

SUB-COMMITTEE ON NAVIGATION,  
COMMUNICATIONS AND SEARCH AND  
RESCUE  
1st session  
Agenda item 28

NCSR 1/28  
16 July 2014  
Original: ENGLISH

## REPORT TO THE MARITIME SAFETY COMMITTEE

### Table of contents

Section	Page No.
1 GENERAL	5
2 DECISIONS OF OTHER IMO BODIES	5
3 ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS	6
4 CONSIDERATION OF ECDIS MATTERS RELATED TO THE IMPLEMENTATION OF THE CARRIAGE REQUIREMENTS IN SOLAS REGULATIONS V/19.2.10 AND V/19.2.11	10
5 CONSOLIDATION OF ECDIS-RELATED IMO CIRCULARS	11
6 APPLICATION OF THE SATELLITE NAVIGATION SYSTEM "BEIDOU" IN THE MARITIME FIELD	12
7 DEVELOPMENT OF EXPLANATORY FOOTNOTES TO SOLAS REGULATIONS V/15, V/18, V/19 AND V/27	13
8 CONSIDERATION OF LRIT-RELATED MATTERS	14
9 DEVELOPMENT OF AN E-NAVIGATION STRATEGY IMPLEMENTATION PLAN	20
10 DEVELOPMENT OF PERFORMANCE STANDARDS FOR MULTI-SYSTEM SHIPBORNE NAVIGATION RECEIVERS	23
11 REVISION OF THE GUIDELINES FOR THE ONBOARD OPERATIONAL USE OF SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEMS (AIS)	24
12 DEVELOPMENTS IN MARITIME RADIOCOMMUNICATION SYSTEMS AND TECHNOLOGY	25
13 REVIEW AND MODERNIZATION OF THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)	28

<b>Section</b>	<b>Page No.</b>
14 FURTHER DEVELOPMENT OF THE GMDSS MASTER PLAN ON SHORE-BASED FACILITIES	33
15 CONSIDERATION OF OPERATIONAL AND TECHNICAL COORDINATION PROVISIONS OF MARITIME SAFETY INFORMATION (MSI) SERVICES, INCLUDING THE DEVELOPMENT AND REVIEW OF RELATED DOCUMENTS	33
16 CONSIDERATION OF RADIOCOMMUNICATION ITU-R STUDY GROUP MATTERS	34
17 CONSIDERATION OF ITU WORLD RADIOCOMMUNICATION CONFERENCE MATTERS	36
18 CONSIDERATION OF DEVELOPMENTS IN INMARSAT AND COSPAS-SARSAT	37
19 DEVELOPMENT OF GUIDELINES ON HARMONIZED AERONAUTICAL AND MARITIME SEARCH AND RESCUE PROCEDURES, INCLUDING SAR TRAINING MATTERS	39
20 FURTHER DEVELOPMENT OF THE GLOBAL SAR PLAN FOR THE PROVISION OF MARITIME SAR SERVICES, INCLUDING PROCEDURES FOR ROUTEING DISTRESS INFORMATION IN THE GMDSS	42
21 DEVELOPMENT OF AMENDMENTS TO THE IAMSAR MANUAL	44
22 DEVELOPMENT OF MEASURES TO PROTECT THE SAFETY OF PERSONS RESCUED AT SEA	45
23 DEVELOPMENT OF A MANDATORY CODE FOR SHIPS OPERATING IN POLAR WATERS	46
24 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS	50
25 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR NCSR 2	53
26 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2015	53
27 ANY OTHER BUSINESS	53

#### **LIST OF ANNEXES**

ANNEX 1	DRAFT AMENDED TRAFFIC SEPARATION SCHEMES
ANNEX 2	DRAFT ROUTEING MEASURES OTHER THAN TRAFFIC SEPARATION SCHEMES
ANNEX 3	DRAFT RESOLUTION MSC.[...](94) – ADOPTION OF AMENDMENTS TO THE EXISTING MANDATORY SHIP REPORTING SYSTEM "OFF CHENGSHAN JIAO PROMONTORY"

- 
- ANNEX 4 DRAFT SN CIRCULAR – RECOGNITION OF THE BEIDOU SATELLITE NAVIGATION SYSTEM (BDS) AS A COMPONENT OF THE WORLD-WIDE RADIONAVIGATION SYSTEM
- ANNEX 5 DRAFT REVISED COMSAR.1/CIRC.54 – AUDITS OF LRIT DATA CENTRES AND OF THE INTERNATIONAL LRIT DATA EXCHANGE CONDUCTED BY THE LRIT COORDINATOR
- ANNEX 6 DRAFT AMENDMENTS TO LRIT-RELATED CIRCULARS – DRAFT AMENDMENTS TO THE TECHNICAL SPECIFICATIONS FOR COMMUNICATIONS WITHIN THE LRIT SYSTEM (MSC.1/CIRC.1259/REV.5, ANNEX, ANNEX 3)
- ANNEX 7 DRAFT E-NAVIGATION STRATEGY IMPLEMENTATION PLAN
- ANNEX 8 DRAFT MSC CIRCULAR – GUIDELINES ON HARMONIZATION OF TESTBEDS REPORTING
- ANNEX 9 DRAFT ASSEMBLY RESOLUTION – REVISED GUIDELINES FOR THE ONBOARD OPERATIONAL USE OF SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEMS (AIS)
- ANNEX 10 REVIEW AND MODERNIZATION OF THE GMDSS – OUTCOME OF THE HIGH LEVEL REVIEW OF THE GMDSS
- ANNEX 11 DRAFT REVISED PLAN OF WORK FOR THE GMDSS REVIEW AND MODERNIZATION PROJECT
- ANNEX 12 DRAFT MSC CIRCULAR – REVISED JOINT IMO/IHO/WMO MANUAL ON MARITIME SAFETY INFORMATION (MSI)
- ANNEX 13 LIAISON STATEMENT TO ITU-R WP 5B – REVISION OF RECOMMENDATION ITU-R M.493-13
- ANNEX 14 DRAFT IMO POSITION ON WRC-15 AGENDA ITEMS CONCERNING MATTERS RELATING TO MARITIME SERVICES
- ANNEX 15 LIAISON STATEMENT TO ITU-R JOINT TASK GROUP 4-5-6-7 – WRC-15, AGENDA ITEM 1.1
- ANNEX 16 DRAFT REVISED MSC.1/CIRC.1210 – GUIDANCE ON THE COSPAS-SARSAT INTERNATIONAL 406 MHz BEACON REGISTRATION DATABASE
- ANNEX 17 DRAFT REVISED MSC.1/CIRC.1182 – GUIDE TO RECOVERY TECHNIQUES
- ANNEX 18 DRAFT REVISED TEXT FOR RENUMBERED CHAPTERS 9 (SAFETY OF NAVIGATION) AND 10 (COMMUNICATION) OF THE DRAFT POLAR CODE
- ANNEX 19 DRAFT REVISIONS TO SECTIONS 2.2 (NAVIGATION EQUIPMENT) AND 2.3 (COMMUNICATION EQUIPMENT) OF THE RECORD OF ADDITIONAL EQUIPMENT AND OPERATIONAL LIMITATIONS FOR THE POLAR SHIP CERTIFICATE

- ANNEX 20 DRAFT ADDITIONAL GUIDANCE ON RENUMBERED CHAPTERS 9 (SAFETY OF NAVIGATION) AND 10 (COMMUNICATION) FOR POSSIBLE INCLUSION IN PART I-B OF THE DRAFT POLAR CODE
- ANNEX 21 DRAFT MSC CIRCULAR – UNIFIED INTERPRETATIONS OF SOLAS REGULATION V/23.3.3
- ANNEX 22 DRAFT MSC CIRCULAR – UNIFIED INTERPRETATIONS PERTAINING TO COMPLETION OF ITEMS 2.1 AND 2.2 OF PART 3 OF THE FORM E AND ITEMS 2.1 AND 2.2 OF PART 5 OF FORMS P AND C
- ANNEX 23 PROPOSED BIENNIAL STATUS REPORT OF THE SUB-COMMITTEE FOR THE 2014-2015 BIENNIUM
- ANNEX 24 PROPOSED PROVISIONAL AGENDA FOR NCSR 2
- ANNEX 25 STATEMENTS BY DELEGATIONS

## **1 GENERAL**

1.1 The Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) held its first session from 30 June to 4 July 2014 under the chairmanship of Mr. C. Salgado (Chile), who was unanimously elected as Chairman for 2014 at the opening of the session. The Vice-Chairman, Mr. R. Lakeman (Netherlands), who was unanimously elected as Vice-Chairman for 2014 at the opening of the session, was also present.

1.2 The session was attended by delegations from Member Governments and Associate Members of IMO; by representatives from United Nations and specialized agencies; by observers from intergovernmental organizations and by non-governmental organizations in consultative status, as listed in document NCSR 1/INF.1.

### **Opening address**

1.3 The Secretary-General welcomed participants and delivered his opening address, the full text of which can be downloaded from the IMO website at the following link: <http://www.imo.org/MediaCentre/SecretaryGeneral/Secretary-GeneralsSpeechesToMeetings>.

### **Chairman's remarks**

1.4 In responding, the Chairman thanked the Secretary-General for his words of guidance and encouragement and assured him that his advice and requests would be given every consideration in the deliberations of the Sub-Committee.

### **Adoption of the agenda and related matters**

1.5 The Sub-Committee adopted the agenda (NCSR 1/1) and agreed to be guided in its work, in general, by the annotations contained in document NCSR 1/1/1 (Secretariat) and the arrangements in document NCSR 1/1/2/Rev.1 (Secretariat). The agenda, as adopted, together with the list of documents considered under each agenda item, is set out in document NCSR 1/INF.23.

## **2 DECISIONS OF OTHER IMO BODIES**

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by MSC 92, FSI 21, DE 57, FAL 38, C 110, A 28, SDC 1, HTW 1, MEPC 66 and MSC 93, as reported in documents NCSR 1/2, NCSR 1/2/1, NCSR 1/2/2 and NCSR 1/2/3, and took them into account in its deliberations when dealing with the relevant agenda items.

2.2 The Sub-Committee also noted that the Council, at its 110th session, approved the Committees' proposal for full five-day sessions, with interpretation, for the first sessions of the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) and the Sub-Committee on Ship Design and Construction (SDC), to enable them to cope with their heavy agendas; and also approved their decision to request the Secretariat to make the necessary changes to the IMODOCS website to reflect the new sub-committee structure, while also maintaining access to documents under the previous sub-committee structure.

2.3 The Sub-Committee further noted that the Assembly, at its twenty-eighth session, approved the *Strategic plan for the Organization (for the six-year period 2014 to 2019)* (resolution A.1060(28)) and the *High-level Action Plan of the Organization and priorities for the 2014-2015 biennium* (resolution A.1061(28)).

### **3 ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS**

3.1 The Sub-Committee recalled that NAV 51 had agreed that a preliminary assessment of ships' routeing proposals would be made by the Chairman in consultation with the Secretariat and the Chairman of the Ships' Routeing Working Group and disseminated as a working paper. In this context, the Sub-Committee noted document NCSR 1/WP.2, outlining a preliminary assessment of the ships' routeing proposals.

#### **Amendments to existing Traffic Separation Schemes (TSSs) and associated measures**

*Amendment to the existing Traffic Separation Scheme "In the Strait of Gibraltar" and amendment of the precautionary area off Tanger-Med and of the south-western inshore traffic zone including anchorage areas*

3.2 The Sub-Committee, noting that the joint proposal submitted by Morocco and Spain (NCSR 1/3) for amending the existing Traffic Separation Scheme "In the Strait of Gibraltar", the precautionary area off Tanger-Med and the south-western inshore traffic zone including anchorage areas did not require any decision by the Sub-Committee in principle, referred it to the Ships' Routeing Working Group for detailed consideration and advice.

*Amendments to the Traffic Separation Scheme off the Chengshan Jiao Promontory*

3.3 The Sub-Committee, noting that the proposal submitted by China (NCSR 1/3/1) relating to amendments to the existing Traffic Separation Scheme "In the waters off the Chengshan Jiao Promontory" did not require any decision by the Sub-Committee in principle, referred it to the Ships' Routeing Working Group for detailed consideration and advice.

*Amendments to the routeing system "Off Friesland" and associated measures*

3.4 The Sub-Committee, noting that the proposals submitted by the Netherlands (NCSR 1/3/4, NCSR 1/3/5, NCSR 1/3/6, and NCSR 1/3/7) relating to amendments to the routeing system "Off Friesland" and associated measures did not require any decision by the Sub-Committee in principle, referred it to the Ships' Routeing Working Group for detailed consideration and advice. In this context, the Sub-Committee noted that these proposals were supported by a report on the formal safety assessment (FSA) related to the proposed amendments to the routeing system "Off Friesland" (NCSR 1/INF.4).

3.5 The Sub-Committee, having noted the view expressed by the delegation of France that there was a need to revise MSC.1/Circ.1060, as amended, to allow for an overview when several routeing measures are submitted together for consideration, invited it to submit a proposal for a new unplanned output to revise this circular to the Committee.

*Establishment of new Traffic Separation Schemes in the Iskenderun, Izmir, Candarli and a new two-way route in Nemrut Bays*

3.6 The Sub-Committee noted, with appreciation, the information provided by Turkey (NCSR 1/INF.12) relating to the establishment of new Traffic Separation Schemes in the Iskenderun, Izmir, Candarli and a new two-way route in Nemrut Bays.

#### **Routeing measures other than traffic separation schemes (TSSs)**

*Amendment to the existing two-way route in the Great North-East Channel*

3.7 The Sub-Committee, noting that the proposal submitted by Australia (NCSR 1/3/3) relating to amendments to the existing two-way route in the Great North-East Channel did not require any decision by the Sub-Committee in principle, referred it to the Ships' Routeing Working Group for detailed consideration and advice.

---

*Establishment of two-way routes and a precautionary area at Jomard Entrance, Papua New Guinea*

3.8 The Sub-Committee, noting that the proposal submitted by Australia and Papua New Guinea (NCSR 1/3/8) relating to the establishment of two-way routes and a precautionary area at Jomard Entrance, Papua New Guinea did not require any decision by the Sub-Committee in principle, referred it to the Ships' Routeing Working Group for detailed consideration and advice.

*Revocation of the IMO-adopted area to be avoided in the region of the Great Barrier Reef*

3.9 The Sub-Committee, noting that the proposal submitted by Australia (NCSR 1/3/12) relating to cancellation of the IMO-adopted Area To Be Avoided in the region of the Great Barrier Reef did not require any decision by the Sub-Committee in principle, after a brief discussion referred it to the Ships' Routeing Working Group for detailed consideration and advice.

*Amendments to the existing area to be avoided in the region of Vorai Sporadhes Islands*

3.10 The Sub-Committee considered the proposal submitted by Greece (NCSR 1/3/13) relating to amendments to the existing area to be avoided in the region of Vorai Sporadhes Islands. Some delegations expressed the views that no compelling need had been demonstrated and that some areas were outside the territorial waters. The delegation of Greece, having noted the concerns regarding the lack of compelling need, withdrew the proposal and expressed its intention to resubmit it with additional information for consideration at a future session of the Sub-Committee.

### **Mandatory ship reporting system**

*New mandatory ship reporting system in the Izmit Bay (IZMITRAP)*

3.11 The Sub-Committee briefly considered the proposal submitted by Turkey (NCSR 1/3/9) relating to the establishment of a new mandatory ship reporting system in the Izmit Bay (IZMITRAP), including a correction to the cover of the draft MSC resolution set out in the annex of the document to indicate that the said new mandatory ship reporting system should enter into force "6 months after adoption by the Maritime Safety Committee".

3.12 Several delegations raised concerns about the necessity of the proposed reporting system and the mandatory nature of the provisions, given:

- .1 the existing TSS in Izmit Bay and the establishment of a Vessel Traffic Service (VTS) in 2014;
- .2 the use of pilots in the area;
- .3 the established shore-side information exchange mechanism already in place in the area; and
- .4 the possible administrative burden on seafarers, who were already busy with the manoeuvring of vessels in the narrow channels.

3.13 After some discussion, the Sub-Committee decided to refer document NCSR 1/13/9 to the Ships' Routeing Working Group for detailed consideration and advice.

*Amendments to the existing mandatory ship reporting system Off Chengshan Jiao Promontory*

3.14 The Sub-Committee, noting that the proposal submitted by China (NCSR 1/3/2) relating to amendments to the existing mandatory ship reporting system Off Chengshan Jiao Promontory did not require any decision by the Sub-Committee in principle, referred it to the Ships' Routeing Working Group for detailed consideration and advice.

*Experience gained from implementation of the mandatory ship reporting system SOUNDREP ("In the Sound between Denmark and Sweden")*

3.15 The Sub-Committee noted, with appreciation, the information provided by Denmark and Sweden (NCSR 1/INF.11) relating to the experience gained from implementation of the mandatory ship reporting system SOUNDREP ("In the Sound between Denmark and Sweden").

### **Review of adopted mandatory ship reporting systems**

3.16 The Chairman recalled that at previous sessions of the NAV Sub-Committee, the Chairman had subsequently taken the initiative to bring to the attention of Members the need for carrying out an evaluation of adopted mandatory ship reporting systems and had appealed to Member Governments to undertake this exercise.

3.17 In this context, the Chairman appreciated the efforts by China in reviewing and submitting the above-mentioned proposal (NCSR 1/3/2) and suggested that Member Governments should review the various ship reporting systems adopted by the Organization at an early date to ensure that they are all up to date.

### **Guidance on amendments to existing IMO adopted ships' routeing systems**

3.18 The Chairman invited the Sub-Committee's attention to paragraph 3.17 of the *General Provisions on Ships' Routeing* (resolution A.572(14)), as amended, that states: "A routeing system, when adopted by IMO, shall not be amended or suspended before consultation with an agreement by IMO unless local conditions or the urgency of the case require that earlier action be taken". The intention of this requirement was to ensure consistency and predictability in routeing measures and the charting of such measures, particularly with regard to TSSs.

3.19 The Chairman urged Member Governments to abide by this requirement and inform the Organization of any planned changes to an IMO-adopted routeing measure, so that the formal procedures for amendments were followed in line with the General Provisions on Ships' Routeing.

### **The state of hydrographic surveys and nautical charts in the areas of proposed routeing measures**

3.20 Having noted the view expressed by the IHO observer that the level of information provided in submissions on the adequacy of the state of hydrographic surveys and nautical charts in the areas of proposed routeing measures had slowly eroded over the years, the Sub-Committee urged Member Governments to implement effectively the relevant provisions of the IMO Guidance Note on the Preparation of Proposals on Ships' Routeing Systems and Ship Reporting Systems (MSC.1/Circ.1060, as amended). The Sub-Committee recalled that this guidance included the invitation that Governments who do not have the necessary hydrographic information should seek the assistance of the relevant charting authority,



directly or through the IHO Secretariat, in obtaining such information. The Sub-Committee further recalled that such considerations should take place at a very early stage in the preparation of routeing measures.

#### **ESTABLISHMENT OF THE SHIPS' ROUTEING WORKING GROUP**

3.21 The Sub-Committee established the Ships' Routeing Working Group under the chairmanship of Mr. R. Lakeman (Netherlands) and instructed it, taking into account decisions of the plenary and comments and proposals made in plenary, to consider documents NCSR 1/3, NCSR 1/3/1, NCSR 1/3/2, NCSR 1/3/3, NCSR 1/3/4, NCSR 1/3/5, NCSR 1/3/6, NCSR 1/3/7, NCSR 1/3/8, NCSR 1/3/9 and NCSR 1/3/12, as well as taking into account the information contained in document NCSR 1/INF.4 regarding routeing of ships and related matters, and to prepare routeing and reporting measures, including recommendations, as appropriate, for consideration and approval by the Sub-Committee with a view to adoption by the Committee, and submit a report on Thursday, 3 July 2014.

#### **Report of the Ships' Routeing Working Group**

3.22 Having received and considered the working group's report (NCSR 1/WP.6), the Sub-Committee approved it in general and, in particular, took action as summarized in the ensuing paragraphs.

#### *Amendments to existing Traffic Separation Schemes (TSS) and associated measures*

3.23 The Sub-Committee approved the following amendments to existing TSSs, as set out in annex 1, which the Committee is invited to adopt, i.e. amendments to:

- .1 the traffic separation scheme "In the Strait of Gibraltar", the precautionary area off Tanger-Med and the south-western inshore traffic zone including anchorage areas;
- .2 the traffic separation scheme "In the waters off the Chengshan Jiao Promontory"; and
- .3 the routeing system "Off Friesland".

#### *Routeing measures other than Traffic Separation Schemes*

3.24 The Sub-Committee approved the establishment of the following new routeing measures and amendments to existing routeing measures other than Traffic Separation Schemes, as set out in annex 2, which the Committee is invited to adopt:

- .1 consequential amendment to the existing recommended directions of traffic flow in the precautionary area off Tanger-Med in the Strait of Gibraltar;
- .2 establishment of new areas to be avoided "Off Friesland";
- .3 amendments to the deep-water routes forming parts of the routeing system "Off Friesland";
- .4 amendments to the mandatory route for tankers from North Hinder to the German Bight;

- .5 amendments to the existing two-way route in the Great North-East Channel; and
- .6 establishment of new two-way routes and a precautionary area at Jomard Entrance, Papua New Guinea.

3.25 The Sub-Committee further approved the revocation of the area to be avoided in the region of the Great Barrier Reef, which the Committee is invited to adopt.

#### *Mandatory ship reporting systems*

3.26 The Sub-Committee did not agree on the establishment of a new mandatory ship reporting system in the Izmit Bay (IZMITRAP) and invited Turkey to reconsider the proposal for possible consideration at a future session of the Sub-Committee.

3.27 The Sub-Committee approved the amendments to the existing mandatory ship reporting system Off Chengshan Jiao Promontory, as set out in annex 3, which the Committee is invited to adopt.

#### *Date of implementation*

3.28 The Sub-Committee agreed to recommend to the Committee that the new and amended routing measures detailed in paragraphs 3.23 to 3.25 and the amended ship reporting system detailed in paragraph 3.27 be implemented six months after adoption by the Committee.

#### *Inconsistency in the format of proposals*

3.29 Having considered all the proposals submitted at this session by Member Governments under agenda item 3, the Sub-Committee identified a lack of consistency in the format of proposals, in accordance with the requirements set out in MSC.1/Circ.1060, as amended. This lack of consistency might have been caused by insufficient expertise in ships' routing and ship reporting systems in general.

3.30 In this context, the Sub-Committee instructed the Secretariat to develop standard formats for proposals depending on the nature of the system, and to make available some models/templates which might be used by Governments considering the submission of proposals. It was noted that such guidance material could be included in MSC.1/Circ.1060, as amended, when it will be revised in future.

## **4 CONSIDERATION OF ECDIS MATTERS RELATED TO THE IMPLEMENTATION OF THE CARRIAGE REQUIREMENTS IN SOLAS REGULATIONS V/19.2.10 AND V/19.2.11**

4.1 The Sub-Committee recalled that MSC 91 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee and the provisional agenda for NAV 59 an output on "Consideration of ECDIS matters related to the implementation of the carriage requirements in SOLAS regulations V/19.2.10 and V/19.2.11", with a target completion year of 2014.

4.2 The Sub-Committee further recalled the information provided to, and discussions which had taken place at NAV 59 (NAV 59/20, section 12).

4.3 The Sub-Committee considered:

- .1 the report submitted by IHO, CIRM and IEC (NCSR 1/4) on the revision of several ECDIS standards related to investigations into the anomalous operation of some ECDIS, which also addressed the transition from the current editions of the standards to the new ones; and
- .2 the information provided by IHO (NCSR 1/4/1) on the action taken by it since NAV 59 to monitor and address ECDIS issues related to the implementation of the carriage requirements in SOLAS regulations V/19.2.10 and V/19.2.11, and noted, in particular, that vigilance and attentiveness were still relevant.

4.4 During the ensuing discussions, the following views were expressed:

- .1 there were still a number of pending issues relating to ECDIS that needed to be resolved, however, it was difficult to decide on additional work needed in addition to the work that had been done so far;
- .2 the status of the revised standards, from the IMO perspective, was governed by SN.1/Circ.266/Rev.1, which stated: "ECDIS that is not updated for the latest version of IHO Standards may not meet the chart carriage requirements as set out in SOLAS regulation V/19.2.1.4"; and
- .3 the concerns expressed by some delegations with regard to the consequences of updating existing standards on an ad hoc basis without proper control or oversight from IMO.

4.5 In this context, the Sub-Committee agreed that progress in resolving the outstanding issues with ECDIS operating anomalies, as well as other matters related to the implementation of ECDIS, could be reported to the Sub-Committee under Any other business.

4.6 The Sub-Committee also noted, with appreciation, the information provided by the Republic of Korea (NCSR 1/INF.15) on analysis of a survey of seafarers on the display and functions of ECDIS, in order to identify any anomalies, as well as the seafarers' level of satisfaction and requirements, for further functional improvement.

4.7 Taking into account the views expressed and given that no further work had been identified in relation to this agenda item, the Sub-Committee agreed to invite the Committee to delete this agenda item and the associated planned output "Guidelines on the carriage of ECDIS (5.2.4.8)" from its biennial agenda under agenda item 25.

## **5 CONSOLIDATION OF ECDIS-RELATED IMO CIRCULARS**

5.1 The Sub-Committee recalled that MSC 90 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee an unplanned output on "Consolidation of ECDIS-related IMO circulars", with a target completion year of 2014.

5.2 The Sub-Committee also recalled that NAV 59, recognizing the complexity of the task at hand and that the target completion year for this output was 2014, had invited Member Governments to review the draft MSC circular (NAV 59/11, annex) in order to meet the objective to have all guidance related to ECDIS as a single new circular and to revoke existing circulars at NCSR 1.

5.3 The Sub-Committee considered document NCSR 1/5 (Australia et al.) proposing to consolidate existing ECDIS-related information contained in seven separate circulars into one circular and noted, in particular, that the proposed draft MSC circular:

- .1 consolidated the contents of seven "pure" ECDIS-related circulars (i.e. MSC.1/Circ.1391, SN.1/Circ.207/Rev.1, SN.1/Circ.266/Rev.1, SN.1/Circ.276, SN.1/Circ.312, STCW 7/Circ.10 and STCW 7/Circ.18) and, if approved, would revoke the above-mentioned ECDIS-related circulars, making it easier to keep the information up to date without duplication or the need for continual cross-referencing; and
- .2 did not introduce any new ECDIS requirement, but rather consolidated existing guidance in a structured manner, including only ECDIS-related information that was contained in existing circulars.

5.4 After some discussion, the Sub-Committee referred the draft circular to the Drafting Group on the finalization of draft circulars and resolution with a view to finalization and subsequent approval by the Committee.

#### **ESTABLISHMENT OF THE DRAFTING GROUP ON THE FINALIZATION OF DRAFT CIRCULARS AND RESOLUTION**

5.5 The Sub-Committee established the Drafting Group on the finalization of draft circulars and resolution under the chairmanship of Mr. Yijiang Qu (China) and instructed it, taking into account decisions of the plenary and comments and proposals made in plenary, to use the text provided in the annex to document NCSR 1/5 as the base document in order to finalize a draft MSC circular on ECDIS – Guidance for Good Practice, for consideration by the Sub-Committee and forwarding to the HTW Sub-Committee for review and subsequent approval by the Committee, and to submit its report on Thursday, 3 July 2014.

#### **Report of the drafting group**

5.6 On receipt of the report of the drafting group (NCSR 1/WP.8), the Sub-Committee took action as summarized in the ensuing paragraphs.

5.7 The Sub-Committee endorsed the draft MSC circular on ECDIS – Guidance for good practice, as set out in annex 1 of document NCSR 1/WP.8, with minor editorial corrections, and instructed the Secretariat to forward it to the HTW Sub-Committee for review, in particular, the provisions related to ECDIS training and the use of simulators, and for subsequent approval by the Committee, and invited the Committee to endorse this action.

5.8 Noting that the work on this output was completed, the Sub-Committee agreed to invite the Committee to delete this agenda item and the associated planned output "Consolidation of ECDIS-related IMO circulars (5.2.4.5)" from its biennial agenda under agenda item 25.

### **6 APPLICATION OF THE SATELLITE NAVIGATION SYSTEM "BEIDOU" IN THE MARITIME FIELD**

6.1 The Sub-Committee recalled that MSC 91 had agreed to include, in the 2012-2013 biennial agenda of the NAV Sub-Committee and provisional agenda for NAV 59, an output on "Application of the BeiDou satellite navigation system in the maritime field", with 2014 as a target completion year.

6.2 The Sub-Committee noted that the performance standards for shipborne BeiDou satellite navigation system (BDS) receiver equipment had been adopted by MSC 93 as resolution MSC.379(93), and that NAV 59 had noted the preliminary assessment provided by China (NAV 59/4/1) and which needed to be further developed in order to consider recognition of the new system as a future component of the World-Wide Radionavigation System (WWRNS).

6.3 The Sub-Committee considered the update provided by China (NCSR 1/6) on the status of BDS and further information for giving consideration to the recognition of BDS as a component of WWRNS. In this context, China also indicated its intention to develop two additional performance standards for GNSS receiver equipment as an extension of the current GPS/GLONASS receiver standard (resolutions MSC.114(73) and MSC.115(73)). To this end, the Sub-Committee noted that this would lead to the revision of the two existing MSC resolutions, which did not fall within the current planned output and would require a proposal for a new unplanned output. Accordingly, the Sub-Committee invited China to forward a proposal for a new unplanned output to the Committee.

6.4 The Sub-Committee noted the views expressed by the European Commission observer that the development of these two additional performance standards should be considered under agenda item 10 on the development of performance standards for multi-shipborne navigation receivers. Furthermore, the Sub-Committee also noted the intention expressed by the delegation of China that it would submit a proposal for a new unplanned output to the Committee for the development of these two specific performance standards.

6.5 After some discussion related to the recognition of BDS, the Sub-Committee agreed that China had provided the necessary information and to advise the Committee to:

- .1 recognize BDS as a future component of the WWRNS and approve the associated draft SN circular, as set out in annex 4; and
- .2 delete this agenda item and the associated planned output "Approved BeiDou satellite navigation system in the maritime field (5.2.4.7)" from the biennial agenda of the Sub-Committee under agenda item 25.

6.6 The Sub-Committee noted that India was developing a satellite-based navigation system called "GAGAN" and that India would provide further information in the near future.

## **7 DEVELOPMENT OF EXPLANATORY FOOTNOTES TO SOLAS REGULATIONS V/15, V/18, V/19 AND V/27**

7.1 The Sub-Committee recalled that MSC 90 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee an unplanned output on "Development of explanatory footnotes to SOLAS regulations V/15, V/18, V/19 and V/27", with a target completion year of 2014.

7.2 The Sub-Committee recalled further that NAV 59, having considered documents NAV 59/13 (Australia et al.) and NAV 59/13/1 (ICS and CLIA), had invited Member Governments to reconsider this issue and to submit comments and proposals for consideration at this session.

7.3 The Sub-Committee considered document NCSR 1/7 (Republic of Korea) highlighting practical difficulties that may occur with the ECDIS software update and proposing the development of draft guidelines for ECDIS software update as an alternative solution to the development of explanatory footnotes to SOLAS regulations, in order to facilitate the smooth implementation of ECDIS software update.

7.4 Having considered the proposal, along with the question of whether guidelines or explanatory footnotes to SOLAS regulations should be developed, the Sub-Committee, whilst noting that the proposed draft guidelines contained some useful elements, agreed that the best way forward to address the ECDIS issues related to implementation would be to amend the relevant SOLAS regulations.

7.5 Despite the concerns expressed with regard to the updating of ECDIS software, the Sub-Committee did not agree with a proposal by the delegation of Spain for the development of interim guidelines for use until future SOLAS amendments dealing with this particular issue entered into force.

7.6 In this context, the Sub-Committee decided not to take any further action related to the output "Development of explanatory footnotes to SOLAS regulations V/15, V/18, V/19 and V/27 (5.2.4.6)" and agreed to invite the Committee to delete this agenda item and the associated planned output from its biennial agenda under agenda item 25.

7.7 The Sub-Committee also invited interested member Governments to submit to the Committee proposals for a new unplanned output on the development of draft SOLAS amendments in order to address the ECDIS-related issues.

## **8 CONSIDERATION OF LRIT-RELATED MATTERS**

8.1 The Sub-Committee noted the outcome of MSC 92 (MSC 92/26, paragraphs 9.15 to 9.17) on LRIT-related matters.

### **Developments in relation to the operation of the LRIT system since COMSAR 17**

8.2 The Sub-Committee noted the information provided by the Secretariat (NCSR 1/8 and NCSR 1/INF.2) related to communication of information and the operation of the LRIT Data Distribution Plan (DDP) server and the Information Distribution Facility (IDF) since COMSAR 17, including issues related to the renewal of Public-Key Infrastructure (PKI) certificates.

8.3 The Sub-Committee also noted the information provided by the European Commission (NCSR 1/8/5) related to the operation, performance and maintenance of the LRIT International Data Exchange (IDE) during 2013, including a security assessment conducted by an independent auditor team and recommending the use of a stronger cryptographic key as part of the implementation of PKI certificates.

8.4 With regard to the above recommendation, the Sub-Committee requested the Secretariat to consider, in its capacity as PKI certificate authority, the recommendations for using a stronger cryptographic key and to advise NCSR 2 on the feasibility of its technical implementation, including any necessary modifications to the LRIT technical specifications and the consequent impact on the functioning of existing LRIT Data Centres (DCs), the DDP server and the IDE.

### **Audits of LRIT Data Centres and of the LRIT International Data Exchange**

8.5 The Sub-Committee had for its consideration the following documents submitted by IMSO, as the LRIT Coordinator:

- .1 NCSR 1/8/1, providing comments and recommendations related to the audits carried out since COMSAR 17;
- .2 NCSR 1/8/2, providing information related to 89 audits conducted from 19 October 2012 to 28 March 2014;

- .3 NCSR 1/INF.3, containing the summary audit reports of DCs and of the IDE; and
- .4 NCSR 1/INF.18, containing information on the scale of charges to be levied by the LRIT Coordinator during 2014.

8.6 The Sub-Committee noted the information contained in the above documents and, in particular, that:

- .1 the Venezuela National Data Centre (NDC) had not been audited since its establishment and had three audits pending due to the absence of acknowledgement or consent to the audit;
- .2 the latest audit of the Morocco NDC had been suspended due to outstanding financial obligations relating to its 2012 audit;
- .3 the Ecuador NDC had been issued with a major non-conformity note for the second consecutive time and no corrective actions had been taken by the end of the audit period; the NDC had declined the 2013 audit as the Government of Ecuador was considering to either join another DC or to use the services of a commercial LRIT service provider to continue operating in the LRIT system; and the NDC had not renewed the PKI certificate on 31 December 2013 and was therefore, since then, no longer able to connect to the LRIT system;
- .4 the Indonesia NDC had been issued with a major non-conformity note for the second consecutive time and no corrective actions had been taken by the end of the audit period; and the NDC had been re-established under a different DC provider in August 2013;
- .5 the Republic of Korea NDC had been issued with a major non-conformity note during the last audit and the overall performance of the DC would be reviewed during the next audit; and
- .6 non-audited DCs were creating a financial burden for other DCs that had been audited.

8.7 The Sub-Committee recalled the decisions taken at MSC 90 related to non-audited DCs and the barring, suspension or temporarily disconnection of such DCs from operating in the LRIT system (MSC 90/28, paragraph 6.20).

8.8 Having considered the above issues, the Sub-Committee:

- .1 urged those Governments responsible for the DCs that had not been audited to ensure their compliance with the provisions of the Revised performance standards (resolution MSC.263(84), as amended), in particular paragraphs 7.5, 7.5.1 and 7.5.2;
- .2 requested the Secretariat to remove the Ecuador NDC from the DDP until it is fully retested and to inform the points of contact for LRIT-related matters designated by the Government of Ecuador of the action taken;
- .3 urged the Indonesia NDC and the Republic of Korea NDC to implement the necessary corrective actions, and agreed to review the related issues after completion of the next year's audits; and

- .4 agreed that DCs that had not been audited or that had been issued with major non-conformity notes should conduct additional testing in order to verify their correct functioning and, in this respect, invited the LRIT Coordinator to prepare, in consultation with DC operators, draft test cases and procedures for consideration by the Sub-Committee at a future session.

8.9 In this context, the Sub-Committee noted the views expressed by:

- .1 the delegation of Ecuador, advising that work was currently being carried out to rectify the issues with the Ecuador NDC and that technical assistance had been requested from the Secretariat;
- .2 the delegation of Indonesia, indicating that corrective actions had already been taken and that the LRIT Coordinator had been informed accordingly, that the Government of Indonesia took necessary actions in 2014 to re-establish cooperation with the new DC provider, as had been stated during A 28, and that overall operation had been tested and found in working condition; and
- .3 the Republic of Korea, informing that a detailed analysis had been conducted and corrective actions implemented, which would be reviewed by the LRIT Coordinator.

8.10 In light of the foregoing, the Sub-Committee endorsed a draft revised COMSAR.1/Circ.54 on Audits of LRIT Data Centres and of the LRIT International Data Exchange conducted by the LRIT Coordinator, as set out in annex 5, and invited the Committee to approve it for dissemination as COMSAR.1/Circ.54/Rev.2.

### **Proposals and recommendations related to the functioning and operation of the LRIT system and related procedures**

8.11 The Sub-Committee had for its consideration the following documents:

- .1 NCSR 1/8/1 (IMSO), paragraph 23.3, recommending the promotion of a wider and more efficient use of the LRIT system amongst SAR services;
- .2 NCSR 1/8/3 (Secretariat), providing relevant outcomes and recommendations from the meetings of the LRIT Operational Governance Body (OGB) since COMSAR 17, including proposed amendments to MSC.1/Circ.1376/Rev.1 on Continuity of service plan for the LRIT system in order to review the composition of the OGB and allow the submission of relevant technical recommendations by the OGB to the Sub-Committee, through the Secretariat, with the view to improving the efficiency, effectiveness and security of the LRIT system;
- .3 NCSR 1/8/4 (IMSO), providing information on the outcome of the Second session of the IMSO LRIT Operators Meeting held from 3 to 5 March 2014, and containing a number of recommendations to improve the overall functioning of the LRIT system, including proposed amendments to:
  - .1 MSC.1/Circ.1259/Rev.5 and MSC.1/Circ.1294/Rev.3 on LRIT Technical documentation, parts I and II, respectively, and MSC.1/Circ.1376/Rev.1 on Continuity of service plan for the LRIT system concerning the notification, reporting and recording of temporary suspensions of operations or reduction of the level of



service provided, the provision of LRIT information to/from non-metropolitan territories and special administrative regions, the overlapping of Custom coastal area polygons and the provision of LRIT information in response to a SAR Surface Picture (SURPIC) request; and

- .2 MSC.1/Circ.1412 on Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and of the LRIT International Data Exchange concerning arrangements for making available summary audit reports of DCs and of the IDE;
- .4 NCSR 1/8/7 (European Commission), proposing the development of web services and related messages between DCs and the DDP server for the upload and validation of geographical polygons in the DDP and the activation of coastal State standing orders;
- .5 NCSR 1/8/8 (European Commission), proposing an amendment to MSC.1/Circ.1338 on Guidance to Search and Rescue services in relation to requesting and receiving LRIT information in case a DC is temporarily out of service, and also proposing the distribution of geographical polygons related to the area of responsibility of SAR services to DCs using the DDP server; and
- .6 NCSR 1/8/9 (China), proposing amendments to MSC.1/Circ.1307 on Guidance on the survey and certification of compliance of ships with the requirement to transmit LRIT information in order to establish procedures for revoking LRIT Conformance test reports which are no longer valid with regard to any of the reasons indicted in paragraphs 7.2 and 7.3 of the circular.

8.12 Having considered the above proposals, the Sub-Committee took action as indicated in the ensuing paragraphs.

***Proposed amendments to LRIT-related circulars***

8.13 The Sub-Committee agreed with the proposed amendments to:

- .1 MSC.1/Circ.1376/Rev.1, as set out in the annex of document NCSR 1/8/3;
- .2 MSC.1/Circ.1259/Rev.5, MSC.1/Circ.1294/Rev.3 and MSC.1/Circ.1376/Rev.1, as set out in annexes 3 to 6 to the annex to document NCSR 1/8/4, with a minor modification to the draft amendments to paragraph 2.2.4.9 of the Technical specifications for communications within the LRIT system (MSC.1/Circ.1259/Rev.5, annex, annex 3) in order to clarify that the DC should only check the position reports received during the last 24 hours;
- .3 MSC.1/Circ.1412, as set out in annex 7 to the annex of document NCSR 1/8/4; and
- .4 MSC.1/Circ.1338, as set out in the annex of document NCSR 1/8/8, with a minor modification to insert the new text proposed in paragraph 4 of document NCSR 1/8/8 at the end of paragraph 4.1 of the Guidance instead of paragraph 4.4, and to add the word "However" at the beginning of the proposed text.

8.14 With regard to the draft amendments to MSC.1/Circ.1307 proposed in document NCSR 1/8/9, the Sub-Committee, whilst supporting the idea in general, agreed that further modifications would be required to address concerns expressed during its consideration and, in this regard, invited China to resubmit a revised proposal to NCSR 2.

8.15 In relation to the above-mentioned proposed amendments to MSC.1/Circ.1412, the Sub-Committee also agreed to:

- .1 request the Secretariat to modify the web interface of the DDP so as to allow the LRIT Coordinator to upload summary audit reports and information related to the list of audits conducted directly in the DDP and to make this information available to GISIS users of Member States; and
- .2 in view of the above decision, discontinue the publishing of future revised versions of COMSAR.1/Circ.54,

and invited the Committee to endorse the above actions.

8.16 Subsequently, the Sub-Committee endorsed the draft amendments to MSC.1/Circ.1259/Rev.5, MSC.1/Circ.1294/Rev.3, MSC.1/Circ.1338, MSC.1/Circ.1376/Rev.1 and MSC.1/Circ.1412, as set out in annex 6, and invited the Committee to approve them.

8.17 In doing so, the Sub-Committee authorized the Secretariat to prepare the final text of the draft amendments and to make any editorial corrections that may be identified.

#### ***Promotion of a wider and more efficient use of the LRIT system***

8.18 The Sub-Committee agreed that:

- .1 coastal States should be allowed to set the reporting rate for the provision of LRIT information (i.e. 15 min, 30 min, 1 h, 3 h or 6 h) in the context of coastal State standing orders in the DDP, and to perform filtering based on the flag and type of ship (NCSR 1/8/4, paragraph 17.3.1);
- .2 the use of the existing SAR SURPIC request message should be expanded in order to allow coastal States to send a one-time request message for the provision of LRIT information related to ships navigating within a predefined circular or rectangular area, and to perform filtering based on the flag and type of ship (NCSR 1/8/4, paragraph 17.3.2); and
- .3 additional web service(s) between DCs and the DDP server and related messages should be developed for the upload and validation of geographical polygons in the DDP, including the activation/deactivation of coastal State standing orders (NCSR 1/8/7),

and invited IMSO to develop, in consultation with DC operators, the necessary draft amendments to the Technical specifications for communications within the LRIT system for consideration by the Sub-Committee at a future session.

8.19 The Sub-Committee also agreed to request the Secretariat to promote a wider and more efficient use of the LRIT system by SAR services during the implementation of SAR-related technical cooperation activities (NCSR 1/8/1, paragraph 23.3).

8.20 With regard to the further development of an option to allow filtering by type of ship, as indicated in paragraphs 8.18.1 and 8.18.2 above, IMSO clarified that the options that could be considered for classification of ship types were those defined in SOLAS chapter I or in SN/Circ.227, and that consideration would be given to comments when developing the draft amendments to the LRIT Technical specifications, including adding an extra option for type of ship "undefined".

### ***Further improvements to the functioning of DCs and processing of messages***

8.21 The Sub-Committee agreed to:

- .1 complement Receipt Messages with Receipt Code 5 (ship not responding), which were sent in response to a poll or to a change of frequency request, with a standard text to provide information to the requesting SOLAS Contracting Government on the date and time of the last LRIT information received from the ship concerned; and
- .2 the proposal for the distribution of SAR area polygons through the DDP server (NCSR 1/8/8),

and invited IMSO to develop, in consultation with DC operators, the necessary draft amendments to the Technical specifications for consideration by NCSR 2.

8.22 The delegation of Greece, supported by Cyprus, Italy, Poland and the United Kingdom, expressed support, in general, to the proposal made by the European Commission in document NCSR 1/8/8, noting that the DDP polygons representing territorial waters of States should also be clearly displayed on the DC interface.

### ***Other issues***

8.23 The Sub-Committee encouraged SOLAS Contracting Governments to keep the contact information of the persons in charge of the operation of their DCs up to date in the DDP (NCSR 1/8/4, paragraph 17.4).

8.24 With regard to the action requested in paragraph 17.6 of document NCSR 1/8/4, the Sub-Committee found it unnecessary to encourage Administrations to consider the use of dedicated ship-borne terminals for LRIT reporting, given that the implementation of related application requirements was already part of the duties and obligations of the Administrations.

8.25 The Sub-Committee noted the technical capability and real potential of the existing LRIT shore-based infrastructure, which could be expanded in the future to facilitate the exchange of additional ship-related information between Administrations to enhance maritime security, safety and the protection of the marine environment (NCSR 1/8/4, paragraph 17.8).

### **Consideration of the need to review the LRIT system**

8.26 The Sub-Committee had for its consideration document NCSR 1/8/6 (European Commission), providing a brief summary of the operational experience of the European Union Cooperative LRIT Data Centre after five years of operation and recommending to initiate a review of the LRIT system for the purpose of continuous improvement.

8.27 During the consideration of the above document, the following views were expressed:

- .1 several delegations supported the proposal for initiating a review of the LRIT system, noting that it concerned a policy issue that should be considered by the Committee;
- .2 some of the measures that could be reviewed included the consideration of:
  - .1 changing the frequency of data transmissions from four to one transmission per day;
  - .2 the need to continue with annual audits of DCS, as well as the high cost of the audits;
  - .3 alternatives for the LRIT Coordinator role and means of auditing DCs; and
  - .4 meeting the objective of LRIT by other means, such as the use of satellite-augmented AIS;
- .3 careful consideration should be given to the proposal for making the LRIT information available at no cost and the possible consequences; and
- .4 the level of use of LRIT data remains well below that envisaged at the time the system was developed with consequential impacts on the financial implications for Contracting Governments.

8.28 After some discussion, the Sub-Committee, recognizing the need for a review of the LRIT system, agreed that the consideration of possible solutions relating to the functioning and the operation of the LRIT system to improve its financial sustainability and viability was a policy issue that was within the remit of the Committee. Accordingly, the Sub-Committee invited interested Member Governments, if they considered it necessary, to submit appropriate proposals to the Committee.

## **9 DEVELOPMENT OF AN E-NAVIGATION STRATEGY IMPLEMENTATION PLAN**

9.1 The Sub-Committee recalled that NAV 59 had re-established the Correspondence Group on e-navigation to, inter alia, finalize the draft e-navigation Strategy Implementation Plan (SIP) and progress related guidelines (NAV 59/20, paragraphs 6.37 and 6.38).

9.2 The Sub-Committee noted that:

- .1 HTW 1 had considered a report of the e-navigation Correspondence Group (HTW 1/20/1) on human element and training issues, along with possible implications for training related to the introduction of e-navigation, and had agreed that it was premature to consider any training requirements, pending the finalization of the SIP (HTW 1/21, paragraphs 20.9 to 20.13); and
- .2 MSC 93, having noted the relevant discussions at NAV 59 regarding the convening of an intersessional meeting on e-navigation, had decided that there was no need to convene such a meeting (MSC 93/22, paragraphs 8.9 to 8.11).

---

## Consideration of the draft e-navigation Strategy Implementation Plan and related guidelines

9.3 The Sub-Committee had for its consideration the following documents:

- .1 NCSR 1/9 (Norway) and NCSR 1/9/1 (Norway), containing, respectively, the report of the Correspondence Group on e-navigation, along with the draft SIP, and four draft guidelines related to e-navigation;
- .2 NCSR 1/9/2 (Germany), commenting on document NCSR 1/9 and proposing an improved specification of Risk Control Option (RCO) 5 as basis for the continuing work on the completion, detail and harmonization of related tasks, especially task T12 as described in the SIP; and
- .3 NCSR 1/9/3 (CIRM), commenting on document NCSR 1/9 and proposing the removal of references to the development of S-Mode from the SIP.

9.4 The Sub-Committee noted, with appreciation, the information contained in the following documents:

- .1 NCSR 1/INF.5 (Norway) and NCSR 1/INF.6 (Norway), both related to the report of the correspondence group and containing, respectively, background information on the development of e-navigation and a list of Standards that could be evaluated for e-navigation;
- .2 NCSR 1/INF.7 (Republic of Korea), providing information on the results of research undertaken to specify the Common Maritime Data Structure (CMD5) at a detailed level for improving existing onboard systems related to the implementation of e-navigation;
- .3 NCSR 1/INF.13 (BIMCO and CIRM), providing information on the work of the CIRM/BIMCO Joint Working Group on Software Maintenance, which was established to address the problems involved with shipboard software and firmware maintenance;
- .4 NCSR 1/INF.16 (Denmark, Republic of Korea and Sweden), reporting on international trials of e-navigation solutions in Korean waters as a first step toward implementing a global e-navigation testbed;
- .5 NCSR 1/INF.17 (Republic of Korea), on the consideration of available e-navigation services from the perspective of shipboard users of e-navigation;
- .6 NCSR 1/INF.18 (Italy and Sweden), providing information on the results and recommendations emanating from the MONALISA and MONALISA 2.0 projects; and
- .7 NCSR 1/INF.21 (Denmark, France and Republic of Korea), providing an overview of the Maritime Cloud concept.

9.5 During the consideration of the draft SIP, the following views were expressed, among others:

- .1 IMO should continue to lead and coordinate the future work on e-navigation in order to ensure global implementation in a structured and coordinated manner;

- .2 a project management approach should be adopted to control the overall progress of e-navigation, in particular with regard to those tasks requiring coordination with other international organizations;
- .3 implementation of tasks should be conducted taking into account the methods of work of the Organization;
- .4 a new item should be added to the agenda of the Sub-Committee to continue monitoring the implementation of e-navigation and future e-navigation developments during the next two biennia after 2015;
- .5 a single new planned/unplanned output could be proposed to address the work of all tasks contained in the SIP, but this may not be in line with the methods of work of the Organization;
- .6 some of the tasks could be considered and further developed as part of the review of the GMDSS (e.g. Task 15 related to integration of existing communication systems and their future development);
- .7 the Organization should consider inviting relevant international organizations to assist with the development and implementation of e-navigation; and
- .8 the future development of e-navigation was within the purview of the Committee.

9.6 The Sub-Committee considered document NCSR 1/9/2 (Germany) and, following Germany's advice, agreed to consider the proposals contained in the document under agenda item 10 "Development of performance standards for multi-system shipborne navigation receivers" (see paragraphs 10.3 to 10.5).

9.7 With regard to document NCSR 1/9/3 (CIRM), the Sub-Committee agreed with the view of the majority of the delegations that references to S-Mode should not be deleted from the SIP.

9.8 After a lengthy discussion on the role of IMO in coordinating the future development of e-navigation and how to proceed with the implementation of related tasks, bearing in mind the methods of work of the Organization, the Sub-Committee finalized the SIP, as set out in annex 7, and agreed to forward it to the Committee for approval.

9.9 The Sub-Committee also agreed to invite the Committee to note that IALA, IHO, the Nautical Institute and others had indicated that they were ready to continue to support IMO with the future development of e-navigation and to contribute to the work on related tasks.

9.10 The Sub-Committee noted that some Member States were considering submitting proposals to the Committee for new planned/unplanned outputs addressing the future development of the tasks contained in the SIP.

9.11 The Sub-Committee also noted the views expressed by some delegations that the establishment of a website in itself would not be the proper instrument for coordinating the work, but it could help to promote information on e-navigation, and that IMO should continue to coordinate and lead the work related to e-navigation through an appropriate mechanism.

9.12 With regard to the draft guidelines contained in annexes 1 to 4 of document NCSR 1/9/1 (Norway), the Sub-Committee:

- .1 endorsed the draft MSC circular on Guidelines on harmonization of testbeds reporting, as set out in annex 8, and invited the Committee to approve it; and
- .2 agreed that the draft Guidelines on Human Centred Design (HCD) for e-navigation systems, the draft Guidelines on Usability Testing, Evaluation and Assessment (UTEA) for e-navigation systems and the draft Guidelines on Software Quality Assurance (SQA) in e-navigation should be combined and harmonized into one single circular to avoid overlapping of subjects and cross-referencing.

9.13 Taking into account the above decisions, the Sub-Committee agreed to establish a Correspondence Group on Harmonization of Guidelines related to e-navigation under the coordination of Australia<sup>1</sup> and instructed it to:

- .1 consolidate the draft *Guidelines on Human Centred Design (HCD) for e-navigation systems*, the draft *Guidelines on Usability Testing, Evaluation and Assessment (UTEA) for e-navigation systems* and the draft *Guidelines on Software quality assurance (SQA) in e-navigation* contained in annexes 1, 2 and 3 of document NCSR 1/9/1, respectively, into a single and harmonized guideline;
- .2 if necessary, submit a report to HTW 2 raising specific questions related to human element aspects contained in the draft harmonized guideline; and
- .3 submit a consolidated final report to NCSR 2.

9.14 The Sub-Committee authorized the Secretariat, when preparing the final text of the SIP and of the draft *Guidelines on Harmonization of testbeds reporting*, to make any editorial corrections that might be identified.

## **10 DEVELOPMENT OF PERFORMANCE STANDARDS FOR MULTI-SYSTEM SHIPBORNE NAVIGATION RECEIVERS**

10.1 The Sub-Committee recalled that MSC 90 had agreed to include in the post-biennial agenda of the Committee an unplanned output on "Development of performance standards for multi-system shipborne navigation receivers", with two sessions needed to complete the work, and assigning the NAV Sub-Committee as the coordinating organ.

10.2 The Sub-Committee considered:

- .1 the proposal by the United States et al. (NCSR 1/10), providing draft Performance standards for shipborne receiver equipment capable of using either a single radionavigation system or a combination of radionavigation systems;

---

<sup>1</sup> **Coordinator:**  
Mr. Nick Lemon  
Manager, Nautical & Regulation  
Navigation Safety & International Division (AMSA)  
Tel: +61 2 6279 5656  
Email: nick.lemon@amsa.gov.au

- .2 comments and proposed amendments submitted by China (NCSR 1/10/1); and
- .3 a proposed amendment submitted by ESA (NCSR 1/10/2).

10.3 The Sub-Committee also considered a proposal by Germany (NCSR 1/9/2), submitted under agenda item 9 and related to the development of a concept for an open, harmonized and extendable onboard Position, Navigation and Timing (PNT) system covering the requirements for resilience and integrity for PNT within multi-radionavigation equipment and for PNT within Integrated Navigation Systems (INS). The proposal included a recommendation for the development of a functional, goal-based performance standard for PNT data processing for multi-radionavigation equipment and for the PNT processing unit for INS.

10.4 During the ensuing discussion, the following views were expressed:

- .1 a number of delegations supported the draft Performance standards, as presented in document NCSR 1/10 (United States et al.), including also comments and modifications proposed in documents NCSR 1/10/1 (China) and NCSR 1/10/2 (ESA);
- .2 further consideration should be given to the proposal contained in document NCSR 1/9/2 (Germany); and
- .3 some changes in organization regarding the modular concept as well as other editorial corrections may be required.

10.5 Recognizing that this would need further consideration and that the target completion year for this planned output was 2015, and having noted that some interested parties were willing to work together to produce a joint proposal for consideration at the next session of the Sub-Committee, the Sub-Committee invited Member Governments and interested organizations to consider the matter in detail and submit comments and proposals to NCSR 2.

## **11 REVISION OF THE GUIDELINES FOR THE ONBOARD OPERATIONAL USE OF SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEMS (AIS)**

11.1 The Sub-Committee recalled that:

- .1 MSC 90 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee an unplanned output on "Revision of the Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)", with a target completion year of 2014; and
- .2 NAV 59, having progressed the development of the draft amendments, had forwarded the draft text of the revised Assembly resolution, as set out in document NAV 59/WP.7, annex 4, to NCSR 1 for review and finalization and invited Member Governments and international organizations to submit comments and proposals to NCSR 1.

11.2 The Sub-Committee noted that the Secretariat had provided the outcome of NAV 59 (NAV 59/WP.7, annex 4), with some editorial corrections proposed by the Secretariat (NCSR 1/11).



11.3 The Sub-Committee considered the proposal submitted by Australia (NCSR 1/11/1), commenting on and proposing an amendment to the draft revised Guidelines. After a brief discussion, the Sub-Committee decided to refer the finalization of the draft circular to the Drafting Group on the finalization of draft circulars and resolution.

11.4 The Sub-Committee noted with appreciation the information provided by Australia (NCSR 1/INF.9) relating to Australia's experiences with deficiencies pertaining to the content of AIS transmissions from ships.

#### **Instruction for the Drafting Group on the finalization of draft circulars and resolution**

11.5 The Sub-Committee instructed the Drafting Group on the finalization of draft circulars and resolution, taking into account decisions of the plenary and comments and proposals made in plenary, to finalize the draft text for the revision of the *Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)* (resolution A.917(22), as amended by resolution A.956(23)), using the text provided in the annex to document NCSR 1/11 as the basis for the work and taking into account document NCSR 1/11/1 (Australia), for consideration and endorsement by the Sub-Committee, and to submit its report on Thursday, 3 July 2014.

#### **Report of the Drafting Group on the finalization of draft circular and resolution**

11.6 On receipt of the report of the Drafting Group on the finalization of draft circulars and resolution (NCSR 1/WP.8), the Sub-Committee took action as summarized in the ensuing paragraph.

11.7 The Sub-Committee endorsed the draft Assembly resolution on Revised Guidelines for the onboard operational use of shipborne automatic identification systems (AIS), with minor editorial corrections, as set out in annex 9, for approval by the Committee and subsequent adoption by the Assembly.

11.8 Noting that the work relating to this output had been completed, the Sub-Committee agreed to invite the Committee to delete this agenda item and the associated planned output "Revised guidelines for the onboard operational use of shipborne automatic identification systems (AIS) (5.2.4.4)" from its biennial agenda covered under agenda item 25.

## **12 DEVELOPMENTS IN MARITIME RADIOCOMMUNICATION SYSTEMS AND TECHNOLOGY**

12.1 The Sub-Committee recalled that COMSAR 7 had agreed that no submissions concerning performance standards for any radiocommunication equipment should be accepted and/or considered under this agenda item (COMSAR 7/23, paragraphs 11.5 and 11.6).

12.2 The Sub-Committee noted that based on the request of COMSAR 17, the Committee had extended the target completion year for this item to 2014.

#### **Recognition of Iridium mobile satellite system as a GMDSS service provider**

12.3 The Sub-Committee recalled that MSC 92 had considered matters related to the application of the Iridium mobile satellite system for recognition and use in the GMDSS and had agreed to refer the matter to the NCSR Sub-Committee for evaluation of detailed information under its agenda item on "Developments in maritime radiocommunication systems and technologies" (MSC 92/26, paragraphs 9.22 to 9.25).

12.4 The Sub-Committee considered:

- .1 the proposal submitted by the United States (NCSR 1/12) that the Iridium mobile satellite system be considered for recognition and use in the GMDSS in accordance with the criteria and guidance of resolution A.1001(25) and MSC.1/Circ.1414, and which provided detailed information related to the application to recognize Iridium Satellite LLC for use in the GMDSS;
- .2 the information provided by IMSO (NCSR 1/12/1) on actions it had undertaken in preparation for the recognition of a new mobile satellite communications system for use in the GMDSS and highlighting relevant financial and operational matters; and
- .3 comments provided by the United Kingdom (NCSR 1/12/2) on document NCSR 1/12, outlining a number of detailed concerns relating to the recognition of the Iridium mobile satellite system for use in the GMDSS, and expressing the view that these concerns would need to be addressed before the proposal could be subject to any further detailed consideration.

12.5 During the ensuing discussions, the following views were expressed:

- .1 the recognition of new satellite service providers as part of the GMDSS was supported in general;
- .2 whilst sharing the concerns of the United Kingdom (NCSR 1/12/2), the majority of the delegations supported the evaluation of Iridium for recognition as a GMDSS service provider and recommended that further technical analysis be undertaken;
- .3 other delegations highlighted other concerns, such as: incompatibility of satellite systems and of equipment requirements under SOLAS chapter IV; additional requirements and equipment for SAR authorities and RCCs; the limitation of the network architecture with regard to the number of accesses to land stations which could affect the effective dissemination of information; and the costs associated with equipment acquisition and transmission of MSI related messages, etc.;
- .4 the detailed technical assessment should be conducted as soon as possible, by IMSO or by another, independent group of experts, addressing all related concerns in order to ensure compliance with the criteria set out in resolution A.1001(25);
- .5 some delegations indicated that more information should be presented to the Sub-Committee in order to evaluate the proposal, while others were of the opinion that, in order to avoid delaying the process, the additional information could be presented directly to the independent body that would conduct the technical assessment; and
- .6 MSC 94 could consider establishing a group of experts to conduct the detailed technical assessment, the outcome of which should be reported to NCSR 2.

---

12.6 The Chairman, noting the provisions of resolution A.1001(25) and MSC.1/Circ.1414, clarified the following procedures related to the process of recognition of mobile satellite communication systems for use in the GMDSS:

- .1 an application for recognition should be considered and reviewed first by the Committee and, if there are no objections, it should be forwarded to the NCSR Sub-Committee;
- .2 the NCSR Sub-Committee should then verify and evaluate the information, based on the information provided by the Government proposing such a satellite system for possible recognition, and produce an evaluation report; in doing so, the provisions of relevant regulations of SOLAS chapter IV and the criteria established by resolution A.1001(25) should be observed;
- .3 in order to produce such an evaluation report, a technical and operational assessment should be conducted by an independent body which can report directly to the NCSR Sub-Committee; however, it is within the purview of the Committee to decide who should undertake the technical and operational assessment and to issue the request;
- .4 once the technical and operational assessment is received by the NCSR Sub-Committee and the evaluation report is produced, the Committee, following satisfactory consideration of the evaluation report, should adopt an MSC resolution recognizing the new maritime mobile satellite services provider; and
- .5 the new maritime mobile satellite services provider should then be subject to oversight by IMSO in accordance with the rules and arrangements set out in the public services agreement (PSA) to be concluded between the service provider and IMSO.

12.7 With regard to the documents presented and the comments and views expressed by delegations, the Chairman also clarified that, based on the provisions of paragraph 11 of MSC.1/Circ.1414, the technical and operational assessment report to inform the Sub-Committee's evaluation could be produced by an independent body, which is not necessarily IMSO.

12.8 The IMSO observer confirmed the Chairman's interpretation and clarified that its submission was in response to a request by the United States (NCSR 1/12). IMSO also indicated its readiness and willingness to proceed with the technical evaluation and assessment, should the Committee wish to request IMSO to do so.

12.9 After an in-depth discussion, the Sub-Committee, recognizing general support that the application of Iridium for recognition of its mobile satellite system for use in the GMDSS be evaluated in accordance with the criteria defined in resolution A.1001(25), agreed that:

- .1 the Committee could consider convening a group of experts, through the Secretariat, to participate in the evaluation process and provide technical advice, including requesting support from other international organizations such as IHO, WMO and others; or
- .2 the Committee could consider and decide which independent body should produce a technical and operational assessment of the information contained in documents NCSR 1/12 and NCSR 1/12/2, invite that body to make the assessment and provide a report to the NCSR Sub-Committee for evaluation; and

- .3 additional information deemed to be required for the assessment could be presented directly to the independent body, through the Secretariat, in order to address the concerns expressed in document NCSR 1/12/2 as well as those expressed in paragraph 12.5.3 above.

12.10 Recognizing that it was very important to consider developments in maritime radiocommunication systems and technology and that further proposals might be submitted, the Sub-Committee decided to invite the Committee to extend the target completion year for this planned output to 2015 when discussing its biennial agenda under agenda item 25.

### **13 REVIEW AND MODERNIZATION OF THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)**

#### **Outcome of the ICAO/IMO Joint Working Group**

13.1 The Sub-Committee noted that the ICAO/IMO Joint Working Group had considered issues related to the review and modernization of GMDSS (NCSR 1/19, section 7.5) and that the Secretariat had informed the meeting of the Joint IMO/ITU Expert Group, held in October 2013, on the outcome of discussions at the meeting of the Joint Working Group.

#### **Outcome of the High-level Review**

##### *Report of the ninth meeting of the Joint IMO/ITU Experts Group*

13.2 The Sub-Committee considered the relevant part of document NCSR 1/17 (Secretariat) providing the report of the ninth meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters, which took place from 14 to 18 October 2013 under the chairmanship of Mr. K. Fisher (United Kingdom).

##### *Definition of sea areas A3 and A4*

13.3 The Sub-Committee considered document NCSR 1/13/3 (France), highlighting the challenges for the Organization when more mobile satellite communication systems become available that would be recognized as GMDSS service providers and focussing on the definition of sea areas A3 and A4, including the view that defining areas A3 and A4 should go beyond the three options proposed in paragraph 30, appendix 2 of the annex to document NCSR 1/17.

13.4 During the ensuing discussions, the Sub-Committee:

- .1 noted that this was a complex matter and more options should be considered, including for instance the option of establishing separate sea areas for satellite systems with regional (A5) and global (A6) coverage;
- .2 taking into account that becoming a satellite provider for the purposes of the GMDSS involves a lengthy and complex process, noted that it was not expected that a large number of GMDSS service providers would be recognized in the foreseeable future; and
- .3 agreed that this matter should be further considered in the detailed review of the GMDSS.

13.5 The Sub-Committee noted that the Joint IMO/ITU Expert Group had finalized the draft outcome of the High-level Review of the GMDSS, based on the draft prepared by the Correspondence Group on the Review of the GMDSS, as set out in appendix 2 of the annex to document NCSR 1/17. In this context the Sub-Committee:

- .1 noting that although in most cases the same equipment was used, security-related communications, including the Ship Security Alert System, did not form part of the GMDSS and were clearly separated from the proposed new functional requirements for the proposed modernized GMDSS, endorsed the proposed new definition of "Security-related communications", to be added to SOLAS regulation IV/2 (paragraph 6 of appendix 2);
- .2 endorsed the proposed revision of the definition of "General communications" in SOLAS regulation IV/2 (paragraph 11 of appendix 2);
- .3 noted that there was no need to revise the current definition of Maritime Safety Information in SOLAS regulation IV/2 (paragraphs 6 and 14 of appendix 2);
- .4 endorsed the inclusion of the abbreviation "MSI" in SOLAS regulation IV/2, by means of an editorial amendment (paragraph 14 of appendix 2);
- .5 endorsed the proposal to add a new functional requirement for ships to be capable of transmitting and receiving safety-related information, whilst retaining the functional requirement for ships to receive Maritime Safety Information (MSI) (paragraphs 16 and 17 of appendix 2);
- .6 endorsed the proposed ten functional requirements for the modernized GMDSS (paragraph 17 of appendix 2);
- .7 noted that the four levels of priority should be retained and that two priorities were sufficient for controlling the radiocommunication link, for example by using pre-emption (paragraphs 19 and 20 of appendix 2);
- .8 noted that sea areas A1 and A2 should be retained as separate sea areas (paragraphs 22 and 23 of appendix 2);
- .9 taking into account the discussion set out in paragraph 13.4 above, noted that there were several options for the definition of sea areas A3 and A4 and that this issue, together with port State control procedures, would be further considered under the detailed review of the GMDSS (paragraphs 24 to 32 of appendix 2);
- .10 noted that at the present time, there was no compelling case for the development of a GMDSS Code (paragraph 36 of appendix 2);
- .11 noted that issues to allow for differences with respect to certain categories of ships would be further considered under the detailed review (paragraph 37 of appendix 2);
- .12 noted that it was too early to decide which systems and equipment would or would not be included in the modernized GMDSS (paragraph 40 of appendix 2);

- .13 noted the need for interoperability of radiocommunications between ships and between ships and shore stations, as well as the need for consistent user interfaces and alignment with other SOLAS chapters; also noted that the use of goal-based methodologies was not appropriate (paragraph 52 and paragraph 43 of appendix 2); and
- .14 approved the outcome of the High-level Review, as set out in annex 10.

### **Report of the Correspondence Group on the Review of the GMDSS**

13.6 The Sub-Committee noted that the Joint IMO/ITU Experts Group had discussed the development of the outline of the Detailed Review as prepared by the Correspondence Group on the Review of the GMDSS (CG), and had invited the correspondence group to further consider this matter and report directly to the Sub-Committee (NCSR 1/17, paragraphs 54 to 58 and appendix 3).

13.7 The Sub-Committee considered document NCSR 1/13 (United States), providing the report of the Correspondence Group on the Review of the GMDSS and containing a revised draft outline of the detailed review of the GMDSS.

13.8 After a brief discussion, the Sub-Committee endorsed the draft outline of the detailed review as presented by the correspondence group, and referred it to the Technical Working Group for detailed review using the outline as prepared by the correspondence group.

### **Coordination of the work on GMDSS review and implementation of e-navigation**

13.9 The Sub-Committee considered the proposal submitted by France et al. (NCSR 1/13/4) on coordination between planned outputs related to the detailed review and modernization of the GMDSS and the development of an e-navigation strategy implementation plan (SIP).

13.10 The Sub-Committee noted that:

- .1 whilst e-navigation had a wider scope than the GMDSS, radiocommunications formed a key element of e-navigation;
- .2 there would be benefits in coordinating the work and there was a need to consider which specific issues needed coordination; and
- .3 the methodology for the proposed coordination should also be considered.

13.11 After some discussion, the Sub-Committee decided to refer the issue to the Technical Working Group for detailed consideration and advice.

### **Reduction of inadvertent activation of EPIRPs**

13.12 The Sub-Committee considered the proposal submitted by the Islamic Republic of Iran et al. (NCSR 1/13/2) concerning a new system to receive EPIRB alerts directly on board ships and reduce inadvertent activation of EPIRBs.

13.13 The Sub-Committee noted that:

- .1 false alerts were still a cause for concern and were still being considered as a part of the GMDSS review; and

- .2 the proposal was to introduce additional carriage requirements which would need a planned output before it could be considered by the Sub-Committee.

13.14 Accordingly, the Sub-Committee decided not to take this proposal further and invited the Islamic Republic of Iran and other interested member Governments to submit proposals for a new unplanned output on this matter to the Committee.

#### **Plan of work for the GMDSS review and modernization project**

13.15 The Sub-Committee briefly considered document NCSR 1/13/1 (Secretariat), proposing an editorial revision of the current plan of work for the GMDSS review and modernization project and referred it to the Technical Working Group for detailed consideration and advice, in particular, with regard to the timing of the deliverables.

#### **Analysis of the results of a user survey conducted among seafarers**

13.16 The Sub-Committee noted with appreciation the information provided by the Republic of Korea (NCSR 1/INF.14) concerning an analysis of the results of a user survey conducted among seafarers in relation to GMDSS modernization.

#### **ESTABLISHMENT OF THE TECHNICAL WORKING GROUP**

13.17 The Sub-Committee established the Technical Working Group under the chairmanship of Mr. Alexander Schwarz (Germany) and instructed it, taking into account decisions of the plenary and comments and proposals made in plenary, to:

- .1 taking into account document NCSR 1/13/3, conduct further work on the Detailed Review of the GMDSS using the draft outline of the Detailed Review as prepared by the correspondence group (NCSR 1/13, annex), and identify matters to be considered by the correspondence group and by the Joint IMO/ITU Experts Group intersessionally between this and the next session of the Sub-Committee;
- .2 consider document NCSR 1/13/4 on the proposed coordination of the work on the GMDSS review and the implementation of e-navigation, and in particular, identify areas for which coordination would be required, as well as the methodology of coordination, and advise the Sub-Committee, as appropriate;
- .3 taking into account the progress made at this session, review the plan of work as provided in the annex to document NCSR 1/13/1 and advise the Sub-Committee, as appropriate, in particular, with regard to the timing of the deliverables; and
- .4 prepare draft terms of reference for the Correspondence Group on the Review of the GMDSS for the work to be done in the intersessional period between NCSR 1 and NCSR 2, reporting during that period to the meeting of the Joint IMO/ITU Experts Group; and
- .5 prepare draft terms of reference for the 10th meeting of the Joint IMO/ITU Experts Group, scheduled to take place from 6 to 10 October 2014,

and submit its report on Thursday, 3 July 2014.

## Report of the Technical Working Group

13.18 On receipt of the report of the Technical Working Group (NCSR 1/WP.7/Rev.1), the Sub-Committee took action as summarized in the ensuing paragraphs.

13.19 The Sub-Committee noted the draft document on the Detailed Review of the GMDSS, as presented in the group's report (NCSR 1/WP.7/Rev.1, annex 5), including the views of the group with regard to the following:

- .1 the proposed modifications to the options for the definition of sea areas A3 and A4 and the development of a fourth option (NCSR 1/WP.7/Rev.1, annex 6);
- .2 the need to approve a definition of sea areas that is as simple and understandable as possible;
- .3 the need for all equipment working in the GMDSS to be type approved in order to ensure the integrity of the GMDSS; and
- .4 the need for further studies of AIS functionality for alerting purposes.

13.20 The Sub-Committee also noted the views of the group on the issue of coordination of work between the GMDSS review and the implementation of e-navigation (NCSR 1/WP.7/Rev.1, paragraphs 6.2 and 6.3).

13.21 Taking into account that the Detailed Review was still in a very early stage and could not be finalized by NSCR 2, the Sub-Committee invited the Committee to extend the planned output 5.2.5.2 (First outline of the Detailed Review of the Global Maritime Distress and Safety System (GMDSS)), for an additional year (to 2018) and to approve the revised plan of work, as set out in annex 11.

13.22 The Sub-Committee re-established the Correspondence Group on the Review of the GMDSS, under the coordination of the United States\*, approved its terms of reference, as set out in annex 8 of document NCSR 1/WP.7/Rev.1, and authorized the correspondence group, as an exceptional case, to submit its report for NCSR 2 by 19 December 2014 (i.e. two weeks beyond the deadline for bulky documents).

13.23 The Sub-Committee approved the terms of reference of the tenth meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters, to be held at IMO headquarters in London, from 6 to 10 October 2014 (NCSR 1/WP.7/Rev.1, annex 9).

13.24 The Sub-Committee invited Member States and international organizations to send experts on SAR to the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters.

---

\*

**Coordinator:**

Mr. Robert L. Markle  
President of the Radio Technical Commission for Maritime Services (RTCM)  
1800 N. Kent St., Suite 1060  
Arlington, VA 22209, United States  
Tel (office): +1 703 527-2000  
Email: [RMarkle@rtcm.org](mailto:RMarkle@rtcm.org)



---

## **14 FURTHER DEVELOPMENT OF THE GMDSS MASTER PLAN ON SHORE-BASED FACILITIES**

14.1 The Sub-Committee noted the information provided by the Secretariat on amendments to the GMDSS Master Plan as disseminated through GMDSS/Circ.16 and encouraged Administrations to check their national data issued in GMDSS/Circ.16, for accuracy, and to provide the Secretariat with any necessary amendments, as soon as possible.

### **Promulgation of Maritime Safety Information – IMO NAVTEX Coordinating Panel**

14.2 The Sub-Committee noted that the Chairman of the IMO NAVTEX Coordinating Panel, Mr. Guy Beale, had retired and that the members of the Panel had unanimously endorsed Mr. William Van Den Bergh as its new Chairman. The Sub-Committee congratulated Mr. Van Den Bergh on his appointment and wished him good luck with this new assignment. The Sub-Committee invited the new Chairman of the IMO NAVTEX Coordinating Panel to convey to Mr. Guy Beale the sincere thanks and appreciation of the Sub-Committee for all the work done by him, first for many years as the Secretary and later as the Chairman of the Panel.

14.3 The Sub-Committee further noted with appreciation the report of the Chairman of the IMO NAVTEX Coordinating Panel (NCSR 1/14), providing a summary of the current operational issues associated with the NAVTEX service worldwide being addressed by the Panel and of its actions/activities since COMSAR 17.

14.4 Recognizing that it was very important to consider the further development of the GMDSS Master Plan on shore-based facilities, the Sub-Committee decided to invite the Committee to extend the target completion year for this item to 2015 when discussing its biennial agenda under agenda item 25.

## **15 CONSIDERATION OF OPERATIONAL AND TECHNICAL COORDINATION PROVISIONS OF MARITIME SAFETY INFORMATION (MSI) SERVICES, INCLUDING THE DEVELOPMENT AND REVIEW OF RELATED DOCUMENTS**

### **Proposed amendments to the Joint IMO/IHO/WMO Manual on Maritime Safety Information**

15.1 The Sub-Committee recalled that

- .1 MSC 86 had approved the revised Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI), as prepared by the WMO and the IHO and endorsed by COMSAR 13, and that at COMSAR 17, following the completion of the holistic review of all World-Wide Navigational Warning Service (WWNWS) documentation, the IHO WWNWS Sub-Committee had noted the need for further amendments to the previously revised documents in order to ensure consistency of terminology and guidance; and
- .2 MSC 92 had adopted amendments to resolution A.705(17), as amended, on the Promulgation of Maritime Safety Information and resolution A.706(17), as amended, on the IMO/IHO World-Wide Navigational Warning Service Guidance document. These amendments had been circulated as MSC.1/Circ.1287/Rev.1 and MSC.1/Circ.1288/Rev.1, respectively, and were due to come into force on 1 January 2015.

15.2 The Sub-Committee, noting that the proposal submitted by the IHO and the WMO (NCSR 1/15/1/Rev.1) on amendments to the Joint IMO/IHO/WMO Manual on Maritime Safety Information did not require any decision by the Sub-Committee in principle, referred it to the Technical Working Group for detailed consideration and advice.

#### **Outcome of the fifth session of the IHO World-Wide Navigational Warnings Service Sub-Committee (WWNWS-SC)**

15.3 In considering document NCSR 1/15 (IHO), the Sub-Committee noted with appreciation the matters discussed and decisions taken at the fifth session of the IHO WWNWS Sub-Committee held from 1 to 4 October 2013.

#### **Instructions for the Technical Working Group**

15.4 The Sub-Committee instructed the Technical Working Group, taking into account decisions of the plenary and comments and proposals made in plenary, to consider the proposed amendments to the Joint IMO/IHO/WMO Manual on Maritime Safety Information (NCSR 1/15/1/Rev.1) and provide comments and advice with a view to finalization of the draft MSC circular by the Sub-Committee for approval by the Committee, and to submit its report on Thursday, 3 July 2014.

#### **Report of the Technical Working Group**

15.5 On receipt of the report of the Technical Working Group (NCSR 1/WP.7/Rev.1), the Sub-Committee took action as summarized in the ensuing paragraph.

15.6 The Sub-Committee endorsed the draft MSC circular on the Revised Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI), as set out in annex 12, and invited the Committee to approve it.

### **16 CONSIDERATION OF RADIOCOMMUNICATION ITU-R STUDY GROUP MATTERS**

16.1 The Sub-Committee noted that, since COMSAR 17, ITU-R Working party 5B (WP 5B) had held three meetings, in May 2013, November 2013 and May 2014, and that in relation to these meetings radiocommunication ITU-R Study Group matters of relevance to the Sub-Committee, among others, were the following:

- .1 finalization of the revision of Recommendation ITU-R M.1371-4 on AIS;
- .2 finalization of a new recommendation on characteristics of a digital system, named navigational data for broadcasting maritime safety and security-related information from shore to ship in the maritime HF frequency band;
- .3 finalization of a new report on maritime survivor locating systems and devices (man overboard systems), providing an overview of systems and their mode of operation;
- .4 finalization of a new report on AIS VHF data link loading;
- .5 finalization of a new report on a system for digital voice communication on MF/HF radio channels of the maritime mobile service for shore-to-ship/ship-to-shore applications;

- .6 ongoing work on new, and revision of existing recommendations, and reports on a variety of topics; and
- .7 ongoing consideration of amendments to Recommendation ITU-R M.493-13 on Digital Selective-Calling (DSC) System for use in the Maritime Mobile Service.

16.2 The Sub-Committee noted further the outcome of the ninth meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters (NCSR 1/17) relating to radiocommunication matters under the purview of the ITU-R Study Group and noted, in particular:

- .1 the discussion on the proposed modification of resolution A.803(19) (paragraphs 7 to 9 of the annex to document NCSR 1/17);
- .2 that there might be a need for a mechanism which would allow for the administrative update of:
  - .1 IMO instruments when the ITU Radio Regulations had been revised, to bring IMO regulations in line with ITU regulations; and
  - .2 other IMO instruments dealing with related issues, when a new or revised IMO instrument had been adopted (paragraph 8 of the annex to document NCSR 1/17);
- .3 the discussion on the out-of-band roll-off for radars (paragraphs 10 and 11 of the annex to document NCSR 1/17); and
- .4 the discussion concerning the liaison statement from Cospas-Sarsat to WP 5B regarding proposed amendments to the draft revision of Recommendation ITU-R M.1371-4 (paragraphs 12 to 15 of the annex to document NCSR 1/17).

### **Revision of Recommendation ITU-R M.493-13**

16.3 The Sub-Committee referred a liaison statement received from WP 5B (NCSR 1/16) regarding the revision of Recommendation ITU-R M.493-13 on DSC System for use in the Maritime Mobile Service to the Technical Working Group for consideration and preparation of a liaison statement for the attention of WP 5B, as appropriate.

16.4 In this context, the Sub-Committee noted that WP 5B had further developed the revision of the above recommendation and that there was a need to establish the relevance of the liaison statement sent by the November 2013 meeting of WP 5B. It further noted that COMSAR 9, COMSAR 10, COMSAR 12, COMSAR 13, COMSAR 14 and COMSAR 16 had sent liaison statements on this matter to WP 5B and that these should be taken into account when finalizing the liaison statement referred to in paragraph 16.3.

### **Instructions for the Technical Working Group**

16.5 The Sub-Committee instructed the Technical Working Group, taking into account decisions of the plenary and comments and proposals made in plenary, to consider document NCSR 1/16 regarding the revision of Recommendation ITU-R M.493-13 on DSC System for use in the Maritime Mobile Service, also taking into account further developments in WP 5B's May 2014 meeting and liaison statements sent by COMSAR in previous years, and to prepare a liaison statement on this matter for the attention of WP 5B, as appropriate, and to submit its report on Thursday, 3 July 2014.

## **Report of the Technical Working Group**

16.6 On receipt of the report of the Technical Working Group (NCSR 1/WP.7/Rev.1), the Sub-Committee took action as summarized in the ensuing paragraph.

16.7 The Sub-Committee approved the liaison statement to WP 5B on the revision of Recommendation ITU-R M.493-13, as set out in annex 13, instructed the Secretariat to convey it to WP 5B, and invited the Committee to endorse this action.

## **17 CONSIDERATION OF ITU WORLD RADIOCOMMUNICATION CONFERENCE MATTERS**

### **Draft IMO position on relevant WRC-15 agenda items**

17.1 The Sub-Committee noted that:

- .1 all ITU-R Working Parties and the Joint Task Group 4-5-6-7 (JTG 4-5-6-7) involved in the preparations for the next ITU World Radiocommunication Conference to be held in 2015 (WRC-15) had to finalize studies and deliver text for the draft report of the Conference Preparatory Meeting (CPM); and
- .2 the second meeting of the Conference Preparatory Meeting (CPM-2) was scheduled to take place from 23 March to 2 April 2015 and the draft IMO position on relevant WRC-15 agenda items, which had to be finalized at this session for approval by MSC 94, would be sent to CPM-2.

17.2 Having noted that the ICAO/IMO Joint Working Group (JWG) had discussed SAR-related agenda items of WRC-15 (NCSR 1/19, sections 7.3 and 7.4), the Sub-Committee noted, in particular, that the JWG had concluded that the matter of broadband public protection and disaster relief (PPDR) was not an issue on which it could advise on an IMO position for WRC-15.

17.3 Following the advice of the JWG, the Sub-Committee encouraged maritime administrations participating in IMO meetings to liaise with the telecommunication administrations in their country in order to bring IMO's position on WRC-15 agenda items to their attention.

17.4 Having noted the discussions held at the ninth meeting of the Joint IMO/ITU Experts Group in October 2013, as reflected in paragraphs 59 to 94 of the annex to document NCSR 1/17 relating to the draft IMO position on relevant WRC-15 agenda items, the Sub-Committee referred appendix 4 of the annex to document NCSR 1/17 to the Technical Working Group for finalization of the draft IMO position, for endorsement by the Sub-Committee and approval by MSC 94 and submission to CPM-2.

### **Preparation of ITU World Radiocommunication Conference 2015, agenda item 1.1**

17.5 Having noted the information provided by the Secretariat (NCSR 1/17/1) concerning the progress in JTG 4-5-6-7 in relation to the preparation of WRC-15, agenda item 1.1, highlighting issues for consideration when updating the draft IMO position on WRC-15 and containing a draft liaison statement to the last meeting of the JTG to be held from 21 to 31 July 2014, the Sub-Committee referred it to the Technical Working Group with the request to amend the draft IMO position on WRC-15 and to finalize a liaison statement to JTG 4-5-6-7, as appropriate.

## **Instructions for the Technical Working Group**

17.6 The Sub-Committee instructed the Technical Working Group, taking into account decisions of the plenary and comments and proposals made in plenary, to:

- .1 consider paragraphs 59 to 94 and appendix 4 of the annex of document NCSR 1/17 and finalize the draft IMO position on WRC-15 agenda items concerning matters relating to maritime services for endorsement by the Sub-Committee, approval by MSC 94 and submission to CPM-2; and
- .2 consider document NCSR 1/17/1 on issues related to the preparation of WRC-15, agenda item 1.1, and amend the draft IMO position on WRC-15 and finalize a liaison statement to JTG 4-5-6-7, as appropriate,

and submit its report on Thursday, 3 July 2014.

## **Report of the Technical Working Group**

17.7 On receipt of the report of the Technical Working Group (NCSR 1/WP.7/Rev.1), the Sub-Committee took action as summarized in the ensuing paragraphs.

17.8 The Sub-Committee endorsed the draft IMO position on WRC-15 agenda items concerning matters relating to maritime services, as set out in annex 14, for approval by MSC 94 and instructed the Secretariat to convey it to CPM-2.

17.9 The Sub-Committee invited the Committee to instruct the Secretariat to consult with IMO Member States present at CPM-2 on new issues not included in the IMO position as developed and approved by the Committee, and to take action, as appropriate, to protect IMO's interest.

17.10 The Sub-Committee approved the draft liaison statement to the JTG 4-5-6-7 on additional comments in relation to frequency bands identified by ITU-R for future assessment of the suitability for international mobile telecommunications (IMT), as set out in annex 15, and instructed the Secretariat to convey it to ITU and invited the Committee to endorse this action.

17.11 The Sub-Committee invited Member Governments and international organizations to submit proposals for possible agenda items for the provisional agenda for WRC-18 to the next meeting of the Joint IMO/ITU Experts Group, scheduled to take place from 6 to 10 October 2014.

## **18 CONSIDERATION OF DEVELOPMENTS IN INMARSAT AND COSPAS-SARSAT**

### **COSPAS-SARSAT SERVICES**

18.1 The Sub-Committee noted with appreciation a status report on Cospas-Sarsat (NCSR 1/18/3), including system operations, space and ground segments, beacons, false alerts and results of MCC-SPOC communication tests.

### **Outcome of the ICAO/IMO Joint Working Group**

18.2 The Sub-Committee noted that the ICAO/IMO Joint Working Group (JWG) (NCSR 1/19) had:

- .1 considered issues related to the regular testing of MCC-SPOC communications and that it had noted with concern that poor test results could also indicate that SAR services in the relevant areas might be unreliable;

- .2 agreed that the homing frequency for Cospas-Sarsat beacons currently mandated within ICAO and IMO carriage requirements should remain as directed and that ICAO and IMO could be requested to re-examine the issue at such time when second generation beacons and the MEOSAR system could demonstrate location accuracies and detection reliability that would reduce the reliance on homing for the location of distress beacons;
- .3 agreed that, noting that according to its terms of reference it had no authorization to make recommendations to States, nor to any organization other than IMO and ICAO, Cospas-Sarsat should be advised to also bring matters directly to the attention of the relevant IMO body as decisions on maritime-related matters could only be taken by the Maritime Safety Committee; and
- .4 invited the Sub-Committee to request Cospas-Sarsat to provide a comprehensive list related to SPOC communication tests which includes all the SPOCs that had been tested.

18.3 In light of the foregoing, the Sub-Committee invited Cospas-Sarsat to:

- .1 also bring matters directly to the attention of the Sub-Committee and not only to the JWG since the JWG had no authorization to make recommendations to States, nor to any organization other than IMO and ICAO; and
- .2 provide a comprehensive list related to SPOC communication tests which includes all the SPOCs that had been tested.

18.4 Having considered the JWG's recommendation to consider developing questions on search and rescue for use in the voluntary IMO Member State Audit Scheme, including on the issue of Cospas-Sarsat's Special Point of Contacts (SPOCs), the Sub-Committee decided to refer consideration of the inclusion of additional questions on search and rescue for use in the above-mentioned audit scheme to the SAR Working Group.

#### **Draft amendments to MSC.1/Circ.1210**

18.5 The Sub-Committee, noting that the proposal submitted by Cospas-Sarsat (NCSR 1/18/2) providing draft amendments to MSC.1/Circ.1210 on *Guidance on the Cospas-Sarsat International 406 MHz Beacon Registration Database (IBRD)* did not require any decision by the Sub-Committee in principle, referred it to the SAR Working Group for detailed consideration and advice.

#### **INMARSAT SERVICES**

18.6 The Sub-Committee noted with appreciation the information submitted by IMSO (NCSR 1/18) providing analysis and assessment of the performance by Inmarsat Global Ltd. in relation to the company's obligations for the provision of maritime satellite services within the GMDSS, as overseen by IMSO. The information covered the period from 1 November 2012 to 31 October 2013. The Sub-Committee agreed that, during this period, Inmarsat had continued to provide a sufficient quality of service to meet its obligations under the GMDSS.

### **Closure date for Inmarsat B services**

18.7 The Sub-Committee noted with appreciation the information provided by IMSO (NCSR 1/18/1) on the extension of the closure date for Inmarsat B services until 30 December 2016, which would also apply for Inmarsat M and Inmarsat Mini-M services.

### **ESTABLISHMENT OF THE SAR WORKING GROUP**

18.8 The Sub-Committee established the SAR Working Group under the chairmanship of Mr. Nigel Clifford (New Zealand) and instructed it, taking into account decisions of the plenary and comments and proposals made in plenary, to:

- .1 taking into account document NCSR 1/19, section 7.2.2, consider the inclusion of additional questions on search and rescue for use in the voluntary IMO Member State Audit Scheme and advise the Sub-Committee, as appropriate; and
- .2 consider document NCSR 1/18/2 containing draft amendments to MSC.1/Circ.1210 on *Guidance on the Cospas-Sarsat International 406 MHz Beacon Registration Database (IBRD)* and prepare MSC.1/Circ.1210/Rev.1,

and submit its report on Thursday, 3 July 2014.

### **Report of the SAR Working Group**

18.9 On receipt of the report of the SAR Working Group (NCSR 1/WP.5), the Sub-Committee took action as summarized in the ensuing paragraphs.

18.10 The Sub-Committee, having noted the views expressed by some delegations that the inclusion of additional questions on search and rescue for use in the voluntary IMO Member State Audit Scheme would be beyond the scope of the scheme, agreed not to develop such questions.

18.11 The Sub-Committee endorsed the draft revised MSC.1/Circ.1210 on *Guidance on the Cospas-Sarsat International 406 MHz Beacon Registration Database (IBRD)*, as set out in annex 16, with a view to approval by the Committee.

## **19 DEVELOPMENT OF GUIDELINES ON HARMONIZED AERONAUTICAL AND MARITIME SEARCH AND RESCUE PROCEDURES, INCLUDING SAR TRAINING MATTERS**

19.1 The Sub-Committee noted that, as requested by COMSAR 17, MSC 92 had extended the target completion year for the planned output on the "Development of guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters" to 2014.

### **Report of the twentieth session of the ICAO/IMO Joint Working Group on Harmonization of Aeronautical and Maritime Search and Rescue**

19.2 The Sub-Committee noted that, as agreed by COMSAR 17 and authorized by MSC 92, the twentieth session of the ICAO/IMO Joint Working Group was held in Amsterdam, the Netherlands, from 23 to 27 September 2013, under the chairmanship of Mr. D. Edwards (United States).

19.3 The Sub-Committee briefly considered the relevant part of document NCSR 1/19 (Secretariat) providing the report of the twentieth session of the ICAO/IMO Joint Working Group (JWG) and noted:

- .1 the discussion with regard to AIS-SARTs and other devices using AIS technology, including AIS-MOB, and that a proposal would be prepared for consideration by the next session of the JWG (section 2.4 of the annex to document NCSR 1/19);
- .2 the ongoing work related to mass rescue operations (section 4.3 and paragraph 2.2.2.5 of the annex);
- .3 the JWG's and the IMO Secretariat's involvement in the ICAO Asia/Pacific SAR Task Force, aiming at enhancement and improvement of SAR capabilities within the Asia/Pacific region and adjacent regions (sections 5.1, 5.2 and 5.3 of the annex);
- .4 the discussion relating to the creation of a website for documents required to be held by RCCs (section 5.4 of the annex);
- .5 the discussion on improving the performance of RCCs, and that a proposal would be prepared for consideration by the next session of the JWG (section 5.5 of the annex);
- .6 the information provided by the United States on the termination of its shore-based MF communications network from 1 August 2013 (section 7.1 of the annex);
- .7 the discussion relating to Electronic Visual Distress Signalling Devices (EVDSD). and that a proposal of a way ahead would be prepared for consideration by the next session of the JWG (section 9.1 of the annex); and
- .8 that MSC 92 had already authorized the holding of the twenty-first session of the JWG in 2014 and instructed the Secretariat to take action, as appropriate, and that the Council had endorsed this intersessional meeting for 2014 (paragraph 2.2.4 in relation to section 9.4 of the annex).

19.4 In this context, the Sub-Committee noted that the twenty-first session of the JWG was scheduled to take place from 15 to 19 September 2014, at IMO headquarters in London.

19.5 The Sub-Committee decided to refer the action items mentioned in paragraphs 2.1, 2.2, 2.10, 2.23, 2.25 and 2.27 of document NCSR 1/19 to the SAR Working Group for detailed consideration.

### **Report on the fifteenth Combined Antarctic Naval Patrol 2012-2013**

19.6 The Sub-Committee noted with appreciation the report submitted by Argentina and Chile (NCSR 1/19/1) on activities of the fifteenth combined Antarctic naval patrol carried out by the submitting States with the aim of enhancing maritime safety and environmental protection in Antarctica.



---

## Instructions for the SAR Working Group

19.7 The Sub-Committee instructed the SAR Working Group, taking into account decisions by the plenary and comments and proposals made in plenary, to:

- .1 consider and provide advice on paragraphs 2.1, 2.2, 2.10, 2.23, 2.25 and 2.27 of document NCSR 1/19 and, in particular, to:
  - .1 consider the advice provided on the preferred cancellation procedure in case of an accidental activation of an EPIRB, and advise the Sub-Committee, as appropriate;
  - .2 consider the advice provided on possible measures preventing the beacon's transmission in case of an accidental activation of an EPIRB, and advise the Sub-Committee, as appropriate;
  - .3 consider the draft revised MSC.1/Circ.1182 on *Guide to recovery techniques*, for endorsement by the Sub-Committee and approval by the Committee;
  - .4 consider encouraging member Governments to participate in exchange programmes for SAR Mission Coordinators, and advise the Sub-Committee, as appropriate;
  - .5 review the list of pending and new action items for the JWG, and advise the Sub-Committee, as appropriate; and
  - .6 consider and finalize the provisional agenda for JWG 21; and
- .2 provide proper justification, if there is a need for extending the target completion year of the biennial agenda item "Guidelines on harmonization of aeronautical and maritime search and rescue procedures, including SAR training matters (2.0.3.3)", to 2015.

and submit its report on Thursday, 3 July 2014.

## Report of the SAR Working Group

19.8 Having received and considered the working group's report (NCSR 1/WP.5), the Sub-Committee approved it in general and, in particular, took action as summarized in the ensuing paragraphs.

19.9 The Sub-Committee drew the attention of Member States to the following, preferred, cancellation procedure in case of an accidental activation of an EPIRB and possible measures to prevent a beacon's transmission if it was not possible to switch the beacon off, which would be incorporated into the 2016 edition of the IAMSAR Manual:

### "INADVERTENT ACTIVATION

- Switch beacon OFF
- Inform RCC
- If not able to switch beacon OFF, take measures to prevent or inhibit transmission of signal (e.g. shielding of transmission, battery removal, etc.).

Users should be made aware that these actions might prevent future use of the beacon.

Note: There is no penalty for inadvertent activation of a beacon."

19.10 The Sub-Committee endorsed the draft revised MSC.1/Circ.1182 on *Guide to recovery techniques*, with a minor amendment to replace the text of paragraph 10.11.1.1 with the words "care should be taken to prevent operation of any on-load release gear or automatic release hook", as set out in annex 17, and invited the Committee to approve it.

19.11 The Sub-Committee noted:

- .1 the benefits of initiatives on SAR cooperation and coordination and encouraged Member Governments to initiate and participate in exchange programmes for SAR Mission Coordinators; and
- .2 the list of pending and new action items for the JWG (NCSR 1/WP.5, annex 3).

19.12 The Sub-Committee approved the provisional agenda for JWG 21 (NCSR 1/WP.5, annex 4) and invited Member States and international organizations to send experts on radiocommunications to the JWG.

19.13 The Sub-Committee requested the Committee to extend the target completion year of the planned output *Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters (2.0.3.3)* to 2015.

## **20 FURTHER DEVELOPMENT OF THE GLOBAL SAR PLAN FOR THE PROVISION OF MARITIME SAR SERVICES, INCLUDING PROCEDURES FOR ROUTEING DISTRESS INFORMATION IN THE GMDSS**

### **Global SAR Plan**

20.1 The Sub-Committee noted the information provided by the Secretariat on the status of the Global SAR Plan as available in GISIS.

20.2 The Sub-Committee further noted that the Global SAR Plan had been updated by several Member Governments during the time between COMSAR 17 and this first session of the NCSR Sub-Committee. It was further noted that the status of the availability of SAR services changed day by day and, therefore, providing updated information directly into GISIS was of utmost importance. Having available updated information would enable Rescue Coordination Centres to act promptly without losing precious time the moment they were dealing with a distress situation.

20.3 The Sub-Committee encouraged Member Governments to check the available information in GISIS on a regular basis and update the information immediately when changes had been notified to them.

### **Medical advice and related matters**

20.4 The Sub-Committee briefly considered document NCSR 1/20 (France), proposing the creation of a platform (such as GISIS) to facilitate the exchange of medical information between Telemedical Assistance Services (TMASs) during international SAR operations. In this context, the Sub-Committee noted that there would be a need to clarify several issues, including the security of the data and whether GISIS would be an appropriate platform to facilitate the exchange of this kind of information. After a brief discussion, the Sub-Committee decided to refer the document to the SAR Working Group for detailed consideration and advice.

20.5 The Sub-Committee considered document NCSR 1/20/1 (France) relating to the creation of an international procedure facilitating the provision of medical supplies to ships in ports outside their own flag State, and noting the view of CLIA, supported by ICS, that:

- .1 the issues raised were complex and of an operational nature;
- .2 they might not be within the remit of IMO; and
- .3 they could be better addressed by ILO through the implementation of the Maritime Labour Convention, 2006,

agreed not to pursue this matter further. The Sub-Committee invited France to consider to bring it to the attention of ILO and WHO.

20.6 The Sub-Committee, noting that document NCSR 1/20/2 (France) inviting consideration of appropriate action to enable better implementation of MSC.1/Circ.1218 on *Guidance on exchange of medical information between telemedical assistance services (TMAS)* and, in particular, to inform and raise awareness among TMASs on the need to exchange medical information during international SAR operations, did not require any decision by the Sub-Committee in principle, referred it to the SAR Working Group for detailed consideration and advice.

#### **SAR-related technical cooperation activities in the Asia/Pacific region**

20.7 The Sub-Committee noted with appreciation the information contained in document NCSR 1/INF.22 (Secretariat) on SAR-related technical cooperation activities in the Asia/Pacific region for the years 2013 and 2014.

#### **Instructions for the SAR Working Group**

20.8 The Sub-Committee instructed the SAR Working Group, taking into account decisions of the plenary and comments and proposals made in plenary, to:

- .1 consider document NCSR 1/20 on the creation of a platform to facilitate the exchange of medical information between TMASs during international SAR operations, and advise the Sub-Committee, as appropriate; and
- .2 consider document NCSR 1/20/2 on the need for better implementation of MSC.1/Circ.1218 on *Guidance on exchange of medical information between telemedical assistance services (TMAS)*, and advise the Sub-Committee, as appropriate,

and submit its report on Thursday, 3 July 2014.

#### **Report of the SAR Working Group**

20.9 Having received and considered the working group's report (NCSR 1/WP.5), the Sub-Committee approved it in general and, in particular, took action as summarized in the ensuing paragraphs.

20.10 Noting that there was no clear need to create a platform for the exchange of medical information between TMASs, the Sub-Committee noted the group's view that further work could be undertaken by interested Member Governments on a voluntary basis, outside the work of IMO.

20.11 The Sub-Committee recalled the importance of MSC.1/Circ.1218, in particular, the practice of medical information exchange during international SAR operations.

20.12 The Sub-Committee tasked the ICAO/IMO Joint Working Group on Harmonization of Aeronautical and Maritime Search and Rescue (JWG) to undertake initial work in developing options on how the distribution and communication of SAR information might be improved.

## **21 DEVELOPMENT OF AMENDMENTS TO THE IAMSAR MANUAL**

21.1 The Sub-Committee noted that:

- .1 the ICAO/IMO Joint Working Group on Harmonization of Aeronautical and Maritime Search and Rescue (JWG) had prepared amendments to the IAMSAR Manual;
- .2 many tasks were still pending with regard to the finalization of proposed amendments for inclusion in the 2016 edition of the IAMSAR Manual, and the JWG was expected to finalize these amendments at its forthcoming meeting in September 2014; and
- .3 the latest opportunity to endorse amendments for inclusion in the 2016 edition of the IAMSAR Manual would be at NCSR 2 in 2015, since MSC 95 needed to approve the amendments one year before they would become applicable on 1 June 2016.

### **Instructions for the SAR Working Group**

21.2 Accordingly, the Sub-Committee instructed the SAR Working Group, taking into account decisions of the plenary and comments and proposals made in plenary, to:

- .1 consider the draft proposed amendments to the IAMSAR Manual, as submitted in document NCSR 1/19, appendices D, E and F, for approval by MSC 95 and subsequent inclusion in the 2016 edition of the IAMSAR Manual;
- .2 consider the proposal from the JWG to revoke COMSAR.1/Circ.57 on *Guidance on the use of the graph at figure N.14, as contained in appendix N of IAMSAR Manual, Volume II* when the amendments included in the 2016 edition of the IAMSAR Manual become applicable, and advise the Sub-Committee, as appropriate; and
- .3 consider the proposal from the JWG to revoke COMSAR/Circ.23 on *Guidance for Central Alerting Posts (CAPs)*, and advise the Sub-Committee, as appropriate,

and submit its report on Thursday, 3 July 2014.

### **Report of the SAR Working Group**

21.3 Having received and considered the working group's report (NCSR 1/WP.5), the Sub-Committee approved it in general and, in particular, took action as summarized in the ensuing paragraphs.

21.4 The Sub-Committee endorsed the draft revisions to Volumes I, II and III of the IAMSAR Manual, for approval by MSC 95 and subsequent inclusion in the 2016 edition of the IAMSAR Manual (NCSR 1/WP.5, annexes 5, 6 and 7).

21.5 The Sub-Committee noted the need to revoke COMSAR.1/Circ.57 and COMSAR/Circ.23 when the 2016 edition of the IAMSAR Manual becomes applicable.

## **22 DEVELOPMENT OF MEASURES TO PROTECT THE SAFETY OF PERSONS RESCUED AT SEA**

22.1 The Sub-Committee recalled that COMSAR 17 had noted information provided by the Secretariat on the progress of the group of interested parties working on the development of a draft regional arrangement to protect the safety of persons rescued at sea (COMSAR 17/17, section 10).

22.2 The Sub-Committee noted the information provided by the Secretariat that:

- .1 the Second formal Regional Meeting, scheduled to be held on 18 April 2013, had been postponed following a request for more time to be given for informal consultations between some parties concerned;
- .2 the tragic accidents that occurred on 3 October 2013, when a boat carrying migrants from Libya to Italy sank off the Italian island of Lampedusa, resulting in more than 360 deaths and the rescue of 155 survivors, and on 11 October 2013, when another boat sank within the SAR region of Malta and at least 34 individuals were later confirmed dead, had made the Secretariat reactivate the discussion on the development of a draft regional agreement, and an informal meeting between the Member States involved in previous discussions had been convened on 20 November 2013; and
- .3 subsequently, two additional meetings had been held, on 11 February 2014 and on 7 April 2014, in order to progress the work on the development of a draft regional agreement, and it was expected that the Second formal Regional Meeting would be rescheduled in the upcoming months.

22.3 The Sub-Committee noted views expressed by the delegations of Bahamas, Italy, Malta, Marshall Islands, Panama and ICS that:

- .1 the countries in the Mediterranean were experiencing an increase in migration and were expecting another 100,000 to 150,000 migrants to arrive in Europe over the course of the second part of this year;
- .2 coast guard and rescue vessels could not deal with the large amount of people who needed to be rescued at sea, and assistance from merchant vessels was required on a daily basis;
- .3 in this regard concerns were expressed about the safety and security of merchant vessels transporting large numbers of migrants;
- .4 ICS had prepared additional guidance complementing the guidance made available by ICS, IMO and UNHCR at an earlier stage;
- .5 the problem placed a heavy burden upon the administrations and ship owners involved;
- .6 appreciation was expressed for the invaluable assistance provided by a large number of merchant vessels;

- .7 the role of the FAL Committee and of the III and NCSR Sub-Committees was marginal and no substantive work had been done for many years; and
- .8 this planned output should be postponed until such time when further progress on this matter had been made regionally.

22.4 In light of the foregoing, recognizing the importance of the issues involved and noting that no progress had been made with the development of the above-mentioned regional agreement, the Sub-Committee agreed to invite the Committee to move this output to the post-biennial agenda of the Sub-Committee, with two sessions needed for completion, until further progress on this matter had been made regionally.

### **23 DEVELOPMENT OF A MANDATORY CODE FOR SHIPS OPERATING IN POLAR WATERS**

23.1 The Sub-Committee noted the information provided by the Secretariat (NCSR 1/23) that SDC 1 had forwarded the chapters of the draft mandatory International Code for Ships Operating in Polar Waters (Polar Code) pertaining to, respectively, safety of navigation and communication to NCSR 1 for further consideration and finalization. It was also noted that the draft Polar Code had been further revised at MSC 93, but that the chapters to be considered by the Sub-Committee had not been changed since SDC 1.

23.2 The Sub-Committee further noted the outcome of MSC 93 (NCSR 1/23/3) and, in particular, that MSC 93 had:

- .1 approved, in principle, the draft Polar Code and referred matters to NCSR 1 for consideration in conjunction with the finalization of the renumbered chapters 9 (Safety of Navigation) and 10 (Communication) (consequent to the deletion of chapter 7 on Operational Safety and subsequent renumbering);
- .2 invited NCSR 1 to note that in other chapters of the draft Code the words "ships intended to operate in ice" had been replaced with the words "ships ice strengthened in accordance with chapter 3" and a definition had been developed for the term "ships intended to operate in low air temperatures", to editorially amend the renumbered chapters 9 and 10, as appropriate, and to consider the appropriate application of the various measures in the renumbered chapters 9 and 10;
- .3 instructed NCSR 1 to further consider whether the scope of application of the renumbered chapters 9 and 10 should also include different types and sizes of ship, or if it would be sufficient to address this issue in phase 2 (non-SOLAS ships) of the development of the Polar Code; and
- .4 referred to NCSR 1 for further consideration:
  - .1 document MSC 93/10/19 (CLIA), regarding the potential need to install two independent echo-sounding devices on board ships;
  - .2 paragraphs 14 and 15 of document MSC 93/10/4 (Argentina), regarding the requirement in paragraph 10.3.1.1.1 of the draft Polar Code that ships shall have equipment capable of receiving and displaying information on ice and voyage monitoring, respectively;

- .3 paragraphs 10, 13 and 14 of document MSC 93/10/16 (United States), concerning the use of consistent language for the functional and prescriptive requirements in each chapter of part I-A, and, in this regard, the need to restructure the renumbered chapters 9 and 10, taking into account section 1.1 of part I-A of the draft Polar Code, for the purpose of consistency with other chapters of the Code;
- .4 the additional guidance in part I-B of the draft Polar Code regarding personal and group survival equipment; and
- .5 the Record of additional equipment and operational limitations for the Polar Ship Certificate for navigation and communication equipment.

23.3 The Sub-Committee also noted that further to discussions at SDC 1 on matters related to the scope of application with regard to the types of ship to be covered by the draft Polar Code, as well as its application to new and existing ships (SDC 1/26, paragraph 3.34), MSC 93 had agreed to apply the provisions of the Polar Code to both new and existing ships certificated in accordance with SOLAS Chapter I (MSC 93/WP.7, paragraphs 5 to 7 and MSC 93/22, paragraphs 10.42 to 10.45) and had instructed NCSR 1 to further consider whether the scope of application of the renumbered chapters 9 and 10 of the draft Polar Code should also include different types and sizes of ship, or if it would be sufficient to address this in phase 2 (non-SOLAS ships) of the development of the Polar Code.

23.4 Having considered the outcome of MSC 93, in particular the issue of the scope of application of the renumbered chapters 9 and 10, the Sub-Committee agreed:

- .1 that the provisions of the above two chapters should only apply to new and existing ships certified in accordance with SOLAS chapter I, in line with the rest of the Code, as agreed by MSC 93;
- .2 that the application to other types and sizes of ship (i.e. non-SOLAS ships) could be addressed in phase 2 of the development of the Polar Code; and
- .3 to refer all matters to the SAR and Ships' Routeing Working Groups for detailed consideration and advice.

23.5 The Sub-Committee briefly considered document NCSR 1/23/1 (United States), proposing amendments to the renumbered chapter 10 of the draft Polar Code, and referred it to the SAR Working Group for detailed consideration and advice.

23.6 The Sub-Committee also considered briefly document NCSR 1/23/2 (CLIA), commenting on the proposed requirement (10.3.1.1.2) in the draft Polar Code that "Ships shall have two independent echo-sounding devices" and proposing an alternative requirement, and referred it to the Ships' Routeing Working Group for detailed consideration and advice.

23.7 The Sub-Committee noted with appreciation the information provided by Australia (NCSR 1/INF.10) regarding the search and rescue response to the incident involving **Akademik Shokalskiy**, in particular, in relation to discussions on the draft Polar Code as outlined in the report of COMSAR 17 and the matter of "Time to rescue" as set out in paragraphs 12 and 13 of document COMSAR 17/WP.6.

### **Instructions for the SAR Working Group**

23.8 The Sub-Committee instructed the SAR Working Group, taking into account decisions of the plenary and comments and proposals made in plenary, to:

- .1 taking into account the outcome of MSC 93 and using the text provided in document NCSR 1/23 as the basis for the work, consider the renumbered chapter 10 (Communication) of the draft Polar Code and, in particular:
  - .1 the need to restructure the chapter, taking into account section 1.1 of part I-A of the draft Code and document MSC 93/10/16 (United States), paragraphs 10, 13 and 14, to achieve consistent language regarding functional and prescriptive requirements for consistency with other chapters of the draft Code; and
  - .2 the proposed amendments in document NCSR 1/23/1 (United States) and amend the chapter, as appropriate,with a view to finalization and subsequent approval by MSC 94;
- .2 consider the additional guidance in part I-B regarding personal and group survival equipment (MSC 93/WP.7/Add.1, annex 2), and advise the Sub-Committee, as appropriate;
- .3 consider the Record of additional equipment and operational limitations for the Polar Ship Certificate for navigation and communication equipment (MSC 93/WP.7/Add.1, annex 2), and advise the Sub-Committee, as appropriate; and
- .4 start and finalize discussion on this matter on Tuesday, 1 July 2014,  
and submit a report on Thursday, 3 July 2014.

### **Instructions for the Ships' Routeing Working Group**

23.9 The Sub-Committee instructed the Ships' Routeing Working Group, taking into account decisions of the plenary and comments and proposals made in plenary, to:

- .1 taking into account the outcome of MSC 93 and using the text provided in document NCSR 1/23 as the basis for the work, consider the renumbered chapter 9 (Safety of Navigation) of the draft Polar Code and, in particular:
  - .1 restructure the chapter, taking into account section 1.1 of part I-A of the draft Code and document MSC 93/10/16 (United States), paragraphs 10, 13 and 14, to achieve consistent language regarding functional and prescriptive requirements for consistency with other chapters of the draft Code;
  - .2 editorially amend the chapter by replacing the words "ships intended to operate in ice" by the words "ships ice strengthened in accordance with chapter 3";



- .3 consider document NCSR 1/23/2 (CLIA), regarding the potential need to install two independent echo-sounding devices on board ships, and amend the chapter, as appropriate; and
  - .4 consider document MSC 93/10/4 (Argentina), paragraph 14, regarding the requirement in paragraph 10.3.1.1.1 of the draft Polar Code that ships shall have equipment capable of receiving and displaying information on ice, and amend the chapter, as appropriate,
- with a view to finalization and subsequent approval by MSC 94;
- .2 taking into account the outcome of MSC 93 and using the text provided in NCSR 1/23 as the basis for the work, consider paragraph 12.5 of the draft Polar Code, taking into account document MSC 93/10/4 (Argentina), paragraph 15 on voyage monitoring, and amend the paragraph, as appropriate;
  - .3 consider the Record of additional equipment and operational limitations for the Polar Ship Certificate for navigation and communication equipment (MSC 93/WP.7/Add.1, annex 2), and advise the Sub-Committee, as appropriate; and
  - .4 start and finalize discussion on this matter on Wednesday, 2 July 2014,
- and submit a report on Thursday, 3 July 2014.

### **Report of the SAR Working Group**

23.10 On receipt of the report of the SAR Working Group (NCSR 1/WP.5/Add.1), the Sub-Committee took action as summarized in the ensuing paragraphs.

23.11 The Sub-Committee endorsed the draft revised text for the renumbered chapter 10, as set out in annex 18, and invited the Committee to approve it.

23.12 The Sub-Committee endorsed the draft revisions to section 2.3 (communications equipment) of the Record of additional equipment and operational limitations for the Polar Ship Certificate, as set out in annex 19, and invited the Committee to approve it.

23.13 The Sub-Committee instructed the Secretariat to make the necessary editorial corrections to the proposed revisions to section 2.3 (communications equipment) of the Record of additional equipment and operational limitations for the Polar Ship Certificate, as and when appropriate.

23.14 The Sub-Committee agreed to advise the Committee that the additional guidance in part I-B regarding personal and group survival equipment was sufficient.

23.15 The Sub-Committee endorsed the draft additional guidance on the renumbered chapter 10 for possible inclusion in part I-B of the Polar Code, as set out in annex 20, and invited the Committee to approve it.

## **Report of the Ships' Routeing Working Group**

23.16 On receipt of the report of the Ships' Routeing Working Group (NCSR 1/WP.6/Add.1), the Sub-Committee took action as summarized in the ensuing paragraphs.

23.17 The Sub-Committee endorsed the draft revised text for the renumbered chapter 9, with a minor modification to replace the word "separate" with "separated" in paragraph 10.3.2.1.1, as set out in annex 18, and invited the Committee to approve it.

23.18 The Sub-Committee endorsed the group's recommendation to delete the renumbered paragraph 11.4 (reporting) in the renumbered chapter 11 of the draft Code.

23.19 The Sub-Committee endorsed the draft revisions to section 2.2 (navigation equipment) of the Record of additional equipment and operational limitations for the Polar Ship Certificate, as set out in annex 19, and invited the Committee to approve it.

23.20 The Sub-Committee instructed the Secretariat to make the necessary editorial corrections to the proposed revisions to section 2.2 (navigation equipment) of the Record of additional equipment and operational limitations for the Polar Ship Certificate, as and when appropriate.

23.21 The Sub-Committee agreed with the group's view that the topic of de-icing was already covered by SOLAS regulation V/22.1.9.4 and, therefore, should not to be included in the mandatory part of the Polar Code but instead should be moved to the non-mandatory part I-B of the Code. Accordingly, the Sub-Committee endorsed the draft additional guidance on the renumbered chapter 9 for possible inclusion in part I-B of the Code, as set out in annex 20, and invited the Committee to approve it.

## **24 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS**

24.1 The Sub-Committee recalled that MSC 78 had included the consideration of IACS Unified Interpretations (UIs) as a continuous item on its biennial agenda, so that IACS could submit any newly developed or updated unified interpretations for consideration by the Sub-Committee with a view to developing appropriate IMO interpretations, if deemed necessary.

### **Pilot transfer arrangements (SOLAS regulation V/23.3.3)**

24.2 The Sub-Committee recalled that NAV 59, having noted that the length of the pilot boarding ladder should be calculated inclusive of the consideration of an adverse list of 15 degrees, had reiterated that when considering pilot transfer arrangements at any distance of more than nine metres above the surface of the water under any circumstances, a combination pilot boarding arrangement would be required, in accordance with existing SOLAS regulation V/23.3.3.2. Accordingly, NAV 59 had not agreed with the IACS unified interpretation on pilot transfer arrangements and had requested IACS to reconsider its proposal.

24.3 The Sub-Committee considered:

- .1 a revised unified interpretation submitted by IACS (NCSR 1/24), which included a recommended implementation date due to the fact that the implementation of this interpretation might involve a change of the pilot transfer design arrangement; and

- .2 comments on the proposed revised unified interpretation submitted by IMPA (NCSR 1/24/2), expressing the view that the decision of NAV 59 did not propose a change of pilot transfer design arrangements, but merely confirmed a situation that had already existed for 40 years.

24.4 The IMPA observer, supported by several delegations, indicated that SOLAS regulation V/23 and its predecessor (i.e. SOLAS regulation V/17) were clear and that it was not aware of any problem or interpretation issue. For that reason, IMPA could not agree to a future implementation date for compliance with requirements which were already in place. As recognized by NAV 59, the most fundamental principle of regulation V/23 and its predecessor had always been that a pilot should never have to climb a ladder more than nine metres from the surface of the water. The decision of NAV 59 to confirm the requirements of regulation V/23 would not result in any ship, now or in the future, having to add an accommodation ladder solely due to a possible adverse list of 15 degrees. As recognized by IACS, the allowance for a 15 degrees adverse list had to do with the length of the pilot ladder, not with the requirement combining an accommodation ladder or with any exceptional circumstances.

24.5 After some discussion, the Sub-Committee decided to instruct the Secretariat to prepare a draft MSC circular for a unified interpretation, as set out in annex 21, containing the text as provided in the annex to the IACS document (NCSR 1/24), with a modification in paragraph 3 to delete the words "installed on or after", and with the text in square brackets, including the brackets and the footnote, for approval by the Committee.

24.6 The IACS observer then asked the Sub-Committee to consider whether the provision stipulated in SOLAS regulation V/23.1.4, as written, and noting the term "in so far as is reasonable and practicable", might allow non-compliance with the requirements of regulation V/23 on pilot transfer arrangements, as clarified in the above draft unified interpretation, especially at the time of replacement of a pilot ladder.

24.7 The IMPA observer noted that SOLAS regulation V/23.1.4 was concerned with the transition to the revised regulation V/23, which entered into force on 1 July 2012. The provision stipulated in SOLAS regulation V/23.1.4 did not apply to the requirements that a pilot ladder had to be long enough to reach the surface of the water and that an accommodation ladder had to be combined with a pilot ladder whenever the climb was more than nine meters from the surface of the water, because those two requirements were not changed in 2012. Efforts to avoid the nine metres rule should be rejected.

24.8 Some delegations were of the view that the calculation of the nine metres should not take into account the adverse list of 15 degrees and that the IACS interpretation should not apply to existing ships.

24.9 After some discussion, the Sub-Committee agreed with IMPA's understanding, as provided in paragraph 24.7 above.

24.10 In this regard, the delegation of Spain, with reference to IMPA's statement and the Sub-Committee's agreement which specified that the key provisions of the old SOLAS regulation V/17 and the revised regulation V/23 remained unchanged, requested clarifications with respect to the scope of application of the above draft unified interpretation, in particular, whether it should apply only to ships subject to SOLAS regulation V/23 or also to ships subject to the old regulation V/17.

24.11 After consideration, the Chairman agreed that Member States could submit proposals to NCSR 2 on the issue of the scope of application of SOLAS regulation V/23.1.4, and to MSC 94 in relation to the scope of application of the draft MSC circular itself.

### **Completion of items 2.1 and 2.2 of part 3 of the form E and items 2.1 and 2.2 of part 5 of forms P and C**

24.12 The Sub-Committee recalled that NAV 59, having considered the need to clarify how to document flexibility in the actual use of either paper charts or ECDIS as a primary means of navigation, accepted the offer of IACS to develop an IACS unified interpretation for consideration by NCSR 1, taking into account the comments made with respect to ship management responsibilities (NAV 59/20, paragraph 16.11 to 16.14).

24.13 The Sub-Committee considered a draft IACS unified interpretation submitted by IACS (NCSR 1/24/1), providing a common approach on how to complete items 2.1 and 2.2 of part 3 of the form E and items 2.1 and 2.2 of part 5 of forms P and C.

24.14 During the ensuing discussions, the following views were expressed:

- .1 SOLAS did not mandate that ECDIS should always be the primary means of navigation, this can also be nautical charts;
- .2 SOLAS mandated the carriage of ECDIS but not its use;
- .3 paper charts did not require a backup, so a third scenario could be added; and
- .4 taking into account the definition of "nautical charts" provided in regulation V/2.2, which indicated that a nautical chart could be an electronic chart or a paper chart, the term "standard navigational chart" should be used instead.

24.15 After the discussion and having noted the support expressed by several delegations with regard to the draft IACS unified interpretation, the Sub-Committee decided to instruct the Secretariat to prepare a draft MSC circular, as set out in annex 22, containing the text as provided in the annex to the IACS document (NCSR 1/24/1) and amended as necessary to clarify the use of the term "nautical chart", as indicated in paragraph 24.14.4 above, for approval by the Committee.

## **25 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR NCSR 2**

### **Outcome of A 28**

25.1 In considering matters related to the biennial agenda and provisional agenda, the Sub-Committee recalled that the Assembly, at its twenty-eighth session, had approved the *Strategic Plan for the Organization (for the six-year period 2014 to 2019)* (resolution A.1060(28)) and the *High-level Action Plan and priorities for the 2014-2015 biennium* (resolution A.1061(28)).

### **Biennial status report and proposed provisional agenda for NCSR 2**

25.2 Taking into account the progress made at the session and the instructions of MSC 93, the Sub-Committee prepared the biennial status report of the Sub-Committee for the 2014-2015 biennium (NCSR 1/WP.4, annex 1) and the proposed provisional agenda for

NCSR 2 (NCSR 1/WP.4, annex 2), as set out in annexes 23 and 24, respectively, for consideration by MSC 94.

### **Arrangements for the next session**

25.3 The Sub-Committee agreed to change the name of the Ships' Routeing Working Group and of the Technical Working Group into the Navigation Working Group and the Communications Working Group, respectively.

25.4 The Sub-Committee agreed to establish, at its next session, working groups on the following subjects:

- .1 Navigation;
- .2 Communications; and
- .3 Search and Rescue.

25.5 The Sub-Committee also established a correspondence group on the review of the GMDSS and a correspondence group on harmonization of guidelines related to e-navigation.

### **Date of next session**

25.6 The Sub-Committee noted that the second session of the Sub-Committee had been tentatively scheduled to take place from 9 to 13 March 2015.

## **26 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2015**

26.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. C. Salgado (Chile) as Chairman and Mr. R. Lakeman (Netherlands) as Vice-Chairman for 2015.

## **27 ANY OTHER BUSINESS**

### **Distress position indication method utilizing Radar Cross Section**

27.1 The Sub-Committee considered the proposal submitted by the Republic of Korea in document NCSR 1/24/4, introducing a distress position indication method that utilized Radar Cross Section (RCS) to inform ships and aircrafts operating nearby of the position of a survivor in real-time, and to complement beacons such as SART.

27.2 The Sub-Committee noted the views expressed by several delegations that:

- .1 more information was needed;
- .2 it was not the appropriate Sub-Committee to deal with matters related to the LSA Code; and
- .3 consideration of this matter would require a new output.

The Sub-Committee invited the Republic of Korea to submit a proposal for a new unplanned output to the Committee.

### **Protection of cable ships and repair operations for international submarine cables**

27.3 The Sub-Committee recalled that NAV 59 had noted with appreciation the information provided by the United States on the provisions of the International Convention for Protection of Submarine Cables (Cable Convention) and the safety distances for vessels from cable ships and from cable repair buoys during repair operations and, in particular, the responsibility to abide by the Cable Convention, especially articles 5 and 6, respectively.

27.4 The Sub-Committee considered a proposal by the United States (NCSR 1/27) for a draft Safety of Navigation circular highlighting the provisions of the Cable Convention and the safety distances for vessels from cable ships and cable repair buoys during repair operations.

27.5 During the ensuing discussion, the following views were expressed:

- .1 there was general support for issuing a Safety of Navigation circular on this important matter;
- .2 there was a need to amend the proposed text, in particular, with respect to the reference to the Cable Convention, which was not within the purview of IMO;
- .3 care should be taken to avoid conflict with the regulatory regime within the purview of IMO;
- .4 the proposed safety distance would not be practicable in narrow waters and the insertion of the term "as far as possible" could provide the necessary flexibility for masters;
- .5 this was an urgent safety matter which needed urgent action; and
- .6 there was no unplanned output to carry out this important work.

27.6 In light of the importance of the work and taking into account the views expressed, the Sub-Committee invited the United States to prepare an updated proposal for consideration by NCSR 2, based on the views expressed at this session, and agreed that this urgent matter could be dealt with under Any other business.

### **Progress on standards' development by the IEC**

27.7 The Sub-Committee noted with appreciation the update submitted by IEC (NCSR 1/27/1) on the preparation of relevant standards to support the performance standards of the Organization.

---

## **Publication of ISO/PAS19697, Ships and marine technology – Navigation and ship operations – Electronic inclinometers**

27.8 The Sub-Committee recalled that MSC 92 has adopted resolution MSC.363(92) on *Performance standards for electronic inclinometers*.

27.9 Having noted the information provided by ISO (NCSR 1/27/2) on its new Publicly Available Specification (PAS) as contained in publication ISO/PAS 19697, titled "Ships and marine technology Navigation and ship operations – Electronic inclinometers", and addressing the construction, performance requirements, methods of testing and test results of electronic inclinometers stipulated in resolution MSC.363(92), the Sub-Committee encouraged Member Governments and international organizations to make use of or refer to this new PAS for electronic inclinometers, as appropriate.

## **Participation in the WMO Voluntary Observing Ships' Scheme**

27.10 The Sub-Committee recalled that MSC 85 had approved and circulated MSC.1/Circ.1293 regarding participation in the WMO Voluntary Observing Ships' (VOS) Scheme, inviting Member States to consider increased participation in the Scheme by ships in the Arctic.

27.11 The Sub-Committee considered the information provided by the United States et al. (NCSR 1/27/3) relating to the WMO VOS Scheme and to encourage increased participation in the Scheme by all flag States, in particular, those with vessels sailing in Arctic waters.

27.12 Having noted additional information provided orally by the WMO observer, in particular, that the Arctic was only one of several areas in the world where data was not forthcoming, and that WMO planned to submit a paper providing information on areas where it seeks to increase participation in the WMO VOS scheme, the Sub-Committee invited Member States to consider increased participation in the VOS Scheme, in particular, those with vessels sailing in Arctic waters.

## **Counterfeit charts and publications**

27.13 The Sub-Committee noted with appreciation the information provided by the United Kingdom (NCSR 1/INF.19) on the proliferation of counterfeit nautical charts and publications and providing information and advice on identifying such rogue and potentially unsafe products.

## **Update of maritime radiocommunication systems and equipment**

27.14 The Sub-Committee noted with appreciation the information provided by Argentina (NCSR 1/INF.20) with regard to an update of maritime radiocommunication systems and equipment in Argentina to improve shore-ship radiocommunications within the framework of its duties as a coastal State.

## **The IMO/IALA Award for Zero Accident Campaign**

27.15 The Sub-Committee recalled that NAV 59 (NAV 59/20, paragraphs 19.4 to 19.6) had noted the information provided by the Secretariat (NAV 59/19/1) on the IMO/IALA Award for Zero Accident Campaign and the oral intervention by IALA that it was confident that the implementation of the campaign would improve the safety of navigation. Furthermore, the Group of Experts specifically established for this purpose and consisting of experts from IALA, IHO, IMO, IAPH and IMPA, and which had met on 28 January 2013 under the competent

chairmanship of the NAV Sub-Committee Chairman, was well placed to highlight the important role the campaign could play in reducing incidents. Accordingly, they strongly supported this initiative was strongly supported.

27.16 The Sub-Committee noted the proposal put forward by the Secretariat to launch an IMO/IALA award for Vessel Traffic Services (VTS) in different regions of the world, based on the criteria developed jointly by IMO and IALA. The evaluation would be carried out by a panel comprising of the:

- .1 Chairman of the NCSR Sub-Committee (Chairman of the Panel);
- .2 Secretary-General of IALA (or representative);
- .3 Secretary-General of IMPA (or representative);
- .4 Secretary-General of IAPH (or representative);
- .5 Chairman of the IALA VTS Committee;
- .6 IALA-accredited VTS expert;
- .7 VTS expert from IFSMA; and
- .8 VTS expert from IHMA.

The Sub-Committee further noted that it was expected that the call for nominations would be distributed after the Committee had endorsed the proposal.

27.17 In light of the foregoing, the Sub-Committee agreed to invite the Committee to endorse the establishment of an IMO/IALA award to promote the Zero Accident Campaign.

#### **Goal-based guidelines on the framework of requirements for ships' life-saving appliances**

27.18 The Sub-Committee recalled that MSC 92 had noted that DE 57 had referred parts of the draft Goal-based guidelines on the framework of requirements for ships' life-saving appliances (DE 57/WP.5, annex 1) to the STW (HTW), COMSAR (NCSR) and FP (SSE) Sub-Committees for consideration, as appropriate.

27.19 The Sub-Committee had no comments on the functional requirements in Tier II of the above draft guidelines, and instructed the Secretariat to inform the SSE Sub-Committee accordingly.

#### **Launch of missiles without giving navigational warnings**

27.20 The Sub-Committee noted the statement made by the United States, supported by France, and supporting statements by the Republic of Korea, Japan, Australia and the Marshall Islands, as set out in annex 25. The Sub-Committee further noted the response by the Democratic People's Republic of Korea, as also set out in annex 25.

27.21 In this context, the Sub-Committee urged Member Governments to provide adequate advance notice with regard to all operations that might affect the safety of navigation, in compliance with resolution A.706(17), as amended.



---

## Expressions of appreciation

27.22 The Sub-Committee expressed appreciation to the following delegates and observers, who had recently relinquished their duties, had retired or had been transferred to other duties or were about to, for their invaluable contribution to its work, and to staff members of the IMO Secretariat, on their retirement, and wished all of them a long and happy retirement or, as the case may be, every success in their new duties:

- Mr. Guy Beale, Chairman of Navtex Co-ordinating Panel (on retirement);
- Mr. Peter Blackhurst of Inmarsat (on retirement);
- Ms. Christine Caceres (Secretariat) (on retirement);
- Mr. Stan Deno of CLIA (on retirement);
- Mr. Andy Fuller of IMSO (on retirement);
- Mr. Michel Huet of IHO (on retirement);
- Mr. Kwok Wai Chan of Hong Kong China (on retirement);
- Mr. Fer van de Laar of IAPH (on retirement);
- Capt. C. Lindvall of IFSMA (on retirement);
- Ms. Florence Onumonu (Secretariat) (on retirement);
- Mr. Ranjeet Singh of Singapore (on transfer);
- Mr. Stein Solberg of Norway (on retirement);
- Mrs. Jane Thompson (Secretariat) (on retirement);
- Mr. David Tongue of ICS (on retirement); and
- Ms. Tatiana Zatsepina (Secretariat) (on retirement).

## 28 ACTION REQUESTED OF THE COMMITTEE

28.1 The Maritime Safety Committee, at its ninety-fourth session, is invited to:

- .1 in accordance with resolution A.858(20), adopt the proposed:
  - .1 amendments to the existing traffic separation scheme "In the Strait of Gibraltar", the precautionary area off Tanger-Med and the south-western inshore traffic zone including anchorage areas (paragraph 3.23.1 and annex 1);
  - .2 amendments to the existing traffic separation scheme "In the waters off the Chengshan Jiao Promontory" (paragraph 3.23.2 and annex 1);
  - .3 amendments to the existing routeing system "Off Friesland" (paragraph 3.23.3 and annex 1);
  - .4 amendment to the existing recommended directions of traffic flow in the precautionary area off Tanger-Med in the Strait of Gibraltar (paragraph 3.24.1 and annex 2);
  - .5 establishment of new areas to be avoided "Off Friesland" (paragraph 3.24.2 and annex 2);
  - .6 amendments to the deep-water routes forming parts of the routeing system "Off Friesland" (paragraph 3.24.3 and annex 2);
  - .7 amendments to the mandatory route for tankers from North Hinder to the German Bight (paragraph 3.24.4 and annex 2);

- .8 amendments to the existing two-way route in the Great North-East Channel (paragraph 3.24.5 and annex 2);
- .9 establishment of new two-way routes and a precautionary area at Jomard Entrance, Papua New Guinea (paragraph 3.24.6 and annex 2);
- .10 revocation of the area to be avoided in the region of the Great Barrier Reef (paragraph 3.25); and
- .11 amendments to the existing mandatory ship reporting system Off Chengshan Jiao Promontory (paragraph 3.27 and annex 3);
- .2 endorse the action taken by the Sub-Committee to forward the draft MSC circular on ECDIS – Guidance for good practice to the HTW Sub-Committee for review, in particular, the provisions related to ECDIS training and the use of simulators, and to the Committee for subsequent approval (paragraph 5.7);
- .3 recognize the BeiDou satellite navigation system as a future component of the World-Wide Radionavigation System, and approve the associated draft SN circular (paragraph 6.5.1 and annex 4);
- .4 approve the draft revised COMSAR.1/Circ.54 on Audits of LRIT Data Centres and of the LRIT International Data Exchange conducted by the LRIT Coordinator (paragraph 8.10 and annex 5);
- .5 approve the draft amendments to LRIT-related circulars (MSC.1/Circ.1259/Rev.5, MSC.1/Circ.1294/Rev.3, MSC.1/Circ.1338, MSC.1/Circ.1376/Rev.1 and MSC.1/Circ.1412) (paragraph 8.16 and annex 6);
- .6 approve the draft e-navigation Strategy Implementation Plan (paragraph 9.8 and annex 7);
- .7 approve the draft MSC circular on Guidelines on harmonization of testbeds reporting (paragraph 9.12.1 and annex 8);
- .8 approve the draft Assembly resolution on Revised guidelines for the onboard operational use of shipborne automatic identification systems (AIS), and forward it to the Assembly for adoption (paragraph 11.7 and annex 9);
- .9 in relation to the application of the Iridium mobile satellite system for recognition and use in the GMDSS:
  - .1 consider convening a group of experts, through the Secretariat, to participate in the evaluation process and provide technical advice, including requesting support from other international organizations such as IHO, WMO and others; or
  - .2 consider and decide which independent body should produce a technical and operational assessment of the information contained in documents NCSR 1/12 and NCSR 1/12/2, invite that body to make the assessment and provide a report to the NCSR Sub-Committee for evaluation (paragraph 12.9);

- 
- .10 note that the Sub-Committee approved the outcome of the High-level Review of the GMDSS (paragraph 13.5 and annex 10);
  - .11 taking into account that the Detailed Review was still in a very early stage and cannot be finalized by NCSR 2, extend the planned output 5.2.5.2 (First outline of the Detailed Review of the Global Maritime Distress and Safety System (GMDSS)) for an additional year (to 2018) and approve the revised plan of work (paragraph 13.21 and annex 11);
  - .12 endorse the action taken by the Sub-Committee, as an exceptional case, in authorizing the Correspondence Group on the Review of the GMDSS to submit its report for NCSR 2 two weeks beyond the deadline for bulky documents, i.e. by 19 December 2014 (paragraph 13.22);
  - .13 approve the draft MSC circular on the Revised Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI) (paragraph 15.6 and annex 12);
  - .14 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey the liaison statement on the revision of Recommendation ITU-R M.493-13 to ITU-R Working Party 5B (paragraph 16.7 and annex 13);
  - .15 approve the draft IMO position on WRC-15 agenda items concerning matters relating to maritime services and instruct the Secretariat to convey it to ITU's Conference Preparatory Meeting (CPM-2), scheduled to take place from 23 March to 2 April 2015 (paragraph 17.8 and annex 14);
  - .16 instruct the Secretariat to consult with IMO Member States present at ITU's Conference Preparatory Meeting on new issues not included in the IMO position as developed and approved by the Committee, and to take action, as appropriate, to protect IMO's interest (paragraph 17.9);
  - .17 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey the liaison statement on additional comments in relation to frequency bands identified by ITU-R for future assessment of the suitability for international mobile telecommunications (IMT) to the ITU-R Joint Task Group 4-5-6-7 (paragraph 17.10 and annex 15);
  - .18 approve the draft revised MSC.1/Circ.1210 on *Guidance on the Cospas-Sarsat International 406 MHz Beacon Registration Database (IBRD)* (paragraph 18.11 and annex 16);
  - .19 approve the draft revised MSC.1/Circ.1182 on *Guide to recovery techniques* (paragraph 19.10 and annex 17);
  - .20 approve the draft revised texts for the renumbered chapter 9 (Safety of Navigation) and 10 (Communication) of the draft Polar Code (paragraphs 23.11 and 23.17, and annex 18);
  - .21 approve the deletion of the renumbered paragraph 11.4 (reporting) in the renumbered chapter 11 of the draft Polar Code (paragraph 23.18);

- .22 approve the draft revisions to sections 2.2 (navigation equipment) and 2.3 (communication equipment) of the Record of additional equipment and operational limitations for the Polar Ship Certificate (paragraphs 23.12 and 23.19, and annex 19);
- .23 endorse the Sub-Committee's view that the additional guidance in part I-B of the draft Polar Code regarding personal and group survival equipment was sufficient (paragraph 23.14);
- .24 approve the draft additional guidance on the renumbered chapters 9 and 10 for possible inclusion in part I-B of the draft Polar Code (paragraphs 23.15 and 23.21, and annex 20);
- .25 approve the draft MSC circular on Unified Interpretations of SOLAS regulation V/23.3.3 pertaining to pilot transfer arrangements (paragraph 24.5 and annex 21);
- .26 approve the draft MSC circular on Unified Interpretations on Completion of items 2.1 and 2.2 of Part 3 of the Form E and items 2.1 and 2.2 of Part 5 of Forms P and C, which pertain to the use of nautical charts/ECDIS (paragraph 24.15 and annex 22);
- .27 endorse the establishment of an IMO/IALA award to promote the Zero Accident Campaign (paragraph 27.17); and
- .28 approve the report in general.

\*\*\*

## ANNEX 1

### DRAFT AMENDED TRAFFIC SEPARATION SCHEMES

#### AMENDMENTS TO THE EXISTING TSS "IN THE STRAIT OF GIBRALTAR"

(Reference chart No.445 issued by the Hydrographic Institute of the Spanish Navy, Datum WGS 84, 4th edition, June 2007).

#### Description of the amended traffic separation scheme

- (a) A separation zone, half a mile wide, is centred upon the following geographical positions:

(1) 35° 59'.01 N 005° 25'.68 W (2) 35° 58'.36 N 005° 28'.19 W

- (b) A separation zone, half a mile wide, is centred upon the following geographical positions:

(3) 35° 56'.70 N 005° 34'.71 W (5) 35° 56'.21 N 005° 44'.98 W  
(4) 35° 56'.21 N 005° 36'.48 W

- (c) A traffic lane for westbound traffic is established between the separation zone described in paragraph (a) and a line connecting the following geographical positions:

(7) 36° 01'.21 N 005° 25'.68 W (8) 36° 00'.35 N 005° 28'.98 W

- (d) A traffic lane for westbound traffic is established between the separation zone described in paragraph (b) and a line connecting the following geographical positions:

(9) 35° 58'.68 N 005° 35'.44 W (11) 35° 58'.41 N 005° 44'.98 W  
(10) 35° 58'.41 N 005° 36'.48 W

- (e) A traffic lane for eastbound traffic is established between the separation zone described in paragraph (b) and a line connecting the following geographical positions:

(12) 35° 52'.51 N 005° 44'.98 W (14) 35° 54'.55 N 005° 33'.90 W  
(13) 35° 53'.81 N 005° 36'.48 W

- (f) A traffic lane for eastbound traffic is established between the separation zone described in paragraph (a) and a line connecting the following geographical positions:

(15) 35° 56'.35 N 005° 27'.40 W (16) 35° 56'.84 N 005° 25'.68 W

- (g) A precautionary area is established on the eastern side of the TSS "In the Strait of Gibraltar" by the lines connecting the following geographical positions:

(6) 36° 02'.80 N 005° 19'.68 W (16) 35° 56'.84 N 005° 25'.68 W  
(7) 36° 01'.21 N 005° 25'.68 W (17) 35° 58'.78 N 005° 18'.55 W

- (h) A precautionary area with recommended directions of traffic flow is established off the Moroccan port of Tanger-Med in the TSS "In the Strait of Gibraltar" formed by the lines connecting the following geographical positions:

(8)	36° 00'.35 N	005° 28'.98 W	(14)	35° 54'.55 N	005° 33'.90 W
(9)	35° 58'.68 N	005° 35'.44 W	(15)	35° 56'.35 N	005° 27'.40 W

### **Inshore traffic zones**

#### **Description of the northern inshore traffic zone**

- (a) The area between the northern boundary of the scheme formed by the continuing line that links points 7, 8, 9, 10 and 11 and the Spanish coast, and lying between the following limits is designated as an inshore traffic zone:
- (1) Eastern limit: That part of the meridian 005° 25'.68 W (27) between the northern boundary of the westbound traffic lane (latitude 36° 01'.21 N, corresponding to point (7) on the attached chartlet) and the Spanish coast.
  - (2) Western limit: That part of meridian 005° 44'.98 W (26) between the northern boundary of the westbound traffic lane (latitude 35°58'.41 N, corresponding to point (11) on the attached chartlet) and the Spanish coast.

#### **Description of the south-eastern and south-western inshore traffic zones**

- (b) The two southern inshore traffic zones, located between the southern limit of the TSS and the coast of Morocco, are separated by a free navigational area between them; these are defined as below. A Tanger-Med ports anchorage area is established within the limits of the free navigational area.
- (1) South-eastern inshore traffic zone: a zone between the southern limit of the eastern portion of the eastbound traffic lane and the coast of Morocco and limited by the following geographical positions:

(18)	35° 54'.45 N	005° 25'.68 W
(16)	35° 56'.84 N	005° 25'.68 W

and

(15)	35° 56'.35 N	005° 27'.40 W
(19)	35° 54'.88 N	005° 27'.40 W
  - (2) South-western inshore traffic zone: a zone formed by the coast of Morocco, the external limit of the traffic lane for the traffic heading towards the eastern area of the current scheme and the lines connecting the following geographical positions:

(24)	35° 51'.20 N	005° 32'.40 W
(23)	35° 52'.18 N	005° 34'.00 W
(22)	35° 51'.10 N	005° 36'.20 W
(21)	35° 52'.06 N	005° 36'.30 W
(20)	35° 52'.87 N	005° 36'.70 W
(14)	35° 54'.55 N	005° 33'.90 W

and

(12)	35° 52'.51 N	005° 44'.98 W
(25)	35° 49'.09 N	005° 44'.98 W

**Notes:**

- 1 An anchorage area, named "Alpha", for the port of Tanger-Med is established within the south-western inshore traffic zone configured as a circle centred in geographical position 35°51'.05 N, 005°40'.34 W and having a radius of 0.4 miles.
- 2 Ships heading for the anchorage "Alpha" can enter the south-western inshore traffic zone:
  - by its western limit if coming from the Atlantic Ocean; and
  - by its eastern limit if coming from the port of Tanger-Med or the Mediterranean Sea, subject to the provisions of requirements to use appropriate TSS and follow the recommended directions of traffic flow within the precautionary area (h) above, in accordance with rule 10 (d) of the 1972 COLREGs.
- 3 Given the absence of ports or any type of facility in the south-eastern inshore traffic zone, ships entering or leaving the port of Tanger-Med coming from or heading for the Mediterranean Sea must sail along the corresponding traffic lanes, in accordance with rule 10 of the 1972 COLREGs.
- 4 Ships sailing from the Atlantic Ocean or the Mediterranean Sea towards the port of Tanger-Med, or departing from it for the Atlantic Ocean or the Mediterranean Sea must sail along the corresponding traffic lanes, in accordance with rule 10 of the 1972 COLREGs.

**"IN THE WATERS OFF THE CHENGSHAN JIAO PROMONTORY"**

**Note:** See mandatory ship reporting system "Off the Chengshan Jiao Promontory".

(Reference charts: Chinese charts 1305 and 35001.

**Note:** These charts are based on WGS 84 Datum.)

The ship's routing system in the waters off the Chengshan Jiao promontory consists of several elements comprising:

- .1 The inner traffic separation scheme, the inner precautionary area and inshore traffic zone;
- .2 The outer traffic separation schemes and outer precautionary area.

**Part I (Inner TSS):**

**Description of the Chengshan Jiao inner traffic separation scheme, the inner precautionary area and inshore traffic zone;**

(a) A separation zone, 2 miles wide, is centered upon the line connecting the following geographical positions:

- |     |             |              |     |             |              |
|-----|-------------|--------------|-----|-------------|--------------|
| (1) | 37°31'.18 N | 122°45'.40 E | (3) | 37°11'.60 N | 122°49'.68 E |
| (2) | 37°25'.29 N | 122°49'.68 E |     |             |              |

(b) A separation zone is bounded by part of the inner precautionary area (g) and by lines connecting the following geographical positions:

- |      |            |             |      |            |             |
|------|------------|-------------|------|------------|-------------|
| (13) | 37°38'.20N | 122°47'.31E | (27) | 37°11'.60N | 122°56'.60E |
| (14) | 37°38'.82N | 122°47'.76E | (9)  | 37°11'.60N | 122°53'.46E |
| (15) | 37°37'.30N | 122°51'.00E | (8)  | 37°26'.09N | 122°53'.46E |
| (26) | 37°31'.08N | 122°56'.62E | (7)  | 37°32'.69N | 122°48'.68E |

(c) The inner limit of the traffic separation scheme is the line connecting the following geographical positions:

- |     |             |             |     |             |             |
|-----|-------------|-------------|-----|-------------|-------------|
| (4) | 37°29'.69 N | 122°42'.13E | (6) | 37°11'.60 N | 122°45'.91E |
| (5) | 37°24'.49 N | 122°45'.91E |     |             |             |

(d) The outer limit of the traffic separation scheme is the part of separation zone (b) connecting the following geographical positions:

- |     |            |             |     |            |             |
|-----|------------|-------------|-----|------------|-------------|
| (7) | 37°32'.69N | 122°48'.68E | (9) | 37°11'.60N | 122°53'.46E |
| (8) | 37°26'.09N | 122°53'.46E |     |            |             |

(e) The traffic lane for southbound traffic, 2 miles wide, is established between the separation zone (a) and the inner limit of the traffic separation scheme (c). The main traffic directions are 150° (T) and 180° (T).

(f) The traffic lane for northbound traffic, 2 miles wide, is established between the separation zone (a) and part of the separation zone (d). The main traffic directions are 000° (T) and 330° (T).



### Inner precautionary area

(g) The inner precautionary area is established to the north by an arc of a circle of radius 5 miles centering upon geographical position:

(10) 37°34'.65N 122°42'.88E

and connecting with the following geographical positions:

(4) 37°29'.69 N 122°42'.13E (7) 37°32'.69N 122°48'.68E

### Inshore traffic zone

(h) The inshore traffic zone is the waters between the inner limit of the traffic separation scheme described in (c) and the adjacent coast.

### Part II (Outer TSSs):

#### Description of the Chengshan Jiao outer traffic separation schemes and outer precautionary area

##### North traffic separation scheme

(i) A separation zone, 2 miles wide, is centered upon the following geographical positions:

(11) 37°41'.41N 122°49'.65E (12) 37°39'.89N 122°52'.89E

(j) A separation line connects the following geographical positions:

(16) 37°44'.00N 122°51'.56E (17) 37°42'.49N 122°54'.76E

(k) A 2 mile wide traffic lane for southeast bound traffic between the separation zone described in (i) and that portion of separation zone described in (b) above connecting the following geographical positions:

(14) 37°38'.82N 122°47'.76E (15) 37°37'.30N 122°51'.00E

The main traffic direction is 120° (T)

(l) A 2 mile wide traffic lane for northwest bound traffic is established between the separation zone described in (i) above and a separation line described in (j). The main traffic direction is 300° (T).

##### East traffic separation scheme

(m) A separation zone, 2 miles wide, is centered upon the following geographical positions:

(18) 37°33'.72N 123°06'.07E (19) 37°32'.15N 123°09'.44E

(n) A separation line connects the following geographical positions:

(20) 37°31'.14N 123°04'.16E (21) 37°29'.56N 123°07'.53E

- (o) A separation line connects the following geographical positions:  
(22) 37°36'.33N 123°07'.94E (23) 37°34'.76N 123°11'.30E
- (p) A traffic lane for south-eastbound traffic between the separation zone described in (m) and separation line described in (n) above. 2 miles wide, the main traffic direction is 120° (T)
- (q) A traffic lane for north-westbound traffic between the separation zone described in (m) above and a separation line described in (o). 2 miles wide, the main traffic direction is 300° (T).

### South traffic separation scheme

- (r) A separation zone, 2 miles wide, is centered upon the following geographical positions:  
(24) 37°31'.08N 123°00'.37E (25) 37°11'.60N 123°00'.37E
- (s) A separation line connects the following geographical positions:  
(20) 37°31'.14N 123°04'.16E (28) 37°11'.60N 123°04'.14E
- (t) A traffic lane for southbound traffic between the separation zone described in (r) above and that portion of separation zone described in (b) above connecting the following geographical positions:  
(26) 37°31'.08N 122°56'.62E (27) 37°11'.60N 122°56'.60E  
2 miles wide, the main traffic direction is 180° (T).
- (u) A traffic lane for northbound traffic between the separation zone described in (r) above and the separation line described in (s) above connecting the following geographical positions:  
(20) 37°31'.14N 123°04'.16E (28) 37°11'.60N 123°04'.14E  
The main traffic direction is 000° (T).

### Outer precautionary area

- (v) The outer precautionary area is established by a line connecting the following geographical positions:  
(17) 37°42'.49N 122°54'.76E (26) 37°31'.08N 122°56'.62E  
(22) 37°36'.33N 123°07'.94E (15) 37°37'.30N 122°51'.00E  
(20) 37°31'.14N 123°04'.16E

**Notes:** All oil tankers 150 gross tonnage and above, all vessels carrying dangerous, hazardous cargo, vessels of LOA more than 200 meters, or mean draft more than 12 meters, and high speed vessels which are transiting the area of Chengshan Jiao Promontory are recommended to sail in the traffic lanes of the Outer Traffic Separation Schemes.

## AMENDED TSS "OFF FRIESLAND"

Reference charts, Netherlands 1632 (INT 1420), 2011 edition, 1633 (INT 1417), 2010 edition and 1037 (INT 1045), 2011 edition.

**Note:** These charts are based on World Geodetic System 1984 datum (WGS 84)

(EXISTING GEOGRAPHICAL POSITIONS IN ED50 COINCIDING WITH THE PROPOSED NEW SYSTEM HAVE BEEN CONVERTED TO WGS 84.)

### West Friesland scheme

- (a) The eastern boundary of the separation zone is amended from existing position (19) north-eastward and newly bounded by the following geographical positions as follows:

(100) 53° 55'.36 N 004° 33'.85 E (21) 53° 59'.18 N 004° 35'.92 E

- (b) A new separation zone is established bounded by a line connecting the following geographical positions:

(85) 53° 59'.46 N 004° 39'.60 E (86) 53° 59'.68 N 004° 42'.44 E  
(87) 53° 57'.17 N 004° 38'.40 E

- (c) A traffic lane for northbound traffic branching off from the main north-eastbound traffic lane is established between the separation zones in paragraphs (a) and (b).

### North Friesland scheme

- (d) A separation zone is established bounded by a line connecting the following geographical positions:

(79) 54° 04'.30 N 004° 59'.98 E (80) 54° 04'.78 N 005° 05'.94 E  
(81) 54° 02'.76 N 005° 04'.73 E (82) 54° 02'.28 N 004° 58'.76 E

- (e) A separation zone is established bounded by a line connecting the following geographical positions:

(75) 54° 02'.84 N 004° 41'.41 E (76) 54° 03'.99 N 004° 56'.11 E  
(77) 54° 01'.98 N 004° 54'.89 E (78) 54° 00'.83 N 004° 40'.34 E

- (f) A separation zone is established bounded by a line connecting the following geographical positions:

(71) 54° 01'.52 N 004° 24'.62 E (72) 54° 02'.55 N 004° 37'.69 E  
(73) 54° 00'.54 N 004° 36'.62 E (74) 53° 59'.21 N 004° 19'.05 E

- (g) A separation zone is established bounded by a line connecting the following geographical positions:

(67) 54° 00'.37 N 004° 09'.21 E (68) 54° 01'.10 N 004° 18'.89 E  
(69) 53° 58'.91 N 004° 13'.93 E (70) 53° 58'.66 N 004° 09'.60 E

(h) A traffic lane for eastbound traffic is established between the separation zone in paragraph (g) and the following existing geographical positions:

(26) 53° 57'.16 N 004° 09'.94 E (22) 53° 57'.56 N 004° 15'.09 E

(i) A traffic lane for eastbound traffic is established between the separation zone in paragraph (f) and the amended separation zone of the traffic separation scheme "West Friesland".

(j) A traffic lane for eastbound traffic is established between the separation zones in paragraph (b) and (e).

(k) A traffic lane for eastbound traffic is established between the separation zone in paragraph (e) and the following geographical positions:

(25) 53° 59'.96 N 004° 45'.92 E (96) 54° 00'.60 N 004° 54'.06 E

(l) A traffic lane for eastbound traffic is established between the separation zone in paragraph (d) and the following geographical positions:

(97) 54° 00'.91 N 004° 57'.94 E (98) 54° 01'.38 N 005° 03'.90 E

(m) A traffic lane for westbound traffic is established between the separation zone in paragraph (d) and the following geographical positions:

(94) 54° 06'.14 N 005° 06'.77 E (93) 54° 05'.67 N 005° 00'.81 E

(n) A traffic lane for westbound traffic is established between the separation zone in paragraph (e) and the following geographical positions:

(92) 54° 05'.37 N 004° 56'.94 E (91) 54° 04'.20 N 004° 42'.14 E

(o) A traffic lane for westbound traffic is established between the separation zone in paragraph (f) and the following geographical positions:

(90) 54° 03'.91 N 004° 38'.43 E (89) 54° 03'.13 N 004° 28'.46 E

(p) A traffic lane for westbound traffic is established between the separation zone in paragraph (g) and the following geographical positions:

(88) 54° 02'.65 N 004° 22'.44 E (31) 54° 01'.87 N 004° 08'.88 E

(q) A traffic lane for south-westbound traffic is established between, on the west side, a line connecting the following geographical positions:

(68) 54° 01'.10 N 004° 18'.89 E (69) 53° 58'.91 N 004° 13'.93 E

and, on the east side, a line connecting the following geographical positions:

(71) 54° 01'.52 N 004° 24'.62 E (74) 53° 59'.21 N 004° 19'.05 E

(r) A traffic lane for northbound traffic is established between, on the west side, a line connecting the following geographical positions:

(72) 54° 02'.55 N 004° 37'.69 E (73) 54° 00'.54 N 004° 36'.62 E

and, on the east side, a line connecting the following geographical positions:

(75) 54° 02'.84 N 004° 41'.41 E (78) 54° 00'.83 N 004° 40'.34 E

(s) A traffic lane for southbound traffic is established between, on the west side, a line connecting the following geographical positions:

(76) 54° 03'.99 N 004° 56'.11 E (77) 54° 01'.98 N 004° 54'.89 E

and, on the east side, a line connecting the following geographical positions:

(79) 54° 04'.30 N 004° 59'.98 E (82) 54° 02'.28 N 004° 58'.76 E

(t) A traffic lane for northbound traffic is established between, on the west side, a line connecting the following geographical positions:

(80) 54° 04'.78 N 005° 05'.94 E (81) 54° 02'.76 N 005° 04'.73 E

and, on the east side, a line connecting the following geographical positions:

(83) 54° 04'.84 N 005° 09'.60 E (84) 54° 03'.26 N 005° 08'.65 E

### East Friesland scheme

(u) The western boundary of the separation zone is amended as follows:

Existing position 32 is shifted east to new position (84) 54° 03'.26 N 005° 08'.65 E

Existing position 37 is shifted east to new position (83) 54° 04'.84 N 005° 09'.60 E

(v) The traffic lane for eastbound traffic is amended as follows:

Existing position (28) I shifted east to new position (99) 54° 01'.69 N 005° 07'.70 E

(w) The traffic lane for westbound traffic is amended as follows:

Existing position (29) I shifted east to new position (95) 54° 06'.44 N 005° 10'.57 E

\*\*\*



## ANNEX 2

### DRAFT ROUTEING MEASURES OTHER THAN TRAFFIC SEPARATION SCHEMES

#### AMENDMENTS TO THE EXISTING RECOMMENDED DIRECTIONS OF TRAFFIC FLOW WITHIN THE PRECAUTIONARY AREA OFF TANGER-MED IN THE STRAIT OF GIBRALTAR

(Reference chart No.445, issued by the Hydrographic Institute of the Spanish Navy, Datum WGS 84, 4th edition, June 2007).

##### Description of the amended precautionary area off Tanger-Med

A precautionary area with recommended directions of traffic flow is established off the Moroccan port of Tanger-Med in the Gibraltar TSS, formed by the lines connecting the following geographical positions:

(08)	36° 00'.35 N	005° 28'.98 W
(09)	35° 58'.68 N	005° 35'.44 W
(14)	35° 54'.55 N	005° 33'.90 W
(15)	35° 56'.35 N	005° 27'.40 W

#### NEW AREAS TO BE AVOIDED "OFF FRIESLAND"

Reference charts, Netherlands 1632 (INT 1420), edition 2011, 1633 (INT 1417), edition 2010 and 1307 (1045) editions 2011.

**Note:** These charts are based on World Geodetic System 1984 datum (WGS 84)

(a) An area to be avoided is established and bounded by a line connecting the following geographical positions:

(101)	54° 01.27 N	004° 24.79 E	(102)	54° 02.23 N	004° 37.05 E
(103)	54° 00.78 N	004° 36.28 E	(104)	53° 59.61 N	004° 20.79 E

(b) An area to be avoided is established and bounded by a line connecting the following geographical positions:

(105)	54° 02.70 N	004° 43.12 E	(106)	54° 03.57 N	004° 54.19 E
(107)	54° 02.13 N	004° 53.32 E	(108)	54° 01.26 N	004° 42.33 E

#### DEEP-WATER ROUTES FORMING PARTS OF ROUTEING SYSTEM "OFF FRIESLAND"

Reference charts Netherlands 1632 (INT 1420), edition 2011, 1633 (INT 1417), edition 2010 and 1307 (1045) editions 2011.

**Note:** These charts are based on World Geodetic System 1984 datum (WGS 84)

(EXISTING GEOGRAPHICAL POSITIONS IN ED50 COINCIDING WITH THE PROPOSED NEW SYSTEM HAVE BEEN CONVERTED TO WGS 84.)

1 The part "**Friesland Junction**" precautionary area (paragraphs e) and f)) is deleted.

- 2 The text: ***Deep-water route from the traffic separation scheme "Off Botney Ground" to the precautionary area "Friesland Junction"*** is replaced by:

***Deep-water route from the traffic separation scheme "Off Botney Ground" to the traffic separation scheme "North Friesland"***

- 3 After existing paragraph (h), a new paragraph is added reading:

(i) Geographical positions (26) and (31) form part of the traffic separation scheme "North Friesland".

and renumber existing paragraph (i) to (j).

- 4 Replace the words "Friesland Junction" in note 2 by "TSS North Friesland".

### **AMENDMENTS TO THE MANDATORY ROUTE FOR TANKERS FROM NORTH HINDER TO THE GERMAN BIGHT**

Reference charts, Netherlands 1632 (INT 1420), edition 2011, 1633 (INT 1417), edition 2010 and 1307 (1045) editions 2011.

**Note:** These charts are based on World Geodetic System 1984 datum (WGS 84)

- 1 The "**Friesland junction**" precautionary area is replaced by:

#### **Traffic separation scheme "North Friesland"**

- (a) A separation zone is established bounded by a line connecting the following geographical positions:

(79)	54° 04'.30 N	004° 59'.98 E	(80)	54° 04'.78 N	005° 05'.94 E
(81)	54° 02'.76 N	005° 04'.73 E	(82)	54° 02'.28 N	004° 58'.76 E

- (b) A separation zone is established bounded by a line connecting the following geographical positions:

(75)	54° 02'.84 N	004° 41'.41 E	(76)	54° 03'.99 N	004° 56'.11 E
(77)	54° 01'.98 N	004° 54'.89 E	(78)	54° 00'.83 N	004° 40'.34 E

- (c) A separation zone is established bounded by a line connecting the following geographical positions:

(71)	54° 01'.52 N	004° 24'.62 E	(72)	54° 02'.55 N	004° 37'.69 E
(73)	54° 00'.54 N	004° 36'.62 E	(74)	53° 59'.21 N	004° 19'.05 E

- (d) A separation zone is established bounded by a line connecting the following geographical positions:

(67)	54° 00'.37 N	004° 09'.21 E	(68)	54° 01'.10 N	004° 18'.89 E
(69)	53° 58'.91 N	004° 13'.93 E	(70)	53° 58'.66 N	004° 09'.60 E

- (e) A traffic lane for eastbound traffic is established between the separation zone in paragraph (d) and the following existing geographical positions:

(26)	53° 57'.16 N	004° 09'.94 E	(22)	53° 57'.56 N	004° 15'.09 E
------	--------------	---------------	------	--------------	---------------



- (f) A traffic lane for eastbound traffic is established between the separation zone in paragraph (c) and the amended separation zone of the traffic separation scheme "West Friesland".
- (g) A traffic lane for eastbound traffic is established between the separation zones in paragraph (b) and the new separation zone of the amended traffic separation scheme "West Friesland".
- (h) A traffic lane for eastbound traffic is established between the separation zone in paragraph (b) and the following geographical positions:  
(25) 54° 59'.96 N 004° 45'.92 E (96) 54° 00'.60 N 004° 54'.06 E
- (i) A traffic lane for eastbound traffic is established between the separation zone in paragraph (a) and the following geographical positions:  
(97) 54° 00'.91 N 004° 57'.94 E (98) 54° 01'.38 N 005° 03'.90 E
- (j) A traffic lane for westbound traffic is established between the separation zone in paragraph (a) and the following geographical positions:  
(94) 54° 06'.14 N 005° 06'.77 E (93) 54° 05'.67 N 005° 00'.81 E
- (k) A traffic lane for westbound traffic is established between the separation zone in paragraph (b) and the following geographical positions:  
(92) 54° 05'.37 N 004° 56'.94 E (91) 54° 04'.20 N 004° 42'.14 E
- (l) A traffic lane for westbound traffic is established between the separation zone in paragraph (c) and the following geographical positions:  
(90) 54° 03'.91 N 004° 38'.43 E (89) 54° 03'.13 N 004° 28'.46 E
- (m) A traffic lane for westbound traffic is established between the separation zone in paragraph (d) and the following geographical positions:  
(88) 54° 02'.65 N 004° 22'.44 E (31) 54° 01'.87 N 004° 08'.88 E
- (n) A traffic lane for south-westbound traffic is established between, on the west side, a line connecting the following geographical positions:  
(68) 54° 01'.10 N 004° 18'.89 E (64) 53° 58'.91 N 004° 13'.93 E  
and, on the east side, a line connecting the following geographical positions:  
(71) 54° 01'.52 N 004° 24'.62 E (74) 53° 59'.21 N 004° 19'.05 E
- (o) A traffic lane for northbound traffic is established between, on the west side, a line connecting the following geographical positions:  
(72) 54° 02'.55 N 004° 37'.69 E (73) 54° 00'.54 N 004° 36'.62 E  
and, on the east side, a line connecting the following geographical positions:  
(75) 54° 02'.84 N 004° 41'.41 E (78) 54° 00'.83 N 004° 40'.34 E

**2 The traffic separation scheme "East Friesland" is amended as follows:**

- (p) The western boundary of the separation zone is amended as follows:  
Existing position 32 is shifted east to new position (84) 54° 03'.26 N, 005° 08'.65 E  
Existing position 37 is shifted east to new position (83) 54° 04'.84 N, 005° 09'.60 E
- (q) The traffic lane for eastbound traffic is amended as follows:  
Existing position (28) is shifted east to new position (99) 54° 01'.69 N, 005° 07'.70 E
- (r) The traffic lane for westbound traffic is amended as follows:  
Existing position (29) is shifted east to new position (95) 54° 06'.44 N, 005° 10'.57 E

**3 The traffic separation scheme "West Friesland" is amended as follows**

- (s) The eastern boundary of the separation zone is amended from existing position (19) north-eastward and newly bounded by the following geographical positions as follows:  
(100) 53° 55'.36 N 004° 33'.85 E (21) 53° 59'.18 N 004° 35'.92 E
- (t) A new separation zone is established bounded by a line connecting the following geographical positions:  
(85) 53° 59'.46 N 004° 39'.60 E (86) 53° 59'.68 N 004° 42'.44 E  
(87) 53° 57'.17 N 004° 38'.40 E
- (u) A traffic lane for northbound traffic branching off from the main north-eastbound traffic lane is established between the separation zones in paragraphs (s) and (t).

**TWO-WAY ROUTE IN THE GREAT NORTH-EAST CHANNEL, TORRES STRAIT**

**Reference charts:**

Electronic Navigation Charts (ENC): AU410143 (edition 9), AU411142 (edition 4), AU411143 (edition 8)

Paper charts: Aus292 (2005 June edition), Aus293 (2011 November edition), Aus837 (2012 February edition), Aus839 (2012 January edition), Aus840 (2012 July edition)

**Description of the area**

- (a) The northern limits are bound by the line joining the following geographical positions:
- |     |              |               |
|-----|--------------|---------------|
| (1) | 10° 29'.51 S | 142° 22'.29 E |
| (2) | 10° 28'.81 S | 142° 25'.61 E |
| (3) | 10° 28'.54 S | 142° 26'.93 E |
| (4) | 10° 27'.80 S | 142° 28'.45 E |
| (5) | 10° 26'.40 S | 142° 31'.30 E |
| (6) | 10° 21'.90 S | 142° 41'.50 E |
| (7) | 10° 19'.37 S | 142° 47'.97 E |

---

(8)	10° 18'.14 S	142° 50'.82 E
(9)	10° 13'.38 S	142° 54'.96 E
(10)	10° 00'.50 S	143° 03'.42 E
(11)	09° 47'.73 S	143° 10'.40 E
(12)	09° 25'.80 S	143° 31'.07 E
(13)	09° 12'.47 S	143° 51'.34 E

(b) The southern limits are bound by the line joining the following geographical positions:

(14)	10° 30'.45 S	142° 24'.02 E
(15)	10° 28'.38 S	142° 28'.66 E
(16)	10° 27'.38 S	142° 31'.85 E
(17)	10° 22'.85 S	142° 41'.95 E
(18)	10° 19'.80 S	142° 48'.23 E
(19)	10° 17'.63 S	142° 53'.29 E
(20)	10° 09'.78 S	143° 05'.55 E
(21)	09° 53'.97 S	143° 15'.61 E
(22)	09° 46'.02 S	143° 18'.48 E
(23)	09° 37'.96 S	143° 21'.97 E
(24)	09° 27'.60 S	143° 32'.15 E
(25)	09° 13'.95 S	143° 52'.62 E

(c) The centre polygon is defined by the following geographical positions:

(26)	10° 16'.10 S	142° 53'.82 E
(27)	10° 13'.79 S	142° 55'.85 E
(28)	10° 01'.05 S	143° 04'.20 E
(29)	09° 48'.10 S	143° 11'.30 E
(30)	09° 41'.04 S	143° 18'.87 E
(31)	09° 45'.72 S	143° 17'.51 E
(32)	09° 53'.84 S	143° 14'.50 E
(33)	10° 09'.15 S	143° 04'.70 E

## **TWO-WAY ROUTES AND PRECAUTIONARY AREA AT JOMARD ENTRANCE**

(Reference Charts:

Electronic Navigation charts (ENC): AU412152 (edition 2, 2014), (edition 3, planned 2014/15, will include an inset at a scale of 1:45,000 covering Jomard Entrance as part of the depiction of the Two-way route.), AU220150 (edition 3, 2013).

Paper charts: Aus62x (Planned for 2014/15), Aus510 (edition 1, 2007), Aus4621(INT 621) (edition 4, 2011.)

Note: All charts above and geographical positions are based on WGS 84.

### **Description of the Two-Way Routes and Precautionary Area**

The ships' routing system consists of four recommendatory Two-way routes and a precautionary area through Jomard Entrance, aligned with and centred upon the existing charted preferred route. At the shoalest point within the proposed route, depths are in excess of 200 metres. In the area immediately south of Jomard Entrance, three existing Coral Sea shipping routes converge (and diverge) at Jomard Entrance. A precautionary area will assist with improving the safety of navigational interaction in the region.

A list of geographical coordinates of the four recommendatory two-way routes and precautionary area are provided below.

**Two-way route at Jomard Entrance (aligned 005°-185°)**

(1)	11° 10'.00S	152° 06'.42E	(16)	11° 20'.00S	152° 07'.14E
(2)	11° 18'.00S	152° 05'.72E	(17)	11° 18'.00S	152° 06'.76'E
(3)	11° 20'.00S	152° 04'.97E	(18)	11° 10'.00S	152° 07'.46E

**Precautionary Area**

(3)	11° 20'.00S	152° 04'.97E	(15)	11° 22'.50S	152° 07'.59E
(4)	11° 22'.50S	152° 02'.88E	(16)	11° 20'.00S	152° 07'.14E

**South-western Two-way route (aligned 040°-220°)**

(4)	11° 22'.50S	152° 02'.88E	(6)	11° 26'.00S	152° 01'.18E
(5)	11° 26'.00S	151° 59'.90E	(7)	11° 22'.50S	152° 04'.14E

**Southern Two-Way route (aligned 005°-185°)**

(8)	11° 22'.50S	152° 05'.33E	(10)	11° 26'.00S	152° 06'.05E
(9)	11° 26'.00S	152° 05'.00E	(11)	11° 22'.50S	152° 06'.35E

**South-eastern Two-way route (aligned 350°-170°)**

(12)	11° 22'.50S	152° 06'.56E			
(13)	11° 26'.00S	152° 07'.22E			
(14)	11° 26'.00S	152° 08'.24E			
(15)	11° 22'.50S	152° 07'.59E			

\*\*\*

**ANNEX 3**

**DRAFT RESOLUTION MSC [...] (94)  
(Adopted on [...])**

**ADOPTION OF AMENDMENTS TO THE EXISTING  
MANDATORY SHIP REPORTING SYSTEM  
"OFF CHENGSHAN JIAO PROMONTORY"**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO regulation V/11 of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), in relation to the adoption of mandatory ship reporting systems by the Organization,

RECALLING FURTHER resolution A.858(20) resolving that the function of adopting ship reporting systems shall be performed by the Committee on behalf of the Organization,

TAKING INTO ACCOUNT the guidelines and criteria for ship reporting systems adopted by resolution MSC.43(64), as amended by resolutions MSC.111(73) and MSC.189(79),

HAVING CONSIDERED the recommendations of the Sub-Committee on Navigation, Communication and Search and Rescue at its first regular session,

- 1 ADOPTS in accordance with SOLAS regulation V/11, the amendments to the existing mandatory ship reporting system "Off Chengshan Jiao Promontory", as set out in the annex;
- 2 DECIDES that the above-mentioned amended mandatory ship reporting system will enter into force at 0000 hours UTC on [1 July 2015];
- 3 REQUESTS the Secretary-General to bring this resolution and its annex to the attention of Contracting Governments to the SOLAS Convention and to members of the Organization.

## ANNEX

### MANDATORY SHIP REPORTING SYSTEM OFF CHENGSHAN JIAO PROMONTORY

#### 1 Categories of ships required to participate in the system

1.1 The following ships are required to participate in the system:

- .1 *passenger ships;*
- .2 *all oil tankers 150 gross tonnage and above, all ships carrying hazardous cargo;*
- .3 *ships of LOA more than 200 m or draft more than 12 m;*
- .4 *ships engaged in towing or pushing another ship, regardless of gross tonnage; and*
- .5 *ships are compulsory to report to VTS in circumstances where they:*
  - are "not under command" or at anchor in the TSSs,*
  - are "restricted in their ability to manoeuvre"; or*
  - have defective navigational equipment.*

1.2 The meaning of hazardous cargoes is as follows:

- .1 goods classified in the International Maritime Dangerous Goods (IMDG Code);
- .2 substances classified in chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) and chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code);
- .3 oils as defined in MARPOL Annex I;
- .4 noxious liquid substances as defined in MARPOL Annex II;
- .5 harmful substances as defined in MARPOL Annex III; and
- .6 radioactive materials specified in the Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-level Radioactive Wastes in Flasks on Board Ships (INF Code).

#### 2 Geographical coverage of the system and the numbers and editions of the reference charts used for the delineation of the system

2.1 The waters covered by the Ship Reporting System is the water area with the VTS Centre (geographical position is 37°23'.65N, 122°42'.12E) as the centre and 24 miles as the radius.

2.2 The relevant charts are Chinese charts Nos. 1305, 35001. Chart datum is World Geodetic System 1984 (WGS 84) Datum.

### **3 Format, reporting time and geographical positions for submitting reports, authority to whom the reports should be sent, available services**

#### **3.1 Format**

The format for reporting is as set forth in paragraph 2 of the appendix to Assembly resolution A.851(20)

A	Name of ship, call sign, and IMO number (if applicable)
C or D	Position (latitude and longitude or in relation to a landmark)
E	Course
F	Speed
G	Port of departure
I	Port of destination (optional)
Q	Defects and limitation (ships towing are to report length of tow and name of object in tow)
U	Overall length and gross tonnage

#### **3.2 Content and geographical position for submitting reports**

3.2.1 Participating ships are to report the information in paragraph 3.1 when entering the ship reporting system area. Reports are not required when a participating ship leaves the area.

3.2.2 When a participating ship leaves a port that is located within the reporting area, it shall report its name, position, departure time and port of destination.

3.2.3 When a participating ship arrives at a port or anchorage within the reporting area, it shall report, on arrival at its berth, its name, position and arrival time.

3.2.4 When a traffic incident or a pollution incident occurs within the reporting area, the ship(s) shall immediately report the type, time, and location of the incident, extent of damage or pollution, and whether assistance is needed. The ship(s) shall provide any additional information related to the incident, as required by the shore-based authority.

#### **3.3 Authority**

The competent authority is *Weihai* Maritime Safety Administration, China. The voice call sign is "Chengshan Jiao VTS Centre".

### **4 Information to be provided to ships and procedures to be followed**

4.1 The Chengshan Jiao VTS Centre, where appropriate, will provide participating ships with information such as conflicting ship traffic, abnormal weather conditions, and maritime safety information.

4.2 Participating ships shall maintain a listening watch on the designated VTS *working channel*.

## **5 Radio communications required for the system, frequencies on which reports should be transmitted and the information to be reported.**

5.1 The working channels of the Chengshan Jiao VTS Centre are:

*Primary-Channel 08*  
*Secondary-Channel 09 or 65*

5.2 The language used for reports in the system will be Chinese or English. Marine communication phrases in a prescribed format will be used in all direct-printing telegraphy and radiotelephony communications.

## **6 Rules and regulations in force in the area of the system**

China has taken appropriate action to implement international conventions to which it is a party including, where appropriate, adopting domestic legislation and promulgating regulations through domestic law. Relevant laws in force include domestic legislation and regulations to implement the Convention on the International Regulations for Preventing Collisions at Sea, 1972, the International Convention for the Safety of Life at Sea, 1974, and the International Convention for the Prevention of Pollution from Ships, 1973/1978.

## **7 Shore-based facilities to support operation of the system**

7.1 Chengshan Jiao VTS Centre is comprised of radar, VHF communications, information processing and display, information transmission, recording, replay, and hydro-meteorological sensors. Its functions are data collection and evaluation, provision of information, navigation assistance, and support to allied services.

7.2 Chengshan Jiao VTS Centre maintains a continuous 24 hour watch.

## **8 Alternative communications if the communication facility of the shore-based authority fails**

Chengshan Jiao VTS Centre has built in redundancies with multiple receivers on each channel. Alternative means of ship to shore communication are by HF (SSB), telex (facsimile), email, or cellular telephone.

*Fax: +86-631-5232467*  
*Email: whvts@whmsa.gov.cn*  
*Mobile phone: +86-631-5203320 +86-631-5190330*

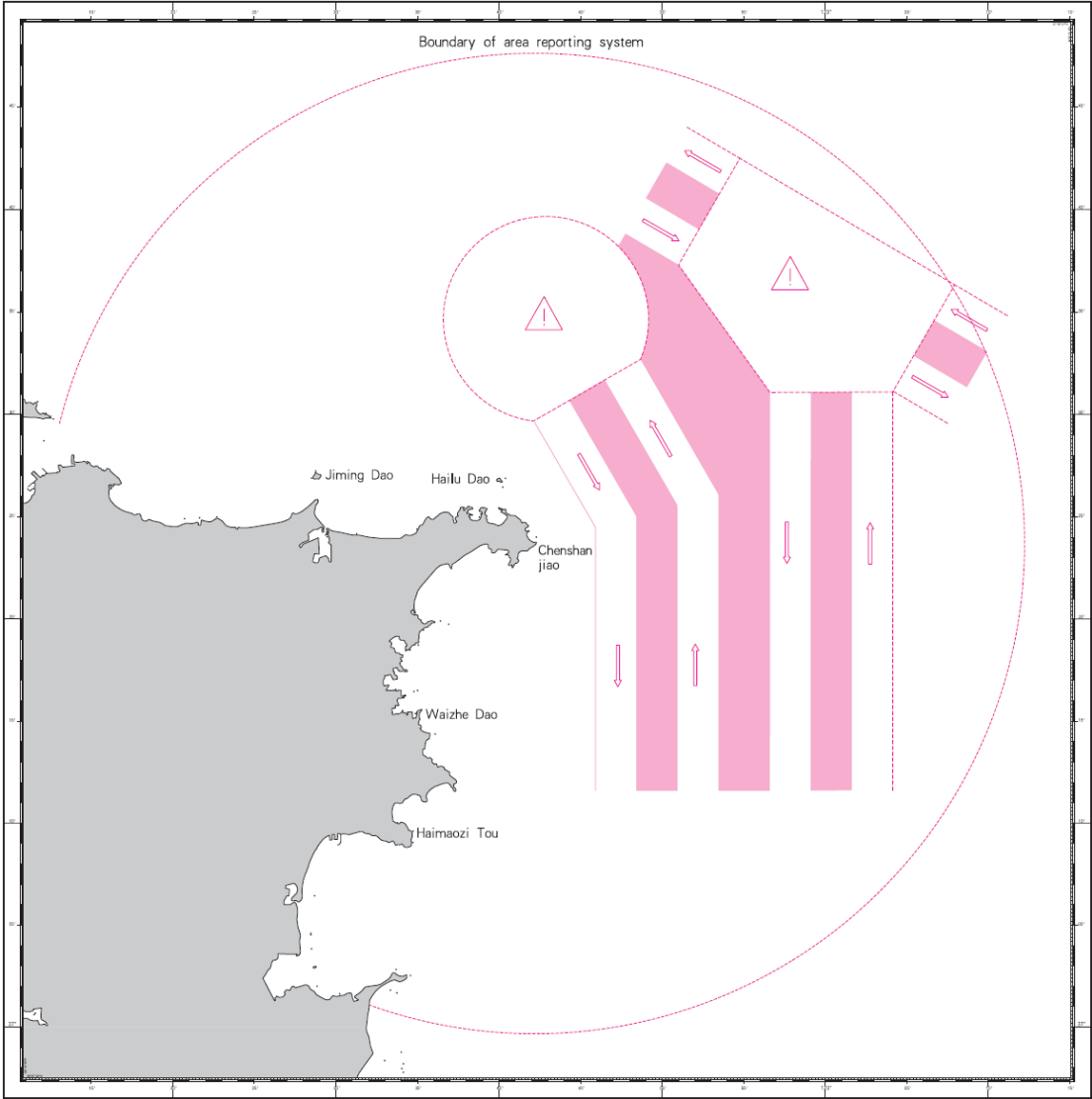
## **9 Measures to be taken if a ship fails to comply**

9.1 Appropriate measures will be taken to enforce compliance with the system, consistent with international law.



APPENDIX 1

CHARTLET



BOUNDARY OFF CHENGSHAN JIAO PROMONTORY MANDATORY

\*\*\*



## ANNEX 4

### DRAFT SN CIRCULAR

#### **RECOGNITION OF THE BEIDOU SATELLITE NAVIGATION SYSTEM (BDS) AS A COMPONENT OF THE WORLD-WIDE RADIONAVIGATION SYSTEM**

1 The Maritime Safety Committee, at its [ninety-fourth session (17 to 21 November 2014)], pursuant to operative paragraph 4 of resolution A.1046(27) on World-Wide Radionavigation System, recognized the BeiDou Navigation Satellite System (BDS), proposed by the People's Republic of China, as a component of the World-Wide Radionavigation System.

2 The Committee's decision was based on the recommendation and assessment made by the Sub-Committee on Navigation, Communications and Search and Rescue at its first session (30 June to 4 July 2014). The NCSR Sub-Committee assessed the offer of China in accordance with the requirements of the annex to resolution A.1046(27). The NCSR Sub-Committee had agreed that BDS meets the operational requirements of the appendix to resolution A.1046(27) to assist in the navigation of ships in ocean waters.

3 Administrations should note that the static and dynamic accuracy of the system is 100 m (95%) and is therefore not suitable for navigation in harbour entrances and approaches, and other waters in which freedom to manoeuvre is limited.

4 BDS does not provide instantaneous integrity warning of system malfunction. Administrations may wish to note that Receiver Autonomous Integrity Monitoring (RAIM) can provide this facility. It should also be noted that the accuracy and integrity of the system can be greatly enhanced by the use of differential correction techniques using either local or wide area augmentations, or both.

5 Member Governments are invited to bring this information to the attention of all concerned.

\*\*\*



## ANNEX 5

### DRAFT REVISED COMSAR.1/CIRC.54

#### AUDITS OF LRIT DATA CENTRES AND OF THE LRIT INTERNATIONAL DATA EXCHANGE CONDUCTED BY THE LRIT COORDINATOR

1 The Maritime Safety Committee, at its eighty-fifth session, appointed the International Mobile Satellite Organization (IMSO) as the LRIT Coordinator and requested the LRIT Coordinator to perform the functions and duties specified in paragraphs 14.1 to 14.5 of the *Revised performance standards and functional requirements for the long-range identification and tracking (LRIT) of ships* adopted by resolution MSC.263(84), as amended.

2 The Sub-Committee on Navigation, Communications and Search and Rescue, at its first session (30 June to 4 July 2014), prepared the attached list of audits conducted by the LRIT Coordinator, as of 28 March 2014.

3 The present circular supersedes COMSAR.1/Circ.54/Rev.1 issued on 24 June 2013.

4 The Maritime Safety Committee, at its [ninety-fourth session (17 to 21 November 2014)], decided that information related to audits of LRIT Data Centres and of the International LRIT Data Exchange should be made available through the LRIT Data Distribution Plan (DDP) module of GISIS and that the publishing of revised versions of COMSAR.1/Circ.54 should be discontinued. The information contained in the annex of this circular will be in the future available in the DDP and will be accessible via the IMO website to all GISIS users from Member Governments. Consequently, this will be the last time this circular is issued and distributed.

ANNEX

**AUDITS OF LRIT DATA CENTRES AND OF THE LRIT INTERNATIONAL DATA  
EXCHANGE CONDUCTED BY THE LRIT COORDINATOR  
(as of 28 March 2014)**

LRIT ID	Name of LRIT system component	Integration date	Audit	Submitted to	Remarks
0001	DDP				Not applicable
0002	IDE	15/10/2009	1st 2nd 3rd 4th	MSC 88 MSC 89 COMSAR 17 NCSR 1	
3002	Algeria NDC	08/11/2010	1st 2nd 3rd	COMSAR 17 NCSR 1 NCSR 1	
3004	Antigua and Barbuda NDC	19/06/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	Converted to Caribbean CDC on 14/03/2014
3005	Argentina NDC	14/04/2011	1st 2nd	COMSAR 17 NCSR 1	
3006	Australia NDC	30/06/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	
3008	Azerbaijan NDC	22/02/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3009	Bahamas NDC	19/12/2008	1st 2nd 3rd 4th	MSC 87 COMSAR 16 COMSAR 17 NCSR 1	
3010	Bahrain NDC	08/09/2009	1st 2nd 3rd	MSC 89 COMSAR 16 NCSR 1	
3011	Bangladesh NDC	07/12/2010	1st 2nd	COMSAR 17 NCSR 1	No longer in production (Bangladesh joined the Sierra Leone NDC on 24/01/2014)
3012	Barbados NDC	15/07/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	

LRIT ID	Name of LRIT system component	Integration date	Audit	Submitted to	Remarks
3015	Belize NDC	03/08/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	No longer in production (Belize joined the Dominica NDC on 03/10/2013)
3206	Bermuda (United Kingdom) NDC	16/09/2009	1st 2nd 3rd	MSC 89 COMSAR 17 NCSR 1	
3018	Brazil NDC	18/01/2009	1st	MSC 87	Converted to Brazil RDC on 19/07/2010
3303	Brazil RDC	19/07/2010	1st 2nd 3rd	COMSAR 16 NCSR 1 NCSR 1	
3019	Brunei Darussalam NDC	15/12/2010	1st 2nd	COMSAR 17 NCSR 1	
3021	Cambodia NDC	17/02/2012	1st	NCSR 1	
3023	Canada NDC	30/12/2008	1st 2nd 3rd 4th	MSC 87 COMSAR 16 COMSAR 17 NCSR 1	
3208	Cayman Islands (United Kingdom) NDC	27/07/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	
3025	Chile NDC	18/08/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 17 NCSR 1 NCSR 1	
3026	China NDC	20/07/2009	1st 2nd 3rd	MSC 89 COMSAR 16 COMSAR 17	
3028	Comoros NDC	13/01/2011	1st 2nd	COMSAR 17 NCSR 1	
3032	Croatia NDC	18/09/2009	1st	MSC 89	No longer in production (Croatia joined the European Union CDC on 13/01/2011)
3036	Democratic People's Republic of Korea NDC	02/07/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	

LRIT ID	Name of LRIT system component	Integration date	Audit	Submitted to	Remarks
3040	Dominica NDC	01/04/2011	1st 2nd	NCSR 1 NCSR 1	
3042	Ecuador NDC	15/04/2010	1st 2nd 3rd	COMSAR 17 NCSR 1 NOT AUDITED	The Ecuador NDC did not express its consent to the 3rd annual audit and thus the audit could not be conducted.
3043	Egypt NDC	04/01/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3302	European Union CDC	04/06/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 COMSAR 17 NCSR 1	
3217	Faroe Islands (Denmark) NDC	17/09/2009	1st 2nd 3rd 4th	MSC 89 COMSAR 17 NCSR 1 NCSR 1	
3060	Guyana NDC	16/06/2011	1st 2nd	COMSAR 17 NCSR 1	No longer in production (Guyana joined the Dominica NDC on 03/10/2013)
3065	India NDC	07/08/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 COMSAR 17 NCSR 1	
3066	Indonesia NDC	04/12/2009	1st 2nd 3rd	MSC 89 COMSAR 17 NCSR 1	
3067	Islamic Republic of Iran NDC	14/09/2011	1st 2nd	NCSR 1 NCSR 1	
3212	Isle of Man (United Kingdom) NDC	03/08/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	
3070	Israel NDC	18/01/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	



LRIT ID	Name of LRIT system component	Integration date	Audit	Submitted to	Remarks
3072	Jamaica NDC	28/07/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	No longer in production (Jamaica joined the Dominica NDC on 03/10/2013)
3073	Japan NDC	31/03/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 COMSAR 17 NCSR 1	
3074	Jordan NDC	28/09/2009	1st 2nd 3rd 4th	MSC 89 COMSAR 17 NCSR 1 NCSR 1	
3076	Kenya NDC	27/05/2010	1st 2nd 3rd	COMSAR 17 COMSAR 17 NCSR 1	
3078	Kuwait NDC	24/02/2010	1st 2nd	COMSAR 16 NCSR 1	No longer in production (Kuwait joined the Bahrain NDC on 11/09/2012)
3081	Liberia NDC	06/08/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	
3087	Malaysia NDC	01/09/2010	1st 2nd 3rd	COMSAR 17 NCSR 1 NCSR 1	
3090	Marshall Islands NDC	29/12/2008	1st 2nd 3rd 4th	MSC 87 COMSAR 16 COMSAR 17 NCSR 1	
3092	Mauritius NDC	22/01/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3096	Montenegro NDC	13/01/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	

LRIT ID	Name of LRIT system component	Integration date	Audit	Submitted to	Remarks
3097	Morocco NDC	16/11/2009	1st 2nd 3rd	MSC 89 NCSR 1 NOT AUDITED	The 3rd audit of the Morocco NDC was suspended due to outstanding financial obligations relating to its 2012 audit.
3099	Myanmar NDC	14/09/2009	1st 2nd 3rd 4th	MSC 89 COMSAR 16 NCSR 1 NCSR 1	
3104	Nigeria NDC	16/02/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3304	Pacific CDC	09/02/2010	1st 2nd 3rd	NCSR 1 NCSR 1 NCSR 1	The 3rd audit of the Pacific CDC was a consolidated audit covering also the 1st and 2nd audits, which had not been conducted due to issues relating to audit fees.
3107	Pakistan NDC	29/10/2009	1st 2nd 3rd 4th	MSC 89 COMSAR 17 NCSR 1 NCSR 1	
3108	Panama NDC	16/09/2009	1st 2nd 3rd	MSC 89 COMSAR 17 NCSR 1	
3112	Philippines NDC	25/01/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3017	Plurinational State of Bolivia NDC	15/01/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3115	Qatar NDC	03/03/2010	1st 2nd	COMSAR 16 COMSAR 17	No longer in production (Qatar joined the Bahrain NDC on 11/09/2012)

LRIT ID	Name of LRIT system component	Integration date	Audit	Submitted to	Remarks
3116	Republic of Korea NDC	16/03/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 COMSAR 17 NCSR 1	
3119	Russian Federation NDC	24/09/2009	1st 2nd 3rd 4th	MSC 89 COMSAR 17 NCSR 1 NCSR 1	
3120	Saint Kitts and Nevis NDC	01/12/2009	1st 2nd 3rd 4th	MSC 89 COMSAR 17 NCSR 1 NCSR 1	No longer in production (Saint Kitts and Nevis and Antigua and Barbuda established the Caribbean CDC on 14/03/2014)
3122	Saint Vincent and the Grenadines NDC	15/07/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 17 NCSR 1 NCSR 1	
3128	Seychelles NDC	25/02/2011	1st 2nd	COMSAR 17 NCSR 1	No longer in production (Seychelles joined the South Africa NDC on 03/05/2013)
3129	Sierra Leone NDC	27/07/2009	1st 2nd 3rd 4th	MSC 89 COMSAR 16 NCSR 1 NCSR 1	
3130	Singapore NDC	24/07/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	
3134	South Africa NDC	02/09/2009	1st 2nd 3rd 4th	MSC 89 COMSAR 17 NCSR 1 NCSR 1	
3142	Thailand NDC	20/01/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3147	Turkey NDC	05/03/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	

LRIT ID	Name of LRIT system component	Integration date	Audit	Submitted to	Remarks
3148	Tuvalu NDC	08/07/2009			Converted to Pacific CDC on 09/02/2010
3149	Ukraine NDC	03/05/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3150	United Arab Emirates NDC	22/03/2010	1st 2nd	COMSAR 16 COMSAR 17	No longer in production (the United Arab Emirates joined the Bahrain NDC on 11/09/2012)
3152	United Republic of Tanzania NDC	14/01/2010	1st 2nd 3rd	COMSAR 16 COMSAR 17 NCSR 1	
3153	United States NDC	15/12/2008	1st 2nd 3rd 4th	MSC 88 COMSAR 16 COMSAR 17 NCSR 1	
3155	Vanuatu NDC	11/08/2009	1st 2nd 3rd 4th	MSC 88 COMSAR 16 NCSR 1 NCSR 1	
3156	Venezuela NDC	18/06/2010	1st 2nd 3rd	NOT AUDITED NOT AUDITED NOT AUDITED	The Venezuela NDC has never been audited so far due to refusal to be audited.

*Note:*

Summary audit reports submitted by the LRIT Coordinator are contained in the following documents: MSC 87/6/8 (Secretariat), MSC 88/INF.14 (Secretariat), MSC 89/INF.14 (Secretariat), COMSAR 16/13/1 (IMSO), COMSAR 17/INF.4 (IMSO), COMSAR 17/INF.4/Add.1 (IMSO) and NCSR 1/INF.3 (IMSO).

\*\*\*

## ANNEX 6

(English only)

### DRAFT AMENDMENTS TO LRIT-RELATED CIRCULARS

#### DRAFT AMENDMENTS TO THE TECHNICAL SPECIFICATIONS FOR COMMUNICATIONS WITHIN THE LRIT SYSTEM (MSC.1/CIRC.1259/REV.5, ANNEX, ANNEX 3)

1 Paragraph 2.2.4.9 is amended, as follows:

"2.2.4.9 The *NumberOfPositions* parameter defines how many of the most recent position reports received by a DC during the past 24 h from ships within the requested geographical area are being requested by the SAR service. The number of positions must be from 1 to 4. Once a DC has received a SAR SURPIC request message, it should check ~~the last all~~ position reports it has ~~received during the past 24 h from~~ every ship registered to that DC. If the timestamps associated with ~~that these~~ position reports ~~is are~~ within the past 24 h and the position reports ~~is are~~ within the geographical area established by the SAR SURPIC message, then the DC should send the last N position reports associated with the ship that are within the past 24-h window and in the geographical area. Thus all the position reports that are sent to the requesting DC should have timestamps that are within the past 24-h window as well as location coordinates that are within the geographical area."

2 Paragraph 2.3.4.1.3 is amended, as follows:

".3 verify that the ship is not located in the territorial sea of the Contracting Government (including non-metropolitan territories or special administrative regions listed in the DDP under the ~~requesting providing~~ Contracting Government) whose flag the ship is entitled to fly by checking the territorial seas polygon in the DDP."

3 Paragraph 2.3.4.2.4 is amended, as follows:

".4 verify that the ship is not located in the territorial sea of the Contracting Government (including non-metropolitan territories or special administrative regions listed in the DDP under the ~~requesting providing~~ Contracting Government) whose flag the ship is entitled to fly by checking the territorial seas polygon in the DDP."

#### DRAFT AMENDMENTS TO THE TECHNICAL SPECIFICATIONS FOR THE LRIT DATA DISTRIBUTION PLAN (MSC.1/CIRC.1259/REV.5, ANNEX, ANNEX 4)

4 Paragraph 5.3 is amended, as follows:

"5.3 All polygons within each set of *InternalWaters*, *TerritorialSeas*, ~~and SeawardAreaOf1000NM~~ ~~and CustomCoastalAreas~~ should be *disjoint* (i.e. no overlap between polygons within each set). ~~The CustomCoastalArea polygons defined by any single Contracting Government may overlap within each set.~~"

**DRAFT AMENDMENTS TO THE PROCEDURES FOR THE NOTIFICATION,  
REPORTING AND RECORDING OF TEMPORARY SUSPENSIONS OF  
OPERATIONS OR REDUCTION OF THE SERVICE PROVIDED  
(MSC.1/CIRC.1294/REV.3, ANNEX, ANNEX II)**

5 The existing paragraph 1.3 is replaced with the following:

"1.3 The information should be communicated to the other components by email through the IDE Administrative web interface."

6 The following new paragraph is added after paragraph 1.3:

"1.4 The information should be communicated to the persons in charge of the operation of the IDE, the DDP Server, all DCs, and the LRIT Coordinator, as listed in the DDP."

7 Paragraph 2.2 is amended, as follows:

"2.2 The DC concerned, the IDE and the DDP server should publish an advisory notice to be posted ~~in the case of:~~ on the IDE Administrative web interface

~~.1 the IDE and the DDP server on the IDE Administrative web interface and the DDP, respectively;~~

~~.2 a DC on its web interfaces, if such an interface exists and is accessible by the other components of the LRIT system and the LRIT Coordinator or if the DC concerned does not have such interface it should consult with the IDE and or the DDP server with a view to posting the report on the IDE Administrative web interface and/or the DDP,~~

providing the information specified in paragraphs 2.1 and 2.1.1, and should update the notice as and when changes occur."

8 Paragraph 3.3 is amended, as follows:

"3.3 If the circumstances allow so and subject to the duration of the period during which the DC concerned, the IDE or the DDP server would need to continue any temporary suspension of operations or reduction of the level of service or to temporarily suspend its operations or reduce the level of service in order to address the situation which has been, or is being, encountered, the DC concerned, the IDE and the DDP server should publish an advisory notice to be posted ~~in the case of:~~ on the IDE Administrative web interface

~~.1 the IDE and the DDP server on the IDE Administrative web interface and the DDP, respectively; and~~

~~.2 the DC concerned on its web interfaces, if such an interface existing and is accessible by the other components of the LRIT system and the LRIT Coordinator or if the DC concerned does not have such interface it should consult with the IDE and or the DDP server with a view to posting such advisory notice on the IDE Administrative web interface and/or the DDP,~~

providing the relevant information, and should update such notices as and when developments occur."

- 9 Section 5 (Monthly recording of temporary suspension of operations and reduction of level of service), Appendix 1 (Report on temporary suspension of operations or reduction of level of service) and Appendix 2 (Monthly records of temporary suspension of operations or reduction of the level of service) are deleted.

**DRAFT AMENDMENTS TO THE GUIDANCE TO SEARCH AND RESCUE SERVICES  
IN RELATION TO REQUESTING AND RECEIVING LRIT INFORMATION  
(MSC.1/CIRC.1338, ANNEX)**

- 10 The following text is added at the end of paragraph 4.1:

"However, in case of a temporary suspension or reduction of service of a LRIT Data Centre, a SAR service using the service of the LRIT Data Centre concerned should be able to request and receive LRIT information through another active SAR service which is using the service of an operational LRIT Data Centre."

**DRAFT AMENDMENTS TO THE CONTINUITY OF SERVICE PLAN  
FOR THE LRIT SYSTEM (MSC.1/CIRC.1376/Rev.1, ANNEX)**

- 11 Paragraphs 3.3, 3.4 and 3.5 are amended, as follows:

~~3.3 Access to the IDE administrative interface should be provided to the designated points of contact for LRIT-related matters~~ the persons in charge of the operation of the IDE, the DDP Server, all DCs, and the LRIT Coordinator, as listed in the DDP.

3.4 Whenever a new advisory notice is published, updated or removed, the IDE should automatically advise ~~all designated points of contact for LRIT-related matters~~ the persons in charge of the operation of the IDE, the DDP Server, all DCs and the LRIT Coordinator, as listed in the DDP.

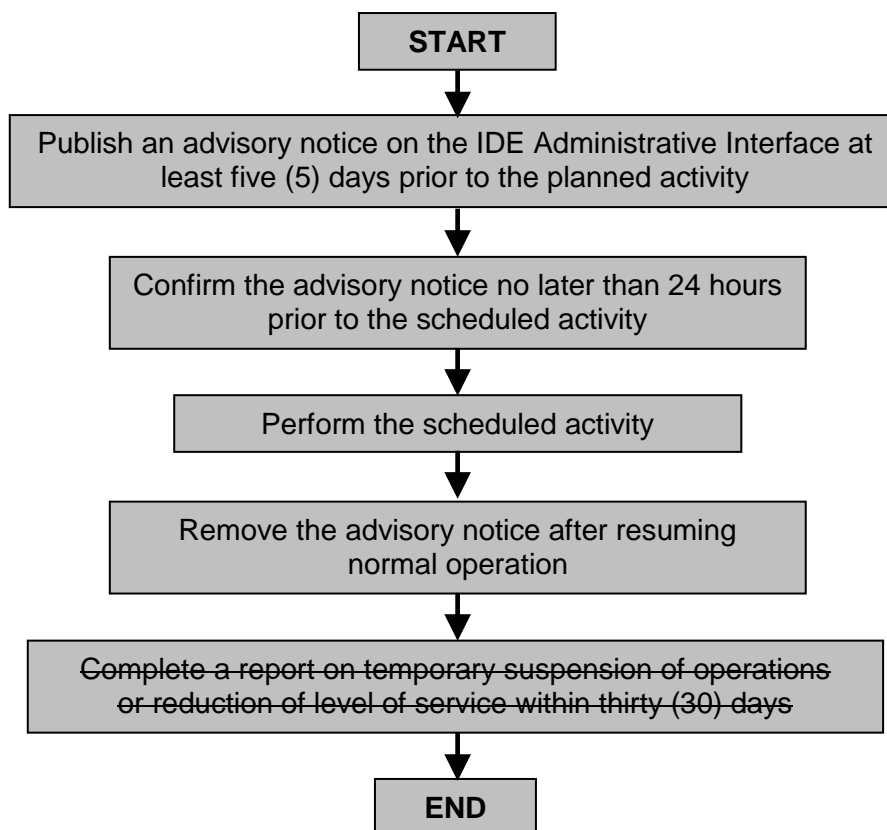
3.5 System components requiring temporary suspension of operations or reduction of the level of service due to scheduled or planned activities should:

- .1 publish an advisory notice on the IDE Administrative Interface at least five (5) days prior to the temporary suspension of operations or reduction of the level of service;
- .2 confirm the advisory notice no later than 24 hours prior to the scheduled activity; and
- .3 remove the advisory notice after resuming normal operation; and
- ~~.4 complete a report on temporary suspension of operations or reduction of level of service available on the IDE Administrative interface no later than thirty (30) days after the occurrence."~~

- 12 The following new sentence is added at the end of paragraph 3.6:

"If the circumstances warrant, an advisory notice can be published for a group of DCs provided the person submitting the notification is authorized to do so, as provided in the DDP."

13 Figure 1 is amended, as follows:



**Figure 1 – Planned downtime notification flow chart**

14 Paragraph 3.9 is amended, as follows:

3.9 Upon recognition or notification of an unforeseen event requiring temporary suspension of operations or reduction of the level of service, the system component concerned, the IDE or the DDP server, as the case may be, should try to resolve the issue and stabilize the component and, in particular:

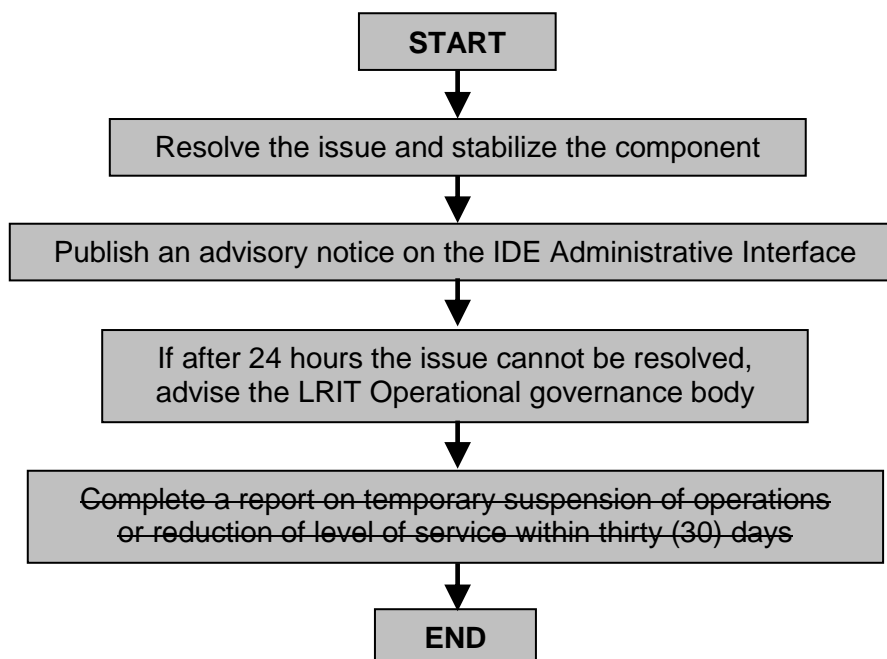
- .1 publish an advisory notice on the IDE Administrative Interface providing relevant information and including the expected time for resuming normal operation. Such a notice should be updated as and when developments occur;
- .2 if, after 24 hours, the issue cannot be resolved, advise the LRIT Operational governance body<sup>1</sup>, identifying the issue along with the measures or actions to be taken; and
- .3 once the system component concerned resumes or restores normal operation, remove the advisory notice from the IDE Administrative Interface; and
- ~~.4 complete a report on temporary suspension of operations or reduction of level of service available on the IDE Administrative interface no later than thirty (30) days after the occurrence.~~

---

<sup>1</sup> Refer to the Appendix – Governance of the LRIT system.



15 Figure 2 should be amended as follows:



**Figure 2 – Unforeseen events notification flow chart**

16 Paragraph 3.14 is amended, as follows:

"3.14 If the IDE does not receive eight (8) consecutive *System status* messages from a specific DC or the DDP server, or if the IDE cannot successfully send eight (8) consecutive *System status* messages to a specific DC or the DDP server due to problem at the receiving end, and there has been no scheduled or unscheduled notification or advisory notice posted onto the IDE Administrative interface by the DC concerned or the DDP server, then the IDE operator should post an advisory notice to the IDE Administrative interface and follow the procedures specified in paragraph 3.12 above. Upon notification, the DC concerned or the DDP server should follow the procedures specified in paragraph 3.9 above."

17 The content of the Appendix is amended, as follows:

## **"Appendix**

### **GOVERNANCE OF THE LRIT SYSTEM**

1 The LRIT system, as an international operational system, requires a formalized governance structure. There have been and will be issues surrounding the operation of the LRIT system which have and will require immediate decisions or actions in order to safeguard the system. There are numerous issues that the system could face, from when to disconnect an LRIT Data Centre (DC) from the International LRIT Data Exchange (IDE), to how to test the modification testing of new schemas, to whether a new message or function should be added to the system, and so on. Some of these issues would require immediate action, others more analysis, and still others a high-level management decision.

2 To address these varying types of issues, four different governance levels are required defined, as follows:

- .1 Immediate decision: The various components of the LRIT system are being continuously monitored by their individual operators. Under specific circumstances, these the IDE, the LRIT Data Distribution Plan (DDP) server and DCs operators must be required to make immediate decisions in order to resolve the issue and stabilize the component concerned.
- .2 Operational governance: After the immediate decision has been made, and if the system cannot be returned by the operators to normal operation within 24 hours, then anthe LRIT Operational governance body, as defined below, must be engaged to make the decision as to the best way to proceed.
- .3 Change control: The architecture, design, and operation of the LRIT system is defined by the Technical specifications for the LRIT system and under the framework of SOLAS regulation V/19-1, and the Revised performance standards (resolution MSC.263(84), as amended) and the Technical specifications for the LRIT system (MSC.1/Circ.1259 and MSC.1/Circ.1294, as revised). There must be a governance framework in place to ensure that the Technical specifications for the LRIT system can be modified where necessary, and in an effective and efficient manner. SOLAS regulation V/19-1 and the Revised performance standards are within the purview of the Committee. The Technical specifications for the LRIT system can be amended and accepted, on a provisional basis, by the NCSR Sub-Committee, and subject to consideration and adoption of the related amendment(s) by the Committee.
- .4 Management: There must be a body that has the final approval on all LRIT-related matters. The Maritime Safety Committee is the management body for the entire LRIT system. Any relevant issue must be reported periodically to this body the Committee, which would have to consider the issue and decide the most appropriate action(s).

3 These four governance levels are currently defined within the LRIT system, as follows:

.1 Immediate decisions: The IDE, the LRIT Data Distribution Plan (DDP) server and DCs operators.

.2 Operational governance: The Committee, at its eighty-sixth session, decided to continue the arrangements that had been put in place by MSC 85, namely:

*"... in case the system faced an emergency situation or a malicious attack, those which faced or encountered such situations first, in consultation with the chairman of the Ad Hoc LRIT Group; the United States acting on behalf of the IDE; and the Secretariat acting on behalf of the Organization for matters relating to the DDP and the PKI should determine the actions to be taken so as to best protect the system; contain the propagation of the problem(s) to*

*other components of the system; ensure continuity of service; and restore normal operations."*

The LRIT Operational governance body is defined as the chairman of the Ad Hoc LRIT Group, a representative of the IDE, a representative of the IDE DR and a representative from the Secretariat.

3 Change control: SOLAS regulation V/19-1 and the Revised performance standards are within the purview of the Committee. The Technical specifications for the LRIT system can be amended and accepted, on a provisional basis, by the NCSR Sub-Committee, and subject to consideration and adoption of the related amendment(s) by the Committee, either by correspondence or via a meeting of the Ad Hoc LRIT Group, as specified in the Procedures for the consideration of proposals for the amendment of the Technical specifications for the LRIT system, the XML schemas and the Test procedures and cases, set out in annex 3 to the annex to MSC.1/Circ.1294/Rev.3.

4 Management: The Maritime Safety Committee is the management body for the entire LRIT system.

4 It is recommended that the above governance structure be maintained. This includes holding meetings of the Ad Hoc LRIT Group as required.

#### **LRIT Operational governance body**

3 The LRIT Operational governance body consists of a representative of the IDE, a representative of the disaster recovery site of the IDE and a representative from the Secretariat.

4 In case the LRIT system faces an emergency situation or a malicious attack, the LRIT Operational governance body should determine the actions to be taken so as to best protect the system, contain the propagation of the problem(s) to other components of the system, ensure continuity of service and restore normal operations.

5 The LRIT Operational governance body may also make relevant technical recommendations with the view to improving the efficiency, effectiveness and security of the LRIT system. Any relevant outcomes or recommendations made by the OGB should be reported to the NCSR Sub-Committee through the Secretariat.

56 The composition of the LRIT Operational governance body could be reviewed in future. For the effective and efficient operation of this body, its membership needs to be relatively small, organization members are preferable to individual persons, and it must reach decisions by consensus. This body should always contain a representative from the IDE and the IDE DR disaster recovery site, since the IDE is a critical central component of the system, and a representative from the Secretariat. The requirement for other member(s) needs further discussion.

67 The LRIT Operational governance body also needs to meet periodically (potentially bi-weekly via teleconference, if necessary) to discuss the operation of the system and to ensure that all operational issues are being addressed."

**DRAFT AMENDMENTS TO THE PRINCIPLES AND GUIDELINES  
RELATING TO THE REVIEW AND AUDIT OF THE PERFORMANCE OF LRIT DATA  
CENTRES AND OF THE INTERNATIONAL LRIT DATA EXCHANGE  
(MSC.1/CIRC.1412, ANNEX)**

18 Paragraph 9.2.8 is amended, as follows:

"8 ~~submit a summary report of the audit~~ make available copies of the completed summary audit reports to the COMSAR NCSR Sub-Committee for consideration."

19 Paragraphs 15.1, including subparagraphs .1 and .2, and 15.2 are amended, as follows:

"15.1 For each of DCs and for the IDE, the LRIT Coordinator should ~~submit~~:

.1 ~~submit~~ to the Secretary-General a detailed audit report which should provide a complete, accurate, concise and clear record of the audit and should include or refer to the following: the audit objectives, the audit scope, particularly identification of the unit or processes audited and the time period covered; a list of the auditee representative(s); the dates when the audit activities were conducted; the audit criteria; the audit findings; the audit conclusions; and any statement of a confidential nature; and

.2 ~~make available~~ to the Committee, through the COMSAR NCSR Sub-Committee, a summary audit report which should include or refer to the following: the audit findings, including information on non-conformities and their status; the audit conclusions; any uncertainties and/or obstacles encountered that could decrease the reliability of the audit conclusions; any areas not covered although within the scope of the audit; any unresolved diverging opinions between the LRIT Coordinator and the auditee; recommendations for improvement, if any; and agreed follow-up action plans, if any.

15.2 The LRIT Coordinator should, prior to submitting the detailed audit reports to the Secretary-General and ~~making~~ the summary audit reports ~~available~~ to the COMSAR NCSR Sub-Committee, forward these, no later than one month after the completion of the audit, to the auditee for its perusal and comments, if any."

20 Paragraphs 15.6 and 15.7 are amended, as follows:

"15.6 The LRIT Coordinator should ~~submit~~ ~~make~~ the summary audit reports to the COMSAR NCSR Sub-Committee in accordance with the ~~arrangements to be agreed between the Organization and the LRIT Coordinator~~. The LRIT Coordinator should also provide information at each session of the Sub-Committee in accordance with the *Guidelines on the organization and method of work of the MSC and MEPC and their subsidiary bodies* (MSC-MEPC.1/Circ.4) on the audits that have been completed since the previous session of the Sub-Committee, ~~taking into account, in particular, the normal deadline for submissions of bulky documents~~. The COMSAR Sub-Committee will consider the summary audit reports, on behalf of the Committee, and will report on any issues that might require further consideration or approval by the Committee.

15.7 The summary audit reports should not be translated in the three working languages of the Organization and should be made available ~~circulated~~ as documents containing information in the English language only."

21 Paragraph 15.9 is amended, as follows:

"15.9 The Secretary-General should make available to the Committee or the ~~COMSAR NCSR~~ Sub-Committee the detailed audit reports, if requested. In such cases, the detailed audit reports should not be translated in the three working languages of the Organization and should be made available as documents containing information in the English language only."

22 Paragraph 16.1 is amended, as follows:

"16.1 The LRIT Coordinator should report to each session of the ~~COMSAR NCSR~~ Sub-Committee on the review and audit of the performance of DCs and/or of the IDE which had been conducted and completed since the previous session of the Sub-Committee."

23 Paragraphs 16.6 and 16.7 are amended as follows:

"16.6 A DC may request the LRIT Coordinator to review and audit its performance on any date within three months before or after the anniversary date referred to in paragraph 16.3 or 16.4, provided the first audit is not held more than 15 months after the date referred to in paragraph 16.3. If the audit, upon request of the DC and subject to acceptance of the LRIT Coordinator, is carried out more than three months before the anniversary date, the new audit date should be considered thereafter as being the new anniversary date. The LRIT Coordinator should provide to the ~~COMSAR NCSR~~ Sub-Committee information to this end as appropriate.

16.7 If the first audit of a DC cannot be carried out within 15 months after the date referred to in paragraph 16.3 or 16.4, or if the period between two consecutive audits exceeds 15 months, the DC concerned should remain liable to complete that audit at the earliest opportunity. This liability should accumulate until all outstanding annual audits have been completed. The LRIT Coordinator should provide to the ~~COMSAR NCSR~~ Sub-Committee information to this end, as appropriate. The audit will additionally report on the reason(s) that led the DC to be audited after the maximum 15-month period, and will recommend that the DC concerned takes all necessary measures to avoid the need to conduct further audits in the future which exceed the maximum 15-month period."

\*\*\*



## ANNEX 7

### DRAFT E-NAVIGATION STRATEGY IMPLEMENTATION PLAN

#### Introduction

1 As shipping moves into the digital world, e-navigation is expected to provide digital information and infrastructure for the benefit of maritime safety, security and protection of the marine environment, reducing the administrative burden and increasing the efficiency of maritime trade and transport.

2 The e-navigation Strategy Implementation Plan (SIP) introduces a vision of e-navigation which is embedded in general expectations for the on board, onshore and communications elements.

3 The main objective of the present SIP is to implement the five prioritized e-navigation solutions, taking into account the IMO Formal Safety Assessment (FSA), from which a number of required tasks have been identified. These tasks should, when completed in the period 2015–2019, provide the industry with the harmonized information, in order to start designing products and services to meet the e-navigation solutions.

4 The present SIP identifies the list of tasks which would need to be performed during the coming years in order to achieve the five prioritized e-navigation solutions.

5 It should be noted that, although the need to use the existing equipment in a more holistic way was identified early on, some onboard equipment may need modifications to interfaces and controls in order to be used. However, in the future, the need for new equipment for the deployment of future e-navigation solutions and applications cannot be disregarded.

6 Tasks listed in the SIP should be incorporated in the High-level Action Plan of the Organization as planned/unplanned outputs, taking into account the provisions of the *Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies*, as set out in MSC-MEPC.1/Circ.4/Rev.2, as may be revised (the Committee's Guidelines).

7 In line with the provisions of the Committee's Guidelines, any further e-navigation-related work would require the Committee's approval and should be clearly incorporated as planned/unplanned output(s) in the High-level Action Plan of the Organization. Therefore, each one of the approved tasks would need to be approved at the same time as a planned/unplanned output, as appropriate, with clear indication of:

- IMO's objectives;
- Analysis of the issue;
- Analysis of implications;
- Compelling need;
- Benefits;
- Industry standards;
- The intended output;
- Human element consideration;
- Priority/urgency, including expected target completion year; and
- Action required.

8 In line with the above, interested Member States may submit proposals to the Committee for the inclusion of new planned/unplanned outputs in the High-level Action Plan of the Organization based on the identified tasks contained in this SIP.

9 Proposals for the further development of e-navigation solutions and tasks which are not listed in the SIP may also be submitted by Member States to the Committee for consideration; however priority should be given to the tasks identified in the SIP.

10 Member States willing to lead a specific task should ensure the timely delivery of the task by requesting the assistance of other Member States and/or relevant organizations.

### **Strategy Implementation Plan for the five prioritized e-navigation solutions**

11 The present SIP is based on the following five prioritized e-navigation solutions:

S1: improved, harmonized and user-friendly bridge design;

S2: means for standardized and automated reporting;

S3: improved reliability, resilience and integrity of bridge equipment and navigation information;

S4: integration and presentation of available information in graphical displays received via communication equipment; and

S9: improved Communication of VTS Service Portfolio (not limited to VTS stations).

12 Solutions S2, S4 and S9 focus on efficient transfer of marine information and data between all appropriate users (ship-ship, ship-shore, shore-ship and shore-shore). Solutions S1 and S3 promote the workable and practical use of the information and data on board.

13 As part of each one of the above prioritized e-navigation solutions, several sub-solutions were identified. These are illustrated in tables 1 to 5 below.

14 Whilst the first steps involve implementing the five prioritized e-navigation solutions, it is important to recognize that further e-navigation development will be a continuous process following user needs for additional functionalities of existing and possible future systems (e.g. implementation of onboard and/or ashore navigational decision support systems). As user needs evolve and new technology is introduced, other e-navigation solutions may be incorporated into the strategy, as appropriate.

15 During the FSA process, the following Risk Control Options (RCOs) were identified in order aid the assessment of the prioritized e-navigation solutions and some of the sub-solutions:

RCO 1: Integration of navigation information and equipment including improved software quality assurance (related to sub-solutions S1.6, S1.7, S3.1, S3.2, S3.3, S4.1.2, and S4.1.6);

RCO 2: Bridge alert management (related to sub-solution S1.5);

RCO 3: Standardized mode(s) for navigation equipment (related to sub-solution S1.4);



RCO 4: Automated and standardized ship-shore reporting (related to sub-solutions S2.1, S2.2, S2.3 and S2.4);

RCO 5: Improved reliability and resilience of onboard PNT systems (related to sub-solution S3.4);

RCO 6: Improved shore-based services (related to sub-solution S4.1.3 and solution S9); and

RCO 7: Bridge and workstation layout standardization (related to sub-solution S1.1).

16 A number of necessary actions and tasks have been identified in order to progress the further development and implementation of the five prioritized e-navigation solutions. These are listed below under each respective solution and consolidated in table 7.

**Table 1**  
**Required regulatory framework and technical requirements for implementation (tasks for solution 1 (Improved harmonized and user friendly bridge design))**

<b>Sub-Solution</b>	<b>Description</b>	<b>Task Action</b>	<b>Task Identifier (Table 7)</b>
<b>S1.1</b>	Ergonomically improved and harmonized bridge and workstation layout.	Draft Guidelines on Human Centred Design (HCD) for e-navigation systems.  Draft Guidelines on Usability testing, Evaluation and Assessment (UTEA) for e-navigation systems.  Resolutions A.694(17), A.997(25) and MSC.252(83) and MSC/Circ.982, SN.1/Circ.265, SN.1/Circ.274 and SN.1/Circ.288 are of relevance.	<b>T1</b>  <b>T2</b>
<b>S1.2</b>	Extended use of standardized and unified symbology for relevant bridge equipment.	Develop symbology for relevant equipment using as a reference resolution MSC.192 (79).	<b>T2</b>
<b>S1.3</b>	Standardized manuals for operations and familiarization to be provided in electronic format for relevant equipment	Develop the concept of electronic manuals and harmonize the layout to provide mariner with an easy way of familiarization for relevant equipment.	<b>T3</b>
<b>S1.4</b>	Standard default settings, save/recall settings, and S-mode functionalities on relevant equipment.	Performance or technical standards mandating the features on relevant equipment. Develop a testbed demonstrating the whole concept of standardized modes of operation including store and recall for various situations as well as S-mode functionality on relevant equipment.	<b>T4</b>
<b>S1.5</b>	All bridge equipment to follow IMO BAM (Bridge	Ensure that all equipment is checked during type approval and that it meets	<b>T5</b>

<b>Sub-Solution</b>	<b>Description</b>	<b>Task Action</b>	<b>Task Identifier (Table 7)</b>
	Alert Management) performance standard.	the requirements of resolution MSC.302(87) on Bridge Alert Management, as may be updated.	
<b>S1.6</b>	Information accuracy/reliability indication functionality for relevant equipment.	Develop a testbed demonstrating technically how accuracy and reliability of navigation equipment may be displayed.	<b>T6</b>
<b>S1.6.1</b>	Graphical or numerical presentation of levels of reliability together with the provided information.	From the above develop a harmonized display system indicating reliability levels.	<b>T6</b>
<b>S1.7</b>	Integrated bridge display system (INS) for improved access to shipboard information.	INS systems which integrate navigation equipment data already exist but are not mandatory carriage to resolution MSC.252(83). E-navigation relies on integration and without mandatory carriage of INS it would be difficult to achieve the solutions. The carriage of an INS or maybe something simpler performing integration should be investigated.	<b>T7</b>
<b>S1.8</b>	GMDSS equipment integration – one common interface.	Take into account resolution A.811(19) when integrating GMDSS into one common interface.	(Already in hand)

**Table 2**

**Required regulatory framework and technical requirements for implementation (tasks for solution 2 (Means for standardized and automated reporting))**

<b>Sub-Solution</b>	<b>Description</b>	<b>Task Action</b>	<b>Task Identifier (Table 7)</b>
<b>S2.1</b>	Single-entry of reportable information in single-window solution.	Develop testbeds demonstrating the use of single window for reporting along with S2.4.	<b>T8 T15</b>
<b>S2.2</b>	Automated collection of internal ship data for reporting.	Much data is already collected in the navigation equipment – investigate the use of this data for reporting of ship navigational information.	<b>T9</b>
<b>S2.3</b>	Automated or semi-automated digital distribution/communication of required reportable information, including both "static" documentation and "dynamic" information.	Review the original AIS long range port facility as well as the new long range frequencies made available at WRC 2012 described in the latest revision of ITU-R M.1371-5, the revised IEC 61993-2, or the developments within VDES (VHF Data Exchange System) and see if the information could be used for no cost or low cost automated or semi-automated reporting. The long	<b>T9 T15</b>

Sub-Solution	Description	Task Action	Task Identifier (Table 7)
		range port was not used during the development of LRIT due to the cost to shipowners of sending this information.	
<b>S2.4</b>	All national reporting requirements to apply standardized digital reporting formats based on recognized internationally harmonized standards, such as IMO FAL Forms or SN.1/Circ.289.	Liaise with all Administrations and agree on standardized formats for ship reporting so as to enable "single window" worldwide. In this respect national and regional harmonization is the first step.	<b>T8</b>

**Table 3**  
**Required regulatory framework and technical requirements for implementation (tasks)**  
**for solution 3 (Improved reliability, resilience and integrity of bridge equipment and**  
**navigation information)**

<b>Sub-Solution</b>	<b>Description</b>	<b>Task Action</b>	<b>Task Identifier (Table 7)</b>
<b>S3.1</b>	Standardized self-check/built-in integrity test (BIIT) with interface for relevant equipment (e.g. bridge equipment).	Equipment should be developed with standardized BIIT built in. The general requirements in resolution A.694(17) as tested by IEC 60945 should be investigated to see if more definition and testing is required.	<b>T10</b>
<b>S3.2</b>	Standard endurance, quality and integrity verification testing for relevant bridge equipment, including software.	Software quality assurance especially lifetime assurance methods need to be developed into draft guidelines.  The type approval process needs to be developed further to ensure that the equipment used in e-navigation is robust in all aspects.	<b>T11</b>  <b>T11</b>
<b>S3.3</b>	Perform information integrity tests based on integration of navigational equipment – application of INS integrity monitoring concept.	This task is very similar to that described for S1.6 and S1.6.1.	<b>T6</b>
<b>S3.4</b>	Improved reliability and resilience of onboard PNT information and other critical navigation data by integration with and backup of by integration with external and internal systems.	IMO is already drafting performance standards for a multi system navigational receiver designed to use all available systems for an improved and more reliable PNT solution. There may be traditional methods and other terrestrial systems which should also be investigated as the external input.  Backup arrangements for critical foundation data, particularly in the event of interruption to cloud based solutions should be investigated.  Administrations need to indicate their support for terrestrial systems.	<b>T12</b>

**Table 4**  
**Required regulatory framework and technical requirements for implementation (tasks)**  
**for solution 4 (Integration and presentation of available information in graphical**  
**displays received via communication equipment)**

<b>Sub-Solution</b>	<b>Description</b>	<b>Task Action</b>	<b>Task Identifier (Table 7)</b>
<b>S4.1</b>	Integration and presentation of available information in graphical displays (including MSI, AIS, charts, radar, etc.) received via communication equipment.	<p>The INS has a display that could be used for displaying this information. Work done by IALA et al show that extra information on existing displays such as ECDIS and Radar might obliterate key critical information on these displays.</p> <p>Investigate and demonstrate via a testbed the integration and portrayal of this information and draft guidelines on how it should be done in a harmonized way.</p> <p>Resolution MSC.252(83) and SN.1/Circ.268 are related.</p>	<b>T13</b>
<b>S4.1.1</b>	Implement a Common Maritime Data Structure and include parameters for priority, source, and ownership of information.	CMDS is at the heart of e-navigation. It has been already agreed to use the IHO S-100 data model. Develop both the shore based data models and also the shipboard data models including firewalls, as necessary, and harmonize via the IMO-IHO harmonization group on data modelling.	<b>T14</b>
<b>S4.1.2</b>	Standardized interfaces for data exchange should be developed to support transfer of information from communication equipment to navigational systems (INS).	Most equipment already uses one of the IEC 61162 series interface standards, although IMO only refer to it by footnote. The testing standards for shipboard equipment developed by IEC all refer to this standard. IEC should make sure that at the highest level the interfaces meet the S100 principle although it may not be necessary to use this standard between simple equipment.	<b>T14</b>
<b>S4.1.3</b>	Provide mapping of specific services (information available) to specific regions (e.g. maritime service portfolios) with status and access requirements.	Ensure that the correct and up-to-date information for the area of operation are provided by the shore side and that the mariner gets the information for the area of operation.	<b>T13</b>

Sub-Solution	Description	Task Action	Task Identifier (Table 7)
		MSI could be viewed on relevant or defined displays as ECDIS or RADAR or on INS task displays.	
<b>S4.1.4</b>	Provision of system for automatic source and channel management on board for the selection of most appropriate communication means (equipment) according to criteria as, band width, content, integrity, costs.	Least cost routing systems are available and could be demonstrated. The communication means should be transparent to the user. However, the real task is identifying the currently available communications systems and how they can be used (range, bandwidth, etc.) and what systems are being developed and will be in use when e-navigation is live. The task should look at short range systems such as VHF, 4G and 5G.	<b>T15</b>
<b>S4.1.5</b>	Routing and filtering of information on board (weather, intended route, etc.).	Investigate the performance standard of the current INS and see how these facilities can be implemented in a preliminary new draft.	<b>T7</b>
<b>S4.1.6</b>	Provide quality assurance process to ensure that all data is reliable and is based on a consistent common reference system (CCRS) or converted to such before integration and display.	Ensure data quality and CCRS are met with new Quality Assurance.	<b>T11</b>
<b>S4.1.7</b>	Implement harmonized presentation concept of information exchanged via communication equipment including standard symbology and text support taking into account human element and ergonomics design principles to ensure useful presentation and prevent overload.	Harmonize displays.	<b>T6 T13</b>
<b>S4.1.8</b>	Develop a holistic presentation library as required to support accurate presentation across displays.	Harmonize displays.	<b>T6</b>
<b>S4.1.9</b>	Provide Alert functionality of INS concepts to information received by communication equipment and integrated into INS.	Ensure that all bridge equipment meets the Bridge Alert Management performance standards.	<b>T7</b>

---

<b>Sub-Solution</b>	<b>Description</b>	<b>Task Action</b>	<b>Task Identifier (Table 7)</b>
<b>S4.1.10</b>	Harmonization of conventions and regulations for navigation and communication equipment.	The task to go through all the IMO performance standards may be very large. It would be advisable to draft an "e-navigation enabling Performance Standard" which would identify the changes to interfaces, control symbology and other details which would be used as an add on for approval for use in e-navigation.	<b>T16</b>

**Table 5**  
**Required regulatory framework and technical requirements for implementation (tasks)**  
**for solution 9 (Improved communication of VTS service portfolio**  
**(not limited to VTS stations))**

Solution	Description	Task Actions	Task Identifier (Table 7)
<b>S9</b>	Improved communication of VTS service portfolio (not limited to VTS stations)	<p>Communications is a key factor in the e-navigation concept. This task needs to identify the possible communications methods that might be used and testbeds need to be built to demonstrate which systems are best in different areas of operation. (e.g. deep sea, coastal and port).</p> <p>If the delivery of MSPs was to be cloud based then this task should report on what is available and where and who is responsible for the cloud or clouds.</p> <p>Much of this work is appropriate to S4.1.4.</p>	<p><b>T15</b></p> <p><b>T17</b></p>

*Maritime Service Portfolios (MSPs)*

17 As part of the improved provision of services to vessels through e-navigation, MSPs have been identified as the means of providing electronic information in a harmonized way, which is part of solution 9. The proposed list of MSPs is presented in table 6 below. Further information about MSPs is set out in annex 2. The further development of the MSPs is task **T17**.

18 The following six areas have been identified for the delivery of MSPs:

- .1 port areas and approaches;
- .2 coastal waters and confined or restricted areas;
- .3 open sea and open areas;
- .4 areas with offshore and/or infrastructure developments;
- .5 Polar areas; and
- .6 other remote areas.



**Table 6**  
**List of proposed MSPs**

<b>No</b>	<b>Identified Services</b>	<b>Identified Responsible Service Provider</b>
MSP1	VTS Information Service (IS)	VTS Authority
MSP2	Navigational Assistance Service (NAS)	National Competent VTS Authority/Coastal or Port Authority
MSP3	Traffic Organization Service (TOS)	National Competent VTS Authority/Coastal or Port Authority
MSP4	Local Port Service (LPS)	Local Port/Harbour Operator
MSP5	Maritime Safety Information Service (MSI)	National Competent Authority
MSP6	Pilotage service	Pilot Authority/Pilot Organization
MSP7	Tugs Service	Tug Authority
MSP8	Vessel Shore Reporting	National Competent Authority, Shipowner/Operator/Master
MSP9	Telemedical Assistance Service (TMAS)	National Health Organization/dedicated Health Organization
MSP10	Maritime Assistance Service (MAS)	Coastal/Port Authority/Organization
MSP11	Nautical Chart Service	National Hydrographic Authority/Organization
MSP12	Nautical Publications Service	National Hydrographic Authority/Organization
MSP13	Ice Navigation Service	National Competent Authority Organization
MSP14	Meteorological Information Service	National Meteorological Authority/WMO/Public Institutions
MSP15	Rea-time Hydrographic and Environmental Information Service	National Hydrographic and Meteorological Authorities
MSP16	Search and Rescue Service	SAR Authorities

*Development of related guidelines*

19 The combination of the five e-navigation solutions supported by the FSA, and the three guidelines, *Guidelines on Human Centred Design (HCD) for e-navigation*, *Guidelines on Usability Testing, Evaluation and Assessment (U-TEA) for e-navigation systems* and *Guidelines for Software Quality Assurance (SQA) in e-navigation*, proposes an e-navigation implementation that facilitates a holistic approach to the interaction between shipboard and shore-based users.

20 The development of an e-navigation reference model for the five solutions, including possible proposed legal framework, governance structures and funding models for relevant infrastructures, could involve establishing a globally cooperating network of regional testbeds.

21 During the development of e-navigation, the use of testbeds has been valuable. e-navigation testbeds could be pivotal to the progressive implementation of e-navigation solutions. It would be advisable that, where possible, there should be international cooperation in the establishment of testbeds. International cooperation could be seen as vital to ensure that e-navigation solutions can successfully operate on a global scale and to leverage the benefits of pooled resources and expertise.

22 Further testbeds may be used and evaluated and it has been identified that guidelines on the reporting need to be drafted so that the results can be presented in a harmonized way. These guidelines have been added to the task list as task **T18**.

*Identification of tasks, deliverables and schedule*

23 Table 7 outlines the identified tasks with a short definition including deliverables and transition arrangements, if necessary, and an indication of the prioritized implementation schedule

**Table 7**  
**Tasks, expected deliverables, transition arrangements and implementation schedule**

<b>Task No</b>	<b>Task</b>	<b>Expected Deliverable</b>	<b>Transition Arrangements</b>	<b>Prioritized Implementation Schedule</b>
<b>T1</b>	Development of draft Guidelines on Human Centred Design (HCD) for e-navigation systems.	Guidelines on Human Centred Design (HCD) for e-navigational systems.	None	2014/2015
<b>T2</b>	Development of draft Guidelines on Usability Testing, Evaluation and Assessment (UTEA) of e-navigation systems.	Guidelines on Usability Testing, Evaluation and Assessment (UTEA) of e-navigation systems.	None	2014/2015
<b>T3</b>	Develop the concept of electronic manuals and harmonize the layout to provide mariner with an easy way of familiarization for relevant equipment.	Guidelines on electronic equipment manuals.	Provide existing manuals as .pdf	2019
<b>T4</b>	Formulate the concept of standardized modes of operation, including store and recall for various situations, as well as S-mode functionality on relevant equipment.	Guidelines on S-mode.	None	2017
<b>T5</b>	Investigate whether and extension of existing Bridge Alert Management Performance Standards (PS) is necessary. Adapt all other alert relevant PSs to the to Bridge Alert Management PS.	(a) Guidelines on implementation of Bridge Alert Management.  (b) Revised Performance Standards on BAM.	None  None	2016  2019
<b>T6</b>	Develop a methodology of how accuracy and reliability of navigation equipment may be displayed. This includes a harmonized display system.	Guidelines on the display of accuracy and reliability of navigation equipment.	None	2017

Task No	Task	Expected Deliverable	Transition Arrangements	Prioritized Implementation Schedule
T7	Investigate if an INS, as defined by resolution MSC.252(83), is the right integrator and display of navigation information for e-navigation and identify the modifications it will need, including a communications port and a PNT module. If necessary, prepare a draft revised performance standard. Refer to resolution MSC.191(79) and SN/Circ.243.	(a) Report on the suitability of INS.  (b) New or additional modules for the Performance Standards for INS.	None  None	2016  2019
T8	Member States to agree on standardized format guideline for ship reporting so as to enable "single window" worldwide (SOLAS regulation V/28, resolution A.851(20) and SN.1/Circ.289)	Updated Guidelines on single window reporting.	National/Regional Arrangements	2019
T9	Investigate the best way to automate the collection of internal ship data for reporting including static and dynamic information.	Technical report on the automated collection of internal ship data for reporting.	None	2016
T10	Investigate the general requirements resolution A.694(17) and IEC 60945 to see how Built In Integrity Testing (BIIT) can be incorporated.	(a) Revised resolution on the general requirements including Built In Integrity Testing.  (b) Revised IEC Standard on General Requirements including Built In Integrity Testing.	None  None	2017  2019

Task No	Task	Expected Deliverable	Transition Arrangements	Prioritized Implementation Schedule
T11	Development of draft Guidelines for Software Quality Assurance (SQA) in e-navigation. This task should include an investigation into the type approval process to ensure that software lifetime assurance (software updates) can be carried out without major re-approval and consequential additional costs. Refer to SN/Circ/266/Rev.1 and MSC.1/Circ.1389.	Guidelines for Software Quality Assurance (SQA) in e-navigation.	None	2014/2015
T12	Develop guidelines on how to improve reliability and resilience of onboard PNT systems by integration with external systems. Liaise with Administrations to ensure that relevant shore-based systems will be available.	Guidelines on how to improve reliability and resilience of onboard PNT systems by integration with external systems.	None	2016
T13	Develop guidelines showing how navigation information received by communications equipment can be displayed in a harmonized way and what equipment functionality is necessary.	Guidelines on the harmonized display of navigation information received from communications equipment.	None	2019
T14	Develop a Common Maritime Data Structure and include parameters for priority, source, and ownership of information based on the IHO S-100 data model. Harmonization will be required for both use on shore and use on the ship and the two must be coordinated (Two Domains). Develop further the standardized interfaces for data exchange used on board (IEC 61162 series) to support transfer of information from communication equipment to navigational systems (INS) including appropriate firewalls (IEC 61162- 450 and 460).	(a) Guidelines on a Common Maritime Data Structure.  (b) Further develop the IEC standards for data exchange used onboard including firewalls.	None  Use latest IEC standards	2017  2019

Task No	Task	Expected Deliverable	Transition Arrangements	Prioritized Implementation Schedule
<b>T15</b>	Identify and draft guidelines on seamless integration of all currently available communications infrastructure and how they can be used (e.g. range, bandwidth, etc.) and what systems are being developed (e.g. maritime cloud) and could be used for e-navigation. The task should look at short range systems such as VHF, 4G and 5G as well as HF and satellite systems taking into account the 6 areas defined for the MSPs.	Guidelines on seamless integration of all currently available communications infrastructure and how they can be used and what future systems are being developed along with the revised GMDSS.	Use existing onboard communications infrastructure	2019
<b>T16</b>	Investigate how the Harmonization of conventions and regulations for navigation and communication equipment would be best carried out. Consideration should be given to an all-encompassing e-navigation performance standard containing all the changes necessary rather than revising over 30 existing performance standards.	Report on the Harmonization of conventions and regulations for navigation and communication equipment would be best carried out.	None	2017
<b>T17</b>	Further develop the MSPs to refine services and responsibilities ahead of implementing transition arrangements.	Resolution on Maritime Service Portfolios.	National/Regional Arrangements	2019
<b>T18</b>	Development of Draft Guidelines for the Harmonization of testbeds reporting.	Guidelines for the Harmonization of testbeds reporting.	None	2014/2015

24 The following table shows the timelines for each task and an indication of the schedule to clarify common understanding necessary for the implementation.

**Table 8**  
**Indication of the schedule to clarify common understanding necessary for the implementation**

	2014	2015	2016	2017	2018	2019	2020
T1							
T2							
T3							
T4							
T5(a)							
T5(b)							
T6							
T7(a)							
T7(b)							
T8							
T9							
T10(a)							
T10(b)							
T11							
T12							
T13							
T14(a)							
T14(b)							
T15							
T16							
T17							
T18							

**Relevant key enablers for e-navigation**

25 During the development of the SIP, a number of actions have been identified as key enablers for e-navigation. Some of them are listed below.

**Table 9**  
**Examples of key enablers of e-navigation**

<b>Key Enabler</b>	<b>INITIAL ACTION</b>	<b>status</b>
Globally Standardized Data Exchange	Data providers to adapt to IMO recognized data standards such as IHO's S-100 data model	IMO/IHO harmonization group set up
A harmonized data communication standard	International organizations with industry; IALA is developing a VHF data Exchange System (VDES) and working with ITU	Ongoing
Maritime Service Portfolios	Defining: IMO	See Task T17
Providers and onboard systems for resilient PNT	IMO is developing Performance Standards for multi-system navigation receiver PS	Ongoing
Connect all relevant equipment and functionality	IEC is developing a family of standards including a firewall with the support of the industry	Ongoing
Software Assurance Quality	Guidelines to be developed	Ongoing
Ensure that relevant e-navigation functions will be accepted as complying with the relevant IMO performance standards for shipborne navigational and radiocommunications equipment	NCSR Sub-Committee to undertake as need arises	See Task T16
Connect all relevant equipment and functionality for VTS	Member States to address individually. IALA and IEC may assist in developing standards	Ongoing
Coastal States to provide the required infrastructure	IALA, IHO and CIRM may assist in developing required infrastructure, including relevant standards	Ongoing
Establish Human Centred Design principles	Continue to refine INS and IBS performance standards and guidelines respectively	Ongoing

### **Description of the ship and shore architecture for the prioritized solutions**

26 Figure 1 shows the principle of an information/data flow in the e-navigation architecture. The figure shows the complete overarching e-navigation architecture, and defines two additional important features:

- .1 the Common Maritime Data Structure (CMDs) that spans the whole of the horizontal axis; and
- .2 the World Wide Radio Navigation System (WWRNS).



- 27 The architecture also:
- .1 brings into focus the "operational service" level and the "Functional links used by Technical services" and the "Physical links used by Technical services";
  - 2 highlights the fundamental distinction between information and data domains, explaining the relationship between the user requested information items and introducing the concepts of Operational and Technical Services, as well as Functional and Physical Links into a hierarchical perspective;
  - .3 identifies the concept of "Maritime Service Portfolios"; and
  - .4 unfolds the relationship of shore-to-shore data exchange.

28 The detailed shore and ship side architecture will be further developed in the light of the completion of some of the relevant tasks.

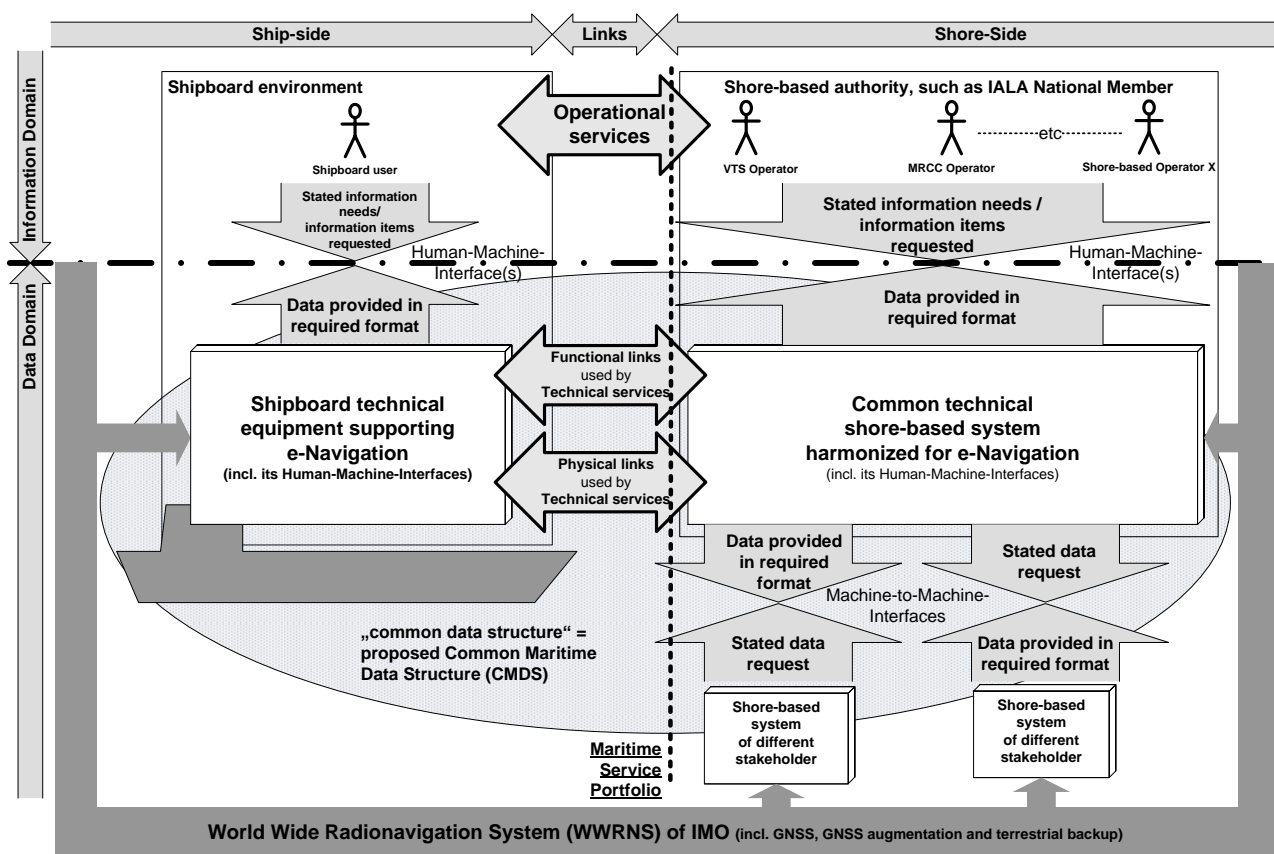


Figure 1 – Overarching e-navigation architecture

### Identification of communication systems for e-navigation

29 Communications are a key for e-navigation. Any communications systems used must be able to deliver appropriate MSPs in the 6 areas defined, as per S9, as well as delivering reliable ship reporting as identified in S2.

30 Existing available communications can be broadly divided into those:

- .1 used for distress and safety-related communications such as for the promulgation of maritime safety information (MSI), as is currently mandated by GMDSS, and AIS; and
- .2 commercially available systems, such as various satellite solutions (e.g. Inmarsat, Iridium and VSAT) as well as terrestrial telephone and data networks, such as GSM / 3G /4G.

31 Future communication systems could include VHF data (VDES) and NAVDAT, and be developed for internet based solutions, such as a maritime cloud, facilitating system wide information management solutions.

32 Existing and future communication links could be integrated via a maritime intranet, although each technical service will be limited by the capabilities of the available communication links. This infrastructure will primarily be based on IP communications links but will enable the utilization of free communication links for safety and mandatory reporting where appropriate, enabling a seamless integration and transition between available communications technologies.

33 The gap analysis, when considering effective and robust shipboard communications, identified that communications system should be developed in the future based on IP technology.

34 Relevant requirements for commercial communication links for e-navigation should have certain availability and latency criteria for the defined service area, and should provide a two-way data communication channel, enabling acknowledgement of information delivery.

35 This could enable automatic quality assurance of:

- .1 service efficiency;
- .2 availability and coverage of the communication service; and
- .3 the shipborne communication installation and capability.

36 It is envisaged that the majority of communication for various MSPs would be needed as a vessel approaches the coast and, therefore, it is likely that more bandwidth/speed may be needed in these areas.

37 Task **T15** addresses these issues and is critical to the implementation of e-navigation. The ability to send, receive and quality assure the MSPs depends on the availability of the right solution here.

38 The possible further development of the existing LRIT shore-based infrastructure has the potential to provide a data link between authorities ashore using secure communications links, for use in certain MSPs, (as an example MSP16 (search and rescue)). This does not impact on the mandatory LRIT ship reporting system nor does it add to the ship to shore cost for an LRIT message.

39 The concept of the "Maritime Cloud" should be further investigated, including its development and funding, operational and legal issues, including liability, quality and accessibility of information, global functional operation.

## **Proposals on enhancing public awareness of the e-navigation concept to key stakeholder and user groups**

40 E-navigation is relevant and important to a broad range of stakeholders. The aim of the proposals on enhancing awareness of the e-navigation concept is to improve the overall knowledge of the e-navigation concept among different stakeholders, and to enlist their cooperation and assistance in the implementation of e-navigation.

41 In this respect, five stakeholder groups have been identified as important and influential recipients, including key messages for each e-navigation solution. The key messages should be actively used to inform different stakeholders of the potential outcome and benefits of e-navigation, as well as the process of implementing e-navigation.

42 The development of an e-navigation website is also proposed in order to provide a coordinated and dynamic approach for distributing and sharing information related to the further development of e-navigation.

43 Regional/technical cooperation activities could be held in various parts of the world to promote and provide information on the status of the implementation of e-navigation initiatives. It would also provide a meeting arena for knowledge exchange on the process.

44 An e-navigation communication plan is provided in annex 3.

### **Regulatory impact**

45 The provision and further development of e-navigation should consider relevant international conventions, regulations and guidelines, national legislation and standards. The development and implementation of e-navigation should build upon the work of IMO<sup>1</sup>.

46 E-navigation is intended to be based on the use of the existing equipment, however any changes in carriage requirement for some of the elements needed to make the system work may have an impact on ship certification.

47 Certain elements in the e-navigation strategy plan have not yet been fully investigated as they depend on the outcome of some of the tasks.

### **Funding**

48 Solution 2 (Means for standardized and automated reporting) and Solution 9 (improved communication of VTS service portfolio) both refer to improved shore based facilities which may need funding for e-navigation to be successfully implemented for some stakeholders.

49 The funding could comprise two components split between regional and international contributions. The former being normally provided by participating Government agencies or National or regional grants and the latter by donors operating under the support of an institution such as the World Bank or National Agencies for international development assistance. The funding can be grants, loans or important technical advisory services.

50 There are in addition bilateral agreements between regions and countries which may contribute to successful funding of e-navigation solutions.

---

<sup>1</sup> Including, but not limited to, the requirements prescribed in FAL, SOLAS, MARPOL and STCW conventions.

51 The identification of potential sources of funding for development and implementation, particularly in developing regions and countries and of actions to secure that funding, including resource management, could, as an example, usefully look at previous successfully funded international maritime projects.

52 According to World bank statistics, in the case of the Marine Electronic Highway (MEH) in the Straits of Malacca and Singapore, the budget was \$17 million which was split as 51% regional (Littoral States and private) and 49% international (GEF/World Bank as grants for IMO and Indonesia).

## ANNEX 1

### **Background information related to the identified Risk Control Options (RCOs)**

1 Relevant background information related to the Risk Control Options (RCOs) identified during the Formal Safety Assessment (FSA) is provided in the following paragraphs.

#### **RCO 1: Integration of navigation information and equipment including improved software quality assurance**

2 There is a potential for various navigational information to be available in an increasingly centralized way enabling presentation on relevant task orientated workstations. This may reduce workload and otherwise ease the task of navigation.

3 Sophisticated bridge navigational systems are increasingly integrated with each other and with other kinds of systems on the ship. This, as well as the implicit ability of these systems to influence each other, increases complexity. As such it is of increasing importance that these systems are usable, available, reliable and resilient.

#### **RCO 2: Bridge alert management**

4 On a bridge with no centralized alert management system, problems in properly identifying alerts may arise. Additionally, alerts from various sources may not be prioritized by importance with regards to safe navigation. Potentially unnecessary distractions of the bridge team by redundant and superfluous audible and visual alarm announcements may occur, increasing the cognitive load on the operator.

5 The relevant performance standards in relation to central alert management are specified in resolutions MSC.252(83) on *Adoption of the revised performance standards for Integrated Navigation Systems (INS)* and MSC.302(87) on *Adoption of performance standards for Bridge Alert Management*.

#### **RCO3: Standardized mode(s) for navigation equipment**

6 In order to aid the navigator, and also to gain commercial advantage, the navigation equipment manufacturers and suppliers are continuously developing their products to include a rapidly increasing number of sophisticated functionalities. As the different suppliers follow different generation and presentation philosophies, and in part different terminology, this introduces the risk of navigators or pilots not being able to access or use all the available functions, not being able to produce a familiar setup of the equipment, and consequently not being able to obtain information required for navigational decision-making.

7 Safe navigation relies on the ability of key personnel of the bridge team to easily operate navigational equipment as well as to comprehend the information that is presented to them. Without proper familiarization, which can sometimes take a significant period of time due to the current differences between operating systems, this is not always the case when someone is new to a particular setup. Lack of familiarity with bridge equipment which can result in slow responses due to not finding correct information, system, control function or alarm is therefore likely to adversely affect safe navigation.

8 Standard modes or default display configurations are envisaged for relevant navigational equipment. Such standard modes should be selectable at the task station and would reset presentation and settings of information to provide a standardized and common display familiar to all users. The standard mode should be accessible by a simple operator

action. The standard or default settings would act as a starting point for a user to build the optional settings appropriate for a particular task. Those optional settings could be then saved by the user and be recalled later by a single operator action.

9 Standardized information presentation, symbols and coding should be used according to resolution MSC.191(79) on *Performance standards for the presentation of navigation-related information on shipborne navigational displays*. There should be a standard or default user interface mode (accessible by a simple operator action) and associated display configuration for relevant navigational equipment.

#### **RCO 4: Automated and standardized ship-shore reporting**

10 A potential for reducing workload due to filling out and delivering reportable information has been identified. Forms are usually manually filled out and sent individually to each authority requesting the information. Compliance with IMO FAL forms normally takes about two hours to complete. Thus a significant potential for reduction in paper work and administration exists.

11 Standardized ship-shore electronic reporting has been the subject of recent work done by the Facilitation Committee and by the European Commission.

#### **RCO 5: Improved reliability and resilience of onboard PNT systems**

12 The primary aim of position fixing is to ensure a ship is correctly following its passage plan. Systems such as Global Navigational Satellite Systems (GNSS) provide position, and timing information. Other information can be derived from multiple position fixes and timing such as, velocity or course and speed over the ground. Changes in velocity over time can also yield other information such as rate of turn. Together this set of information is commonly referred to as Position Navigation and Timing (PNT). Ensuring reliable and resilient PNT data is particularly important for safe navigation at sea.

13 Resilience is the ability of a system to detect and compensate for external and internal sources of disturbances, malfunction and breakdowns in parts of the system. Achieving resilient PNT does not imply any setting up of additional GNSS or terrestrial systems, but may use information from such systems should they exist. Reliability is the probability that the PNT system, when it is available, performs a specified function without failure under given conditions for a specified time.

14 Provision of resilient PNT information can be achieved through a combination of existing space-based and terrestrial systems, modernized and future radio navigation systems, ship-based sensors and other services.

15 Caution must be exercised against the use of differing systems for PNT in different regions of the world. Such a move would potentially create circumstances resulting in new risks for navigation, as mariners will potentially need to change their practices when travelling between regions. Another issue is that ships could be optimized to navigate only in particular regions with certain types of PNT solutions. This also could impact upon achieving a uniform training regime for seafarers. The implementation of e-navigation should as much as possible employ a consistent approach to the provision of PNT for marine navigation worldwide.

16 In order to increase the reliability and resilience of PNT information on board, an appropriate functional, goal-based performance standard for a PNT data processing unit, might be drafted, which would operate using sensor fusion techniques. This performance standard should not be tied to particular technologies.

17 It is evident there are some good candidates to assist with resilient PNT on board that, alongside GNSS and some potential regional systems could provide resilient PNT. They are:

- .1 inertial navigation systems;
- .2 signals of opportunity, such as radio, radar, sonar, echo sounder, etc.;
- .3 electronically-enabled human-observed bearings and distances (i.e. modern electronic coastal navigation using an e-pelorus, radar and ECDIS);
- .4 autonomous celestial navigation; and
- .5 other possibilities that could arise from research, for example in the areas of defence and robotic vehicle navigation.

#### **RCO 6: Improved shore-based services**

18 VTSs, ports and other shore-based stakeholders gather and hold a lot of information regarding navigational warnings, incidents, operations, tide, AIS, traffic regulations, chart updates, meteorological conditions, ice conditions, etc., which is often referred to as the Maritime Service Portfolio.

19 Implementation of a system for automatic and digital distribution of shore support services would make information more available, updated and relevant for navigators.

20 Firstly, Maritime Safety Information (MSI) received by the ship should be relevant to the ship's specific voyage. Today, broadcasted MSI delivered as printed text from a NAVTEX receiver and must be considered for action. As the Officer of Watch (OOW) may potentially receive several MSI messages daily, of which a large portion of the messages may not be of concern to the voyage, there is the risk of missing vital MSI. Important MSI could easily be overlooked. The MSI should be displayed in relation to the information it relates to and is being used on the bridge in the correct place.

21 Secondly, notices to mariners, updates to ENC's and corrections to all nautical publications should be received electronically without any delays in the delivery. Distribution via post is time consuming and may introduce risks to the ships sailing in waters, for which the nautical charts are not up to date.

22 As e-navigation evolves, broadband communications needs to become more cost-effective and readily available. Changes that should be made to current regulatory regimes (e.g. performance standards) so that new systems can be included should be done in a structured way. This will ensure their use is compliant with the various existing navigational equipment and services, whilst not limiting the possibilities for new approaches that could offer benefits such as reduced costs and improvements in efficiency and effectiveness.

23 The most appropriate platform to present MSI may be either the INS tasks *route monitoring and status and data display* (resolution MSC.252(83)) or the ECDIS unit and optionally on another navigational display. Notices to Mariners, updates and corrections to ENCs and all nautical publications should be able to be received electronically with minimal delay in delivery. Such updates and corrections should, in the future, fully integrated into the INS tasks *route monitoring and status and data display* (resolution MSC.252(83)) or the ECDIS unit and optionally on another navigational display. Thus, such updates and corrections should not be reliant on formats such as pdf or require the navigator to manually transfer updates and corrections between source and navigation device.

## **RCO 7: Bridge and workstation layout standardization**

24 Cumbersome equipment layout on the bridge adversely influences the mariner's ability to optimally perform navigational duties. Although some good bridge layout designs exist with respect to ergonomics, this is an area identified as insufficiently regulated so as to ensure a consistent acceptable level of functionality.

25 Reference could be made to SOLAS regulation V/15 on *Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures*, MSC/Circ.982 on *Guidelines on Ergonomic Criteria for Bridge Equipment and Layout*, SN.1/Circ.265 on *Guidelines on the Application of SOLAS regulation V/15 to INS, IBS and bridge design*, SN.1/Circ.288 on *Guidelines for bridge equipment and systems, their arrangement and integration (BES)* and ISO8468 on *Ships Bridge layout and associated equipment*.

26 Document NAV 59/6/1 (Australia) related to "Design Usability Principles for e-navigation Solutions and Risk Control Options" is relevant to this RCO, along with the application of Human Centred Design (HCD) guidelines and the Usability (UTEA) guidelines.

27 Seafarers may experience difficulties in accessing necessary information because of ergonomic problems, such as inappropriate physical bridge locations of navigational equipment. Ergonomic problems of navigation equipment also exist in the sense that there is a lack of intuitive human-machine interface for communication and navigation means. Bridge layouts, equipment and systems have not been consistently and sufficiently designed from an ergonomic and usability perspective. Lack of familiarity with bridge equipment and/or slow response due to not finding correct information/control/alarm is considered to adversely affect safe navigation.



ANNEX 2

**A detailed explanation of the Maritime Service Portfolios**

<b>No</b>	<b>Identified Services</b>	<b>Identified Service Provider</b>	<b>Short Description</b>
MSP1	VTS Information Service (IS)	VTS Authority	<p>The VTS Information Service (IS) is defined as "a service to ensure that essential information becomes available in time for onboard navigational decision making".</p> <p>Relevant information is broadcasted at fixed times and intervals or provided when deemed necessary by the VTS or at the request of a vessel.</p> <p>A VTS IS involves maintaining a traffic image and allows interaction with traffic and response to developing traffic situations. An Information Service should provide essential and timely information to assist the onboard decision-making process, which may include but is not limited to:</p> <ul style="list-style-type: none"> <li>• the position, identity, intention and destination of vessels;</li> <li>• amendments and changes in promulgated information concerning the VTS area such as boundaries, procedures, radio frequencies, reporting points;</li> <li>• the mandatory reporting of vessel traffic movements;</li> <li>• meteorological and hydrological conditions, notices to mariners, status of aids to navigation;</li> <li>• manoeuvrability limitations of vessels in the VTS area that may impose restrictions on the navigation of other vessels, or any other potential hindrances; or</li> <li>• any information concerning the safe navigation of the vessel.</li> </ul> <p>The VTS IS is designed to improve the safety and efficiency of vessel traffic and to protect the environment. Among others, such services include catalogue such as: Routing, Channel info, Security level, Berthing, Anchorage, Time slot, Traffic monitoring and assessment, Waterway conditions, Weather, Navigational hazards, any other factors that may influence the vessel's transit, Reports on the position, Identity and intentions of other traffic.</p>

No	Identified Services	Identified Service Provider	Short Description
MSP2	Navigational Assistance Service (NAS)	National Competent VTS Authority/ Coastal or Port Authority	<p>The NAS is defined as "a service to assist onboard navigational decision-making and to monitor its effects".</p> <p>NAS may be provided on request by a vessel in circumstances such as equipment failure or navigational unfamiliarity.</p> <p>Specific examples of developing situations where NAS may be provided by the VTS include: Risk of grounding; Vessel deviating from the recommended track or sailing plan; Vessel unsure of its position or unable to determine its position; Vessel unsure of the route to its destination; Assistance to a vessel to an anchoring position; Vessel navigational or manoeuvring equipment casualty; Inclement conditions (e.g. low visibility, high winds); Potential collision between vessels; Potential collision with a fixed object or hazard; Assistance to a vessel to support the unexpected incapacity of a key member of the bridge team, on the request of the master.</p>
MSP3	Traffic Organization Service (TOS)	National Competent VTS Authority/Coastal or Port Authority	<p>The TOS is defined as "a service to prevent the development of dangerous maritime traffic situations and to provide for the safe and efficient movement of vessel traffic within the VTS area".</p> <p>The purpose of the TOS is to prevent hazardous situations from developing and to ensure safe and efficient navigation through the VTS area.</p> <p>TOS should be provided when the VTS is authorized to provide services, such as when:</p> <ul style="list-style-type: none"> <li>• vessel movements need to be planned or prioritized to prevent congestion or dangerous situations;</li> <li>• special transports or vessels with hazardous or polluting cargo may affect the flow of other traffic and need to be organized;</li> <li>• an operating system of traffic clearances or sailing plans, or both, has been established;</li> <li>• the allocation of space needs to be organized;</li> <li>• mandatory reporting of movements in the VTS area has been established;</li> <li>• special routes should be followed;</li> <li>• speed limits should be observed;</li> <li>• the VTS observes a developing situation and deems it necessary to interact and coordinate vessel traffic; and</li> <li>• nautical activities (e.g. sailing regattas) or marine works in-progress (such as dredging or submarine cable-laying) may interfere with the flow of vessel movement.</li> </ul>

No	Identified Services	Identified Service Provider	Short Description
MSP4	Local Port Service (LPS)	Local Port/Harbour Operator	<p>LPS is applicable to those ports where it has been assessed that a VTS, as described above, is excessive or inappropriate.</p> <p>The main difference arising from the provision of LPS is that it does not interact with traffic, nor is it required to have the ability and/or the resources to respond to developing traffic situations and there is no requirement for a vessel traffic image to be maintained.</p> <p>Provision of LPS is designed to improve port safety and co-ordination of port services within the port community by dissemination of port information to vessels and berth or terminal operators. It is mainly concerned with the management of the port, by the supply of information on berth and port conditions. Provision of LPS can also act as a medium for liaison between vessels and allied services, as well as providing a basis for implementing port emergency plans. Examples of LPS may include:</p> <ul style="list-style-type: none"> <li>• berthing information;</li> <li>• availability of port services;</li> <li>• shipping schedules; and</li> <li>• meteorological and hydrological data.</li> </ul> <p>A number of web-based LPS services are being developed. An example is AVANTI, an initiative of the International Harbour Masters Association (IHMA).</p>
MSP5	Maritime Safety Information Service (MSI)	National Competent Authority	<p>The Global Maritime Distress and Safety System (GMDSS) as described in SOLAS chapter IV defines the seventh functional requirement as:</p> <p>"Every ship, while at sea, shall be capable of transmitting and receiving maritime safety information".</p> <p>The MSI service is an internationally coordinated network of broadcasts of Maritime Safety Information from official information providers, such as:</p> <ul style="list-style-type: none"> <li>• National Hydrographic Offices, for navigational warnings and chart correction data;</li> <li>• National Meteorological Offices, for weather warnings and forecasts;</li> <li>• Rescue Co-ordination Centres (RCCs), for shore-to-ship distress alerts; and</li> <li>• the International Ice Patrol, for Oceanic ice hazards.</li> </ul> <p>Specific information on Aids to Navigation and restrictions on safe navigation are part of MSI services provided by National Authorities. This can include but is not limited to, the following</p>

No	Identified Services	Identified Service Provider	Short Description
			<p>type of information to be available to mariners:</p> <ul style="list-style-type: none"> <li>• status of Aids to Navigation;</li> <li>• status of GPS and DGPs;</li> <li>• buoy tendering operation; and</li> <li>• restriction on safe navigation such as bridge/hydro cable air gap, new hazards, construction or dredging operations.</li> </ul>
MSP6	Pilotage Service	Pilot Authority/ Pilot Organization	<p>The aim of the pilotage service is to safeguard traffic at sea and protect the environment by ensuring that vessels operating in pilotage area have navigators with adequate qualifications for safe navigation. Each pilotage area needs highly specialized experience and local knowledge on the part of the pilot.</p> <p>Efficient pilotage depends, among other things, upon the effectiveness of the communications and information exchanges between the pilot, the master and the bridge personnel and upon the mutual understanding each has for the functions and duties of the other.</p> <p>The Pilot's Portable Unit (PPU) is a useful tool for safe navigation in clear and restricted visibility. Data accessible by the PPU should be made available in a structured, harmonized and reliable manner, and the interface for accessing such e-navigation information should be standardized.</p> <p>Establishment of effective coordination between the pilot, the master and the bridge personnel, taking due account of the ship's systems and equipment available to the pilot, will aid a safe and expeditious passage (see resolution A.960(23)).</p>
MSP7	Tugs Service	Port/Commercial Tug Organization	<p>Efficient tug operations depend on, among other things, the effectiveness of the communications and information exchanges between relevant stakeholders. The aim of the tugs services is to safeguard traffic at sea and protect the environment by conducting operations such as:</p> <ul style="list-style-type: none"> <li>• transportation (personnel and staff from port to anchorage) operations;</li> <li>• ship assistance (ex: mooring) operations;</li> <li>• salvage (grounded ships or structures) operations;</li> <li>• shore operations;</li> <li>• towage (harbour/ocean) operations;</li> </ul>

No	Identified Services	Identified Service Provider	Short Description
			<ul style="list-style-type: none"> <li>• escort operations; and</li> <li>• oil spill response operations.</li> </ul>
MSP8	Vessel Shore Reporting	National Competent Authority, Shipowner/ Operator/Master	<p>The aim of vessel shore reporting is to safeguard traffic at sea, ensure personnel safety and security, ensure environmental protection and increase the efficiency of maritime operations. Single-Window is one of the most important solutions to reduce the Mariners workload (amount of time spent on preparing and submitting reports to shore-based authorities). To achieve this, reports should be automatically generated as much as possible from onboard systems. Some other important possibilities for vessel shore reporting system may include:</p> <ul style="list-style-type: none"> <li>• single-entry of reportable information in single-window solution;</li> <li>• automated collection of internal ship data for reporting;</li> <li>• all national reporting requirements to apply standardized digital reporting formats based on IMO FAL forms; and</li> <li>• automated or semi-automated digital distribution/communication of required reportable information.</li> </ul>
MSP9	Telemedical Assistance Service (TMAS)	National Health Organization/ Dedicated Health Organization	<p>TMAS centres should provide medical advice for seafarers 24 h/day, 365 days/year. TMAS should be permanently staffed by physicians qualified in conducting remote consultations and who are well versed in the particular nature of treatment on board ship.</p> <p>Within the maritime medicine the prevailing view has for a long time been that a standardization of the TMAS services is both necessary and wanted. This would firstly enhance the quality of the medical practice, and secondly, a standardization of reporting and registering of medical events will make a much better basis for advancement.</p>
MSP10	Maritime Assistance Service (MAS)	Coastal/Port Authority/ Organization	<p>The primary mission of MAS is to handle communication between the coastal State, ship's officers requiring assistance and other players in maritime community. These can be fleet owners, salvage companies, port authorities, brokers, etc.</p> <p>The MAS is on 24-hour alert to deploy rapid assistance and professional support for ships in connection with combating pollution, fire and explosions on board, collision, grounding, maritime security, terror mitigation, etc.</p> <p>The Ship Security Alert System enables a vessel to send a distress call if it is attacked by</p>

No	Identified Services	Identified Service Provider	Short Description
			<p>pirates, etc. On receiving such a call, the MAS is responsible for alerting the relevant authorities responsible for a response.</p> <p>The MAS is responsible only for receiving and transmitting communications and monitoring the situation. It serves as a point of contact between the master and the coastal State concerned if the ship's situation requires exchanges of information between the ship and the coastal State.</p> <p>Situations where the MAS apply are as follows:</p> <ul style="list-style-type: none"> <li>• ship involved in an incident (loss of cargo, accidental discharge of oil, etc.) that does impair its seakeeping ability but nevertheless has to be reported;</li> <li>• ship in need of assistance according to the master's assessment, but not in distress situation that requires the rescue of personnel on board; and</li> <li>• ship in distress situation and those on board have already been rescued, with the possible exception of those who have remained aboard or have been placed on board to attempt to deal with the ship's situation.</li> </ul> <p>The MAS entails the implementation of procedures and instructions enabling the forward of any given information to the competent organization and requiring the organizations concerned to go through the MAS in order to make contact with the ship.</p>
MSP11	Nautical Chart Service	National Hydrographic Authority/ Organization	<p>The aim of the nautical chart service is to safeguard navigation at sea by providing information such as nature and form of the coast, water depth, tides table, obstructions and other dangers to navigation, location and type of aids to navigation.</p> <p>The Nautical Chart service also ensure the distribution, update and licensing of electronic chart to vessels and other maritime parties.</p>
MSP12	Nautical Publications Service	National Hydrographic Authority/ Organization	<p>The aim of the nautical publication service is to promote navigation awareness and safe navigation of ships. The nature of waterways described by any given nautical publication changes regularly, and a mariner navigating by use of an old or uncorrected publication is courting disaster. Nautical publications include:</p> <ul style="list-style-type: none"> <li>• tidal currents, aids to navigation system, buoys and fog signals, radio aids to marine navigation, chart symbols, terms and abbreviations, sailing directions; and</li> <li>• a Chart and Publication Correction Record Card system can be used to ensure that every publication is properly corrected prior use by mariners.</li> </ul>

No	Identified Services	Identified Service Provider	Short Description
MSP13	Ice Navigation Service	National Competent Authority Organization	<p>The ice navigation service is critical to safeguard the ship navigation in ice-infested waters, given how quickly the ice maps become outdated in the rapid changing conditions of the ice-covered navigational regions. Such services include:</p> <ul style="list-style-type: none"> <li>• ice condition information and operational recommendations/advice;</li> <li>• ice condition around a vessel;</li> <li>• vessel routing;</li> <li>• vessel escort and ice breaking;</li> <li>• ice drift load and momentum; and</li> <li>• ice patrol.</li> </ul>
MSP14	Meteorological Information Service	National Meteorological Authority/WMO/ Public Institutions	<p>The meteorological service is essential to safeguard the traffic at sea by providing weather, climate digital forecasts and related information to mariners who will use these types of information to support their decision making. Such information includes:</p> <ul style="list-style-type: none"> <li>• weather routing, solar radiation and precipitation;</li> <li>• cold/hot durations and warnings;</li> <li>• air temperature, wind speed and direction; and</li> <li>• cloud cover and barometric pressure.</li> </ul>
MSP15	Real-time Hydrographic and Environmental Information Service	National Hydrographic and Meteorological Authorities	<p>The real-time hydrographic and environmental information service is essential to safeguard navigation at sea and protect the environment. The services provided are such as:</p> <ul style="list-style-type: none"> <li>• current speed and direction;</li> <li>• wave height;</li> <li>• marine habitat and bathymetry;</li> <li>• sailing Directions (or pilots): detailed descriptions of areas of the sea, shipping routes, harbours, aids to navigation, regulations, etc.;</li> <li>• lists of lights: descriptions of lighthouses and lightbouys;</li> <li>• tide surge prediction tables and tidal stream atlases;</li> <li>• ephemerides and nautical almanacs for celestial navigation; and</li> <li>• notice to mariners: periodical (often weekly) updates and corrections for nautical charts and publications.</li> </ul>
MSP16	Search and	National	The SAR service is responsible for assisting, coordinating search and rescue operations at

No	Identified Services	Identified Service Provider	Short Description
	Rescue Service (SAR)	Competent Authority Organization/ Authorities	<p>sea. In maintaining a state of full readiness the MRCC may perform the following rescue functions:</p> <ul style="list-style-type: none"> <li>• survivors of any aircraft (not in an act of war) crashes or forced landings at sea;</li> <li>• the crew and passengers of vessels in distress; and</li> <li>• survivors of maritime accidents or incidents.</li> </ul> <p>The SAR services must also coordinate the evacuation of seriously injured or ill person from a vessel at sea when the person requires medical treatment sooner than the vessel would be able to get him or her to a suitable medical facility.</p> <p>MRCCs may also be pro-actively involved in activities such as:</p> <ul style="list-style-type: none"> <li>• information collection, distribution and coordination;</li> <li>• monitoring towing operations;</li> <li>• monitoring and evaluating levels of risk from Maritime Safety Information (MSI) broadcasts to ensure an immediate response in case of life threatening situations developing;</li> <li>• monitoring vessels not under command; and</li> <li>• pollution reports and vessels aground.</li> </ul> <p>E-navigation can provide additional information such as number of persons on board, type of ship, port of destination etc. and enable provision of additional information such as available SAR resources on board ships etc.</p> <p>Information on other vessels in the area can be crucial for an effective rescue.</p> <p>Communication solutions used for e-navigation will be able to exchange information about SAR areas and allocate search patterns and provide facilities for MRCCs to set up a common information sharing log or chatroom for MRCCs, onscene coordinator and other resources to share and update information during a SAR incident.</p>



## ANNEX 3

### Plan for enhancing public awareness of e-navigation

#### E-navigation website

1 The development of an e-navigation website could provide a coordinated approach for distributing and sharing information during the development and implementation of e-navigation

2 The purpose of the e-navigation website is to:

- .1 provide an overview of e-navigation initiatives and information on the e-navigation implementation;
- .2 publish relevant information on e-navigation, including guidance on the implementation process;
- .3 provide news and updates on the e-navigation implementation process; and
- .4 provide an overview of e-navigation communication channels on an international and national level.

3 The website should be a means to encourage a convergence of e-navigation awareness initiatives in order to ensure that coordinated and quality assured information is made easily available to a wider range of audiences.

4 The e-navigation website could include, for example:

- an introduction to the SIP – what, how, when, why, who, etc.;
- links to relevant official and quality assured e-navigation documents;
- a list of key stakeholders and information materials targeted to key stakeholder groups;
- an overview of key messages to key stakeholders;
- an overview of maritime publications and other media;
- an overview of events and conferences relevant for e-navigation (e.g. workshops, testbeds, etc.);
- digital brochures on different e-navigation themes/processes;
- PowerPoint templates with basic e-navigation information made available for presentations on e-navigation at national/international meeting arenas;
- FAQ and Q&A on e-navigation; and
- press kits (fact sheets, background information, etc.).

5 The language of the website should be English only or, otherwise, the three IMO official languages.

### **Regional/technical cooperation activities**

6 Regional and technical cooperation activities could be held in various parts of the world. The aim would be to promote and provide information on the status of the implementation of IMO's e-navigation initiative. It would also provide a meeting arena for knowledge exchange on the process.

### **Key messages**

7 The table below identifies the relevant stakeholder groups and key messages.

**Examples of key messages to promote the benefits of e-navigation**

<b>Stakeholder groups</b>	<b>Description</b>	<b>Solution</b>	<b>Description</b>	<b>Key Message</b>
International level	Intergovernmental and non-governmental organizations	S1	Improved, harmonized and user-friendly bridge design	Standardized bridge design globally enhances the opportunity to work cross-border, improves efficiency in training and reduces material cost. Similarities between nations and vessels increase efficiency and improve safety
		S2	Means for standardized and automated reporting	Reduces barriers of trade through reduction of local solutions and bureaucracy
		S3	Improved reliability, resilience and integrity of bridge equipment and navigation information	Reduces risk of accidents and incidents
		S4	Integration and presentation of available information in graphical displays received via communication equipment	-
		S9	Improved communication of VTS Service Portfolio	-
Flag/port/coastal State	Coastal States: Coastal administrations and other national authorities Flag States: Military, law enforcement, ships registries etc. Port States: Port authorities and other authorities related to harbour administration	S1	Improved, harmonized and user-friendly bridge design	Improves efficiency in training, certification and supervision
		S2	Means for standardized and automated reporting	Easy access to standard and reliable information improves situational awareness.
		S3	Improved reliability, resilience and integrity of bridge equipment and navigation information	Reduces risk of accidents and incidents. Improves situational awareness, enhances opportunities to actively use information, and improves coordination, control, communication and information
		S4	Integration and presentation of available information in graphical displays received via communication equipment	Improved efficiency in supervision, coordination, control, coordination and information

Stakeholder groups	Description	Solution	Description	Key Message
		S9	Improved communication of VTS Service Portfolio	Enhances efficiency and reduces risk of accidents and incidents through efficient use of VTS services
Branch/Organization/Industry	Shipowners and shipowner associations	S1	Improved, harmonized and user-friendly bridge design	Flexibility with regard to training and rotation. Standardization leads to a more efficient market for standardized bridge products
		S2	Means for standardized and automated reporting	Simplification of reporting and probably less workload for operations
		S3	Improved reliability, resilience and integrity of bridge equipment and navigation information	Improved safety for own fleet.
		S4	Integration and presentation of available information in graphical displays received via communication equipment	Improved situational awareness for bridge personnel improves speed and efficiency of decision making
		S9	Improved communication of VTS Service Portfolio	Increased safety in VTS regulated areas
Branch/Organization/Industry	Equipment manufacturers, shipbuilders and designers, suppliers, and other branch organizations.	S1	Improved, harmonized and user-friendly bridge design	Provides a direction for product development to a wide market
		S2	Means for standardized and automated reporting	Opportunity for new products and solutions
		S3	Improved reliability, resilience and integrity of bridge equipment and navigation information	Opportunity for new products and solutions.
		S4	Integration and presentation of available information in graphical displays received via communication equipment	Opportunity for new products and solutions
		S9	Improved communication of VTS Service Portfolio	Opportunity for new products and solutions
Shipborne and shore-based users	National and international shipborne users, including pilots	S1	Improved, harmonized and user-friendly bridge design	Ship: Simplification of daily work and training. Improved human-machine interface, usability, familiarity and navigational safety. Reduced risk of accidents; time-saving/efficiency on board, easier

Stakeholder groups	Description	Solution	Description	Key Message
	Shore-based users such as VTS, Met/Hydro institutes and ship handlers			access to information, quicker response/problem-solving
		S2	Means for standardized and automated reporting	Ship: Reduced administrative burden. Reduction of manual work. Improved navigational safety. Reduced risk of accidents by reduced administrative burdens/workload. Shore: Simplification of administration. Reduction of manual work. Improved efficiency, improved access to reliable information, improved national coordination
		S3	Improved reliability, resilience and integrity of bridge equipment and navigation information	Ship: Improves confidence in use of navigational equipment. Enhanced quality and accuracy of information, improving situational awareness and navigational safety Shore: Improves confidence in use of navigational equipment
		S4	Integration and presentation of available information in graphical displays received via communication equipment	Ship: Easy access to all information in a single window. Easy access to need-to-know information, user friendly presentation, better familiarity with systems (through standardization), improved situational awareness, problem-solving and navigational safety, reliable access to info (e.g. in polar) Shore: Easy access to all information in a single window solution

Stakeholder groups	Description	Solution	Description	Key Message
		S9	Improved communication of VTS Service Portfolio	<p>Ship: Improved service and safety in VTS-regulated areas. Reduced need for coordination through voice communication. Easy access to available services and warnings (area), efficient use of bridge resources, reduced bureaucracy</p> <p>Shore: Reduced need for coordination through voice communication. Reliable access to traffic information, better national coordination/use of resources, reduced workload</p>

\*\*\*

**ANNEX 8**

**DRAFT MSC CIRCULAR**

**GUIDELINES ON HARMONIZATION OF TESTBEDS REPORTING**

1 The Maritime Safety Committee, at its [ninety-fourth session (17 to 21 November 2014)], approved the *Guidelines on Harmonization of testbeds reporting*, prepared by the Sub-Committee on Navigation, Communications and Search and Rescue at its first session (30 June to 4 July 2014), as set out in the annex.

2 Member Governments are invited to bring the present circular to the attention of those involved in the planning of testbeds related to e-navigation and the reporting of their results to the Organization.

## ANNEX

### GUIDELINES ON HARMONIZATION OF TESTBEDS REPORTING

#### 1 Introduction

1.1 This document offers guidance on the reporting of results of e-navigation testbeds.

#### 2 Benefits and scope of the guidelines

2.1 Harmonization of the reporting of results from testbeds will allow the results of e-navigation solutions being tested to be shared and compared effectively. Harmonization also allows future meta-analyses<sup>1</sup> of specific aspects. Different organizations can recreate trials both to verify results and refine various factors within the trials, in order to further develop the concepts being trialled.

2.2 This guideline includes the following:

- Initial considerations when planning a testbed (annex 1)
- Reporting the results of a testbed (annex 2)

#### 3 Background

3.1 During the development of e-navigation, a growing number of testbeds have been evaluated. Consequently, NAV 58 agreed to the development of *Guidelines on Harmonization of e-navigation testbeds reporting*.

#### 4 Testbeds

4.1 A testbed (also commonly spelled as "test bed" in research publications) is a platform for trialling development projects. Testbeds generally involve rigorous, transparent and replicable testing of, for example, scientific theories, computational tools and new technologies.

4.2 e-navigation testbeds allow for early detection of new system functionality, operational usability, areas of enhancements and identification of weaknesses. Ideally, testbeds should be linked to human-centred design processes, to ensure any operational usability issues, are detected early. Testbeds should not, necessarily, be limited or restricted by current or planned architecture, data structures or existing procedures. Considerations when planning a testbed are given in annex 1.

4.3 Ideally, testbeds should be conducted in a controlled environment so that they do not adversely affect real-life situations, existing services and maritime safety. Conclusions can be drawn for many aspects of testbeds such as functionality, usability, feasibility and risk. As e-navigation evolves from concept to operational reality, the importance of testbeds will continue to grow.

---

<sup>1</sup> Meta-analyses are when results from a great number of experiments/tests are gathered, compared and trends, if any, analysed. A single experiment or test usually only offers limited information on a specific question/hypothesis; meta-analyses, however, can represent a bigger picture.



4.4 There are testbeds that, while being not directly identified as e-navigation testbeds, are nevertheless relevant to e-navigation. The reporting of results from such testbeds is encouraged.

## **5 Harmonization of reporting of testbed results**

5.1 As a number of testbeds are established, it is important that the results of testbeds are shared, as there could be outcomes and lessons learnt that will be useful to the maritime community. In order to do this and to allow for ready comparison of the relevant elements of testbed results, reporting of the results of testing of e-navigation solutions, systems and services should be harmonized.

## **6 Testbed results**

6.1 For testbed results to be useful to other parties, tests/simulations/trials should ideally have scientific rigour for set-up, collection of data, analysis, etc. Additionally:

- the results presented should be objective;
- trials should be reproducible;
- data gathered should be statistically sound and meet generally accepted "scientific standards"; and
- testbed results should be presented in acceptable scientific formats (e.g. they should be suitable for publication in a peer-reviewed publication).

6.2 A framework, by way of a template for reporting has been developed (see annex 2) that addresses the presentation of results. This should be taken into account when reporting results of testbeds related to e-navigation. The reports of the testbeds should be reported to the Organization.

## Annex 1

### **CONSIDERATIONS WHEN PLANNING A TESTBED**

#### **1 General**

1.1 It is advisable that the following considerations are taken into account when planning testbeds as it will assist in the harmonized reporting of testbed results.

1.2 When planning testbeds, the e-navigation solutions selected should ideally be linked to user needs and the objectives of e-navigation. Where possible, the solutions should address identified gaps in the e-navigation gap analysis.

1.3 It is recommended that testbeds take into account a structured, transparent, objective and repeatable methodology. Where the output is in the form of software tools, these should ideally be open-source, with arrangements in place for collaboration, incorporating user feedback and identified improvements.

#### **2 Architecture**

2.1 It is advisable that, without restricting innovation, testbeds align with the approved overarching e-navigation architecture and solutions including the technical/operational services in the Maritime Service Portfolios.

#### **3 User and stakeholder involvement**

3.1 Testbeds should ideally involve users and stakeholders at every stage – from planning to implementation and assessment of results.

#### **4 Human-centred design and quality assurance principles**

4.1 Human-centred design and quality assurance principles should be taken into account during the development of e-navigation solutions.

#### **5 Data structures**

5.1 The agreed Common Maritime Data Structure (CMDS) is the IHO S-100 Geospatial Information (GI) Registry. Testbeds should therefore preferably use the IHO S-100 framework for data modelling and exchange. Other data model frameworks may be used for testbeds. However, it is advisable that, for results to be of value to the development of e-navigation, steps should be taken to incorporate solutions into the IHO S-100 framework.

#### **6 Reference to the e-navigation documentation**

6.1 It is advisable that testbeds highlight links to user needs, gap analysis and solutions already identified.

#### **7 Sharing of information**

7.1 Information on testbeds should be provided to the Organization.

## Annex 2

### Reporting Template

#### 1 General

1.1 The purpose of this reporting template is to serve as a harmonized framework for reporting results from e-navigation testbeds. In order to assist with the reporting of testbed results and to ensure these are valuable to the e-navigation development community, it is advisable that all headings are completed – even those for which there is no information.

1.2 Testbed information will assist other organizations to learn more about the solution being tested. It may also offer other ideas to expand and further develop the solution.

#### 2 Contents of the reporting template

*Note: Symbols have the following meanings:*

- *Sub-section/Sub-heading*
- *Tick box (choose one or more)*
- *Free text field*

##### 1 General Information

- Name of testbed
- Location of testbed
- Time and duration of testbed
- Status (planned, completed or ongoing)
- Contact person(s)
- Testbed website
- Organization(s) involved
- Funding programme and budget

##### 2 Executive summary

##### 3 Testbed Information

- The type of user group(s) involved in the test
  - *Shipboard users*
  - *Shore-based users*
  - *SAR users*
- Details of e-navigation gap(s) considered for the testbed (*some examples are given below. For a complete list, please refer to the MSC 91 report*):
  - *Information/data management*
  - *Effective and robust voice communication and data transfer*
  - *Systems and equipment*
  - *Ship reporting*
  - *Traffic monitoring*
  - *familiarization*

- The category of e-navigation gap(s) considered in the testbed
  - *Technical*
  - *Regulatory*
  - *Operational*
- Details of e-navigation solution(s) considered in the testbed (*the prioritized solutions are listed below*):
  - *S1: Improved, harmonized and user-friendly bridge design*
  - *S2: Means for standardized and automated reporting*
  - *S3: Improved reliability, resilience and integrity of bridge equipment and navigation information*
  - *S4: Integration and presentation of available information in graphical displays received via communication equipment*
  - *S9: Improved Communication of VTS Service Portfolio*
- The category of e-navigation solution(s) considered in the testbed
  - *Technical*
  - *Regulatory*
  - *Operational*
- Links to similar / relevant testbeds (if any)

#### **4 Testbed methodology**

- Methodology used for data collection
  - *Method*
  - *Validity*
  - *Reliability*
- Summary information on testbed respondents / participants
  - *Number*
  - *Background*
  - *Experience*
  - *Demographics (e.g. age, gender)*
- Procedure used in the testbed
  - *Testbed setup*
  - *Technical solutions used*
  - *Standards*
  - *Guidance documents*
  - *Standard Operating Procedures*
  - *Analysis of data*

#### **5 Testbed results**

- Summary of findings:
  - *Presentation of data (e.g. statistics)*
  - *Users assessment and experience*
  - *Other comments*

**6 Conclusions and recommendations**

- Conclusions
  - Lessons learnt
- Recommendations

**7 Publications**

- Peer-reviewed publications
- Technical papers
- Reports
- Communication material (e.g. videos, flyers, pamphlets, etc.)

**8 Reference material**

- List of reference material used in the testbed

\*\*\*



**ANNEX 9**

**DRAFT ASSEMBLY RESOLUTION**

**REVISED GUIDELINES FOR THE ONBOARD OPERATIONAL USE OF  
SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEMS (AIS)**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

RECALLING ALSO the provisions of regulation V/19 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, requiring all ships of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on international voyages and passenger ships irrespective of size to be fitted with an automatic identification system (AIS), as specified in SOLAS regulation V/19, paragraph 2.4, taking into account the recommendations adopted by the Organization,

RECALLING FURTHER resolution A.917(22) as amended by resolution A.956(23) by which it adopted *Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)*,

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its [ninety-fourth] session and by the Sub-Committee on Navigation, Communications and Search and Rescue, at its first session,

1 ADOPTS the revised *Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)*, set out in the annex to the present resolution;

2 INVITES Governments concerned to take into account the annexed amendments to the Guidelines when implementing SOLAS regulations V/11, 12 and 19;

3 ALSO INVITES Governments which are considering setting, or have set regional frequencies or otherwise make use of AIS channel management, including changing to narrow-band operation, for whatever reason, to take into account the possible impact on the use of AIS at sea, and that it should only be used for urgent temporary situations. In such cases, Governments should notify the Organization of such areas and designated frequencies, for urgent circulation of that information to all Member Governments.

4 REQUESTS the Maritime Safety Committee to keep the Guidelines, as revised, under review and amend them as appropriate.

5 REVOKES resolution A.917(22), as amended by resolution A.956(23).

## ANNEX

### REVISED GUIDELINES FOR THE ONBOARD OPERATIONAL USE OF SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEMS (AIS)

#### PURPOSE

1 These Guidelines have been developed to promote the safe and effective use of shipborne Automatic Identification Systems (AIS), in particular to inform the mariner about the operational use, limits and potential uses of AIS. Consequently, AIS should be operated taking into account these Guidelines.

2 Before using shipborne AIS, the user should fully understand the principle of the current Guidelines and become familiar with the operation of the equipment, including the correct interpretation of the displayed data. A description of the AIS system, particularly with respect to shipborne AIS (including its components and connections), is contained in annex 1.

#### CAUTION

Not all ships carry AIS.

**The officer of the watch (OOW) should always be aware that other ships, in particular leisure craft, fishing boats and warships, and some coastal shore stations including Vessel Traffic Service (VTS) centres, might not be fitted with AIS.**

**The OOW should always be aware that AIS fitted on other ships as a mandatory carriage requirement might, under certain circumstances, be switched off on the master's professional judgement.**

3 The internationally-adopted shipborne carriage requirements for AIS are contained in SOLAS regulation V/19. The SOLAS Convention requires AIS to be fitted on certain ships through a phased implementation period spanning from 1st July 2002 to 1st July 2008. In addition, specific vessel types (e.g. warships, naval auxiliaries and ships owned/operated by Governments) are not required to be fitted with AIS. Also, small vessels (e.g. leisure craft, fishing boats) and certain other ships are exempt from carrying AIS. Moreover, ships fitted with AIS might have the equipment switched off. Users are therefore cautioned always to bear in mind that information provided by AIS may not be giving a complete or correct "picture" of shipping traffic in their vicinity. The guidance in this document on the inherent limitations of AIS and their use in collision avoidance situations (see paragraphs 39 to 43) should therefore be observed.

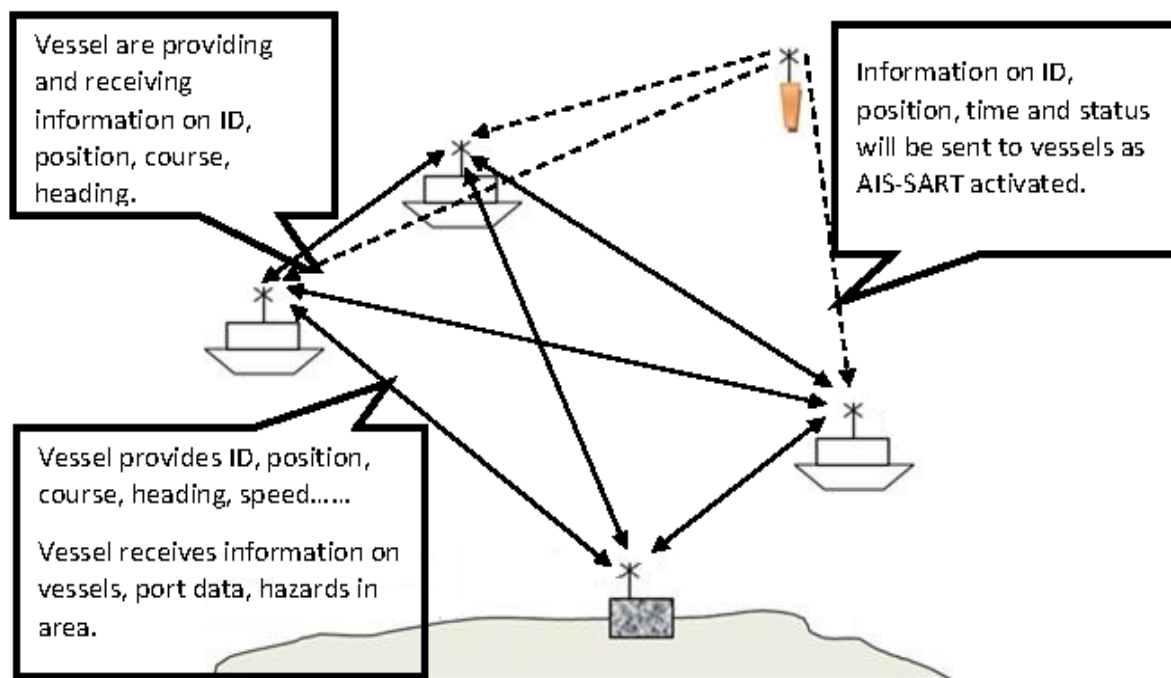
#### Objectives of AIS

4 AIS is intended to enhance: safety of life at sea; the safety and efficiency of navigation; and the protection of the marine environment. SOLAS regulation V/19 requires that AIS exchange data ship-to-ship and with shore-based facilities. Therefore, the purpose of AIS is to help identify vessels, assist in target tracking, *assist in search and rescue operation*, simplify information exchange (e.g. reduce verbal mandatory ship reporting) and provide additional information to assist situation awareness. In general, data received via AIS will improve the quality of the information available to the OOW, whether at a shore surveillance station or on board a ship. AIS is a useful source of supplementary information to that derived from navigational systems (including radar) and therefore an important 'tool' in enhancing situation awareness of traffic confronting users.



## DESCRIPTION OF AIS

Figure 1 – AIS system overview



5 Class A shipborne equipment complies with relevant IMO AIS carriage requirement. Class B shipborne equipment provides functionalities not in full accordance with IMO AIS carriage requirement. Class B devices may be carried on vessels which are not subject to the IMO SOLAS carriage requirements.

6 Shipborne AIS (see figure 1):

- transmits ship's own data to other vessels and VTS stations; and
- receives and makes available data of other vessels and VTS stations and other AIS stations, such as AIS-SARTs, AIS-ATON, etc.

7 When used with the appropriate display, shipborne AIS enables provision of fast, automatic information by calculating Closest Point of Approach (CPA) and Time to Closest Point of Approach (TCPA) from the position information transmitted by the target vessels.

8 AIS operates primarily on two dedicated VHF channels. Where these channels are not available regionally, the AIS is capable of being automatically switched to designated alternate channels by means of a message from a shore facility. Where no shore-based AIS or GMDSS sea Area A1 station is in place, the AIS should be switched manually. However, this capability should only be considered for use in urgent, temporary situations, noting the possible adverse effects on AIS at sea.

9 The capacity of the system allows for a great number of ships to be accommodated at the same time. Priority in the system is given to Class A devices. Class B devices operate at a reduced reporting rate or when free time slots are available.

10 The AIS is able to detect ships within VHF/FM range around bends and behind islands, if the landmasses are not too high. A typical value to be expected at sea is 20 to 30 nautical miles depending on antenna height. With the help of repeater stations, the coverage for both ship and VTS stations can be improved.

11 Information from a shipborne AIS is transmitted continuously and automatically without any intervention or knowledge of the OOW. An AIS shore station might require updated information from a specific ship by "polling" that ship, or alternatively, might wish to "poll" all ships within a defined sea area. However, the shore station can only increase the ships' reporting rate, not decrease it.

### **AIS INFORMATION SENT BY SHIPS**

#### **Ship's data content**

12 The AIS information transmitted by a ship is of three different types:

- static information, which is entered into the AIS on installation and need only be changed if the ship changes its name, MMSI, location of the electronic position fixing system (EPFS) antenna, or undergoes a major conversion from one ship type to another;
- dynamic information, which, apart from "Navigational status" information, is automatically updated from the ship sensors connected to AIS; and
- voyage-related information, which might need to be manually entered and updated during the voyage.

13 Details of the information referred to above are given in table 1 below:

<b>Information item</b>	<b>Information generation, type and quality of information</b>
<b>Static</b>	
MMSI (Maritime Mobile Service Identity)	Set on installation Note that this might need amending if the ship changes ownership
Call sign and name	Set on installation Note that this might need amending if the ship changes ownership
IMO Number	Set on installation
Length and beam	Set on installation or if changed
Type of ship	Select from pre-installed list
Location of electronic position fixing system (EPFS) antenna	Set on installation or may be changed for bi-directional vessels or those fitted with multiple antennae
<b>Dynamic</b>	
Ship's position with accuracy indication and integrity status	Automatically updated from the position sensor connected to AIS The accuracy indication is approximately 10 m.

Position Time stamp in UTC	Automatically updated from ship's main position sensor connected to AIS
Course over ground (COG)	Automatically updated from ship's main position sensor connected to AIS, if that sensor calculates COG This information might not be available
Speed over ground (SOG)	Automatically updated from the position sensor connected to AIS This information might not be available
Heading	Automatically updated from the ship's heading sensor connected to AIS
Navigational status	Navigational status information has to be manually entered by the OOW and changed as necessary, for example: <ul style="list-style-type: none"> <li>- underway by engines</li> <li>- at anchor</li> <li>- not under command (NUC)</li> <li>- restricted in ability to manoeuvre (RIATM)</li> <li>- moored</li> <li>- constrained by draught</li> <li>- aground</li> <li>- engaged in fishing</li> <li>- underway by sail</li> </ul> <p>In practice, since all these relate to the COLREGs, any change that is needed could be undertaken at the same time that the lights or shapes were changed</p>
Rate of turn (ROT)	Automatically updated from the ship's ROT sensor or derived from the gyro This information might not be available

<b>Voyage-related</b>	
Ship's draught	To be manually entered at the start of the voyage using the maximum draft for the voyage and amended as required (e.g. – result of de-ballasting prior to port entry)
Hazardous cargo (type)	To be manually entered at the start of the voyage confirming whether or not hazardous cargo is being carried, namely: <ul style="list-style-type: none"> <li>- DG (Dangerous goods)</li> <li>- HS (Harmful substances)</li> <li>- MP (Marine pollutants)</li> </ul> <p>Indications of quantities are not required</p>
Destination and ETA	To be manually entered at the start of the voyage and kept up to date as necessary
Route plan (waypoints)	To be manually entered at the start of the voyage, at the discretion of the master, and updated when required

<b>Short safety-related messages</b>	
	Free format short text messages would be manually entered, addressed either a specific addressee or broadcast to all ships and shore stations

**Table 1 – Data sent by ship**

*\*Due to the amendment of MARPOL categorization of hazardous cargo by resolution MEPC.118(52), cargo type may be categorized as A, B, C or D, rather than X, Y, Z or OS on older AIS equipment, as described in SN.1/Circ.227/Corr.1.*

The table below indicates the equivalence of the old and new category indications:

Current MARPOL category	Equivalent category on older AIS units
X	A
Y	B
Z	C
OS	D

- 14 The data is autonomously sent at different update rates:
- dynamic information dependent on speed and course alteration (see table 2 and table 3);
  - static and voyage-related data every 6 minutes or on request (AIS responds automatically without user action); and
  - safety-related text message: as required.

Type of ship	General reporting interval
Ship at anchor or moored and not moving faster than 3 knots	3 min
Ship at anchor or moored and moving faster than 3 knots	10 s
Ship 0-14 knots	10 s
Ship 0-14 knots and changing course	4 3 1/3 s
Ship 14-23 knots	6 s
Ship 14-23 knots and changing course	2 s
Ship >23 knots	3 2 s
Ship >23 knots and changing course	2 s

**Table 2 – Class A shipborne equipment reporting intervals**

Crafts not subject to SOLAS	Nominal reporting interval
Class B "SO" shipborne equipment not moving faster than 2 knots	3 min
Class B "SO" shipborne equipment moving 2-14 knots	30 s
Class B "SO" shipborne equipment moving 14-23 knots	15 s
Class B "SO" shipborne equipment moving > 23 knots	5 s
Class B "CS" shipborne equipment not moving faster than 2 knots	3 min
Class B "CS" shipborne equipment moving faster than 2 knots	30 s

**Table 3 – Class B shipborne equipment reporting intervals**

### Short safety-related messages

15 Short safety-related messages are fixed or free format text messages addressed either to a specified destination (MMSI) or all ships in the area. Their content should be relevant to the safety of navigation, e.g. an iceberg sighted or a buoy not on station.

Messages should be kept as short as possible. The system allows up to 158 characters per message but the shorter the message the more easily it will find free space for transmission. At present these messages are not further regulated, to keep all possibilities open.

16 Operator acknowledgement may be requested by a text message.

The operator should be aware that there are special safety-related messages and special user identities from devices such as the AIS-SART. Details are given in SN.1/Circ.322, as amended. There is no need for acknowledgement by a text message.

17 Short safety-related messages are only an additional means of broadcasting maritime safety information. Whilst their importance should not be underestimated, use of such messages does not remove any of the requirements of the Global Maritime Distress and Safety System (GMDSS).

18 The operator should ensure that he displays and considers incoming safety-related messages and should send safety-related messages as required.

19 According to SOLAS regulation V/31 (Danger messages)

*"The master of every ship which meets with dangerous ice, a dangerous derelict, or any other direct danger to navigation, or ...is bound to communicate the information by all the means at his disposal to ships at his vicinity, and also to the competent authorities..."*

20 Normally this is done via VHF voice communication, but "by all the means" now implies the additional use of the AIS short messages application, which has the advantage of reducing difficulties in understanding, especially when noting down the correct position.

### **Confidentiality**

21 When entering any data manually, consideration should be given to the confidentiality of this information, especially when international agreements, rules or standards provide for the protection of navigational information.

### **OPERATION OF AIS ON BOARD**

#### **OPERATION OF THE TRANSCEIVER UNIT**

#### **Activation**

22 AIS should always be in operation when ships are underway or at anchor. If the master believes that the continual operation of AIS might compromise the safety or security of his/her ship or where security incidents are imminent, the AIS may be switched off. Unless it would further compromise the safety or security, if the ship is operating in a mandatory ship reporting system, the master should report this action and the reason for doing so to the competent authority. Actions of this nature should always be recorded in the ship's logbook together with the reason for doing so. The master should however restart the AIS as soon as the source of danger has disappeared. If the AIS is shut down, static data and voyage-related information remains stored. Restart is done by switching on the power to the AIS unit. Ship's own data will be transmitted after a two minute initialization period. In ports AIS operation should be in accordance with port requirements.

### **Manual input of data**

23 The OOW should manually input the following data at the start of the voyage and whenever changes occur, using an input device such as a keyboard:

- ship's draught;
- hazardous cargo;
- departure, destination and ETA;
- route plan (way points);
- the correct navigational status; and
- short safety-related text messages.

It is recommended to use the United Nations Code for Trade and Transport Locations (UN/LOCODE) for the entry of the port of destination. In addition, it is recommended that the existing destination field be used for entering both the port of departure and the next port of call (space for 20 characters of 6 bit ASCII is available) using the UN/LOCODE.<sup>1</sup>

### **Check of information**

24 To ensure that own ship's static information is correct and up-to-date, the OOW should check the data whenever there is a reason for it. As a minimum, this should be done once per voyage or once per month, whichever is shorter. The data may be changed only on the authority of the master.

25 The OOW should also periodically check the following dynamic information:

- positions given according to WGS 84;
- speed over ground; and
- sensor information.

26 After activation, an automatic built-in integrity test (BIIT) is performed. In the case of any AIS malfunction an alarm is provided and the unit should stop transmitting.

27 The quality or accuracy of the ship sensor data input into AIS would not however be checked by the BIIT circuitry before being broadcast to other ships and shore stations. The ship should therefore carry out regular routine checks during a voyage to validate the accuracy of the information being transmitted. The frequency of those checks would need to be increased in coastal waters.

### **DISPLAY OF AIS DATA**

28 The AIS provides data that can be presented on the minimum display or on any suitable display device as described in annex 1.

---

<sup>1</sup> SN/Circ.244.

## Minimum display

29 The minimum mandated display provides not less than three lines of data consisting of bearing, range and name of a selected ship. Other data of the ship can be displayed by horizontal scrolling of data, but scrolling of bearing and range is not possible. Vertical scrolling will show all the other ships known to the AIS.

## Graphical display

30 Where AIS information is used with a graphical display, the following target types may be displayed:

**Sleeping target** A sleeping target indicates only the presence of a vessel equipped with AIS in a certain location. No additional information is presented until activated, thus avoiding information overload.

**Activated target** If the user wants to know more about a vessel's motion, he has simply to activate the target (sleeping), so that the display shows immediately:

- a vector (speed and course over ground);
- the heading; and
- ROT indication (if available) to display actually initiated course changes.

**Selected target** If the user wants detailed information on a target (activated or sleeping), he may select it. Then the data received, as well as the calculated CPA and TCPA values, will be shown in an alpha-numeric window.

The special navigation status will also be indicated in the alpha numeric data field and not together with the target directly.

**Dangerous target** If an AIS target (activated or not) is calculated to pass preset CPA and TCPA limits, it will be classified and displayed as a dangerous target and an alarm will be given.

**Lost target** If a signal of any AIS target at a distance of less than a preset value is not received, a lost target symbol will appear at the latest position and an alarm will be given.

**Other targets** Other targets such as AIS-SART, AIS-AToN, may be displayed with special symbols (see SN.1/Circ.243/Rev.1 *Guidelines for the presentation of navigational-related symbols, terms and abbreviations*).

## Symbols

31 The user should be familiar with the symbology used in the graphical display provided.

### ***INHERENT LIMITATIONS OF AIS***

32 The officer of the watch (OOW) should always be aware that other ships, in particular leisure craft, fishing boats and warships, and some coastal shore stations including Vessel Traffic Service (VTS) centres, might not be fitted with AIS.

33 The OOW should always be aware that other ships fitted with AIS as a mandatory carriage requirement might switch off AIS under certain circumstances by professional judgement of the master.

34 In other words, the information given by the AIS may not be a complete picture of the situation around the ship.

35 The users must be aware that transmission of erroneous information implies a risk to other ships as well as their own. The users remain responsible for all information entered into the system and the information added by the sensors.

36 The accuracy of AIS information received is only as good as the accuracy of the AIS information transmitted.

37 The OOW should be aware that poorly configured or calibrated ship sensors (position, speed and heading sensors) might lead to incorrect information being transmitted. Incorrect information about one ship displayed on the bridge of another could be dangerously confusing.

38 If no sensor is installed or if the sensor (e.g. the gyro) fails to provide data, the AIS automatically transmits the "not available" data value. However, the built-in integrity check cannot validate the contents of the data processed by the AIS.

39 It would not be prudent for the OOW to assume that the information received from other ships is of a comparable quality and accuracy to that which might be available on own ship.

### **USE OF AIS IN COLLISION AVOIDANCE SITUATIONS**

40 The potential of AIS as an assistance for anti-collision device is recognized and AIS may be recommended as such a device in due time.

41 Nevertheless, AIS information may merely be used to assist in collision avoidance decision-making. When using the AIS in the ship-to-ship mode for anti-collision purposes, the following cautionary points should be borne in mind:

- .1 AIS is an additional source of navigational information. It does not replace, but supports, navigational systems such as radar target-tracking and VTS; and
- .2 the use of AIS does not negate the responsibility of the OOW to comply at all times with the Collision Regulations, particularly rule 7 when determining whether risk of collisions exists.

42 The user should not rely on AIS as the sole information system, but should make use of all safety-relevant information available.

43 The use of AIS on board ship is not intended to have any special impact on the composition of the navigational watch, which should continue to be determined in accordance with the STCW Convention.



44 Once a ship has been detected, AIS can assist in tracking it as a target. By monitoring the information broadcast by that target, its actions can also be monitored. Many of the problems common to tracking targets by radar, namely clutter, target swap as ships pass close by and target loss following a fast manoeuvre, do not affect AIS. AIS can also assist in the identification of targets, by name or call sign and by ship type and navigational status.

#### **ADDITIONAL AND POSSIBLE FUTURE APPLICATIONS**

##### ***AIS IN VTS OPERATIONS***

#### **Pseudo Targets broadcast by VTS**

45 VTS centres may send information about vessels which are not carrying AIS and which are tracked only by VTS radar via the AIS to vessels equipped with AIS. Any VTS/generated/synthetic target broadcast by VTS should be clearly identified as such. Particular care should always be taken when using information which has been relayed by a third party. Accuracy of these targets may not be as complete as actual directly-received targets, and the information content may not be as extensive.

#### **Text messages**

46 VTS centres may also send short messages either to one ship, all ships, or ships within a certain range or in a special area, e.g.:

- (local) navigational warnings;
- traffic management information; and
- port management information.

47 A VTS operator may request, by a text message, an acknowledgement from the ship's operator.

**Note:** The VTS should continue to communicate via voice VHF. The importance of verbal communication should not be underestimated. This is important to enable the VTS operator to:

- assess vessels' communicative ability; and
- establish a direct communication link which would be needed in critical situations.

#### **(D)GNSS corrections**

48 (D)GNSS corrections may be sent by VTS centres via AIS.

#### **MANDATORY SHIP REPORTING SYSTEMS**

49 AIS is expected to play a major role in ship reporting systems. The information required by coastal authorities in such systems is typically included in the static voyage-related and dynamic data automatically provided by the AIS system. The use of the AIS long-range feature, where information is exchanged via communications satellite, may be implemented to satisfy the requirements of some ship reporting systems.

### ***AIS IN SAR OPERATIONS***

50 AIS may be used in search and rescue operations. By receiving messages from AIS-SART, operators get more accurate information, especially on the position of survival craft. In combined aerial and surface searches AIS may allow the direct presentation of the position on other displays such as radar or ECS/ECDIS, which facilitates the task of SAR craft. For ships in distress without AIS, the On Scene Coordinator (OSC) could create an AIS target.

### ***AIDS TO NAVIGATION***

51 AIS, when fitted to selected fixed and floating aids to navigation can provide information to the mariner such as:

- position;
- status;
- tidal and current data; and
- weather and visibility conditions.

### ***AIS IN AN OVERALL INFORMATION SYSTEM***

52 AIS will play a role in an overall international maritime information system, supporting voyage planning and monitoring. This will help Administrations to monitor all the vessels in their areas of concern and to track dangerous cargo.

### **REFERENCE DOCUMENTS**

- IMO Recommendation on Performance Standards for a Universal Shipborne Automatic Identification System (AIS), (MSC. 74(69), annex 3)
- IMO SOLAS Convention Chapter V
- Performance Standards for survival craft AIS search and rescue transmitters (AIS-SART) for use in search and rescue operations (resolution MSC.246(83))
- Guidance on the use of the UN/LOCODE in the destination field in AIS messages (SN/Circ.244).
- ITU Radio Regulations, appendix 18, table of transmitting frequencies in the VHF maritime mobile band
- Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile frequency band (Recommendation ITU-R M.1371-5)
- IEC Standard 61993 Part 2: Class A shipborne equipment of the Universal Shipborne Automatic Identification System (AIS) Operational and Performance Requirements, Methods of Testing and required Test Results.

## Annex 1

### **DESCRIPTION OF AIS**

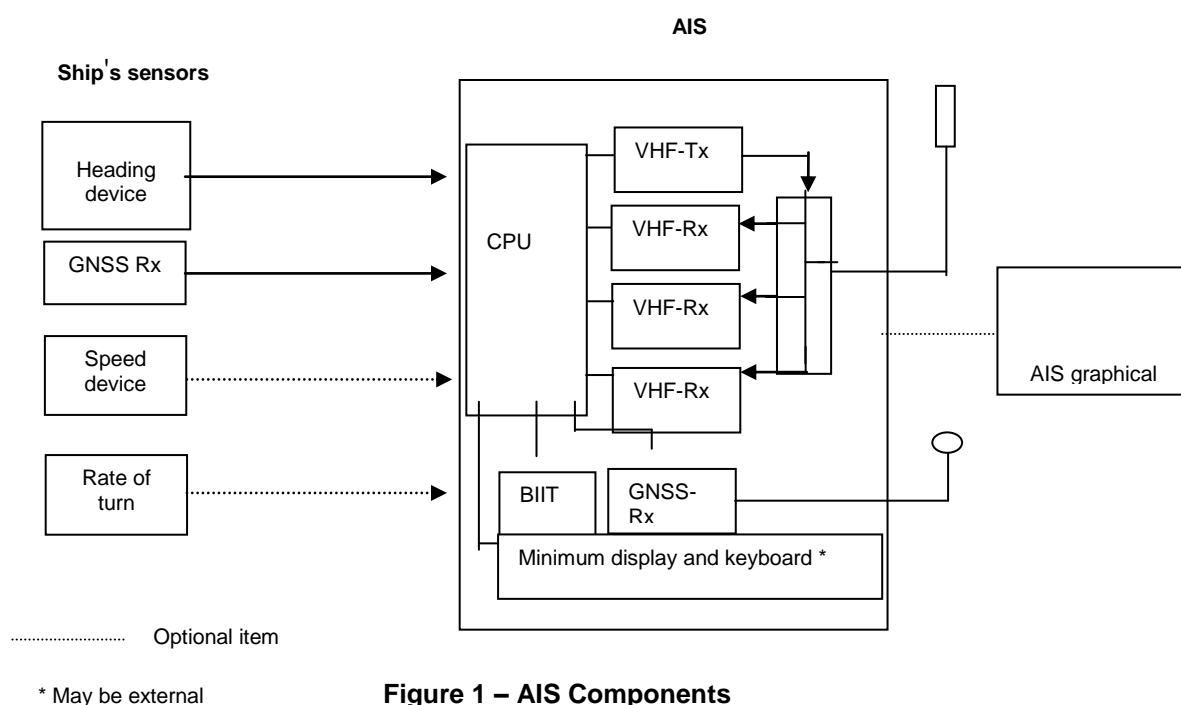
#### **COMPONENTS**

- 1 In general, an onboard AIS (see figure 1) consists of:
  - antennas;
  - one VHF transmitter;
  - two multi-channel VHF receivers;
  - one channel 70 VHF receiver for channel management;
  - a central processing unit (CPU);
  - an electronic position-fixing system, Global Navigation Satellite System (GNSS) receiver for timing purposes and position redundancy;
  - interfaces to heading and speed devices and to other shipborne sensors;
  - interfaces to radar/Automatic Radar Plotting Aids (ARPA), Electronic Chart System/Electronic Chart Display and Information System (ECS/ECDIS) and Integrated Navigation Systems (INS);
  - BIIT (built-in integrity test); and
  - minimum display and keyboard to input and retrieve data.

With the integral minimum display and keyboard unit, the AIS would be able to operate as a stand-alone system. A stand-alone graphical display or the integration of the AIS data display into other devices such as INS, ECS/ECDIS or a radar/ARPA display would significantly increase the effectiveness of AIS, when achievable.

- 2 All onboard sensors must comply with the relevant IMO standards concerning availability, accuracy, discrimination, integrity, update rates, failure alarms, interfacing and type-testing.

- 3 AIS provides:
  - a built in integrity test (BIIT) running continuously or at appropriate intervals;
  - monitoring of the availability of data;
  - an error detection mechanism of the transmitted data; and
  - an error check on the received data.



**Figure 1 – AIS Components**

## **CONNECTIONS**

### **The connection of AIS to external navigational display systems**

4 The AIS can be connected either to an additional dedicated AIS display unit, possibly one with a large graphic display, or as an input to an existing navigational system devices such as a radar, or an Electronic Chart System (ECS), Electronic Chart Display and Information System (ECDIS), or but in the latter case only as part of an integrated navigation system (INS). Such system interconnection and data integration is recommended."

### **The connection of AIS to external portable navigational equipment**

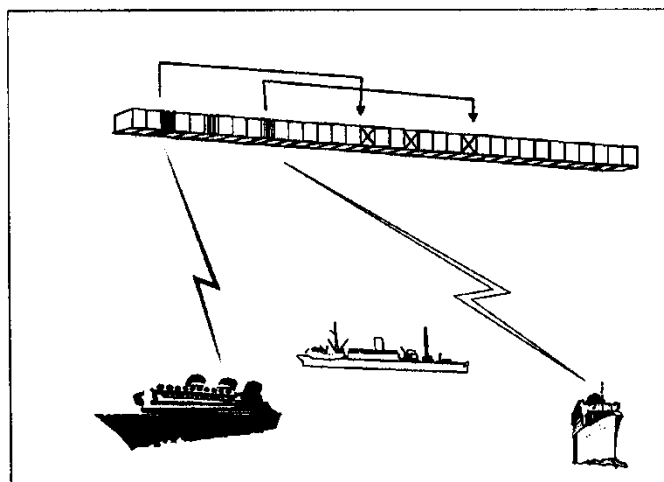
5 It is becoming common practice for pilots to possess their own portable navigational equipment, which they carry on board. Such devices can be connected to shipborne AIS equipment and display the targets they receive. Some administrations require this connection to be provided at the bridge front.

Annex 2

**TECHNICAL DESCRIPTION**

1 AIS operates primarily on two dedicated VHF channels (AIS1 – 161,975 MHz and AIS2 – 162,025 MHz). Where these channels are not available regionally, the AIS is capable of automatically switching to alternate designated channels. However, this capability should only be considered for use in urgent, temporary situations, noting the possible adverse effects on AIS at sea.

2 The required ship reporting capacity according to the IMO performance standard amounts to a minimum of 2000 time slots per minute (see figure 2). The ITU Technical Standard for the Universal AIS provides 4500 time slots per minute. The broadcast mode is based on a principle called (S)TDMA (Self-organized Time Division Multiple Access) that allows the system to be overloaded by 400 to 500% and still provide nearly 100% throughput for ships closer than 8 to 10 NM to each other in a ship-to-ship mode. In the event of system overload, only targets far away will be subject to drop-out in order to give preference to targets close by that are a primary concern for ship-to-ship operation of AIS. In practice, the capacity of the system allows for a great number of ships to be accommodated at the same time.



**Figure 2 – Principles of TDMA**

\*\*\*



## ANNEX 10

### REVIEW AND MODERNIZATION OF THE GMDSS

#### OUTCOME OF THE HIGH LEVEL REVIEW OF THE GMDSS

##### Introduction

1 The Maritime Safety Committee, at its ninetieth session, approved an unplanned output on "Review and modernization of the Global Maritime Distress and Safety System (GMDSS)", with a target completion year of 2017. In accordance with the work plan, this report is the final report on the outcome of the High-level Review as approved by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its first session (30 June to 4 July 2014).

2 The work plan provides for this High-level Review to be followed by a Detailed Review. The Sub-Committee on Navigation, Communication and Search and Rescue (NCSR) and its correspondence group performed the High-level Review, with the participation of the Joint IMO/ITU Experts Group on Maritime radiocommunication matters (Experts Group).

3 The High-level Review was limited to the following over-arching issues concerning the GMDSS:

- .1 review of the existing nine functional requirements, including:
  - .1 the possible need for inclusion of security-related communications in the GMDSS; and
  - .2 the consideration of the possible need to develop a clearer definition of "General Communications", which is continuing to cause confusion and consider if this category should be included within the requirements of the GMDSS;
- .2 the need for the current order of priorities in use for radiocommunications;
- .3 the future need for the four different areas of carriage requirements (sea areas A1 to A4), and port State control procedures if sea areas are changed;
- .4 the future need to allow for differences for certain categories of ships, including non-SOLAS ships;
- .5 whether distress communications should be separated from other types of communications and in consequence whether the arrangements in chapters in SOLAS could be revised (Note: chapter II, (part D – Electrical installations), chapter III, (part B in several instances), chapter V in various instances including e-navigation applications).
- .6 possible alignment between chapters III, IV, V and XI-2 of SOLAS, in particular, with regard to type approval, secondary equipment and maintenance arrangements and their regulatory status (i.e. mandatory or discretionary); and

- .7 assess whether to increase the use of goal-based methodologies when reviewing the regulations and regulatory framework for GMDSS in SOLAS chapters IV and V and the STCW Convention, to provide flexibility to allow the GMDSS to adapt to new and evolving technologies without major revision of the SOLAS and STCW Conventions in future.

### **Review of the existing nine functional requirements**

4 The current regulation IV/4 of SOLAS requires that every ship<sup>1</sup>, while at sea, shall be capable:

- .1 except as provided in regulations 8.1.1 and 10.1.4.3, of transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service;
- .2 of receiving shore-to-ship distress alerts;
- .3 of transmitting and receiving ship-to-ship distress alerts;
- .4 of transmitting and receiving search and rescue coordinating communications;
- .5 of transmitting and receiving on-scene communications;
- .6 of transmitting and, as required by regulation V/19.2.3.2, receiving signals for locating;
- .7 of transmitting and receiving maritime safety information;
- .8 of transmitting and receiving general radio communications to and from shore-based radio systems or networks subject to regulation 15.8; and
- .9 of transmitting and receiving bridge-to-bridge communications.

### Security-related communications

5 Requirements for maritime security are given in SOLAS chapter XI-2. The Ship Security Alert System (SSAS) does not involve communication with other ships or with coast radio stations. Therefore, those communications are neither ship-to-ship nor ship-to-shore communications. Communications are addressed to a designated competent authority. Therefore, security-related communications should not be a functional requirement of the GMDSS but chapter IV should include a requirement for ships to be capable of security related communications, and a definition of "security-related communications" is also required.

6 Therefore, a definition of "security-related communications" is proposed to be added to regulation IV/2, as follows:

*"Security-related communications* means communications associated with the update of security levels, security incidents or threat thereof and security-related information prior to the entry of a ship into a port."

---

<sup>1</sup> Under the general applicability requirements of the SOLAS Convention as well as regulation IV/1.1, "every ship" means cargo ships over 300 gross tonnage and passenger ships, on international voyages.



7 Security information is occasionally transmitted as Maritime Safety Information (MSI). Security-related requirements are already included in paragraph 4.2.2.17 of the Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI Manual). A revision to the definition of MSI, therefore, is not required.

#### General communications

8 The existing definition in SOLAS regulation IV/2.1.5, defines general radio communications as "operational and public correspondence traffic, other than distress, urgency and safety messages conducted by radio."

9 Coast radio stations (Government owned) which provided public correspondence facilities when the GMDSS was first designed have now all largely closed down. However, facilities for public correspondence are still required. These communications are now being achieved using commercial services which are not normally associated with coast radio stations and the term public correspondence is no longer widely used. For the Modernized GMDSS it is therefore proposed to change the term Public correspondence to "Other communications" and include a new capability for Other communications but not as part of the GMDSS functional requirements.

10 The definition of urgency and safety communications is given in article 33 of the Radio Regulations and now includes the following communications:

- .1 navigational and meteorological warnings and urgent information;
- .2 ship-to-ship safety of navigation communications;
- .3 ship reporting communications;
- .4 support communications for search and rescue operations;
- .5 other urgency and safety messages; and
- .6 communications relating to the navigation, movements and needs of ships and weather observation messages destined for an official meteorological service.

Operational communications is now, therefore, covered under the definition of urgency and safety communications.

11 It is proposed to redefine the term "General communications" by aligning it with the Radio Regulations. The new definition proposed is:

*"General communications* means operational communications, other than distress conducted by radio."

12 MSC/Circ.1038 on *Guidelines for general communications* will need to be revised or withdrawn to reflect this change.

### Maritime Safety Information (MSI)

13 A further issue that was identified during the review involved Maritime Safety Information (MSI).

14 Under the existing definition in SOLAS regulation IV/2.1.9, "*Maritime safety information*" means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships. This definition is also consistent with the Radio Regulations and performed by a shore base service and there is no need to revise the current definition of MSI in SOLAS regulation IV/2. However, in order to align the SOLAS definition with the common use of the term "MSI", and as a consequence the use of this term in other documents, the need was identified to include the abbreviation "MSI" in SOLAS regulation IV/2, by the following editorial amendment: "*Maritime Safety Information (MSI)* means navigational and .....".

15 The existing functional requirement No.7 however requires that ships have a capability to transmit and receive maritime safety information. This capability results from requirements in SOLAS V for ships to transmit danger messages.

16 It is, therefore, proposed to add a new functional requirement for ships to be capable for transmitting and receiving safety-related information, whilst retaining the functional requirement for ships to receive MSI.

### Proposed functional requirements for the Modernized GMDSS

17 The new text of regulation IV/4 is proposed as follows:

1 Every ship, while at sea, shall be capable of:

- .1 performing the Global Maritime Distress and Safety System (GMDSS) functions as follows:
  - .1 transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service;
  - .2 receiving shore-to-ship distress alert relays;
  - .3 transmitting and receiving ship-to-ship distress alerts;
  - .4 transmitting and receiving search and rescue coordinating communications;
  - .5 transmitting and receiving on-scene communications;
  - .6 transmitting and receiving signals for locating;
  - .7 transmitting and receiving safety-related information;
  - .8 receiving Maritime Safety Information (MSI);
  - .9 transmitting and receiving general communications; and
  - .10 transmitting and receiving bridge-to-bridge communications,

- .2 transmitting and receiving security-related communications, in accordance with the requirements of the International Ship and Port Facility Security Code; and
- .3 transmitting and receiving other communications to and from shore-based systems or networks.

### **Order of priorities in use for radiocommunications**

18 The Radio Regulations provide the existing order of four levels of priority, as follows:

- .1 Distress calls, distress messages, and distress traffic.
- .2 Urgency communications.
- .3 Safety communications.
- .4 Other communications.

19 The four priorities are needed for communications and operational use in general, including voice, maritime safety information, as well as other text and data messages. Priorities for text and data messages can be used to sort message displays in order of importance or the way in which they are displayed. However, two priorities are sufficient for controlling the radiocommunication link, for example by using pre-emption.

20 It is concluded, therefore, that the four levels of priority should be retained, and apply to voice, text, and data messages and that there is no need to revise article 53 of the Radio Regulations. Automated systems should give priority to category 1 as required in article 53.2. Automated systems should also give priority to categories 2 and 3 (ahead of category 4), but this would not be in conflict with article 53.

### **Future need for the four different areas of carriage requirements**

#### Existing definitions

21 SOLAS regulation IV/2 defines the existing sea areas:

"Sea area A1" means an area within the radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government.

"Sea area A2" means an area, excluding sea area A1, within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government.

"Sea area A3" means an area, excluding sea areas A1 and A2, within the coverage of an INMARSAT geostationary satellite in which continuous alerting is available.

"Sea area A4" means an area outside sea areas A1, A2 and A3.

#### Sea area A1

22 During the High-level Review it was noted that extensive use was made of VHF communications and, therefore, sea area A1 should be retained.

### Sea area A2

23 Equipment available for terrestrial communication on board ships is invariably combined MF/HF transceivers which are suitable for use in sea areas A2 and A3. The combination of those two areas was considered, however, it was noted that considerable use is made of MF voice communications. Furthermore, there are also different maintenance requirements for sea areas A2 and A3, and it was finally concluded that sea area A2 should be retained as a separate sea area.

### Sea areas A3 and A4

24 The definition of the boundary between sea area A3 and A4 is currently defined by Inmarsat coverage, but Inmarsat might not always be the only GMDSS satellite provider. In future, the Organization might recognize regional or global satellite systems to provide GMDSS services in an A3 sea area, each of them providing coverage different to the current A3 sea area.

25 It is noted that Sea areas A3 and A4 are defined by the Organization, whereas A1, which is related to VHF coverage, and A2, which is related to MF coverage, is defined by Contracting Governments.

26 It was considered that HF should remain a requirement for sea area A4 and an option for sea area A3, excluding any special requirements which might be developed under the Polar Code.

27 It was noted that there may be difficulties to relay distress alerts when a large number of providers would offer services through different systems, as SAR authorities would not know what particular equipment is on any particular ship.

28 One way for differentiating between sea areas A3 and A4 which was considered, is that sea area A3 is related to satellite coverage and sea area A4 is related to HF.

29 References to "Inmarsat" throughout SOLAS chapter IV will need to be changed to refer to "recognized mobile satellite communication service", to be consistent with terminology in resolution A.1001(25).

### Options for the definition of sea areas A3 and A4

30 Recognizing that other options for the definition of sea areas A3 and A4 could be developed, three different options for the definition of sea areas A3 and A4 (SOLAS regulation IV/2.14) were identified as follows:

#### OPTION 1

"Sea area A3" means an area, excluding sea areas A1 and A2, within the coverage of a recognized mobile satellite communication service using geostationary satellites in which continuous alerting is available.

"Sea area A4" means an area outside sea areas A1, A2 and A3.

#### Comments on Option 1:

- .1 Option 1 is the most similar to the current SOLAS definition, except that the reference to Inmarsat has been deleted.
- .2 Option 1 does not facilitate the introduction of non-geostationary satellite systems.

- .3 The boundary between sea areas A3 and A4 would depend upon the satellite system used and could be different for different ships.

#### OPTION 2

"Sea area A3" means an area, excluding sea areas A1 and A2, within the coverage of a recognized mobile satellite communication service in which continuous alerting is available between [70][76] degrees North and South.

"Sea area A3-[R][Regio][Regional][Sub]" means a sub-area within sea area A3, within the regional coverage of a recognized mobile satellite communication service in which continuous alerting is available.

"Sea area A4" means an area outside sea areas A1, A2 and A3.

"Sea area A4-R" means a sub-area within sea area A4, within the regional coverage of a recognized mobile satellite communication service in which continuous alerting is available.

Comments on Option 2:

- .1 Option 2 defines a clear boundary for the A3 sea area and, as such, might be helpful to an Administration in issuing safety radio certificates to ships.

#### OPTION 3

"Sea area A3" means an area, excluding sea areas A1 and A2, within the coverage of a recognized mobile satellite communication service in which continuous alerting is available as may be defined by the Organization.

"Sea area A4" means an area outside sea areas A1, A2 and A3.

Comments on Option 3:

- .1 Option 3 defines the sea area A3 as somewhere where satellite coverage is available.
- .2 The boundary between sea areas A3 and A4 would depend upon the satellite system used and could be different for different ships.
- .3 The safety radio certificate would require details of the geographical area in which the ship is permitted to sail.
- .4 Availability of a global satellite system would result in not having a sea area A4 for ships that are certificated to use a global system.

#### Port State control procedures if sea areas are changed

31 In future, if other satellite service providers are recognized by the Organization, the safety radio certificates of the ship should be required to define the geographic area in which the ship is permitted to operate. The detail of the geographical areas covered by all the different satellite service providers will be given in the GMDSS Master Plan.

#### Follow up

32 The definition of the different areas of carriage requirements (sea areas) and port State control procedures will be further considered under the detailed review.

### **Separation of distress communications from other types of communications**

33 As described in paragraph 17 it was concluded that "security-related communications" and "other communications" could be separated from distress and safety communications. No further revisions to the arrangements in other chapters of SOLAS were considered to be necessary at this time.

### **Future need to allow for differences for certain categories of ships, including non-SOLAS ships**

34 After WRC-07, Articles 30 through 34 of the Radio Regulations contain provisions for operational use of the GMDSS, which apply to all ships of all types. SOLAS chapter IV includes GMDSS radio equipment requirements and applies to cargo ships of 300 gross tonnage and upwards and to passenger ships, on international voyages. Under regulation I/3, the following types of ships are excluded:

- (i) ships of war and troopships
- (ii) cargo ships of less than 500 gross tonnage (note: this exemption is expressly brought down to 300 gross tonnage in chapter IV)
- (iii) ships not propelled by mechanical means
- (iv) wooden ships of primitive build
- (v) pleasure yachts not engaged in trade
- (vi) fishing vessels

The Organization also has Codes (DSC, SPS, MODU and HSC Codes) and other instruments such as the Torremolinos International Convention for the Safety of Fishing Vessels, 1977 (with the its 1993 Protocol and the 2012 Cape Town Agreement) containing requirements for carriage of radio equipment for certain other types of ships.

35 It was suggested that one way to bring consistency to the GMDSS across all types of ships, would be to create a GMDSS Code, which could be applied as mandatory to ships under SOLAS chapter IV, as well as various codes. It could be advisory for other types of ships and serve as a recommendation to governments for application to their domestic services.

36 However, it was concluded that at the present time, there is no compelling case for the development of a GMDSS Code. Developing such a code would require addressing the complex issues that would arise from the various instruments that require the carriage of radio equipment. Each of these would then need to be revised to reference the code.

37 Further items for possible consideration in the detailed review could include:

- .1 relating distress signals in COLREGs to SOLAS chapter IV and requiring SOLAS Convention vessels to relay a distress alert from non-Convention vessels to shore;
- .2 the need for all equipment working in the GMDSS system to be type approved, to ensure that it meets compatible standards;
- .3 reduction in the applicable tonnage limits for SOLAS chapter IV, applicable functional requirements to non-Convention ships as currently defined, maintenance of equipment and qualification of personnel; and
- .4 use of personal devices, such as Man Overboard Devices (MOBs), etc., and protection of the integrity of the GMDSS.

### **Review of existing systems considered for replacement, and existing and new systems for inclusion in the modernized GMDSS**

38 A number of new communication technologies and systems have been developed since the introduction of the GMDSS, which are currently not included in the GMDSS. They offer potential improvements and advantages. The following equipment and systems, among others, might be included in the modernized GMDSS:

- .1 AIS;
- .2 HF Email and data systems;
- .3 VHF data systems;
- .4 Application Specific Messages over AIS;
- .5 NAVDAT (500 kHz and/or HF);
- .6 Modern satellite communication technologies;
- .7 Additional GMDSS satellite service providers;
- .8 Hand-held satellite telephones in survival craft;
- .9 Hand-held VHF with DSC and GNSS for survival craft;
- .10 Man Overboard Devices;
- .11 Cospas-Sarsat MEOSAR system; and
- .12 AIS and GNSS-equipped EPIRBs.

39 Other systems including mobile internet services, mobile telephone services, broadband wireless access (BWA), e.g. Wimax/mesh networks wireless Local Area Networks and non-regulated Satellite Emergency Notification Devices (SENDs), are more and more used by the public including non-SOLAS ships. These systems do not seem to have a place in the modernized GMDSS.

40 It was therefore concluded that there are a number of new communication systems and equipment that might be part of a modernized GMDSS, However, until the detailed review of the GMDSS is completed it is too early to decide which systems and equipment would or would not be included. Similarly, it is too soon to decide which systems, relying on older or inefficient technologies, might be considered for replacement by more modern systems.

### **Possible alignment between chapters III, IV, V and XI-2 of SOLAS and the use of goal-based methodologies**

41 There are differences in arrangements with regard to type approval, secondary equipment and maintenance arrangements and the regulatory status in SOLAS chapters III, IV, V and XI-2. Other SOLAS chapters are also trending toward using goal-based methodologies in order to provide the maximum possible flexibility for designers, and to allow for innovation.

42 With respect to the GMDSS and communications in general, interoperability is required between ships and between ships and shore stations. In the course of the High-level Review, as well as in the work on the e-navigation strategy, there have been numerous calls for standardized user interfaces.

43 However because of the need for interoperability of radiocommunications between ships and between ships and shore stations, as well as the need for consistent user interfaces, alignment with other SOLAS chapters and the use of goal-based methodologies is not appropriate.

\*\*\*





**ANNEX 11**

**DRAFT REVISED PLAN OF WORK FOR THE GMDSS REVIEW  
AND MODERNIZATION PROJECT**

<b>Coordinated Timeline and Planned Outputs for the GMDSS Review and Modernization Project</b>				
<b>Y</b>	<b>Q</b>	<b>Meeting</b>	<b>Output</b>	<b>Year deliverable</b>
<b>2012</b>	<b>2</b>	<b>MSC 90</b>	Approval of Work Plan, along with a new unplanned output on the "Review and modernization of the GMDSS" Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
	<b>2</b>		Correspondence group begins GMDSS Review in preparation for COMSAR 17	
	<b>3</b>	<b>NAV 58</b>	Provide contributions from e-navigation perspective	
	<b>3</b>		Correspondence group provides its report to JEG 8	
	<b>4</b>	<b>19th ICAO/IMO Joint Working Group on SAR (JWG 19)</b>	Reviews the report of COMSAR 16 and, in particular, the work plan and provides recommendations in relation to the High-level Review to COMSAR 17	
	<b>4</b>	<b>8th Joint IMO/ITU Experts Group (JEG 8)</b>	Reviews the report of the correspondence group and the outcome of NAV 58 and reports to COMSAR 17	
	<b>4</b>	<b>MSC 91</b>	Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
<b>2013</b>	<b>1</b>	<b>COMSAR 17</b>	Continues GMDSS Review, taking into account contributions of correspondence group, NAV 58, JWG 19 and JEG 8 and completes the High-level Review Re-establish correspondence group to prepare relevant input for COMSAR 18	First draft of High-level Review completed
	<b>1</b>	<b>STW 44</b>	Reviews report of COMSAR 17 and MSC 90 Provide contributions from STCW and human element perspective	
	<b>2</b>	<b>MSC 92</b>	Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
	<b>3</b>	<b>NAV 59</b>	Reviews report of COMSAR 17 Provide contributions from e-navigation perspective	
	<b>3</b>		Correspondence group provides interim report to JEG 9	
	<b>3</b>	<b>JEG 9</b>	Reviews the interim report of the correspondence group and the outcome of NAV 59 and provides recommendations to correspondence group and <b>NCSR 1</b>	
	<b>4</b>	<b>JWG 20</b>	Reviews report of COMSAR 17 and provides recommendations to <b>NCSR 1</b>	

Coordinated Timeline and Planned Outputs for the IMO GMDSS Modernization Project				
Y	Q	Meeting	Output	Year deliverable
2014	1		Correspondence group reports to NCSR 1	<ul style="list-style-type: none"> <li>High-level Review approved by NCSR 1</li> <li>First draft detailed review completed</li> </ul>
	1	HTW 1	Reviews report of COMSAR 17 Provide contributions from STCW and human element perspective	
	2	MSC 93	Coordination meeting of Chairmen of NCSR, HTW, and Secretariat	
	2/3	NCSR 1	Continues GMDSS Review taking into account reports of correspondence group, NAV 59, JEG 9, JWG 20 and HTW 1 Re-establish correspondence group to prepare relevant input for NCSR 2	
	3		Correspondence group provides interim report to JEG 10	
	4	JEG 10	Reviews the interim report of the correspondence group and provides recommendations to correspondence group and NCSR 2	
	4	JWG 21	Reviews report of NCSR 1 and provides recommendations to NCSR 2	
	4	MSC 94	Coordination meeting of Chairmen of NCSR, HTW, and Secretariat	
2015 (extra year to finalise detailed review)	1		Correspondence group reports to NCSR 2	<ul style="list-style-type: none"> <li>Draft detailed review completed</li> </ul>
	1	HTW 2	Reviews report of NCSR 1 Provide contributions from STCW and human element perspective	
	1	NCSR 2	Continue the GMDSS Review, taking into account contributions of correspondence group, JEG 10, JWG 21 and HTW 2 Re-establish correspondence group to prepare relevant input for NCSR 3	
	2	MSC 95	Coordination meeting of Chairmen of NCSR, HTW, and Secretariat	
	3		Correspondence group provides interim report to JEG 11	
	3	JEG 11	Reviews the interim report of the correspondence group and provides recommendations to correspondence group and NCSR 3	
	4	JWG 22	Reviews report of NCSR 2 and provides recommendations to NCSR 3	

Coordinated Timeline and Planned Outputs for the IMO GMDSS Modernization Project				
Y	Q	Meeting	Output	Year deliverable
2016 2015	1		Correspondence group reports to NCSR 3	<ul style="list-style-type: none"> <li>Detailed review endorsed by NCSR 3 and approved by MSC 96</li> <li>First outline of the Modernization Plan</li> </ul>
	1	HTW 3	Reviews report of NCSR 2 Provide contributions from STCW and human element perspective	
	1	NCSR 3	Completes the GMDSS Review, taking into account contributions of correspondence group, JEG 11, JWG 22 and HTW 3, and begins to discuss the development of the GMDSS Modernization Plan Re-establish correspondence group to prepare relevant input for NCSR 4	
	2	MSC 96	Reviews report of NCSR 3 and approves (1) the outcome of the GMDSS Review and (2) the continuation of the project in developing the modernization plan. Coordination meeting of Chairmen of NCSR, HTW, and Secretariat	
	3		Correspondence group provides interim report to JEG 12	
	3	JEG 12	Reviews the interim report of the correspondence group and provides recommendations to correspondence group and NCSR 4	
	4	JWG 23	Reviews report of NCSR 3 and provides recommendations to NCSR 4	
	4	MSC 97	Coordination meeting of Chairmen of NCSR, HTW, and Secretariat	
2017 2016	1		Correspondence group reports to NCSR 4	<ul style="list-style-type: none"> <li>Draft Modernization Plan</li> </ul>
	1	HTW 4	Reviews report of NCSR 3 and MSC 96 Provide contributions from STCW and human element perspective	
	1	NCSR 4	Continues development of GMDSS Modernization Plan, taking into account reports of MSC 96, correspondence group, JEG 12, JWG 23 and HTW 4 Re-establish correspondence group to prepare relevant input for NCSR 5	
	2	MSC 98	Coordination meeting of Chairmen of NCSR, HTW, and Secretariat	
	3		Correspondence group provides interim report to JEG 13	
	3	JEG 13	Reviews interim report of the correspondence group and provides recommendations to the correspondence group and NCSR 5	
	4	JWG 24	Reviews report of NCSR 4 and provides recommendations to NCSR 5	
2018 2017	1		Correspondence group reports to NCSR 5	<ul style="list-style-type: none"> <li>Modernization Plan endorsed by NCSR 5 and approved by MSC 99</li> </ul>
	1	HTW 5	Reviews report of NCSR 4 Provide contributions from STCW and human element perspective	
	1	NCSR 5	Completes GMDSS Modernization Plan taking into account reports of correspondence group, JEG 13, JWG 24 and HTW 5 Provides final report to MSC 99	
	2	MSC 99	Reviews report of NCSR 5 Acts on final GMDSS Modernization Plan	

\*\*\*



**ANNEX 12**

**DRAFT MSC CIRCULAR**

**REVISED JOINT IMO/IHO/WMO MANUAL ON  
MARITIME SAFETY INFORMATION (MSI)**

1 The Maritime Safety Committee (MSC), at its [ninety-fourth session (17 to 21 November 2014)], noted and approved the revised Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI), as prepared by WMO and IHO and agreed by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) at its first session (30 June to 4 July 2014).

2 MSC 94 noted that section 7 provides extensive guidance and examples on the structure and text to be used in navigational warnings and that, to ensure greater uniformity, this section would be provided in the English language in an additional annex in the circulars and publications in the Spanish and French languages.

3 The Committee was of the opinion that the widest possible use of the manual should be encouraged and invited Member Governments to bring the annexed Joint IMO/IHO/WMO Manual to the attention of mariners and those involved in the promulgation of navigational warnings and meteorological forecasts and warnings.

4 This circular supersedes MSC.1/Circ.1310.

5 The Committee decided that the amendments will come into force on [1 January 2016].

**Contents**

	<i>Page</i>
Foreword .....	3
1 General information .....	5
2 Promulgation of maritime safety information .....	5
3 NAVAREA/Sub-Area/National Coordinators' resources and responsibilities .....	15
4 Navigational warnings for the World-Wide Navigational Warning Service .....	19
5 The structure of navigational warnings .....	22
6 Message format of navigational warnings .....	24
Part 1 – Preamble .....	24
Part 2 – Warning .....	26
Part 3 – Postscript .....	27
7 Guidance and examples for navigational warnings by type of hazard .....	28
8 METAREA Coordinator resources and responsibilities .....	77
9 Meteorological warnings and forecasts .....	78
10 Examples for meteorological warnings and forecasts .....	86
11 Search and rescue notification .....	91
12 Procedure for amending the joint IMO/IHO/WMO Manual on MSI .....	91

## Foreword

SOLAS regulation IV/12.2 states that "Every ship, while at sea, shall maintain a radio watch for broadcasts of maritime safety information on the appropriate frequency or frequencies on which such information is broadcast for the area in which the ship is navigating."

At the request of the Sub-Committee on Radiocommunications, the International Hydrographic Organization (IHO) and the World Meteorological Organization (WMO), a joint document on the drafting of maritime safety information broadcasts was produced (the Joint IMO/IHO/WMO Manual on Maritime Safety Information). The document was circulated to IHO Member States under IHB CL 10/1994 and as COMSAR/Circ.4 by the Sub-Committee on Radiocommunications and Search and Rescue (COMSAR) after its first session in February 1996, which action was endorsed by the Maritime Safety Committee at its sixty-sixth session in May/June 1996.

The publication contained sections from IMO resolution A.706(17), "*World-Wide Navigational Warning Service*", as amended, and relevant sections of the WMO Publication *Manual on Marine Meteorological Services* (WMO No.558).

At its seventh meeting in September 2005, the IHO's Commission on the Promulgation of Radio Navigational Warnings (CPRNW<sup>1</sup>) established a working group to review all World-Wide Navigational Warning Service (WWNWS) documentation. The working group included representation from the WMO and prepared at first, revisions to IMO resolutions as amended A.705(17), "*Promulgation of Maritime Safety Information*" and A.706(17), "*World-Wide Navigational Warning Service*". The proposed revisions of the resolutions were circulated to IHO Member States under IHB CL 104/2007, endorsed by COMSAR at its twelfth session in April 2008 and subsequently approved by the Maritime Safety Committee at its eighty-fifth session in November/December 2008.

The IHO CPRNW working group then prepared the revised Joint IMO/IHO/WMO Manual on Maritime Safety Information incorporating the revised information from resolutions A.705(17), as amended and A.706(17), as amended. The revised text of the Joint IMO/IHO/WMO Manual on Maritime Safety Information was circulated to IHO Member States under cover of IHB CL 70/2008, endorsed by COMSAR at its thirteenth session in January 2009 and subsequently approved by the Maritime Safety Committee at its eighty-sixth session in May/June 2009.

The WMO Executive Council, at its sixty-first session in June 2009, requested WMO to establish and develop, in collaboration with the IMO, terms of reference for an IMO/WMO World-Wide Met-ocean Information and Warning Service guidance document (WWMIWS), to complement the existing IMO/IHO World-Wide Navigational Warning Service guidance document (WWNWS), provided in resolution A.706(17), as amended. This new IMO/WMO guidance document is intended to provide specific guidance for the promulgation of internationally coordinated meteorological information, forecast and warnings services for the GMDSS, which does not apply to purely national services.

The WMO Executive Council adopted the WWMIWS at its sixty-second session in June 2010. It was submitted to IMO's Maritime Safety Committee at the end of 2010, which requested its COMSAR Sub-Committee to review it before its approval at its 89th Session in May 2011. It was officially adopted by the IMO Assembly at its 27th session in November 2011 and the WWMIWS is included in the regulatory publications as IMO

---

1 CPRNW was renamed the IHO WWNWS Sub-Committee (WWNWS) with effect from 1 January 2009.

resolution A.1051(27). Future amendments to this guidance document will be considered formally and approved by both WMO and IMO. Proposed amendments shall be evaluated by the JCOMM Expert Team on Maritime Safety Services (ETMSS), which includes an ex-officio representative of the IMO Secretariat, prior to any extensive WMO and IMO consideration.

The Committee was of the opinion that the widest possible use of the manual should be encouraged and invited Member Governments to bring the Joint IMO/IHO/WMO Manual to the attention of mariners and those involved in the promulgation of navigational warnings and meteorological forecasts and warnings.

Although this is an IMO publication, it is intended that the responsible organizations will maintain their respective sections of this Joint IMO/IHO/WMO Manual.



## 1 GENERAL INFORMATION

This Manual provides a practical guide for anyone who is concerned with drafting navigational warnings or with the issuance of meteorological forecasts and warnings under the Global Maritime Distress and Safety System (GMDSS). Maritime Safety Information (MSI) is promulgated in accordance with the requirements of IMO resolution A.705(17), as amended. Navigational warnings are issued under the auspices of the IMO/International Hydrographic Organization (IHO) World-Wide Navigational Warning Service (WWNWS) in accordance with the requirements of IMO resolution A.706(17), as amended. Meteorological forecasts and warnings are issued under the auspices of the IMO/World Meteorological Organization (WMO) World-Wide Met-ocean Information and Warnings Service (WWMIWS) in accordance with the requirements of IMO resolution A.1051(27). In order to achieve the necessary impact on the mariner it is essential to present timely and relevant information in a consistent format that is clear, unambiguous and brief. Within this Manual, it is particularly intended to provide the best form of words for use in all types of navigational warnings and meteorological forecasts and warnings that are required to be broadcast in the English language.<sup>2</sup> Note has been taken of the *IMO standard marine communication phrases* (resolution A.918(22)), where appropriate.

This Manual cannot provide specimen texts for every type of event which may occur. However, the principles illustrated herein may be applied in general to drafting messages for every kind of navigational warning and covering all types of hazards and for the issuance of meteorological forecasts and warnings.

Resolution A.706(17), as amended, on the *World-Wide Navigational Warning Service* (MSC.1/Circ.1288/Rev.1) at section 5.3.1, requires that "All NAVAREA, Sub-area and coastal warnings should be broadcast only in English in the International NAVTEX and SafetyNET services". Resolution A.1051(27) on the *IMO/WMO World-Wide Met-Ocean Information and Warnings Service* at section 3.4.1 requires that "All Meteorological information shall be broadcast only in English in the International NAVTEX and SafetyNET services". Where this Manual has been produced in languages other than English then the message examples given in the English language text should be used.

## 2 PROMULGATION OF MARITIME SAFETY INFORMATION

### 2.1 Introduction

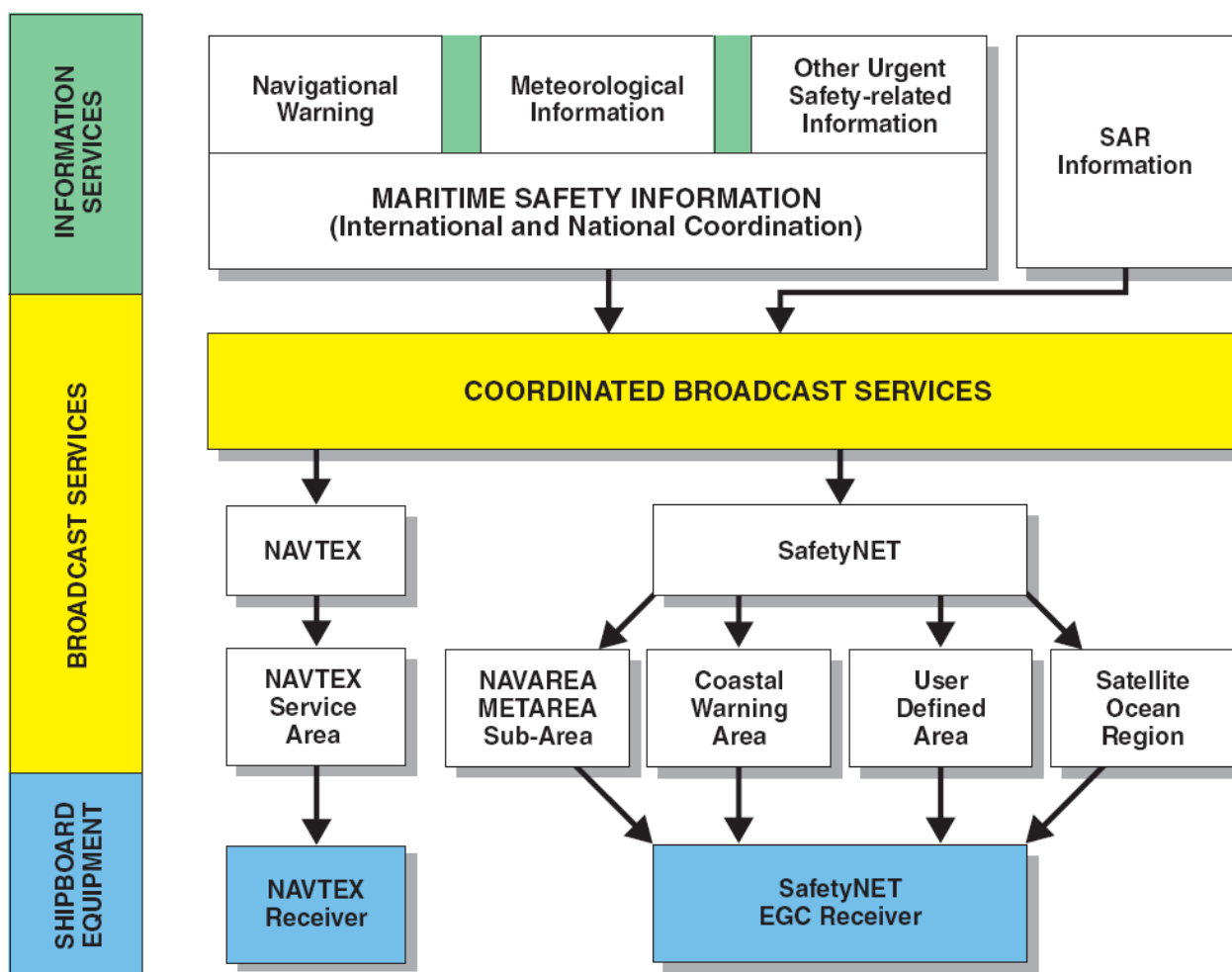
2.1.1 The Maritime Safety Information Service of the GMDSS is the internationally and nationally coordinated network of broadcasts containing information which is necessary for safe navigation, received on ships by equipment which automatically monitors the appropriate transmissions, displays information which is relevant to the ship and provides a print capability. This concept is illustrated in figure 1.

2.1.2 Maritime safety information is of vital concern to all ships. It is therefore essential that common standards are applied to the collection, editing and dissemination of this information. Only by doing so will the mariner be assured of receiving the information he needs, in a form which he understands, at the earliest possible time.

2.1.3 The purpose of IMO resolution A.705(17), as amended "*Promulgation of Maritime Safety Information*" is to set out the organization, standards and methods which should be used for the promulgation and reception of maritime safety information.

---

<sup>2</sup> See WMO Publication *Manual on Marine Meteorological Services* (WMO No 558).



**Figure 1** – *The maritime safety information service of the Global Maritime Distress and Safety System*

## 2.2 Definitions

2.2.1 For the purposes of this Manual, the following definitions apply:

- .1 *Coast Earth Station (CES)* means a fixed terrestrial radio facility acting as a gateway between terrestrial networks and the Inmarsat satellites in the maritime mobile-satellite service. This may also be referred to as a Land Earth Station (LES).
- .2 *Coastal warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a National Coordinator. Broadcast should be made by the International NAVTEX service to defined NAVTEX service areas and/or by the International SafetyNET service to coastal warning areas. (In addition, Administrations may issue coastal warnings by other means.)
- .3 *Coastal warning area* means a unique and precisely defined sea area within a NAVAREA/METAREA or Sub-area established by a coastal State for the purpose of coordinating the broadcast of coastal maritime safety information through the SafetyNET service.

- .4 *Global Maritime Distress and Safety System (GMDSS)* means the global communications service based upon automated systems, both satellite and terrestrial, to provide distress alerting and promulgation of maritime safety information for mariners.
- .5 *HF NBDP* means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688, as amended.
- .6 *In-force bulletin* means a list of serial numbers of those NAVAREA, Sub-area or coastal warnings in force issued and broadcast by the NAVAREA Coordinator, Sub-area Coordinator or National Coordinator.
- .7 *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of maritime safety information by means of narrow-band direct-printing telegraphy using the English language.<sup>3</sup>
- .8 *International SafetyNET service* means the coordinated broadcast and automatic reception of maritime safety information via the Inmarsat Enhanced Group Call (EGC) system, using the English language, in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .9 *Issuing Service* means a National Meteorological Service which has accepted responsibility for ensuring that meteorological warnings and forecasts for shipping are disseminated through the Inmarsat SafetyNET service to the METAREA for which the Service has accepted responsibility under the broadcast requirements of the GMDSS.
- .10 *Local warning* means a navigational warning which covers inshore waters, often within the limits of jurisdiction of a harbour or port authority.
- .11 *Main shipping lanes* means those routes used by international shipping.
- .12 *Maritime safety information (MSI)*<sup>4</sup> means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.
- .13 *Maritime safety information service* means the internationally and nationally coordinated network of broadcasts containing information which is necessary for safe navigation.
- .14 *METAREA* means a geographical sea area<sup>5</sup> established for the purpose of coordinating the broadcast of marine meteorological information. The term METAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and shall not prejudice the delimitation of any boundaries between States. (See figure 3).

---

<sup>3</sup> As set out in the IMO NAVTEX Manual.

<sup>4</sup> As defined in regulation IV/2 of the 1974 SOLAS Convention, as amended.

<sup>5</sup> Which may include inland seas, lakes and waterways navigable by sea-going ships.

- .15 *METAREA Coordinator* means the authority charged with coordinating marine meteorological information broadcasts by one or more National Meteorological Services acting as Preparation or Issuing Services within the METAREA.
- .16 *Meteorological information* means the marine meteorological warning and forecast information in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .17 *National Coordinator* means the national authority charged with collating and issuing coastal warnings within a national area of responsibility.
- .18 *National NAVTEX service* means the broadcast and automatic reception of maritime safety information by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- .19 *National SafetyNET service* means the broadcast and automatic reception of maritime safety information via the Inmarsat EGC system, using languages as decided by the Administration concerned.
- .20 *NAVAREA* means a geographical sea area<sup>5</sup> established for the purpose of coordinating the broadcast of navigational warnings. The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and shall not prejudice the delimitation of any boundaries between States. (See figure 2).
- .21 *NAVAREA Coordinator* means the authority charged with coordinating, collating and issuing NAVAREA warnings for a designated NAVAREA.
- .22 *NAVAREA warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a NAVAREA Coordinator.
- .23 *Navigational warning* means a message containing urgent information relevant to safe navigation broadcast to ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .24 *NAVTEX* means the system for the broadcast and automatic reception of maritime safety information by means of narrow-band direct-printing telegraphy.
- .25 *NAVTEX coverage area* means an area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in IMO resolution A.801(19), annex 4.
- .26 *NAVTEX service area* means a unique and precisely defined sea area, wholly contained within the NAVTEX coverage area, for which maritime safety information is provided from a particular NAVTEX transmitter. It is normally defined by a line that takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region, as given in IMO resolution A.801(19), annex 4.

---

<sup>5</sup> Which may include inland seas, lakes and waterways navigable by sea-going ships.

- .27 *NAVTEX Coordinator* means the authority charged with operating and managing one or more NAVTEX stations broadcasting maritime safety information as part of the International NAVTEX service.
- .28 *Other urgent safety-related information* means maritime safety information broadcast to ships that is not defined as a navigational warning or meteorological information. This may include, but is not limited to, significant malfunctions or changes to maritime communications systems, and new or amended mandatory ship reporting systems or maritime regulations affecting ships at sea.
- .29 *Preparation Service* means a National Meteorological Service which has accepted responsibility for the preparation of forecasts and warnings for parts of or an entire METAREA in the WMO system for the dissemination of meteorological forecasts and warnings to shipping under the GMDSS and for their transfer to the relevant Issuing Service for broadcast.
- .30 *SafetyNET* means the international service for the broadcast and automatic reception of maritime safety information via the Inmarsat EGC system. SafetyNET receiving capability is part of the mandatory equipment which is required to be carried by certain ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .31 *SAR information* means distress alert relays and other urgent search and rescue information broadcast to ships (See section 11.1).
- .32 *Sea Area A1* means an area within the radiotelephone coverage of at least one VHF coast station in which continuous DSC<sup>6</sup> alerting is available, as may be defined by a Contracting Government.
- .33 *Sea Area A2* means an area, excluding sea area A1, within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government.
- .34 *Sea Area A3* means an area, excluding sea areas A1 and A2, within the coverage of an Inmarsat geostationary satellite in which continuous alerting is available.
- .35 *Sea Area A4* means an area outside sea areas A1, A2 and A3.
- .36 *Sub-area* means a subdivision of a NAVAREA/METAREA in which a number of countries have established a coordinated system for the promulgation of maritime safety information. The delimitation of such areas is not related to and shall not prejudice the delimitation of any boundaries between States.

---

<sup>6</sup> Digital selective calling (DSC) means a technique using digital codes which enables a radio station to establish contact with and transfer information to another station or group of stations and complying with the relevant recommendations of the International Radio Consultative Committee ((CCIR) – "Radiocommunications Bureau of the International Telecommunication Union (ITU)" from 1 March 1993).

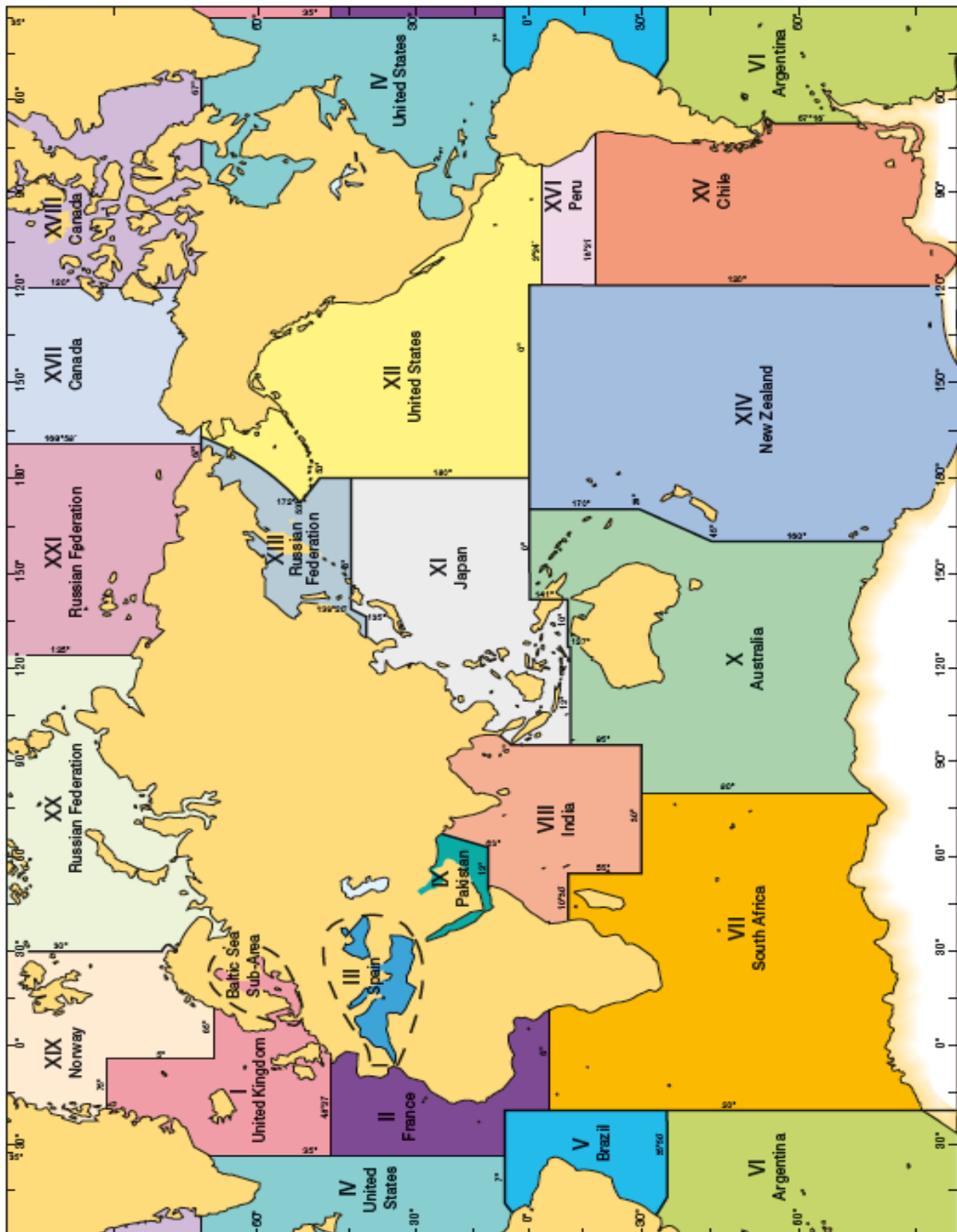
- .37 *Sub-area* Coordinator means the authority charged with coordinating, collating and issuing Sub-area warnings for a designated Sub-Area.
- .38 *Sub-area warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a Sub-area Coordinator. Broadcast should be made by the International NAVTEX service to defined NAVTEX service areas or by the International SafetyNET service (through the appropriate NAVAREA Coordinator).
- .39 *User defined area* means a temporary geographic area, either circular or rectangular, to which maritime safety information is addressed.
- .40 *UTC* means Coordinated Universal Time which is equivalent to GMT (or ZULU) as the international time standard.
- .41 *World-Wide Navigational Warning Service (WWNWS)*<sup>7</sup> means the internationally and nationally coordinated service for the promulgation of navigational warnings.
- .42 *World-Wide Met-ocean Information and Warning Service (WWMIWS)*<sup>8</sup> means the internationally coordinated service for the promulgation of meteorological forecasts and warnings.
- .43 In the operating procedures, *coordination* means that the allocation of the time for data broadcast is centralized, the format and criteria of data transmissions are compliant as described in the *Joint IMO/IHO/WMO Manual on Maritime Safety Information* and that all services are managed as set out in resolutions A.705(17), as amended, A.706(17), as amended and A.1051(27).

---

<sup>7</sup> As set out in resolution A.706(17), as amended.

<sup>8</sup> As set out in resolution A.1051(27).

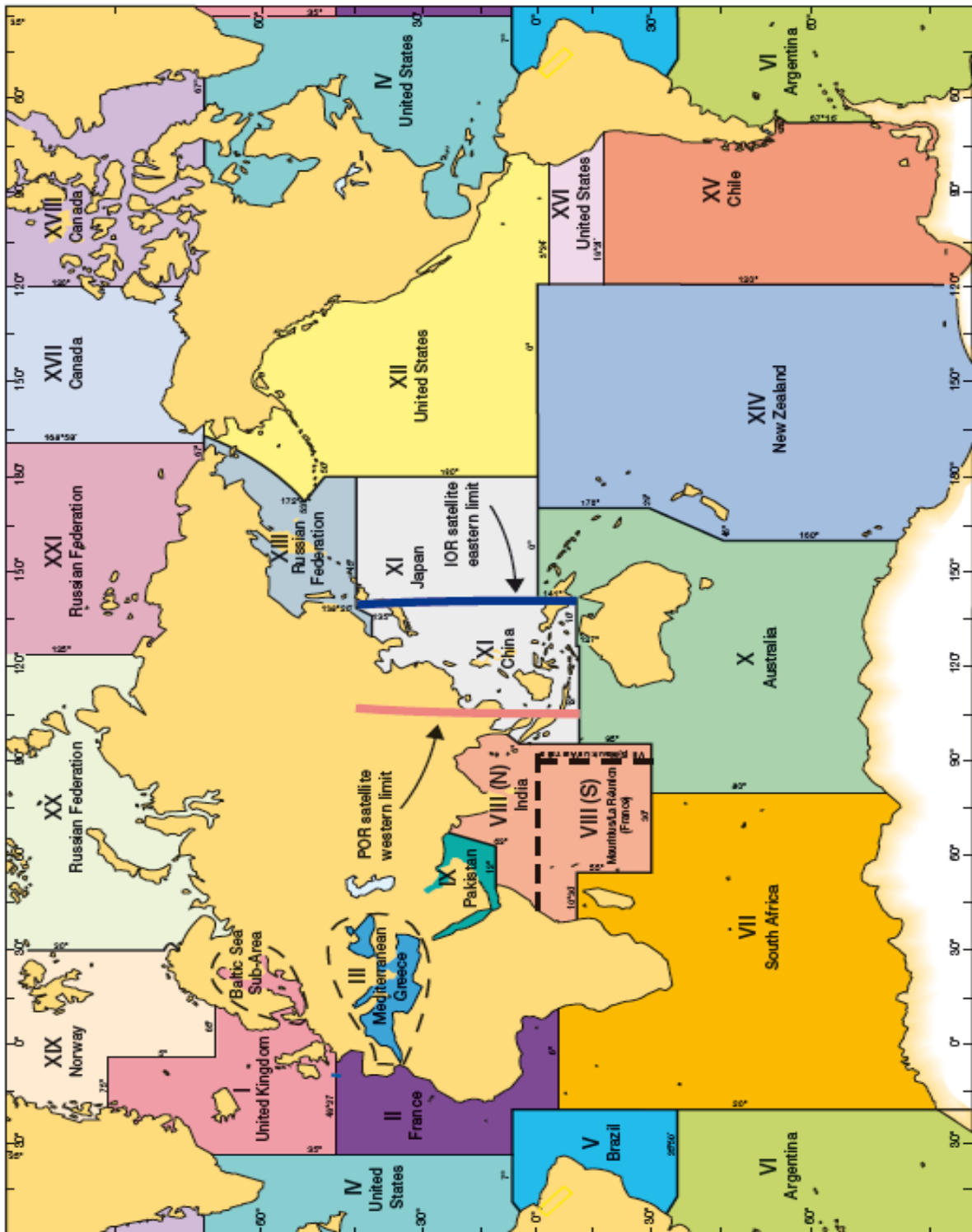
## 2.2.2 Delimitation of NAVAREAs



**Figure 2** – NAVAREAs for coordinating and promulgating navigational warnings under the World-Wide Navigational Warning Service

The delimitation of such areas is not related to and shall not prejudice the delimitation of any boundaries between States.

### 2.2.3 Delimitation of METAREAs



**Figure 3** – METAREAs for coordinating and promulgating meteorological warnings and forecasts within the GMDSS

The delimitation of such areas is not related to and shall not prejudice the delimitation of any boundaries between States.



## 2.3 Broadcast methods

2.3.1 Two principal methods are used for broadcasting maritime safety information in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended, in the areas covered by these methods, as follows:

- .1 **NAVTEX:** broadcasts to coastal waters; and
- .2 **SafetyNET:** broadcasts which cover all the waters of the globe except for Sea Area A4, as defined by IMO resolution A.801(19), annex 3, as amended.

2.3.2 Information should be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above methods. Although there will be some duplication to allow a ship to change from one method to another, the majority of warnings will be broadcast either on NAVTEX or SafetyNET.

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

2.3.4 SafetyNET broadcasts should be made in accordance with the standards and procedures set out in the International SafetyNET Manual.

2.3.5 HF NBDP may be used to promulgate maritime safety information in areas outside Inmarsat or NAVTEX coverage (SOLAS regulation IV/7.1.5).

2.3.6 In addition, Administrations may also provide maritime safety information by other means.

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

## 2.4 Scheduling

### 2.4.1 Automated methods (NAVTEX/SafetyNET)

2.4.1.1 Navigational warnings should be broadcast as soon as possible or as dictated by the nature and timing of the event. Normally, the initial broadcast should be made as follows:

- .1 **for NAVTEX**, at the next scheduled broadcast, unless circumstances indicate the use of procedures for VITAL or IMPORTANT warnings; and
- .2 **for SafetyNET**, within 30 minutes of receipt of original information, or at the next scheduled broadcast.

2.4.1.2 Navigational warnings should be repeated in scheduled broadcasts in accordance with the guidelines promulgated in the NAVTEX Manual and International SafetyNET Manual as appropriate.

2.4.1.3 At least two scheduled daily broadcast times are necessary to provide adequate promulgation of NAVAREA warnings. When NAVAREAs extend across more than six time zones, more than two broadcasts should be considered to ensure that warnings can be received. When using SafetyNET in lieu of NAVTEX for coastal warnings, Administrations may need to consider an increase in the number of scheduled daily broadcasts compared with the requirement for NAVAREA warnings.

2.4.1.4 It is important that where the degree of hazard is known, this information is included in the relevant warning e.g. naval exercises, missile firings, space missions, nuclear tests, ordnance dumping zones, etc. Whenever possible such warnings should be originated not less than five days in advance of the scheduled event and reference may be made to relevant national publications in the warning.

## **2.4.2 Schedule changes**

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

2.4.2.2 Times of scheduled broadcasts under the International SafetyNET service are coordinated through the International SafetyNET Coordinating Panel.

## **2.5 Shipboard equipment**

2.5.1 Ships are required to be capable of receiving maritime safety information broadcasts for the area in which they operate in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.

2.5.2 The NAVTEX receiver should operate in accordance with the technical specifications set out in Recommendation ITU-R M.540, as amended. Resolution MSC.148(77) recommends Governments to ensure that NAVTEX receiver equipment, if installed on or after 1 July 2005, conforms to performance standards not inferior to those specified in resolution MSC.148(77), and if installed before 1 July 2005, conforms to performance standards not inferior to those specified in the annex to resolution A.525(13).

2.5.3 The SafetyNET receiver should conform to the *Maritime Design and Installation Guidelines (DIGs), annex B, issue 6 of April 2008* published by Inmarsat. Resolution MSC.306(87) recommends Governments to ensure that EGC equipment, if installed on or after 1 July 2012, conforms to performance standards not inferior to those specified in the annex to resolution MSC.306(87), and if installed before 1 July 2012, conforms to performance standards not inferior to those specified in the annex to resolution A.664(16).

2.5.4 In Sea Area A4, outside of the coverage of NAVTEX, where MSI is received using HF NBDP, the HF NBDP receiver should operate in accordance with the technical specifications set out in Recommendation ITU-R M.688, as amended, and should meet the performance standards adopted by IMO resolution A.700(17), as amended.

## **2.6 Provision of information**

2.6.1 Navigational warnings should be provided in accordance with the standards, organization and procedures of the WWNWS under the functional guidelines of the IHO through its World-Wide Navigational Warning Service Sub-Committee. Details of NAVAREA Coordinators are maintained on the IHO website [www.iho.int/committees/](http://www.iho.int/committees/) and are also published by an IMO Sub-Committee on Navigation, Communication and Search and Rescue (NCSR) circular.

2.6.2 Meteorological information should be provided in accordance with the WMO technical regulations, recommendations, and procedures defined for the World-Wide Met-ocean Information and Warning Service (WWMIWS) monitored and reviewed by the Expert Team on Maritime Safety Services of the Joint WMO/IOC<sup>9</sup> Commission for Oceanography and Marine Meteorology (JCOMM).

---

<sup>9</sup> IOC is the Intergovernmental Oceanographic Commission of UNESCO.

2.6.3 Other urgent safety-related information should be provided by the relevant national or international authority responsible for managing the system or scheme.

2.6.4 SAR information, which are never MSI, should be provided by the various authorities responsible for coordinating maritime search and rescue operations in accordance with the standards and procedures established by the IMO.

2.6.5 Relevant national or international authorities should take into account the need for contingency planning.

## **2.7 Coordination procedures**

2.7.1 In order to make the best use of automated reception facilities and to ensure that the mariner receives at least the minimum information necessary for safe navigation, careful coordination is required.

2.7.2 In general, this requirement for coordination will be met by the standard operational procedures of IMO, IHO, WMO, the International Telecommunication Union (ITU) and the International Mobile Satellite Organization (IMSO). Cases of difficulty should be referred, in the first instance, to the most appropriate parent body.

2.7.3 Administrations broadcasting maritime safety information should provide details of services to IMO, which will maintain and publish this as part of the GMDSS Master Plan.

2.7.4 The coordination of changes to operational NAVTEX services and of the establishment of new stations is undertaken by the IMO NAVTEX Coordinating Panel on behalf of the Maritime Safety Committee.

2.7.5 The coordination of changes to operational SafetyNET services and of the authorization and registration of information providers is undertaken by the International SafetyNET Coordinating Panel on behalf of the Maritime Safety Committee.

2.7.6 Administrations should design their broadcasts to suit specific service areas.<sup>10</sup> The designation of service areas is an important part of the coordination process since it is intended that a ship should be able to obtain all the information relevant to a given area from a single source. The Maritime Safety Committee approves NAVAREAs/METAREAs and service areas for the International NAVTEX and SafetyNET service as advised by the IHO and the WMO.

## **3 NAVAREA/SUB-AREA/NATIONAL COORDINATORS' RESOURCES AND RESPONSIBILITIES**

### **3.1 NAVAREA Coordinator resources**

3.1.1 The NAVAREA Coordinator must have:

- .1 the expertise and information sources of a well-established national hydrographic service;
- .2 effective communications, e.g. telephone, email, facsimile, internet, telex, etc., with Sub-area and National Coordinators in the NAVAREA, with other NAVAREA Coordinators, and with other data providers; and

---

<sup>10</sup> Coordination of HF NBDP broadcasts in the Arctic should be undertaken by relevant MSI service providers.

- .3 access to broadcast systems for transmission to the navigable waters of the NAVAREA. As a minimum, this should include those described in paragraph 2.3.1. Reception should normally be possible at least 300 nautical miles beyond the limit of the NAVAREA.

### **3.2 NAVAREA Coordinator responsibilities**

#### **3.2.1 The NAVAREA Coordinator must:**

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within the NAVAREA;
- .2 assess all information immediately upon receipt for relevance to navigation in the NAVAREA;
- .3 select information for broadcast in accordance with the guidance given in paragraph 4.2;
- .4 draft NAVAREA warnings in accordance with the *Joint IMO/IHO/WMO Manual on Maritime Safety Information*;
- .5 direct and control the broadcast of NAVAREA warnings, in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended;
- .6 forward NAVAREA warnings and relevant associated information which may require wider promulgation directly to adjacent NAVAREA Coordinators and/or others as appropriate, using the quickest possible means;
- .7 ensure that NAVAREA warnings which may remain in force for more than six weeks are made available immediately to NAVAREA Coordinators, other authorities and mariners in general, as appropriate;
- .8 ensure that information concerning all navigational warning subject areas listed in paragraph 4.2.3 that may not require a NAVAREA warning within their own NAVAREA is forwarded immediately to the appropriate National and NAVAREA Coordinators affected by the event;
- .9 broadcast in-force bulletins not less than once per week at a regular scheduled time;
- .10 promulgate the cancellation of NAVAREA warnings which are no longer valid;
- .11 act as the central point of contact on matters relating to navigational warnings within the NAVAREA;
- .12 promote and oversee the use of established international standards and practices with respect to the promulgation of navigational warnings throughout the NAVAREA;
- .13 when notified by the authority designated to act on reports of piracy and armed robbery against ships, arrange for the broadcast of a suitable NAVAREA warning. Additionally, keep the national or regional piracy control centre informed of long-term broadcast action(s);

- .14 when notified by the appropriate authorities, arrange for the broadcast of suitable NAVAREA warnings to promulgate World Health Organization (WHO) health advisories, tsunami-related warnings and other information which is necessary for safe navigation;
- .15 monitor the broadcasts which they originate, to ensure that the warnings have been correctly broadcast;
- .16 maintain records of source data relating to NAVAREA warnings in accordance with the requirement of the National Administration of the NAVAREA Coordinator;
- .17 coordinate preliminary discussions between neighbouring Member States, seeking to establish or amend NAVTEX services and with other adjacent Administrations, prior to formal application;
- .18 contribute to the development of international standards and practices through attendance and participation in the IHO World-Wide Navigational Warning Service Sub-Committee meetings, and also participate in relevant IMO, IHO and WMO fora as appropriate; and
- .19 take into account the need for contingency planning.

### **3.3 Sub-area Coordinator resources**

3.3.1 The Sub-area Coordinator must have, or have access to:

- .1 the expertise and information sources of a well-established national hydrographic service;
- .2 effective communications, e.g. telephone, email, facsimile, internet, telex, etc., with National Coordinators in the Sub-area, with the NAVAREA Coordinator, and with other data providers; and
- .3 broadcast systems for transmission to the entire Sub-area.

### **3.4 Sub-area Coordinator responsibilities**

3.4.1 The Sub-area Coordinator must:

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within the Sub-area;
- .2 assess all information immediately upon receipt for relevance to navigation in the Sub-area;
- .3 select information for broadcast in accordance with the guidance given in paragraph 4.2;
- .4 draft Sub-area warnings in accordance with the *Joint IMO/IHO/WMO Manual on Maritime Safety Information*;
- .5 direct and control the broadcast of Sub-area warnings, in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended;

- .6 forward Sub-area warnings and relevant associated information which may require wider promulgation directly to their own NAVAREA Coordinator using the quickest possible means;
- .7 broadcast in-force bulletins not less than once per week at a regular scheduled time;
- .8 promulgate the cancellation of Sub-area warnings which are no longer valid;
- .9 act as the central point of contact on matters relating to navigational warnings within the Sub-area;
- .10 promote the use of established international standards and practices in the promulgation of navigational warnings within the Sub-area;
- .11 monitor the broadcasts which they originate, to ensure that the warnings have been correctly broadcast;
- .12 maintain records of source data relating to Sub-area warnings in accordance with the requirement of the National Administration of the Sub-area Coordinator;
- .13 contribute to the development of international standards and practices through attendance and participation in the IHO World-Wide Navigational Warning Service Sub-Committee meetings, and also participate in relevant IMO, IHO and WMO fora as appropriate; and
- .14 take into account the need for contingency planning.

### **3.5 National Coordinator resources**

#### 3.5.1 The National Coordinator must have:

- .1 established sources of information relevant to the safety of navigation within national waters;
- .2 effective communications, e.g. telephone, email, facsimile, internet, telex, etc., with the NAVAREA/Sub-area Coordinator and adjacent National Coordinators; and
- .3 access to broadcast systems for transmission to their area of national responsibility.

### **3.6 National Coordinator responsibilities**

#### 3.6.1 The National Coordinator must:

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within their area of national responsibility;
- .2 assess all information immediately upon receipt for relevance to navigation in their area of national responsibility;
- .3 select information for broadcast in accordance with the guidance given in paragraph 4.2;

- .4 draft coastal warnings in accordance with the *Joint IMO/IHO/WMO Manual on Maritime Safety Information*;
- .5 direct and control the broadcast of coastal warnings, in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended;
- .6 forward coastal warnings and relevant associated information which may require wider promulgation directly to their NAVAREA/Sub-area Coordinator and/or adjacent National Coordinators as appropriate, using the quickest possible means;
- .7 broadcast in-force bulletins not less than once per week at a regular scheduled time;
- .8 promulgate the cancellation of coastal warnings which are no longer valid;
- .9 act as the central point of contact on matters relating to navigational warnings within their area of national responsibility;
- .10 promote the use of established international standards and practices in the promulgation of navigational warnings within their area of national responsibility;
- .11 monitor the broadcasts which they originate, to ensure that the warnings have been correctly broadcast;
- .12 maintain records of source data relating to coastal warnings in accordance with the requirement of the National Administration of the National Coordinator; and
- .13 take into account the need for contingency planning.

## **4 NAVIGATIONAL WARNINGS FOR THE WORLD-WIDE NAVIGATIONAL WARNING SERVICE**

### **4.1 General**

4.1.1 Navigational warnings are issued in response to SOLAS regulation V/4 and carry information which may have a direct bearing on the safety of life at sea. It is the fundamental nature of navigational warnings that they will often be based on incomplete or unconfirmed information and mariners will need to take this into account when deciding what reliance to place on the information contained therein.

4.1.2 In order to achieve the necessary impact on the mariner it is essential to present timely and relevant information in a consistent format that is CLEAR, UNAMBIGUOUS and BRIEF. This is ensured by using structured messages in standard formats, as shown in sections 6 and 7 of this Manual.

4.1.3 The resources employed by Administrations and the mariner are extremely limited. Thus only information which is vital to the safe conduct of ships should be transmitted. Notices to Mariners and other means exist for passing less urgent information to ships after they have reached port. Information of a purely administrative nature should never be broadcasted on the regular international navigational warning schedules.

4.1.4 There are four types of navigational warnings: NAVAREA warnings, Sub-area warnings, coastal warnings and local warnings. The WWNWS guidance and coordination are involved with only three of them:

- .1 NAVAREA warnings;
- .2 Sub-area warnings, and
- .3 Coastal warnings

4.1.5 Navigational warnings should remain in force until cancelled by the originating coordinator. Navigational warnings should be broadcast for as long as the information is valid. However, if they are readily available to mariners by other official means, for example in Notices to Mariners, then after a period of six weeks they may no longer be broadcast.

4.1.6 The minimum information in a navigational warning which a mariner requires is *hazard* and *position*. It is usual, however, to include sufficient extra detail to allow some freedom of action in the vicinity of the hazard. This means that the message should give enough extra data for the mariner to be able to recognize the hazard and assess its effect upon their navigation.

4.1.7 If known, the duration of the event causing a navigational warning should be given in the text.

4.1.8 Some of the subjects for navigational warnings listed in paragraph 4.2.3 (e.g. drifting ice and tsunami warnings) may also be suitable for inclusion in METAREA forecasts or warnings. In this event, appropriate coordination between the relevant NAVAREA and METAREA Coordinators must occur.

## **4.2 NAVAREA warnings**

4.2.1 NAVAREA warnings are concerned with the information detailed below which ocean-going mariners require for their safe navigation. This includes, in particular, new navigational hazards and failures of important aids to navigation as well as information which may require changes to planned navigational routes.

4.2.2 Coastal warnings are broadcast by the International NAVTEX service, or by the International SafetyNET service when implemented in lieu of NAVTEX. They are not normally re-broadcast as NAVAREA warnings unless deemed of such significance that the mariner should be aware of them before entering a NAVTEX service area. The National Coordinator will evaluate the significance of the information for consideration as a NAVAREA warning while the NAVAREA Coordinator will make the final determination.

4.2.3 The following subjects are considered suitable for broadcast as NAVAREA warnings. This list is not exhaustive and should be regarded only as a guideline. Furthermore, it presupposes that sufficiently precise information about the item has not previously been disseminated in a Notice to Mariners. Whenever possible, warnings concerning scheduled events, in particular those covered in 4.2.3.13, should be originated not less than five days in advance, and reference may be made to relevant national publications:

- .1 casualties to lights, fog signals, buoys and other aids to navigation affecting main shipping lanes;
- .2 the presence of dangerous wrecks in or near main shipping lanes and, if relevant, their marking;



- .3 establishment of major new aids to navigation or significant changes to existing ones, when such establishment or change might be misleading to shipping;
- .4 the presence of large unwieldy tows in congested waters;
- .5 drifting hazards (including derelict ships, ice, mines, containers, other large items over 6 metres in length, etc.);
- .6 areas where search and rescue (SAR) and anti-pollution operations are being carried out (for avoidance of such areas);
- .7 the presence of newly discovered rocks, shoals, reefs and wrecks likely to constitute a danger to shipping, and, if relevant, their marking;
- .8 unexpected alteration or suspension of established routes;
- .9 cable or pipe-laying activities, seismic surveys, the towing of large submerged objects for research or exploration purposes, the employment of manned or unmanned submersibles, or other underwater operations constituting potential dangers in or near shipping lanes;
- .10 the establishment of research or scientific instruments in or near shipping lanes;
- .11 the establishment of offshore structures in or near shipping lanes;
- .12 significant malfunctioning of radio-navigation services and shore-based maritime safety information radio or satellite services;
- .13 information concerning events which might affect the safety of shipping, sometimes over wide areas, e.g. naval exercises, missile firings, space missions, nuclear tests, ordnance dumping zones, etc;
- .14 operating anomalies identified within ECDIS including ENC issues;
- .15 acts of piracy and armed robbery against ships;
- .16 tsunamis and other natural phenomena, such as abnormal changes to sea level;
- .17 World Health Organization (WHO) health advisory information; and
- .18 security-related requirements.<sup>11</sup>

### **4.3 Sub-area warnings**

4.3.1 Sub-area warnings broadcast information which is necessary for safe navigation within a Sub-area. They will normally include all subjects listed in 4.2.3 above, but will usually affect only the Sub-area.

---

<sup>11</sup> In accordance with the requirements of the *International Ship and Port Facility Security (ISPS) Code* only.

#### **4.4 Coastal warnings**

4.4.1 Coastal warnings broadcast information which is necessary for safe navigation within areas seaward of the fairway buoy or pilot station, and should not be restricted to main shipping lanes. Where the area is served by NAVTEX, it should provide navigational warnings for the entire NAVTEX service area. Where the area is not served by NAVTEX, it is necessary to include all warnings relevant to the coastal waters up to 250 miles from the coast in the International SafetyNET service broadcast.

4.4.2 Coastal warnings should include at least the subjects in 4.2.3.

#### **4.5 Local warnings**

4.5.1 Local warnings broadcast information which covers inshore waters, often within the limits of jurisdiction of a harbour or port authority. They are broadcast by means other than NAVTEX or SafetyNET, and supplement coastal warnings by giving detailed information within inshore waters.

### **5 THE STRUCTURE OF NAVIGATIONAL WARNINGS**

#### **5.1 Numbering**

5.1.1 Navigational warnings in each series should be consecutively numbered throughout the calendar year, commencing with 1/YY at 0000 UTC on 1 January.

5.1.2 Navigational warnings should be transmitted in reverse numerical order on scheduled broadcasts.

#### **5.2 Language**

5.2.1 All NAVAREA, Sub-area and coastal warnings should be broadcast only in English in the International NAVTEX and SafetyNET services in accordance with IMO resolution A.706(17), as amended.

5.2.2 In addition to the required broadcasts in English, NAVAREA, Sub-area and coastal warnings may be broadcast in a national language using national NAVTEX and SafetyNET services and/or other means.

5.2.3 Local warnings may be issued in the national language and/or in English.

#### **5.3 "No warnings" message**

5.3.1 When there are no navigational warnings to be disseminated at a scheduled broadcast time, a brief unnumbered message should be transmitted to identify the broadcast and advise the mariner that there is no navigational warning message traffic on hand.

## 5.4 Standard elements of messages

5.4.1 The minimum information which a mariner requires to avoid danger is:

### HAZARD + POSITION

It is usual, however, to include amplifying remarks in order to provide sufficient extra details to clearly identify the significance of the hazard and to assist mariners in recognizing and assessing its effect upon their navigation. The time, date and duration of the event should be included if known.

5.4.2 A message can have up to three parts: Preamble, Warning, and Postscript. Sections 6 and 7 of the Manual give guidance on the correct way of phrasing each part of the warning to achieve maximum impact with minimum broadcast time.

5.4.3 The text of a navigational warning should contain specific message elements, identified and ordered by the reference numbers shown in figure 4 and expanded in section 6. The format and structure of a message should ensure that each message element begins on a new line.

5.4.4 The first words of the text of every warning message should always be the message series identifier, followed by the consecutive number; this may be preceded on a separate line by the time of origin of the message.

## 5.5 Message elements table

.1 MESSAGE ELEMENTS TABLE		
Part	Reference no. <sup>12</sup>	Message elements
Preamble	1	Message series identifier
	.2 2	.3 General area
	.4 3	.5 Locality
	.6 4	.7 Chart number
Warning	5	.8 Key subject
	.9 6	.10 Geographical position
	.11 7	.12 Amplifying remarks
Postscript	8	Cancellation details

**Figure 4** – *Message elements table showing standard elements for each part of a message*

<sup>12</sup> Reference number is NOT to be included as part of the message text.

## 6 MESSAGE FORMAT OF NAVIGATIONAL WARNINGS

### Part 1 – PREAMBLE

#### Standard Message Element Reference 1 – MESSAGE SERIES IDENTIFIER

The first words of the text of every warning message should always be message series identifier followed by the consecutive number (N/YY)

**NAVAREA WARNING:**

NAVAREA III 496/14;  
NAVAREA VII 42/14

**SUB-AREA WARNING:**

BALTIC SEA NAV WARN 009/14

**COASTAL WARNING:**

AVURNAV TOULON 1015/14;  
WZ 345/14

*Notes:*

- i) The consecutive number re-starts each calendar year at 1/YY (Leading zeros are not mandatory).
- ii) For coastal warnings the consecutive number is not the same as the NAVTEX Number B<sub>3</sub>B<sub>4</sub>.

#### Standard Message Element Reference 2 – GENERAL AREA

The general area should be sufficient to identify which broad geographic region the message affects. The geographical name which is selected for the general area should be one that can be found on charts and in nautical publications.

**NAVAREA WARNING:**

"NORTH SEA" or "MALACCA STRAIT" would be correct; "NORTH AMERICA, EAST COAST" is too general.

**SUB-AREA WARNING:**

GULF OF FINLAND

**COASTAL WARNING:**

BAY OF BISCAY;  
CANTABRICO

*Notes:*

- i) If appropriate, the established meteorological forecast areas as defined in WMO publication No.9 Volume D and also published in various nautical publications may be used.
- ii) For a NAVAREA-wide event, e.g. failure of satellite or terrestrial positioning systems, a navaid identification acronym "GPS", "LORAN", etc. should be used instead of a general area.

### Standard Message Element Reference 3 – LOCALITY

The locality should be stated in terms which allow the mariner to identify warnings which affect their passage without having to plot them. Locality will only need to be stated when it is considered necessary to refine the general area. The geographical name which is selected as locality should be one that can be found on charts and in nautical publications.

**NAVAREA WARNING:**

NORTHERN GRAND BANKS  
PINANG APPROACH

**SUB-AREA WARNING:**

STORA MIDDELGRUND

**COASTAL WARNING:**

BARRA DE PARANAGUA – CANAL DA GALHETA

*Note:*

- i) If appropriate the established meteorological forecast areas as defined in WMO publication No.9, Volume D and also published in various nautical publications may be used.

### Standard Message Element Reference 4 – CHART NUMBER

For charted features, reference should be made to a national chart (not necessarily the largest scale) identified by the State abbreviation and chart number. Reference should also be made to an international chart number if one exists.

For maritime operations, mobile hazards or events which affect a wider sea area a chart number may not be required. If a chart number is not used particular care should be taken in defining the general area and locality.

**NAVAREA WARNING:**

Chart INDIA 32 (INT 754)

*Notes:*

- i) Warnings may refer to an Electronic Navigational Chart (ENC). In such cases, ENC cell numbers may be quoted, e.g. ENC: US3AK7RM
- ii) Chart or ENC cell numbers are not mandatory for coastal warnings which are only broadcast in the vicinity of the hazard.

## Part 2 – WARNING

### Standard Message Element Reference 5 – KEY SUBJECT

Key subjects referenced in paragraph 4.2.3 are considered suitable for broadcast as NAVAREA, SUB-AREA, or COASTAL Warnings. See examples in section 7.

### Standard Message Element Reference 6 – GEOGRAPHICAL POSITION

Geographical positions should always be given in degrees and minutes or in degrees, minutes and decimal minutes in the form:

Latitude:	DD-MMN or DD-MMS
Longitude:	DDD-MME or DDD-MMW

or

Latitude:	DD-MM.mmN or DD-MM.mmS
Longitude:	DDD-MM.mmE or DDD-MM.mmW

e.g.	07-08N 039-17W
	32-18.65S 165-02.81E

Note that leading zeros should always be included. Three digits are used for reporting degrees of longitude.

Geographical positions should normally be given in WGS84 otherwise the datum should be quoted in the warning (e.g. if the chart quoted in the warning is based on another datum).

For warnings concerning the presence of dangerous wrecks or newly discovered rocks, shoals and reefs (ref: 4.2.3.2 and 4.2.3.7), the word LOCATED should only be used when the position of the hazard has been confirmed by a hydrographic survey. In all other cases the word REPORTED should be used.

Positions should only be quoted to the accuracy required. In many cases this will be less than the known accuracy. For example, it will often be sufficient to quote the position to the nearest whole minute of latitude and longitude when indicating the location of a charted feature. The best accuracy available (to a maximum of 0.01 minutes) should be used when broadcasting the position of new hazards. The same level of accuracy should always be quoted for both latitude and longitude.

When defining the limits of a polygon, positions should be listed in a clockwise direction starting from the North West corner.

Circular areas should be defined by a radius in nautical miles from a single point.

The use of the word "POSITION" or "POS" is not necessary.

### Standard Message Element Reference 7 – AMPLIFYING REMARKS

Amplifying remarks may be used to provide sufficient extra details to clearly identify the significance of the hazard and to assist mariners in RECOGNIZING and ASSESSING its effect upon their navigation.

Distances should be quoted in nautical miles and decimals.

The time, date and duration of the event should be included if known. The time standard for Navigational Warnings should always be UTC (ref: 2.2.1.40)

The accepted format for a Date Time Group (DTG) in the text of a message is as follows:  
DDHHMM UTC MoMoMo YY; e.g. 231642 UTC JUN 14

### Part 3 – POSTSCRIPT

#### Standard Message Element Reference 8 – CANCELLATION DETAILS

Cancellation details should be provided in a message that includes a definitive time frame; the cancellation time should be one hour after the event completes or one day later if the time is not accurately known.

A reason for the cancellation should only be included if it is of benefit to the mariner and can be stated concisely.

Cancellation messages may be "stand alone" and only concern the cancellation of a previous message, as in examples A and B below.

When cancellation details relating to the subject of the message are included, it is recommended that paragraph numbers are used in order to clearly distinguish between the subject of the message and the cancellation details, as in example C below.

When a message is immediately self cancelling i.e. a no warnings message, then immediately preceding the main text "SELF CANCELLING" should be inserted, as in example D below.

The word "MESSAGE" can be abbreviated to MSG.

Examples	Comments
<p>A. CANCEL NAVAREA IV 123/14 AND THIS MSG.</p>	
<p>B. CANCEL ESTONIAN NAV WARN 87/14. ESTONIAN NOTICES TO MARINERS 520/14 REFERS.</p>	
<p>C. 1. MESSAGE TEXT – EVENT OF KNOWN DURATION. 2. CANCEL THIS MSG DDHHMM UTC MoMoMo YY.</p>	<p>Choose a time for self-cancelling messages (example C) one hour after the event completes or one day later if time is not accurately known.</p>
<p>D. SELF CANCELLING. NO NAVAREA XIII WARNINGS TO BROADCAST AT DTG.</p>	

## 7 GUIDANCE AND EXAMPLES FOR NAVIGATIONAL WARNINGS BY TYPE OF HAZARD (AS LISTED IN 4.2.3)

*Note:* All NAVAREA, Sub-area and coastal warnings should be broadcast only in English in the International NAVTEX and SafetyNET services in accordance with IMO resolution A.706(17), as amended.

### 1 Casualties to lights, fog signals, buoys and other aids to navigation affecting main shipping lanes

The text of a navigational warning in this category should contain message elements **1, 2, 3, 4, 5, 6, 7** identified and ordered, as in the Message elements table, **figure 4**.

LIGHTHOUSES, BEACONS, LIGHT SHIPS	
Standard remarks	Comments
UNLIT	Use UNLIT <i>in place of</i> : Out, Extinguished, Not burning, Not working.
LIGHT UNRELIABLE	Use LIGHT UNRELIABLE <i>in place of</i> : Weak, Dim, Low power, Fixed, Flashing incorrectly, Out of character, Incorrect colour of light, Sector limits unreliable. See note iv.
DAMAGED	Use only for major damage, e.g. loss of significant functionality. See note vi.
DESTROYED	Do not use "Temporarily destroyed".
RACON INOPERATIVE	
CHANGED TO FLASH THREE 20 SECONDS 14 METRES 16 MILES	PERMANENT change of character. See notes v and viii.
TEMPORARILY CHANGED TO QUICK YELLOW 12 MILES	TEMPORARY change. Do not use for listed reserve light. See note ix.
MOVED 0.3 MILES NORTH TO 63-14.8N 022-15.6E	Only use for established minor changes of position. Do not quote former geographical position. Indicate former position by approximate direction and distance. See note x.
RE-ESTABLISHED	For previously charted or listed as DESTROYED or TEMPORARILY REMOVED. See note xi.
PERMANENTLY DISCONTINUED	Use for removed.
TEMPORARILY REMOVED	Use when an aid is temporarily removed (i.e. for maintenance purposes).



*Notes:*

- i) Use CHARTED names, not LISTED names.
- ii) LIGHT LIST number is not required.
- iii) POSITION normally quoted to nearest whole minute for existing lights.
- iv) Due to the fundamental nature of navigational warnings that they will often be based on incomplete or unconfirmed information, the use of "REPORTED" is unnecessary for casualties to lights. If the report is unconfirmed, use LIGHT UNRELIABLE.
- v) Always quote FULL LIGHT CHARACTERISTIC to avoid confusion over what has been changed.
- vi) Damage to DAYMARKS is not usually worthy a navigational warning.
- vii) Do not initiate a navigational warning to request reports on an unwatched light.
- viii) Use light descriptions as given in the LIGHTS – Glossary of terms table.
- ix) Temporary use of a listed reserve light is to be expected. A warning would only be required due to a change of character, i.e. reduction of range.
- x) Distances should be quoted in nautical miles and decimals.
- xi) RE-ESTABLISHED is only appropriate for lights which have previously been CHARTED or LISTED as DESTROYED or TEMPORARILY REMOVED. Navigational Warnings concerning such lights are cancelled when the light is re-established. A new Navigational Warning is only required if the character or position has changed.
- xii) Chart INT 1 Abbreviations for light characters are **only** suitable for NAVTEX or SafetyNET transmissions. Voice broadcasts should be drafted using the terms for lights in the LIGHTS – Glossary of terms table.

<b>LIGHTS – Glossary of terms</b>		
<b>CLASS OF LIGHT</b>	<b>Description for TEXT broadcasts</b>	<b>Description for VOICE broadcasts</b>
Fixed (steady light)	F	Fixed
Occulting (total duration of light longer than total duration of darkness) Single-occulting Group-occulting Composite group-occulting	OC OC(2) OC(2+3)	Occulting Occulting two Occulting two plus three
Isophase (equal periods light and dark)	ISO	Iso

Flashing (total duration of light shorter than total duration of darkness) Single-flashing Long-flashing Group-flashing Composite group-flashing	FL LFL FL(3) FL(2+1)	Flash Long flash Flash three Flash two plus one
Quick (50 to 79 – usually either 50 or 60 flashes per minute) Continuous quick Group quick Interrupted quick	Q Q(3) IQ	Quick flash Quick flash three Interrupted quick flash
Very quick (80 to 159 – usually either 100 or 120 flashes per minute) Continuous very quick Group very quick Interrupted very quick	VQ VQ(3) IVQ	Very quick flash Very quick flash three Interrupted very quick flash
Ultra quick (160 or more usually 240 or 300 flashes per minute) Continuous ultra quick Interrupted ultra quick	UQ IUQ	Ultra quick flash Interrupted ultra quick flash
Morse code	MO(K)	Morse kilo
Fixed and flashing	FFL	Fixed and flashing
Alternating	ALWR	Alternating

**ELEVATION in METRES or FEET**, e.g. 14 METRES or 21 FEET

**PERIOD in SECONDS**, e.g. 15 SECONDS or 15 SEC (Not S)

<b>RANGE in nautical miles</b>		<b>International abbreviations</b>	<b>RANGE for broadcast</b>
Single range	e.g.	15M	15 MILES
2 ranges	e.g.	14/12M	14 AND 12 MILES
3 or more ranges	e.g.	22–18M	22 TO 18 MILES (Shortest range only will be sufficient)

<b>BUOYS, LANBYS, SUPERBUOYS</b>	
<b>Standard remarks</b>	<b>Comments</b>
UNLIT	Use UNLIT <i>in place of</i> : Out, Extinguished, Not burning, Not working. See note iv.
LIGHT UNRELIABLE	Use LIGHT UNRELIABLE <i>in place of</i> : Weak, Dim, Low power, Fixed, Out of character, Irregular, Reduced power.
DAMAGED	No action for Topmark or Radar reflectors. Use only for major damage, e.g. loss of significant functionality.
OFF STATION	Not in charted position, but still in the vicinity of original location. The actual position may be informed, if known.
MISSING	Completely absent from position.
TEMPORARILY CHANGED	
MOVED 0.3 MILES NORTH TO 63-14.8N 022-15.6E	Only use for established minor changes of position. Do not quote former geographical position. Indicate former position by approximate direction and distance. See note viii.
PERMANENTLY DISCONTINUED	Use for removed.
TEMPORARILY REMOVED	Use when an aid is temporarily removed (i.e. for maintenance purposes).
RE-ESTABLISHED	Use for previously charted or listed as DESTROYED or TEMPORARILY REMOVED. See note viii.
<p><i>Notes:</i></p> <ul style="list-style-type: none"> <li>i) POSITION normally quoted to nearest whole minute for existing buoys, lanbys, superbuoys.</li> <li>ii) Use light descriptions as given in the LIGHTS – Glossary of terms table.</li> <li>iii) Do NOT describe the type of buoy, e.g., North Cardinal buoy, Port Hand buoy, unless the buoy is unnamed.</li> <li>iv) UNLIT may be used to amplify "DAMAGED" as in "DAMAGED AND UNLIT".</li> <li>v) "LANBY" (Large Automated Navigational Buoy) or "SUPERBUOY" may be used in lieu of "BUOY" where appropriate.</li> <li>vi) Chart INT 1 Abbreviations for light characters are only suitable for NAVTEX or SafetyNET transmissions. Voice broadcasts should be drafted using the terms for lights in the LIGHTS – Glossary of terms table.</li> <li>vii) The term "REPORTED" may be used for unconfirmed reports regarding buoys.</li> <li>viii) Distances should be quoted in nautical miles and decimals.</li> <li>ix) RE-ESTABLISHED is only appropriate for buoys which have previously been CHARTED or LISTED as DESTROYED or TEMPORARILY REMOVED. Navigational Warnings concerning such buoys are cancelled when the buoy is re-established. A new Navigational Warning is only required if the characteristics or position has changed.</li> </ul>	

<b>BUOYAGE - Glossary of terms</b>		
<b>IALA BUOYAGE</b>	<b>Comments</b>	
PORT HAND BUOY STARBOARD HAND BUOY NORTH CARDINAL BUOY EAST CARDINAL BUOY SOUTH CARDINAL BUOY WEST CARDINAL BUOY ISOLATED DANGER BUOY SAFE WATER BUOY SPECIAL BUOY EMERGENCY WRECK MARKING BUOY	Full description of light and colour not required for IALA standard buoys.  "Lightbuoy" may be used to indicate that the buoy is lit.	
<b>OTHER BUOYS</b>		
<b>COLOURS</b>	<b>PATTERN</b>	<b>SHAPE/TYPE</b>
RED BLACK WHITE GREEN YELLOW BLUE	CHEQUERED HORIZONTALLY STRIPED VERTICALLY STRIPED	CAN CONICAL ( <i>not</i> OGIVAL or NUN) PILLAR SPAR SPHERICAL WRECK CABLE ( <i>not</i> TELEGRAPH) MOORING DANGER ZONE ODAS SPM DART

**EXAMPLES OF WARNINGS IN SECTION 4.2.3.1**

<b>Message element</b>	<b>Example 1</b>
1. Message series identifier	NAVAREA XIII 145/14
2. General area	SEA OF OKHOTSK. WESTERN PART.
3. Locality	CHART _____ (INT _____).

Message element	Example 1
4. Chart number	ISOLATED DANGER BUOY 54-49.9N 142-04.1E MISSING.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA X 346/14
2. General area	AUSTRALIA NORTH EAST COAST. ARCHER POINT.
3. Locality	CHART _____ (INT _____).
4. Chart number	LIGHT 15-35.6S 145-19.7E UNRELIABLE.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA I 23/14
2. General area	SOUTHERN NORTH SEA. VICTOR GAS FIELD.
3. Locality	CHART _____ (INT _____).
4. Chart number	PLATFORM 49/22-JD 53-19.6N 002-21.8E FOG SIGNAL INOPERATIVE.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA VII 345/14
2. General area	MOZAMBIQUE CHANNEL. PORT OF MAPUTO.
3. Locality	CHART _____ (INT _____).
4. Chart number	BAIXO RIBEIRO LIGHT 25-54.6S 032-48.1E UNLIT.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA IX 12/14
2. General area	RED SEA, EGYPT. GULF OF AQABA, STRAIT OF TIRAN.
3. Locality	CHART _____ (INT _____).
4. Chart number	WEST CARDINAL BUOY 27-59.4N 034-29.1E RACON INOPERATIVE.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 2 The presence of dangerous wrecks in or near main shipping lanes and, if relevant, their marking

The text of a navigational warning in this category should contain message elements 1, 2, 3, 4, 5, 6, identified and ordered, as in the Message elements table, figure 4.

Standard remarks	Comments
DANGEROUS WRECK REPORTED	Reported position unconfirmed. See note i.
DANGEROUS WRECK LOCATED	Position confirmed, usually by survey.

*Notes:*

- i) Position Approximate (PA) is not appropriate since all "reported" hazards will be of this nature by definition.
- ii) Remarks may be amplified e.g.: ". . . MARKED BY SOUTH CARDINAL BUOY 0.2 MILES SOUTHWARD" or "GUARD SHIP VALIENT STATIONED CLOSE SOUTH EXHIBITING RACON MO(D)".
- iii) The appropriate action to be taken on receipt of wreck information will depend on its location as well as its depth (and therefore relative danger to navigation). Generally, any wreck with a least depth of 30 m or less will need a navigation warning.
- iv) Only quote position and depth to an accuracy of which you can be confident. For example, a wreck which has been fully surveyed may have its position quoted to two decimal places and depth to 0.1 m. On the other hand, in cases of reports of a ship which has been abandoned (in a known position) and has then sunk some hours later, the position and depth of water may be vague.
- v) The inclusion of the name of the wreck is not necessary; however, details of the type of ship may be included in the amplifying remarks if it is considered relevant, i.e. Super Tanker or Fishing Vessel with nets, etc.

### EXAMPLES OF WARNINGS IN SECTION 4.2.3.2

Message element	Example 1
1. Message series identifier	NAVAREA III 45/14
2. General area	TUNISIA, EAST COAST. RADE DE SFAX.
3. Locality	CHART _____ (INT _____).
4. Chart number	WRECK REPORTED IN VICINITY 34-41.5N 010-54.0E.
5. Key subject	
6. Geographical position	

7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA I 110/14
2. General area	SOUTHERN NORTH SEA. SWARTE BANK.
3. Locality	CHART (INT _).
4. Chart number	WRECK LOCATED 53-26.02N 002-08.40E MARKED BY NORTH, SOUTH, EAST AND TWO WEST CARDINAL LIGHTBUOYS, THE MOST WESTERLY ONE FITTED WITH RACON MO(D).
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA XVI 95/14
2. General area	PERU. PAITA.
3. Locality	CHART _____ (INT _____).
4. Chart number	WRECK LOCATED 05-04.8N 081-06.7W. EMERGENCY WRECK MARKING BUOY ESTABLISHED 0.25 MILES SOUTH, ALTERNATING OCCULTING BLUE AND YELLOW THREE SECONDS.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	



Message element	Example 4
1. Message series identifier	NAVAREA V 56/14
2. General area	BRAZIL, SOUTH COAST. APPROACHES TO BAIA DE GUANABARA.
3. Locality	CHART _____ (INT _____).
4. Chart number	TUG ANGLIAN MONARCH STANDING BY WRECK 23-01.8S 043-08.3W. TUG IS EXHIBITING FLASHING BLUE LIGHT.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA VI 16/14
2. General area	ARGENTINA, EAST COAST. VALDES PENINSULA.
3. Locality	CHART _____ (INT _____).
4. Chart number	WRECK OF FISHING VESSEL REPORTED 42-05.75S 063-22.00W.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

### 3 Establishment of major new aids to navigation or significant changes to existing ones, when such establishment or change might be misleading to shipping

The text of a navigational warning in this category should contain message elements 1, 2, 3, 4, 5, 6, identified and ordered, as in the Message elements table, figure 4.

Standard remarks	Comments
ESTABLISHED	The use of the word ESTABLISHED conveys that the position and operation of the new or changed aid has been accurately confirmed by the appropriate competent authority.
RE-ESTABLISHED	For previously charted or listed as DESTROYED or TEMPORARILY REMOVED. See note ix.

*Notes:*

- i) Use CHARTED names, not LISTED names.
- ii) LIGHT LIST number is not required.
- iii) POSITION normally quoted to nearest whole minute for existing lights.
- iv) For new lights or changed positions, quote accurate CHARTED position; in degrees, minutes and decimal minutes (maximum 2 decimal places).
- v) Always quote FULL LIGHT CHARACTERISTIC to avoid confusion over what has been changed.
- vi) Damage to DAYMARKS is not usually worthy a navigational warning.
- vii) Use light descriptions as given in the LIGHTS – Glossary of terms table.
- viii) Distances should be quoted in nautical miles and decimals.
- ix) RE-ESTABLISHED is only appropriate for aids which have previously been CHARTED or LISTED as DESTROYED or TEMPORARILY REMOVED. Navigational Warnings concerning such aids are cancelled when the aid is re-established. A new Navigational Warning is only required if the characteristics or position has changed.
- x) For new buoys, lanbys, superbuoys or changed positions, quote accurate CHARTED position; in degrees, minutes and decimal minutes (maximum 2 decimal places).
- xi) Chart INT 1 Abbreviations for light characters are only suitable for NAVTEX or SafetyNET transmissions. Voice broadcasts should be drafted using the terms for lights in the LIGHTS – Glossary of terms table.

#### EXAMPLES OF WARNINGS IN SECTION 4.2.3.3

Message element	Example 1
1. Message series identifier	NAVAREA IV 210/14
2. General area	JAMAICA, SOUTHWARDS.
3. Locality	PEDRO BANK.
4. Chart number	CHART 26050
5. Key subject	SOUTHWEST ROCK LIGHT, FL (3) 10 SECONDS 7 METRES 5M ESTABLISHED 16-47.55N 078-11.48W.

6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA V 23/14 BRAZIL, SOUTH COAST.
2. General area	ILHA RASA SOUTHEASTWARD. CHART _____ (INT _____).
3. Locality	1. EIGHT UNLIT LARGE SPHERICAL ORANGE BUOYS ESTABLISHED WITHIN 1 MILE RADIUS OF 24-17.8S 042- 39.8W. EXPLORATION IN PROGRESS WITHIN THIS AREA 15 APR TO 15 MAY 14.
4. Chart number	2. CANCEL THIS MSG 160300 UTC MAY 14.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA X 15/14 AUSTRALIA - NORTH WEST COAST.
2. General area	PORT HEDLAND, NORTHWARDS. CHART _____ (INT _____).
3. Locality	E2 SOUTH CARDINAL LIGHTBUOY ESTABLISHED 20-03.08S 118- 32.82E.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA I 245/14 ENGLAND - WEST COAST.
2. General area	LIVERPOOL APPROACH. CHART _____ (INT _____).
3. Locality	LIGHTBUOYS ESTABLISHED MARKING BURBO WINDFARM CONSTRUCTION AREA.
4. Chart number	A. WEST CARDINAL 53-30.21N 003-13.56W.

5. Key subject	B. WEST CARDINAL 53-29.70N 003-13.79W. C. SOUTH CARDINAL 53-28.22N 003-11.10W.
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA I 222/14
2. General area	SCOTLAND, EAST COAST CHART _____ (INT _____).
3. Locality	FIFE NESS LIGHT, 56-16.7N 002-35.2W, CHANGED TO FL(3) 20 SEC 14 METRES 16 MILES
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 6 – AIS (Physical)
1. Message series identifier	NAVAREA I 12/14
2. General area	SCOTLAND, NORTH-EAST COAST. APPROACHES TO INVERNESS. CHART _____ (INT _____).
3. Locality	AIS AID TO NAVIGATION MMSI 992351072 ESTABLISHED AT RIFF BANK EAST LIGHT-BUOY 57-38.38N 003-58.15W.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 7 – AIS (Virtual)
1. Message series identifier	NAVAREA X 12/14
2. General area	TORRES STRAITCAPE YORK NORTHWESTWARD. CHART _____ (INT _____).
3. Locality	HERALD PATCHES BUOY 10-30.16S 142-21.50E TEMPORARILY REMOVED. VIRTUAL AIS AID TO NAVIGATION STARBOARD HAND

Message element	Example 7 – AIS (Virtual)
4. Chart number	MARK MMSI 995036022 ESTABLISHED AT THE SAME POSITION.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

#### 4 The presence of large unwieldy tows in congested waters

The text of a navigational warning in this category should contain message elements **1, 2, 3, 5, 6, 7**, identified and ordered, as in the Message elements table, **figure 4**. Element 4 (Chart number) is optional.

Standard remarks	Comments
LENGTH OF TOW	

*Notes:*

- i) Regular communications should be undertaken with the operators of the tow to ensure that the message is cancelled promptly as soon as the operation has been completed. Particular care should be taken when considering including a cancellation time or date for this category of message due to the many factors which could affect the completion of the operation.
- ii) The name or type of the towing vessel and/or towed object should be included when known.
- iii) Amplifying remarks regarding length and speed of tow need only be included if relevant or significant.
- iv) Amplifying remarks regarding the necessity for "WIDE BERTH" should only be included if specifically requested by the operator as it will always be the case that the towing vessel and towed object will have restricted manoeuvrability.

#### EXAMPLES OF WARNINGS IN SECTION 4.2.3.4

Message element	Example 1
1. Message series identifier	NAVAREA VII 58/14 SOUTH ATLANTIC OCEAN. CHART _____ (INT _____). TUG RIG DELIVERER WILL TOW VESSEL AGATE ISLAND FROM RECIFE, BRAZIL TO CAPE TOWN, COMMENCING 09 JUN 14, ETA CAPE TOWN 09 JUL 14. LENGTH OF TOW 550 METRES WIDE BERTH REQUESTED.
2. General area	
3. Locality	
4. Chart number	

Message element	Example 1
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA XI 76/14
2. General area	KYUSHU - WEST COAST TO EASTERN CHINA SEA. CHART _____ (INT _____).
3. Locality	TUG TOWING DRILLING RIG KURYU NR 3. DEPARTS NAGASAKI KO ETD 010100 UTC JUL 14 TO EASTERN CHINA SEA, 29-37.5N 125-49.8E, VIA 31-45N 128-51E. SPEED 5 KNOTS. ETA 060300 UTC JUL 14. LENGTH OF TOW 1000 METRES.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA XIII 34/14
2. General area	SEA OF JAPAN. PROLIV LAPERUZA AND SAKHALIN NORTH EAST COAST. CHART _____ (INT _____).
3. Locality	TUG TOWING DRILLING RIG PA-B 04,18 JUN 14 FROM
4. Chart number	34-58.1N 128-48.3E TO 52-55.9N 143-29.9E, VIA 45-43.0N 141-58.0E, 45-45.0N 142-30.0E, 45-49.0N 143-19.0E, 45-55.0N 143-40.0E, 52-52.0N 143-39.5E,
5. Key subject	
6. Geographical position	LENGTH OF TOW 1000 METRES SPEED 4.2 KNOTS. ONE MILE BERTH REQUESTED.
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA III 65/14
2. General area	BLACK SEA. ROMANIA.
3. Locality	CHART _____ (INT _____).
4. Chart number	GSP KING TOWING PLATFORM JUPITER 060030 UTC AUG 14 FROM 44-31.9N 029-28.0E TO 44-35.9N 029-21.5E.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA I 145/14
2. General area	SCOTLAND - EAST COAST. NOSS HEAD SOUTH-EASTWARDS TO KITTIWAKE OIL FIELD
3. Locality	CHART _____ (INT _____).
4. Chart number	TOW OF SEMI-SUBMERGED PIPELINE BUNDLE IN PROGRESS IN VICINITY OF LINE JOINING:
5. Key subject	58-30N 003-08W, 58-28N 001-51W, 58-16N 000-48W, 58-05N 000-28W, 57-43N 000-11W AND 57-32N 000-10E.
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 5 Drifting hazards (including derelict ships, ice, mines, containers, other large items etc.)

The text of a navigational warning in this category should contain message elements **1, 2, 3, 5, 6, 7, 8**, identified and ordered, as in the Message elements table, **figure 4**. Element 4 (Chart number) is optional.

Standard remarks	Comments
REPORTED	The time of the latest position report should ALWAYS be included.
ADRIFT	
ADRIFT IN VICINITY	

*Notes:*

- i) It is recommended that warnings concerning drifting hazards should self cancel within 72 hours.
- ii) Drifting objects (with the exception of mines) of less than 6 m in length are not normally considered to be hazards to navigation and therefore should not be promulgated.

### EXAMPLES OF WARNINGS IN SECTION 4.2.3.5

Message element	Example 1
1. Message series identifier	NAVAREA VIII 35/14 INDIA WEST COAST. OFF MURUD JANJIRA. CHART _____ (INT _____). 1. LARGE RECTANGULAR PARTIALLY SUBMERGED METALLIC OBJECT ADRIFT IN VICINITY 18-16N 072-24E AT 150830 UTC JUN 14. 2. CANCEL THIS MSG 180830 UTC JUN 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA II 78/14 PAZENN. CHART _____ (INT _____). 1. SIX CONTAINERS ADRIFT IN VICINITY 47-37N 006-26W AT 262200 UTC JUL 14. 2. CANCEL THIS MSG 292200 UTC JUL 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	



Message element	Example 2
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA I 112/14
2. General area	CELTIC SEA. CELTIC DEEP.
3. Locality	CHART _____ (INT _____). 1. DERELICT FISHING VESSEL REPORTED ADRIFT 51-25.5N 006-21.9W AT 132210 UTC NOV 14.
4. Chart number	2. CANCEL THIS MSG 162210 UTC NOV 14.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA IV 75/14
2. General area	MEXICO. PLAYA DEL CARMEN APPROACH.
3. Locality	CHART _____ (INT _____). 1. DRIFTING MINE REPORTED 20-37.3N 087-03.1W AT 060850 UTC AUG 14.
4. Chart number	2. CANCEL THIS MSG 090850 UTC AUG 14.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA VI 99/14
2. General area	SOUTH ATLANTIC. WEST SCOTIA RIDGE, RHINE BANK
3. Locality	CHART _____ (INT _____). 1. ICEBERGS REPORTED AT 250130 UTC JUL 14:
4. Chart number	A. 55-27.9S 053-35.6W. B. 55-26.2S 053-18.3W.
5. Key subject	2. CANCEL THIS MSG 280130 UTC JUL 14.

Message element	Example 5
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 6
1. Message series identifier	NAVAREA IV 55/14 WEST INDIES. MARTINIQUE, SOUTH. CHART _____ (INT _____). 1. LARGE TRUNK, ELEVEN METRES IN LENGTH, REPORTED IN VICINITY 14-14N 060-52W AT 272115 UTC AUG 14. 2. CANCEL THIS MSG 302115 UTC AUG 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 6 Areas where search and rescue (SAR) and anti-pollution operations are being carried out (for avoidance of such areas)

The text of a navigational warning in this category should contain message elements **1, 2, 3, 5, 6, 7**, identified and ordered, as in the Message elements table, **figure 4**. Element 4 (Chart number) is optional.

Standard remarks	Comments
SAR OPERATION	
ANTIPOLLUTION OPERATIONS	

### .13 EXAMPLES OF WARNINGS IN SECTION 4.2.3.6

Message element	Example 1
1. Message series identifier	NAVAREA XIV 67/14 NEW ZEALAND. COOK STRAIT. CHART _____ (INT _____). SAR OPERATION IN PROGRESS CENTRED ON 40-24.5S 173- 57.6E. ALL VESSELS NOT UNDER INSTRUCTION OF THE SAR MISSION CONTROLLER RCCNZ ARE REQUESTED TO KEEP A WIDE BERTH.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	

Message element	Example 1
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA I 25/14 ENGLAND SOUTH COAST. LYME BAY, BEER HEAD WESTWARDS. CHART _____ (INT _____). ANTIPOLLUTION OPERATIONS IN PROGRESS 50-40.0N 003-10.0W. A TEMPORARY EXCLUSION ZONE RADIUS TWO MILES HAS BEEN ESTABLISHED CENTRED ON THIS POSITION. SHIPS ARE PROHIBITED FROM ENTERING OR REMAINING WITHIN THIS ZONE.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA IV 6/14 GULF OF MEXICO. LOUISIANA. CHART _____ (INT _____). NAVIGATION PROHIBITED ON LOWER MISSISSIPPI RIVER, SOUTHWEST PASS BUOY TO MILE MARKER 98, DUE TO OIL SPILL RESPONSE OPERATIONS. CONTACT CAPTAIN OF THE PORT OF NEW ORLEANS FOR PERMISSION TO ENTER PROHIBITED AREA AND FOR UPDATED INFORMATION.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

**7 The presence of newly discovered rocks, shoals, reefs and wrecks likely to constitute a danger to shipping, and, if relevant, their marking**

The text of a navigational warning in this category should contain message elements **1, 2, 3, 4, 5, 6**, identified and ordered, as in the Message elements table, **figure 4**.

Standard remarks	Comments
LOCATED	The word LOCATED should only be used when the position of the hazard has been confirmed by a hydrographic survey. In all other cases the word REPORTED should be used.
REPORTED	
LESS WATER REPORTED	
SIGNIFICANTLY LESS WATER THAN CHARTED REPORTED	

*Note:*

- i) Due consideration should be taken over the inclusion of a specific depth over a newly discovered submerged hazard to navigation. The terms "LESS WATER REPORTED" or "SIGNIFICANTLY LESS WATER THAN CHARTED REPORTED" may be used prior to a report of survey of the area.

**EXAMPLES OF WARNINGS IN SECTION 4.2.3.7**

Message element	Example 1
1. Message series identifier	NAVAREA XII 222/14
2. General area	COSTA RICA. SOUTHWEST COAST.
3. Locality	CHART _____ (INT _____).
4. Chart number	SHOALS LOCATED: A. 28 METRES 08-17.1N 083-53.1W.
5. Key subject	B. 13.5 METRES 08-19.2N 083-54.2W.
6. Geographical position	C. 27 METRES 08-21.8N 083-56.1W.
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA IV 231/14
2. General area	NORTH PACIFIC OCEAN. JASPER SEAMOUNT.
3. Locality	CHART _____ (INT _____).
4. Chart number	DISCOLOURED WATER WITH SUBMARINE VOLCANIC ACTIVITY REPORTED VICINITY 30-27N 122-40W AT 190110 UTC FEB 14.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA VII 48/14
2. General area	ANGOLA. PORT OF LUANDA.
3. Locality	CHART _____ (INT _____).
4. Chart number	WRECK LOCATED 08-16.50S 013-16.07E. LEAST DEPTH EIGHT METRES.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA I 432/14
2. General area	ORKNEY ISLANDS. WESTRAY FIRTH.
3. Locality	CHART _____ (INT _____).

Message element	Example 4
4. Chart number	SHOAL DEPTH 10.9 METRES LOCATED 59-12.97N 002-54.96W.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA XVI 98/14 PERU. BAHIA DEL CALLAO. CHART _____ (INT _____ ). SIGNIFICANTLY LESS WATER THAN CHARTED REPORTED 11-59.89S 077-17.50W.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 8 Unexpected alteration or suspension of established routes

The text of a navigational warning in this category should contain message elements **1, 2, 3, 4, 5, 6, 7**, identified and ordered, as in the Message elements table, **figure 4**.

### EXAMPLES OF WARNINGS IN SECTION 4.2.3.8

Message element	Example 1
1. Message series identifier	NAVAREA I 67/14 ENGLAND - EAST COAST. THAMES ESTUARY NORTHERN APPROACHES. CHART _____ (INT _____ ). WITH EFFECT FROM 010001 UTC JUL 14 EXTENSIVE CHANGES TO ROUTEING AND BUOYAGE WILL BE IMPLEMENTED TO SEAWARD
2. General area	
3. Locality	
4. Chart number	

Message element	Example 1
5. Key subject	OF AND IN THE SUNK AREA 51-50N 001-46E. FOR FULL DETAILS REFER TO ADMIRALTY NOTICE TO MARINERS 534(P)/14 AND RELEVANT NEW EDITIONS OF ADMIRALTY CHARTS PUBLISHED IN MAY AND JUNE 14. THE CURRENT SUNK VTS IS CANCELLED AT 010001 UTC JULY 14 UNTIL FURTHER NOTICE. SHIPS REQUIRING A PILOT SHOULD CONTACT SUNK PILOTAGE SERVICE VHF CHANNEL 9.
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA X 234/14 AUSTRALIA NORTH COAST. TORRES STRAIT. CHART _____ (INT _____). COMPULSORY TORRES STRAIT PILOTAGE 10-32S 143-01E. MASTERS OF SHIPS 70 METRES IN LENGTH OVERALL OR GREATER, AND ALL LOADED OIL, CHEMICAL TANKERS OR LIQUEFIED GAS CARRIERS ARE ADVISED THAT AUSTRALIAN LAW HAS BEEN AMENDED TO REQUIRE A LICENSED PILOT TO BE ENGAGED WHEN NAVIGATING THE TORRES STRAIT. ALL SHIPS WILL BE AUTOMATICALLY CHECKED FOR COMPLIANCE AND THE FAILURE TO EMBARK A LICENSED PILOT MAY RESULT IN PROSECUTION. MASTERS OF SHIPS SHOULD ENSURE CONTACT IS MADE IN A TIMELY MANNER WITH A PILOTAGE PROVIDER TO GUARANTEE A LICENSED PILOT IS BOOKED. THE FOLLOWING ARE THE CONTACT DETAILS OF THE TWO COMPANIES THAT CAN PROVIDE LICENSED PILOTS: AUSTRALIAN REEF PILOTS PTY LTD. - OPERATIONS@REEFPILOTS.COM.AU. TORRES PILOTS PTY LTD - OPERATIONS@TORRESPILOTS.COM.AU.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA XI 07/14 MALAYSIA SOUTH COAST. SINGAPORE. CHART _____ (INT _____). WEST JURONG CHANNEL WILL BE CLOSED FROM 0100 TO 0600 UTC DAILY 02 THRU 20 JAN 14 WHILE REPLACING ALL CHANNEL BUOYS. MASTERS OF SHIPS SHOULD CONTACT SINGAPORE PORT OPERATIONS AT LEAST 48 HOURS IN ADVANCE PRIOR TO ENTERING OR LEAVING THE WEST JURONG CHANNEL TO ENSURE PILOTS ARE ENGAGED IN A TIMELY MANNER. CONTACT INFORMATION IS AS FOLLOWS. PHONE: 65-62265539, FAX: 65-62279971.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA V 206/14
2. General area	BRAZIL - SOUTH COAST. CHART _____ (INT _____).
3. Locality	1. NAVAL CONTROL EXERCISE 091900 UTC TO 130300 UTC NOV 14 IN AREA BOUNDED BY:
4. Chart number	31-33.00S 051-14.50W, 32-17.50S 050-07.00W, 33-51.00S 051-33.50W, 33-07.00S 052-38.00W.
5. Key subject	A. MERCHANT SHIPS SHOULD CROSS MARITIME AREA USING THE FOLLOWING LANES:
6. Geographical position	i) LANE COASTAL-1: (DIRECTION NE-SW) 32-00.00S 050-50.00W AND 33-20.00S 052-03.00W.
7. Amplifying remarks	ii) LANE COASTAL-2: (NC2-PORT RIO GRANDE) 32-38.00S 051-25.00W AND 32-15.00S 051-58.00W.
8. Cancellation details	B. WIDTH OF LANE IS SIX NAUTICAL MILES, THREE NAUTICAL MILES ON EACH SIDE OF THE TRACKLINE JOINING: i) NC1: 32-00.00S 050-50.00W. ii) NC2: 32-38.00S 051-25.00W. iii) NC3: 33-20.00S 052-03.00W. C. ACCESS AND DEPART RIO GRANDE PORT FROM: 32-15.00S 051-58.00W. D. ACCORDING TO ENTERING POSITION, MERCHANT SHIPS IN THE AREA SHOULD CALL LANE CONTROLLER SHIPS BY VHF CHANNELS 16 AND 10, USING THE FOLLOWING: i) NC1 CONTROLLER OF MERCHANT SHIPS ENTERING AND LEAVING BY NORTHEAST OF AREA. ii) NC2 CONTROLLER OF MERCHANT SHIPS REQUESTING AND LEAVING FROM POINT OF ACCESS AND DEPART OF RIO GRANDE PORT. iii) NC3 CONTROLLER OF MERCHANT SHIPS ENTERING AND LEAVING BY SOUTHWEST OF AREA. 2. CANCEL THIS MSG 130400 UTC NOV 14.

Message element	Example 5
1. Message series identifier	NAVAREA IV 351/14
2. General area	NORTH ATLANTIC. NORTH CAROLINA. CHART _____ (INT _____).
3. Locality	1. THE PORTS FOR NORTH CAROLINA HAVE BEEN CLOSED UNTIL FURTHER NOTICE IN PREPARATION FOR THE ANTICIPATED IMPACT OF HURRICANE HANNA. ALL INLAND WATERS, COASTAL INLETS AND TERRITORIAL SEAS WITHIN THE CAPTAIN OF THE PORT ZONE, FROM LITTLE RIVER INLET TO THE NORTH CAROLINA - VIRGINIA BOUNDARY HAVE BEEN ESTABLISHED. NO SHIP MAY ENTER, DEPART OR TRANSIT WITHIN THIS SAFETY ZONE WITHOUT THE PERMISSION OF THE CAPTAIN OF THE PORT.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	2. ALL CARGO AND BUNKER HANDLING OPERATIONS MUST CEASE. 3. CONTACT CAPTAIN OF PORT FOR UPDATED INFORMATION.



**9 Cable or pipe-laying activities, seismic survey, the towing of large submerged objects for research or exploration purposes, the employment of manned or unmanned submersibles, or other underwater operations constituting potential dangers in or near shipping lanes**

The text of a navigational warning in this category should contain message elements **1, 2, 3, 5, 6, 7**, identified and ordered, as in the Message elements table, **figure 4**. Element 4 (Chart number) is optional.

Standard remarks	Comments
CABLE LAYING OPERATIONS IN PROGRESS	
SEISMIC SURVEY IN PROGRESS	
UNDERWATER OPERATIONS	Do not use "SUBMARINE OPERATIONS"
SCIENTIFIC OPERATIONS IN PROGRESS	

*Notes:*

- i) Regular communications should be undertaken with the operators to ensure that the message is cancelled promptly as soon as the operation has been completed. Particular care should be taken when considering including a cancellation time or date for this category of message due to the many factors which could affect the completion of the operation.
- ii) Use "REQUESTED" when wide berth is for the benefit of the ship which is performing the operation.
- iii) Use "ADVISED" when the operations create a significant hazard.

**EXAMPLES OF WARNINGS IN SECTION 4.2.3.9**

Message element	Example 1
1. Message series identifier	NAVAREA VII 256/14
2. General area	ATLANTIC OCEAN. ANGOLA.
3. Locality	CHART _____ (INT _____).
4. Chart number	M/V GECO EMERALD IS CONDUCTING SEISMIC SURVEY OPERATIONS AND TOWING SIX STREAMERS AT 8000 METRE LENGTH WITH ENDS MARKED WITH YELLOW BUOYS AND BLUE FLASHING LIGHTS IN AREA BOUNDED BY 10-55S, 11-21S, 013-20E AND 012-40E. WIDE BERTH REQUESTED, MINIMUM SIX MILES ASTERN AND THREE MILES ABEAM. SURVEY SHIP STANDING BY ON VHF CH 67 AND 16. GUARD VESSEL ST JOHNS IN ATTENDANCE.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA IX 15/14
2. General area	RED SEA. GULF OF SUEZ. CHART _____ (INT _____).
3. Locality	SHIP TIME BARGE IS WORKING ON HILAL PLATFORM MOORED WITH EIGHT ANCHORS AND BUOYS IN FOLLOWING POSITIONS:
4. Chart number	A. 27-49.98N 033-43.82E. B. 27-50.21N 033-43.67E. C. 27-50.29N 033-43.36E. D. 27-50.41N 033-43.45E. E. 27-50.06N 033-44.41E. F. 27-50.18N 033-44.03E. G. 27-50.50N 033-43.74E. H. 27-50.50N 033-43.61E.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	WIDE BERTH REQUESTED.
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA XIII 55/14
2. General area	TATARSKIY PROLIV. PROLIV LAPERUZA. CHART _____ (INT _____).
3. Locality	
4. Chart number	1. CABLE LAYING OPERATIONS IN PROGRESS BY SHIP SUBARU UNTIL 30 JUN 14 ALONG LINE JOINING 45-56.8N 140-00.7E, 46-36.5N 140-53.6E, 46-36.6N 141-29.0E, 46-38.9N 141-47.3E, 46-36.5N 141-49.8E. WIDE BERTH REQUESTED.
5. Key subject	
6. Geographical position	2. CANCEL THIS MSG 020001 UTC JUL 14.
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA VIII 361/14
2. General area	INDIAN OCEAN. SONGO AND MAFIA ISLANDS. CHART _____ (INT _____).
3. Locality	
4. Chart number	SEISMIC SURVEY IN PROGRESS BY M/V GEO MARINER IN AREA BOUNDED BY:

Message element	Example 4
5. Key subject	A. 07-32S 039-18E.
6. Geographical position	B. 07-37S 040-17E.
7. Amplifying remarks	C. 06-22S 039-50E.
8. Cancellation details	D. 06-35S 039-09E.
	SHIP TOWING A FOUR MILE SEISMIC CABLE WITH YELLOW TAIL BUOY AND FLASHING LIGHT AT THE END OF THE CABLE.
	SIX MILE BERTH REQUESTED.

Message element	Example 5
1. Message series identifier	NAVAREA IV 20/14
2. General area	NORTH ATLANTIC OCEAN.
3. Locality	TRINIDAD, EASTWARDS.
4. Chart number	CHART _____ (INT _____).
5. Key subject	1. PIPELAYING OPERATIONS IN PROGRESS UNTIL 31 JUL 14 BY M/V SOLITAIRE AND M/V HIGHLAND NAVIGATOR ALONG TRACK BETWEEN 10-02.28N 060-15.08W AND 10-06.08N 060-17.81W. WIDE BERTH REQUESTED.
6. Geographical position	2. CANCEL THIS MESSAGE 010001 UTC AUG 14.
7. Amplifying remarks	
8. Cancellation details	

## 10 The establishment of research or scientific instruments in or near shipping lanes

The text of a navigational warning in this category should contain message elements 1, 2, 3, 4, 5, 6, identified and ordered, as in Message elements table, **figure 4**.

### EXAMPLES OF WARNINGS IN SECTION 4.2.3.10

Message element	Example 1
1. Message series identifier	NAVAREA X 77/14
2. General area	AUSTRALIA WEST COAST.
3. Locality	EXMOUTH PLATEAU.
4. Chart number	CHART _____ (INT _____).
	SUBSEA MOORING BUOY ESTABLISHED 21-26S 114-04E. BUOY MARKED WITH MOORING LINE AND SMALL FLOAT. WIDE BERTH

Message element	Example 1
5. Key subject	REQUESTED.
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA VII 321/14
2. General area	MADAGASCAR. PORT OF MAJUNGA.
3. Locality	CHART _____ (INT _____).
4. Chart number	TWO TIDE GAUGES AND A CURRENT METER MOORED IN AREA BOUNDED BY: 15-32.70S, 15-33.03S, 046-11.77E AND 046- 11.53E.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA IV 333/14
2. General area	NORTH ATLANTIC OCEAN. GRAND BANKS OF NEWFOUNDLAND.
3. Locality	CHART _____ (INT _____).
4. Chart number	DART BUOY ESTABLISHED 44-04.58N 055-12.80W.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA III 55/14
2. General area	IONIAN SEA. CENTRAL.
3. Locality	CHART _____ (INT _____).
4. Chart number	ODAS BUOY ESTABLISHED 38-25.59N 18-20.65E.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA XI 66/14
2. General area	NORTH PACIFIC OCEAN. CAROLINE ISLANDS AND NGULU ATOL SOUTH-WESTWARDS.
3. Locality	CHART _____ (INT _____).
4. Chart number	ODAS BUOY ESTABLISHED IN VICINITY 07-39.0N 136-41.9E.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 11 The establishment of offshore structures in or near shipping lanes

The text of a navigational warning in this category should contain message elements **1, 2, 3, 4, 5, 6**, identified and ordered, as in the Message elements table, **figure 4**.

*Note:*

- i) It is not necessary to number or alphabetize the list of structures.

### .14 EXAMPLES OF WARNINGS IN SECTION 4.2.3.11

Message element	Example 1
1. Message series identifier	NAVAREA IX 5/14
2. General area	RED SEA. GULF OF SUEZ, TOR BANK.
3. Locality	CHART _____ (INT _____). MOBILE RIG ESTABLISHED IN 28-12.8N 033-24.1E.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA VII 117/14
2. General area	SOUTH ATLANTIC OCEAN. ANGOLA, CONGO, IVORY COAST AND NAMIBIA.
3. Locality	CHART _____ (INT _____).RIG LIST: 05-08.58S 011-55.15E PRIDE CAPINDA.
4. Chart number	05-33.08S 011-27.08E PRIDE VENEZUELA.
5. Key subject	06-03.81S 011-05.86E GSF RIG 140. 06-19.02S 011-03.23E KIZOMBA A.
6. Geographical position	06-20.15S 011-18.01E PRIDE SOUTH PACIFIC. 06-20.92S 011-09.22E KIZOMBA B.
7. Amplifying remarks	07-40.05S 011-45.08E PRIDE AFRICA. 07-43.00S 011-43.00E PRIDE ANGOLA.
8. Cancellation details	35-08.86S 022-31.81E PRIDE SOUTH SEAS. 35-13.99S 021-29.89E ORCA. FOUR MILE EXCLUSION ZONE ABOUT RIGS DUE TO PRESENCE OF UNLIT ANCHOR MARKING BUOYS.

Message element	Example 3
1. Message series identifier	NAVAREA VIII 244/14
2. General area	INDIA.

Message element	Example 3
3. Locality	WEST COAST.
4. Chart number	CHART _____ (INT _____).
5. Key subject	1. PRESENT POSITION OF OIL RIGS AND DRILL SHIPS: 20-43.00N 072-19.06E ABAN V. 20-18.23N 070-00.03E BADRINATH. 19-54.20N 071-18.95E FRONTIER ICE. 19-29.72N 071-22.89E NOBLE ED HOLT. 19-11.99N 072-11.00E RON TAPMEYER. 19-40.14N 072-00.33E SAGER RATNA. 19-25.23N 071-16.98E TRIDENT-12. 19-18.23N 072-02.75E ENSCO-50. 19-32.70N 071-13.98E SUNDOWNER-7. WIDE BERTH REQUESTED.
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	2. CANCEL NAVAREA VIII 236/14.

Message element	Example 4
1. Message series identifier	NAVAREA I 220/14
2. General area	CHART _____ (INT _____).
3. Locality	1. RIGLIST. CORRECT AT 040600 UTC AUG 14. SOUTHERN NORTH SEA. 51N TO 55N. 52-54.1N 004-08.5E NOBLE LYNDA BOSSLER. 53-27.7N 002-17.1E ENSCO 100.
4. Chart number	NEW 53-39.3N 004-16.9E ENSCO 72. 53-48.3N 002-50.3E NOBLE JULIE ROBERTSON. 53-57.0N 002-13.5E NOBLE AL WHITE.
5. Key subject	NEW 54-16.6N 002-12.6E GSF LABRADOR. 54-19.0N 002-37.2E NOBLE GEORGE SAUVAGEAU.
6. Geographical position	NOTES: A. RIGS ARE PROTECTED BY A 500 METRE SAFETY ZONE. B. ACP - ADJACENT TO CHARTED PLATFORM.
7. Amplifying remarks	
8. Cancellation details	2. CANCEL NAVAREA I 225/14.

Message element	Example 5
1. Message series identifier	NAVAREA VI 116/14
2. General area	URUGUAY. MONTEVIDEO.
3. Locality	CHART _____ (INT _____). PLATFORM AJAX ESTABLISHED 35-00N 056-20W.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 12 Significant malfunctioning of radio-navigation services and shore-based maritime safety information radio or satellite services

The text of a navigational warning in this category should contain message elements 1, 5, identified and ordered, as in the Message elements table, **figure 4**.

Standard remarks	Comments
OFF AIR	Do not use "Until Further Notice" since the fact that the event is complete will always be apparent from the cancellation message.  Back-up facility should be included if one is available.
UNSTABLE	
REDUCED POWER	
INOPERATIVE	
UNUSABLE	
DISCONTINUED	

*Notes:*

- i) Warnings concerning long-range electronic navigational aids will not normally need the message elements; General area, Locality or Chart number.
- ii) If a definitive time is quoted for the outage, the message cancels one hour after event completes.

### EXAMPLES OF WARNINGS IN SECTION 4.2.3.12

Message element	Example 1
1. Message series identifier	NAVAREA I 55/14 GPS SATELLITE SYSTEM. 1. PRN 25 UNUSABLE 231900 UTC TO 241000 UTC APR 14. 2. CANCEL THIS MESSAGE 241100 UTC APR 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	



Message element	Example 2
1. Message series identifier	NAVAREA I 66/14
2. General area	1. LORAN-C. NORTH-WEST EUROPE.LESSAY CHAIN RATE 6731-M AND SYLT CHAIN RATE 7499-X OFF AIR 080600 UTC TO 081500 UTC OCT 14.
3. Locality	2. CANCEL THIS MESSAGE 081600 UTC OCT 14.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA I 93/14
2. General area	GMDSS SHETLAND ISLANDS.
3. Locality	MRCC SHETLAND. VHF RT AND DSC SERVICES FROM SAXA VORD SITE, 60-50N 000-50W, OFF AIR.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA I 43/14
2. General area	GMDSS IRELAND WEST COAST.
3. Locality	ALL NAVTEX TRANSMISSIONS FROM VALENTIA 51-55.8N 010-20.9W, OFF AIR.
4. Chart number	
5. Key subject	
6. Geographical position	

Message element	Example 4
7. Amplifying remarks	
8. Cancellation details	

**13 Information concerning events which might affect the safety of shipping, sometimes over wide areas, e.g. naval exercises, missile firings, space missions, nuclear tests, ordnance dumping zones, etc.**

The text of a navigational warning in this category should contain message elements **1, 2, 3, 5, 6, 7, 8**, identified and ordered, as in the Message elements table, **figure 4**. Element 4 (Chart Number) is optional.

*Note:*

- i)* Whenever possible, warnings concerning scheduled events should be originated not less than five days in advance, and reference may be made to relevant national publications
- ii)* Warnings may include reference to relevant national publications and contact information.

**.15 EXAMPLES OF WARNINGS IN SECTION 4.2.3.13**

Message element	Example 1
1. Message series identifier	NAVAREA III 199/14 BLACK SEA. UKRAINE. CHART _____ (INT _____). 1. GUNNERY EXERCISES 0800 TO 1600 UTC DAILY 16 TO 18 JAN IN AREA BOUNDED BY: A. 44-43.8N 032-52.2E. B. 44-34.8N 032-37.4E. C. 44-39.0N 032-11.5E. D. 44-48.4N 032-08.2E. E. 45-00.2N 032-14.2E. F. 44-52.2N 032-41.6E. 2. CANCEL THIS MESSAGE 181700 UTC JAN 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA VIII 62/14 INDIA WEST COAST. MORMUGAO. 1. FIRING PRACTICE BY NAVAL AIRCRAFT 0230 TO 1230 UTC DAILY FROM 01 TO 07 AUG AND 14 AUG TO 21 AUG 14 IN AREA BOUNDED BY 15-13N, 15-11N, 073-57E AND 073- 52E. 2. CANCEL THIS MESSAGE 211330 UTC AUG 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	

Message element	Example 2
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA XIV 233/14 SOUTH PACIFIC OCEAN 1. HAZARDOUS OPERATIONS SPACE DEBRIS FROM 090600 TO 090845 UTC MAR IN AREA BOUNDED BY: A. 19-30S 120-00W B. 26-30S 120-00W C. 30-00S 123-30W D. 30-00S 132-00W 2. CANCEL THIS MSG 090945 UTC MAR 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	NAVAREA XI 198/14 JAPAN, HONSHU. NOJIMA SAKI, SOUTHEASTWARD. 1. HAZARDOUS OPERATIONS ROCKET, FLARE FIRING AND BOMBING FROM 041500 TO 071500 UTC AUG 14, ALTERNATE FROM 071500 TO 081500 UTC AUG 14. AREA BOUNDED BY: A. 34-35.2N 140-16.8E. B. 34-08.2N 141-01.8E. C. 33-44.2N 140-22.8E. D. 34-31.2N 140-07.8E. 2. CANCEL THIS MSG 071600 UTC AUG 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA VII 74/14 INDIAN OCEAN. ILES KERGUELEN NORTH-EASTWARDS. 1. ROCKET LAUNCHING SCHEDULED 0330 TO 0530 UTC 28 APR TO 03 MAY 14. FOLLOWING RANGE CLEARANCE AREA ESTABLISHED: A. 44-20S 074-45E. B. 44-20S 077-30E. C. 49-10S 074-45E. D. 49-10S 077-30E.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	

Message element	Example 5
7. Amplifying remarks	SHIPS TO REMAIN CLEAR OF THIS AREA. 2. CANCEL THIS MESSAGE 030630 UTC MAY 14.
8. Cancellation details	

Message element	Example 6
1. Message series identifier	NAVAREA XI 30/14 JAPAN, KYUSHU - EAST COAST. HYUGA NADA AND APPROACHES. CHART _____ (INT _____). 1. SEARCH AND RESCUE EXERCISES BY AIRCRAFT. 2300 TO 1200 UTC DAILY 30 JUN, 01, 02, 06 TO 09, 13 TO 16, 21 TO 23 AND 27 TO 30 JUL 14 IN AREAS BOUNDED BY: A. 32-26.20N 131-46.85E, 32-33.20N 132-09.85E, 32-11.20N 132-13.85E, 31-57.21N 132-00.85E, 31-59.21N 131-35.85E. B. 31-23.21N 132-07.85E, 32-09.21N 132-53.85E, 32-35.83N 134-00.00E, 31-52.91N 134-00.00E, 30-48.21N 132-22.85E, 31-04.21N 132-07.85E. 2. CANCEL THIS MSG 301300 UTC JUL 14.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

#### 14 Operating anomalies identified within ECDIS including ENC issues

The text of a navigational warning in this category should contain message elements **1, 5, 7**, identified and ordered, as in the Message elements table, figure 4. Elements 2, 3 and 4 are optional.

*Note:*

- i) *A number of ECDIS operating anomalies have been identified. Due to the complex nature of ECDIS, and in particular because it involves a mix of hardware, software and data, it is possible that further anomalies may exist.*
- ii) *NAVAREA Coordinators should ensure that mariners are aware of the potential for some ECDIS to exhibit display and behaviour anomalies i.e. alarm, and provide manufacturers guidance if appropriate.*

#### EXAMPLES OF WARNINGS IN SECTION 4.2.3.14

Message element	Example 1
1. Message series identifier	NAVAREA I 48/14 DISPLAY ANOMALIES IN SOME ECDIS. MARINERS ARE ADVISED THAT THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO) CHECK DATA SET SHOWS
2. General area	
3. Locality	

Message element	Example 1
4. Chart number	<p>THAT SOME ECDIS SYSTEMS FAIL TO DISPLAY SOME SIGNIFICANT UNDERWATER FEATURES IN THE STANDARD DISPLAY MODE. THE USE OF THIS CHECK DATA SET (ISSUED THROUGH ENC SERVICE PROVIDERS AND AVAILABLE FROM THE IHO WEBSITE WWW.IHO.INT) TO CHECK THE OPERATION OF ECDIS IS STRONGLY RECOMMENDED. XXXX HAS CONFIRMED THAT CERTAIN VERSIONS OF XXXX ECDIS FAIL TO DISPLAY SOME TYPES OF WRECK AND OBSTRUCTION (INCLUDING STRANDED WRECKS) IN ANY DISPLAY MODE. WHERE XXXX ECDIS IS IN USE, PAPER CHARTS SHOULD BE THE PRIMARY MEANS OF NAVIGATION UNTIL THE ECDIS HAS BEEN PROVED TO OPERATE CORRECTLY. SEE HTTP://WWW..... FOR FURTHER INFORMATION.</p>
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	<p>NAVAREA IV 89/14 GULF OF MEXICO. NEW ORLEANS TO JACKSONVILLE. DUE TO A PRODUCTION PROBLEM THAT HAS CAUSED DISPLACED FEATURES, IT HAS BEEN DETERMINED THAT ELECTRONIC NAUTICAL CHART US2GC12M (NEW ORLEANS TO JACKSONVILLE) IS NOT TO BE USED FOR NAVIGATION OR SITUATIONAL AWARENESS. A REVIEW IS IN PROCESS TO ADDRESS THIS SITUATION.</p>
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 15 Acts of piracy and armed robbery against ships

The text of a navigational warning in this category should contain message elements **1, 2, 3, 5, 6**, identified and ordered, as in the Message elements table, **figure 4**.

Standard remarks	Comments
ACT OF PIRACY	
ARMED ROBBERY	

*Note:*

- i) Add amplifying information if available.
- ii) Attention is drawn to IMO resolution MSC.305(87) *Guidelines on operational procedures for the promulgation of MSI concerning acts of piracy and piracy counter-measure operations.*

**EXAMPLES OF WARNINGS IN SECTION 4.2.3.15**

Message element	Example 1
1. Message series identifier	NAVAREA IX 99/14
2. General area	GULF OF ADEN.
3. Locality	1. CHART _____ (INT _____) .M/V ALWAYS SAIL REPORTS
4. Chart number	ACT OF PIRACY/ARMED ROBBERY IN VICINITY 11-50N 048-
5. Key subject	60E AT 120600 UTC AUG 14. TWO ZODIACS CARRYING 3-4
6. Geographical position	MEN EACH APPROACHING FROM ASTERN AT 20 KNOTS AT
7. Amplifying remarks	FIRST LIGHT. ATTEMPTED TO BOARD PORT SIDE AFT. SHIPS
8. Cancellation details	ADVISED TO KEEP CLEAR OF THIS POSITION AND EXERCISE EXTREME CAUTION. REPORTS TO UKMTO DUBAI, PHONE 97 150 552 3215. 2. CANCEL THIS MESSAGE 14 AUG 14.

Message element	Example 2
1. Message series identifier	NAVAREA XI 60/14
2. General area	MALACCA STRAIT.
3. Locality	PIRACY ATTACK/ARMED ROBBERY/M/V ATTACKED IN POSITION 01-
4. Chart number	20.6N 103-18.2E AT 061930 UTC FEB 14. VESSELS ARE
5. Key subject	ADVISED TO KEEP CLEAR OF THIS POSITION AND TO EXERCISE
6. Geographical position	EXTREME CAUTION. REPORTS TO IMB PIRACY REPORTING
7. Amplifying remarks	CENTRE, TEL 60 3 2078 5763, E-MAIL PIRACY@ICC-CCS.ORG
8. Cancellation details	

Message element	Example 3
1. Message series identifier	NAVAREA XV 231/14
2. General area	CHILE.
3. Locality	ISLA SAN AMBROSIO AND ISLA SAN FELIX.
4. Chart number	1. FOUR SPEEDBOATS CARRYING 20 PIRATES, ALL ARMED WITH
5. Key subject	AUTOMATIC WEAPONS, ATTACKED A FISHING BOAT KILLING
6. Geographical position	FOUR CREW AND INJURING EIGHT OTHERS. THE WOUNDED
7. Amplifying remarks	CREW WERE SENT TO SHORE FOR MEDICAL TREATMENT.
8. Cancellation details	2. CANCEL THIS MSG 140001 UTC JUN 14.

Message element	Example 4
1. Message series identifier	NAVAREA II 254/14
2. General area	NIGERIA. BONNY RIVER.
3. Locality	TUGBOAT HERKULES, HIJACKED 25 JUL. SHIP WAS HEADED TO
4. Chart number	AKPO OIL FIELD WHEN GUNMEN IN TWO SPEEDBOATS SEIZED THE
5. Key subject	SHIP AND ITS 12-MAN CREW. THE GUNMEN LATER RELEASED THE
6. Geographical position	SHIP AND SEVEN CREW MEMBERS. CREW MEMBERS WERE ROBBED
7. Amplifying remarks	OF THEIR POSSESSIONS. SHIPS ARE REQUESTED TO MAINTAIN A
8. Cancellation details	VIGILANT WATCH.

Message element	Example 5
1. Message series identifier	NAVAREA IX 17/14
2. General area	RED SEA. YEMEN.
3. Locality	CHART _____ (INT _____). PIRACY.
4. Chart number	1. M/V APPROACHED BY PIRATES IN POSITION 13-15N 043-01E AT 271108 UTC JAN 14. SHIPS ADVISED TO KEEP
5. Key subject	CLEAR OF THIS POSITION AND EXERCISE EXTREME CAUTION. REPORTS TO UKMTO DUBAI, PHONE 97 150 552 3215.
6. Geographical position	2. CANCEL THIS MESSAGE 01 FEB 14
7. Amplifying remarks	.
8. Cancellation details	

## 16 Tsunamis and other natural phenomena, such as abnormal changes to sea level

The text of a navigational warning in this category should contain message elements **1, 2, 5**, identified and ordered, as in the Message elements table, **figure 4**.

### .16 EXAMPLES OF WARNINGS IN SECTION 4.2.3.16

Message element	Example 1
1. Message series identifier	NAVAREA XI 95/14
2. General area	HOKKAIDO, EAST COAST AND OKHOTSK COAST. TSUNAMI WARNING.
3. Locality	TSUNAMI WARNING AT 130436 UTC JAN 14. DANGEROUS

Message element	Example 1
4. Chart number	DRIFTING OBJECTS, CHANGE OF DEPTH AND DAMAGE OF HARBOUR FACILITIES OR NAVIGATIONAL AIDS MAY OCCUR.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA XII 55/14
2. General area	PACIFIC COASTAL AREAS. TSUNAMI WARNING.
3. Locality	AN EARTHQUAKE OCCURRED AT 152341 UTC AUG 14.
4. Chart number	PRELIMINARY MAG 7.9. PRELIMINARY LOCATION VICINITY OF PERU COAST 13-5S 076-7W. A TSUNAMI WARNING IS IN EFFECT FOR PERU, CHILE, ECUADOR AND COLOMBIA. A TSUNAMI WATCH IS IN EFFECT FOR PANAMA, COSTA RICA, NICARAGUA, GUATEMALA, EL SALVADOR, MEXICO AND HONDURAS. A TSUNAMI ADVISORY IS ISSUED FOR THE STATE OF HAWAII EFFECTIVE AT 160020 UTC AUG 14. A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO COASTS AND ISLANDS IN THE PACIFIC AREA. TSUNAMI WAVE HEIGHTS CANNOT BE PREDICTED AND MAY BE A SERIES OF WAVES WHICH COULD BE DANGEROUS FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	SUBAREA I 233/14
2. General area	SOUTHERN BALTIC, THE BELTS, THE SOUND.
3. Locality	THE WATER LEVEL IS EXPECTED TO DROP 80 CM BELOW MSL AFTERNOON 20 AUG 14, RISING TO ABOUT MSL MORNING 21 AUG 14.
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	



Message element	Example 4
1. Message series identifier	NAVAREA XVI 05/14 PERU. TSUNAMI WARNING. AN EARTHQUAKE HAS OCCURRED AT 211128 UTC JAN WITH A PRELIMINARY MAGNITUDE OF 7.6 VICINITY 07-23N 086-49W. A TSUNAMI HAS BEEN GENERATED.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 5
1. Message series identifier	NAVAREA XIV 319/14 NEW ZEALAND, NORTH ISLAND, SOUTH ISLAND, EAST COAST. DUE TO TSUNAMI AFTERMATH ALL AIDS TO NAVIGATION IN NORTH AND SOUTH ISLANDS ARE UNRELIABLE.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 17 World Health Organization (WHO) health advisory information

The text of a navigational warning in this category should contain message elements **1, 2, 3, 5**, identified and ordered, as in the Message elements table, **figure 4**.

### EXAMPLES OF WARNINGS IN SECTION 4.2.3.17

Message element	Example 1
1. Message series identifier	NAVAREA IV 250/14 FLORIDA. SOUTH COAST. THE WORLD HEALTH ORGANIZATION HAS ADVISED THAT AN OUTBREAK OF BIRD FLU HAS OCCURRED IN THE VICINITY OF MIAMI. SHIPS THAT VISITED THIS PORT SINCE 20 JAN 14 AND THOSE PLANNING TO VISIT SHOULD CONSULT WWW.WHO.INT FOR MORE INFORMATION.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	

Message element	Example 1
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## 18 Security-related requirements

The text of a navigational warning in this category should contain message elements **1, 2, 5**, identified and ordered, as in the Message elements table, **figure 4**.

*Note:*

- i) In accordance with the requirements of the International Ship and Port Facility Security Code only.

### EXAMPLES OF WARNINGS IN SECTION 4.2.3.18

Message Element	Example 1
1. Message series identifier	NAVAREA I 88/14 FRANCE NORTH COAST. BAIE DE SEINE AND LE HAVRE HARBOUR. SECURITY ANNOUNCEMENT. REF: ISPS CODE - SECURITY LEVELS IN FRENCH TERRITORIAL WATERS IN THE BAIE DE SEINE AND IN LE HAVRE HARBOUR UPGRADED TO SECURITY LEVEL 3. ALL SHIPS ARE PROHIBITED TO ENTER BAIE DE SEINE AND LE HAVRE HARBOUR.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA XI 111/14 JAPAN. THE GOVERNMENT OF JAPAN ANNOUNCES PUBLICLY THAT IT SETS MARITIME SECURITY LEVEL 1. FOR DETAILS, CALL SOLAS CONVENTION IMPLEMENTATION OFFICE, PHONE: 81-3-5253-8071.
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 3
1. Message series identifier	<p>SUBAREA I 49/14 SWEDEN. HEIGHTENED ISPS SECURITY LEVEL. THE SWEDISH GOVERNMENT HAS DECIDED THAT ALL SHIPS IN SWEDISH PORTS OR IN SWEDISH TERRITORIAL WATERS ABOUT TO ENTER A SWEDISH PORT, SHALL APPLY SECURITY LEVEL 2.</p>
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 4
1. Message series identifier	<p>NAVAREA VI 285/14 ARGENTINA. THE ARGENTINE GOVERNMENT HAS SET MARITIME SECURITY LEVEL 3 FOR ALL PORTS. ALL SHIPS ENTERING ARGENTINA WATERS OR PORTS ARE REQUIRED TO MAINTAIN AN ARMED SECURITY WATCH.</p>
2. General area	
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## MISCELLANEOUS

### IN-FORCE BULLETIN

*Notes:*

- i) *In-force bulletins should be issued once per week at a regular scheduled time.*
- ii) *In-force bulletins should:*
  - *Be part of the numbered navigational warning series, and be issued as an individual numbered message which remains in force for one week;*
  - *Include the DTG of when it was prepared;*
  - *List ALL warnings still in force, not just those issued within the past 6 weeks; and*
  - *Include details of where mariners can obtain copies of those messages which remain in force, but are no longer being broadcast, as they are more than 6 weeks old.*

Message element	Example 1
1. Message series identifier	NAVAREA I 295/14
2. General area	1. NAVAREA I WARNINGS IN FORCE AT 051000 UTC OCT 14: 2012 SERIES: 317.
3. Locality	2013 SERIES: 303.
4. Chart number	2014 SERIES: 212, 220, 227, 246, 249, 255, 256, 274, 276, 277, 279, 286, 288, 290, 291, 292, 295.
5. Key subject	NOTES: A. TEXTS OF NAVAREA I WARNINGS ISSUED EACH WEEK ARE PRINTED IN WEEKLY EDITIONS OF NOTICES TO MARINERS.
6. Geographical position	B. NAVAREA I WARNINGS LESS THAN 42 DAYS OLD (246/14 ONWARD) ARE PROMULGATED VIA SAFETYNET AND/OR RELEVANT NAVTEX TRANSMITTERS.
7. Amplifying remarks	C. THE COMPLETE TEXT OF ALL IN-FORCE NAVAREA I WARNINGS, INCLUDING THOSE WHICH ARE NO LONGER BEING BROADCAST, ARE REPRINTED IN NOTICE TO MARINERS IN WEEKS 1, 13, 26 AND 39 AND ARE ALSO CONSTANTLY AVAILABLE FROM UKHO WEBSITE AT: <a href="http://WWW.UKHO.GOV.UK/RNW">WWW.UKHO.GOV.UK/RNW</a> .
8. Cancellation details	2. CANCEL NAVAREA I 289/14.

### NO WARNINGS MESSAGE

*Notes:*

- i) *A no warnings message will not be part of the numbered navigational warning series and is therefore not required to have a serial number.*
- ii) *The following Example 1 should be used by a NAVAREA to announce that there are no NAVAREA warnings to broadcast. This could be amended to cover occasions when there are no Coastal Warnings to broadcast or when both categories have no warnings to broadcast i.e. NO NAVAREA ?? COASTAL WARNINGS TO BROADCAST or NO NAVAREA ?? WARNINGS OR COASTAL WARNINGS TO BROADCAST.*
- iii) *No warning messages are always self cancelling and have a DTG of when it was prepared.*

Message element	Example 1
1. Message series identifier	NAVAREA XIII
2. General area	SELF CANCELLING. NO NAVAREA XIII WARNINGS TO BROADCAST AT 282130 UTC JAN 14.
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

### CANCELLATION MESSAGE

Message element	Example 1
1. Message series identifier	NAVAREA VII 126/14
2. General area	CANCEL NAVAREA VII 100/14 BAIXO RIBEIRO LIGHT, NORMAL CONDITIONS RESTORED.
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

Message element	Example 2
1. Message series identifier	NAVAREA IV 74/14
2. General area	RADIO SERVICES.

Message element	Example 2
3. Locality	<p>1. U.S. COAST GUARD WILL TERMINATE HF RADIOTELEX (SITOR) SERVICES FOR COLLECTION OF AMVER SHIP POSITION REPORTS AND OF METEOROLOGICAL OBSERVATION FROM:</p> <p>A. COMMUNICATIONS AREA MASTER STATION ATLANTIC (CAMSLANT NMN) AND COMMUNICATIONS STATION KODIAK (NOJ) EFFECTIVE 312359 UTC MAR 14.</p> <p>B. COMMUNICATIONS AREA MASTER STATION PACIFIC (CAMSPAC NMC/NMO) AND COMMUNICATIONS STATION GUAM (NRV) WILL CONTINUE AT LEAST UNTIL 302359 UTC SEP 14. AMVER AND NOAA METEOROLOGICAL REPORTS WILL CONTINUE TO BE RECEIVED AT NO CHARGE THRU SHIPCOM HF RADIOTELEX (NBDP) SERVICE VIA STATIONS KLB NEAR SEATTLE AND WLO NEAR MOBILE, ALABAMA, AND NOAA'S SEAS (SHIPBOARD ENVIRONMENTAL (DATA) ACQUISITION SYSTEM) PROGRAM THROUGH INMARSAT-C. AMVER REPORTS MAY ALSO BE SENT AT NO CHARGE THRU GLOBE WIRELESS.BROADCAST OF MARITIME SAFETY INFORMATION BY HF SITOR (HF NAVTEX) WILL NOT BE AFFECTED BY THIS ACTION</p> <p>2. CANCEL THIS MSG 010001 UTC OCT 14.</p>
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## PERMANENT TIME ZONE CHANGE

Message element	Example 1
1. Message series identifier	NAVAREA XV 55/14
2. General area	<p>DUE TO TIME CHANGE CARRIED OUT 300001 UTC MAR 14 CHILEAN STANDARD TIME HAS CHANGED TO TIME ZONE (UTC+4). SHIPS SHOULD COMPLY WITH REGULATIONS OF NATIONAL MARITIME AUTHORITY IN THE FOLLOWING WEB SITE: WWW.SHOA.MIL.CL</p> <p>(SERVICIOS/RADIOAVISOS/RADIOWARNINGS/PROVISIONS OF THE NATIONAL MARITIME AUTHORITY). ALL SHIPS ARE REQUESTED TO SEND IN CLEAR TEXT, WIND, SEA AND ATMOSPHERIC PRESSURE REPORTS, TO CHILREP.</p>
3. Locality	
4. Chart number	
5. Key subject	
6. Geographical position	
7. Amplifying remarks	
8. Cancellation details	

## WEBSITE OUT OF SERVICE

Message element	Example 1
1. Message series identifier	NAVAREA VIII 43/14
2. General area	NAVAREA VIII WEBSITE.
3. Locality	1. NAVAREA VIII WEBSITE UNUSABLE
4. Chart number	122300 UTC TO 132300 UTC NOV 14.
5. Key subject	FOR URGENT SERVICE, CONTACT NAVAREA VIII, PHONE: 91 135 274 7365, FAX: 91 135 274 8373, E-MAIL: INHO_MARINESAFETY@DATAONE.IN.
6. Geographical position	2. CANCEL THIS MSG 140001 UTC NOV 14.
7. Amplifying remarks	
8. Cancellation details	

## SPACE WEATHER

*Note:*

- i) *Space Weather encompasses the conditions and processes occurring in space, including on the sun, in the magnetosphere, ionosphere and thermosphere, which have the potential to affect the near-Earth environment.*

*The effects of Space Weather can range from damage to satellites arising from charged particles to disruption of power during geomagnetic storms, or disturbance of satellite positioning systems.*

- ii) *Space weather should include:*
- *Geomagnetic Storms,*
  - *Solar Radiation Storms, and*
  - *Radio Blackouts.*

Message element	Example 1
1. Message series identifier	NAVAREA IV 43/14
2. General area	SPACE WEATHER.
3. Locality	1. STRONG SOLAR RADIATION STORM IN PROGRESS UNTIL
4. Chart number	081000 UTC MAR 14. RADIO AND SATELLITE NAVIGATION
5. Key subject	SERVICES MAY BE AFFECTED.
6. Geographical position	2. CANCEL THIS MSG 081100 UTC MAR 14.
7. Amplifying remarks	
8. Cancellation details	

## RADIATION HAZARD

Message element	Example 1
1. Message series identifier	NAVAREA XI 1167/11
2. General area	HONSHU, E COAST. FUKUSHIMA PREF COAST.
3. Locality	DANGEROUS AREA DESIGNATED AT 150230 UTC MAR 11. WITHIN
4. Chart number	10 KILOMETRES OF FUKUSHIMA NR 1 NUCLEAR POWER PLANT,
5. Key subject	37-25.5N 141-02.0E. SHIPS ARE ADVISED TO KEEP CLEAR. IN
6. Geographical position	ADDITION, RESTRICTED AREA, WITHIN 20 KILOMETRES OF
7. Amplifying remarks	FUKUSHIMA NR 1 NUCLEAR POWER PLANT BASED ON SPECIAL
8. Cancellation details	MEASURES CONCERNING NUCLEAR EMERGENCY PREPAREDNESS AT 211500 UTC APR 11.



## **8 METAREA COORDINATOR RESOURCES AND RESPONSIBILITIES**

### **8.1 METAREA Coordinator resources**

8.1.1 The METAREA Coordinator should have:

- .1 the expertise and information sources of National Meteorological Services;
- .2 effective communications, e.g. telephone, email, facsimile, internet, telex, etc., with National Meteorological Services in the METAREA, with other METAREA Coordinators, and with other data providers.

### **8.2 METAREA Coordinator responsibilities**

8.2.1 The METAREA Coordinator has to:

- .1 act as the central point of contact on matters relating to meteorological information and warnings within the METAREA;
- .2 promote and oversee the use of established international standards and practices in the promulgation of meteorological information and warnings throughout the METAREA;
- .3 coordinate preliminary discussions between neighbouring Members, seeking to establish or amend NAVTEX services, prior to formal application; and
- .4 contribute to the development of international standards and practices through attendance and participation in the JCOMM Expert Team on Maritime Safety Services meetings, and also attend and participate in relevant IMO, IHO and WMO meetings as appropriate and required.
- .5 The METAREA Coordinator has to also ensure that within its METAREA, National Meteorological Services which act as Issuing Services have the capability to:
  - .1 select meteorological information and warnings for broadcast in accordance with the guidance given in paragraphs 4 and 5 above; and
  - .2 monitor the SafetyNET transmission of their bulletins, broadcast by the Issuing Service.
- .6 The METAREA Coordinator has to further ensure that within its METAREA, National Meteorological Services which act as Preparation Services have the capability to:
  - .1 endeavour to be informed of all meteorological events that could significantly affect the safety of navigation within their area of responsibility;

- .2 assess all meteorological information immediately upon receipt in the light of expert knowledge for relevance to navigation within their area of responsibility;
- .3 forward marine meteorological information that may require wider promulgation directly to adjacent METAREA Coordinators and/or others as appropriate, using the quickest possible means;
- .4 ensure that information concerning all meteorological warning subject areas listed in paragraph 4 that may not require a METAREA warning within their own area of responsibility is forwarded immediately to the appropriate National Meteorological Services and METAREA Coordinators affected by the meteorological event; and
- .5 maintain records of source data relating to meteorological information and warning messages within their area of responsibility.

## **9 METEOROLOGICAL WARNINGS AND FORECASTS**

### **9.1 Provision of warnings and weather and sea bulletins (GMDSS application)**

9.1.1 The Global Maritime Distress and Safety System (GMDSS) application which is compatible with and required by the radiocommunication provisions of the 1988 SOLAS amendments via the NAVTEX, International SafetyNET and HF MSI services.

#### ***Principles***

9.1.2 The principles for the preparation and issue of warnings and weather and sea bulletins are as follows:

- .1 For the purpose of the preparation and issue of meteorological warnings and the regular preparation and issue of weather and sea bulletins, the oceans and seas are divided into areas for which national Meteorological Services assume responsibility.
- .2 The areas of responsibility together provide complete coverage of oceans and seas by meteorological information contained in warnings and weather and sea bulletins.
- .3 The issue of meteorological warnings and routine weather and sea bulletins for areas not covered by NAVTEX should be broadcast by the International SafetyNET Service for the reception of maritime safety information in compliance with SOLAS chapter IV "Radiocommunications", as amended.

*Note:* in addition, national Meteorological Services may have to prepare and/or issue warnings and routine forecasts for transmission by an HF-direct printing telegraphy maritime safety information service for areas where such a service is provided for ships engaged exclusively on voyages in such areas.

- .4 The preparation and issue of warnings and weather and sea bulletins for areas of responsibility are coordinated in accordance with the procedures mentioned in the *Manual on Marine Meteorological Services* (WMO No.558) and the *Guide to Marine Meteorological Services* (WMO No.471), and summarized in the following section.
- .5 The efficiency and effectiveness of the provision of warnings and of weather and sea bulletins are monitored by obtaining opinions and reports from marine users.
- .6 Maritime safety information broadcasts are monitored by the originating METAREA Coordinator to ensure the accuracy and integrity of the broadcast.

## 9.2 Procedures

### Issuing Service

The forecasts and warnings for broadcasts may have been prepared solely by the issuing service, or by another preparation service, or a combination of both, on the basis of negotiations between the services concerned, or otherwise, as appropriate. The issuing service is responsible for composing a complete broadcast bulletin on the basis of information input from the relevant preparation services and for broadcasting this in accordance with the guidelines contained within the International SafetyNET Manual and the International NAVTEX Manual. The issuing service is also responsible for monitoring the broadcasts of SafetyNET information to its designated area of responsibility.

#### NOTES:

- (1) For some METAREAS there may be only one preparation service, which will be the same National Meteorological Service as the issuing service (e.g. United Kingdom for METAREA I, Argentina for METAREA VI and Australia for METAREA X).
- (2) An appropriate format for the attribution of the origins of the forecast and warning information contained in a broadcast bulletin may be developed on the basis of negotiations among the services concerned.
- (3) In situations where appropriate information, data or advice from other designated Preparation Services for a given area of responsibility is not available, it is the responsibility of the Issuing Service for that area to ensure that complete broadcast coverage for the area is maintained.

### Preparation Service

The METAREA Coordinator is responsible for composing a complete broadcast bulletin on the basis of information input from the relevant Preparation Services, and for inserting the appropriate EGC header, as specified in annex 4(b) of the *International SafetyNET Manual*. The Issuing Service is also responsible for monitoring the broadcasts of information to its designated area of responsibility.

### ***Preparation and issue of weather and sea bulletins***

9.2.1 Weather and sea bulletins should include, in the order given hereafter:

- .1 Part I: Storm warnings;
- .2 Part II: Synopsis of major features of the surface weather chart and, to the possible extent, significant characteristics of corresponding sea-surface conditions; and
- .3 Part III: Forecasts.

9.2.2 Weather and sea bulletins may, in addition, include the following parts:

- .1 Part IV: Analysis and/or prognosis in IAC FLEET code form;
- .2 Part V: Selection of reports from sea stations; and
- .3 Part VI: Selection of reports from land stations.

*Notes:*

- (1) The reports included in part VI should be for a fixed selection of stations in a fixed order.
- (2) Parts IV, V and VI may be issued at a separate scheduled time.

9.2.3 For area(s) for which a METAREA Coordinator has assumed responsibility, the Service should select the appropriate CES to service that area. In particular, the following procedures should be adopted:

- .1 For scheduled broadcasts: These should be issued for broadcast over at least a single nominated satellite, in accordance with a pre-arranged schedule, coordinated by WMO.
- .2 For unscheduled broadcasts: These should be issued for broadcast under the SafetyNET Service through all Inmarsat ocean region satellites covering the METAREA Coordinator's area of responsibility.

9.2.4 Weather and sea bulletins should be prepared and issued at least twice daily.

9.2.5 The issue of the weather and sea bulletins should be at a scheduled time and be in the following sequence: part I to be followed immediately by part II and then part III. A schedule of transmission start times for these bulletins has been compiled for all MSI areas and the CESs which serve the areas and takes into consideration, *inter alia*, the existing WMO synoptic times for observations, data analysis and forecast production. Additionally, as these broadcast schedules for the International SafetyNET Service have to be coordinated, under the aegis of WMO, with other organizations such as IHO, METAREA Coordinator should not independently change or request WMO to arrange frequent alterations to these coordinated and published schedules.

9.2.6 METAREA Coordinators must ensure that the correct EGC message addressing formats are adhered to for all warning and forecast messages intended for broadcast by a CES.

9.2.7 Warnings should be given in plain language. Synopses and forecasts should be given in plain language, however some abbreviations may be used, especially when the size of the bulletin needs to be reduced for dissemination by a low bandwidth system, such as the NAVTEX Service (ref: 9.2.11).

9.2.8 Warnings, synopses and forecasts intended for the International SafetyNET and the International NAVTEX Services should be broadcast in English.

*Note:* Additionally, if a national Meteorological Service wishes to issue warnings and forecasts to meet national obligations under SOLAS, broadcasts may be made in other languages. These broadcasts will be part of national SafetyNET or NAVTEX Services.

9.2.9 In order to ensure the integrity of the warnings and forecasts being received by mariners, it is essential that METAREA Coordinators monitor the broadcasts which they originate. Monitoring is especially important in a highly automated system which is dependent on careful adherence to procedure and format. This may be accomplished by the installation of an EGC receive capability at the METAREA Coordinator's facility.

*Note:* Each METAREA Coordinator may use the EGC receiver to check the following:

- (1) That the message has been broadcast;
- (2) That the message is received correctly;
- (3) That cancellation messages are properly executed; and
- (4) Any unexplained delay in the message being broadcast.

9.2.10 The language of the synopsis should be as free as possible from technical phraseology.

9.2.11 The terminology in weather and sea bulletins should be in accordance with the "Multilingual list of terms used in weather and sea bulletins", which is available in Appendix I.2 to the *Manual on Marine Meteorological Services* (WMO No.558) and in Annex 2.B to the *Guide to Marine Meteorological Services* (WMO No.471). Specific guidelines for the NAVTEX Service, including a list of common abbreviations for weather and sea messages, are available in Appendix II.2 to the *Manual on Marine Meteorological Services* (WMO No. 558). The list of common abbreviations is also given in 9.6 hereto.

### **9.3 Warnings**

9.3.1 Warnings should be given for gales (Beaufort force 8 or 9) and storms (Beaufort force 10 or over), and for tropical cyclones (hurricanes in the North Atlantic and eastern North Pacific, typhoons in the Western Pacific, cyclones in the Indian Ocean and cyclones of a similar nature in other regions).

9.3.2 The issue of warnings for near gales (Beaufort force 7) is optional.

9.3.3 Warnings for gales, storms and tropical cyclones should have the following content and order of items:

- .1 type of warning;
- .2 date and time of reference in UTC;

- .3 type of disturbance (e.g. low, hurricane, etc.) with a statement of central pressure in hectopascals;
- .4 location of disturbance in terms of latitude and longitude or with reference to well-known landmarks;
- .5 direction and speed of movement of disturbance;
- .6 extent of affected area;
- .7 wind speed or force and direction in the affected areas;
- .8 sea and swell conditions in the affected area; and
- .9 other appropriate information such as future positions of disturbance.

Sub-items .1, .2, .4, .6 and .7 listed above should always be included in the warnings.

9.3.4 When warnings are included for more than one pressure disturbance or system, the systems should be described in a descending order of threat.

9.3.5 Warnings should be as brief as possible and, at the same time, clear and complete.

9.3.6 The time of the last location of each tropical cyclone or extra-tropical storm should be indicated in the warning.

9.3.7 A warning should be issued immediately the need becomes apparent and broadcasted immediately on receipt, followed by a repeat after six minutes, when issued as an unscheduled broadcast.

9.3.8 When no warnings for gales, storms or tropical cyclones are to be issued, that fact should be positively stated in part I of each weather and sea bulletin.

9.3.9 Warnings should be updated whenever necessary and then issued immediately.

9.3.10 Warnings should remain in force until amended or cancelled.

9.3.11 Warnings issued as part I of a scheduled bulletin do not need to be repeated after six minutes.

9.3.12 Warnings for other severe conditions such as poor visibility, severe sea states (such as high swell, risk of abnormal waves, etc.), ice accretion, etc., should also be issued, as necessary.

## **9.4 Synopses**

9.4.1 The synopses given in part II of weather and sea bulletins should have the following content and order of items:

- .1 date and time of reference in UTC;
- .2 synopsis of major features of the surface weather chart; and
- .3 direction and speed of movement of significant pressure systems and tropical disturbances.

9.4.2 If possible, significant characteristics of corresponding wave conditions (sea and swell) should be included in the synopsis as well as characteristics of other sea-surface conditions (drifting ice, currents, etc.), if feasible and significant.

9.4.3 Significant low-pressure systems and tropical disturbances which affect or are expected to affect the area within or near to the valid period of the forecast should be described; the central pressure and/or intensity, location movement and changes of intensity should be given for each system; significant fronts, high-pressure centres, troughs and ridges should be included whenever this helps to clarify the weather situation.

9.4.4 Direction and speed of movement of significant pressure systems and tropical disturbances should be indicated in compass points and metres per second or knots, respectively.

9.4.5 Units used for speed of movement of systems should be indicated.

## **9.5 Forecasts**

9.5.1 The forecasts given in part III of weather and sea bulletins should have the following content and order of items:

- .1 the valid period of forecast;
- .2 name or designation of forecast area(s) within the main MSI area; and
- .3 a description of:
  - .1 wind speed or force and direction;
  - .2 sea state (significant wave height/total sea);
  - .3 visibility when forecast is less than five nautical miles; and
  - .4 ice accretion, where applicable.

9.5.2 The forecasts should include expected significant changes during the forecast period, significant meteors such as freezing precipitation, snowfall or rainfall, and an outlook for a period beyond 24 hours. In addition, phenomena such as breaking seas, cross seas, and abnormal waves should also be included, where possible.

9.5.3 The valid period should be indicated either in terms of number of hours from the time of issue of the forecast or in terms of dates and time in UTC of the beginning and the end of the period.

9.5.4 The following descriptive terms should be used for visibility:

- .1 very poor (less than 0.5 nautical miles);
- .2 poor (0.5 to 2 nautical miles);
- .3 moderate (2 to 5 nautical miles);
- .4 good (greater than 5 nautical miles).

## 9.6 Common abbreviations for the International NAVTEX Service

Terminology in full	NAVTEX Abbreviation	Terminology in full	NAVTEX Abbreviation
North or Northerly	<b>N</b>	Slowly	<b>SLWY</b>
Northeast or Northeasterly	<b>NE</b>	Quickly	<b>QCKY</b>
East or Easterly	<b>E</b>	Rapidly	<b>RPDY</b>
Southeast or Southeasterly	<b>SE</b>	Knots	<b>KT</b>
South or Southerly	<b>S</b>	Km/h	<b>KMH</b>
Southwest or Southwesterly	<b>SW</b>	Nautical miles	<b>NM</b>
West or Westerly	<b>W</b>	Metres	<b>M</b>
Northwest or Northwesterly	<b>NW</b>	HectoPascal	<b>HPA</b>
Decreasing	<b>DECR</b>	Meteo...	<b>MET</b>
Increasing	<b>INCR</b>	Forecast	<b>FCST</b>
Variable	<b>VRB</b>	Further outlooks	<b>TEND</b>
Becoming	<b>BECMG</b>	Visibility	<b>VIS</b>
Locally	<b>LOC</b>	Slight	<b>SLGT or SLT</b>
Moderate	<b>MOD</b>	Quadrant	<b>QUAD</b>
Occasionally	<b>OCNL</b>	Possible	<b>POSS</b>
Scattered	<b>SCT</b>	Probability/Probable	<b>PROB</b>
Temporarily/Temporary	<b>TEMPO</b>	Significant	<b>SIG</b>
Isolated	<b>ISOL</b>	No change	<b>NC</b>
Frequent/Frequency	<b>FRQ</b>	No significant change	<b>NOSIG</b>
Showers	<b>SHWRS or SH</b>	Following	<b>FLW</b>
Cold front	<b>C-FRONT or CFNT</b>	Next	<b>NXT</b>
Warm front	<b>W-FRONT or WFNT</b>	Heavy	<b>HVY</b>
Occlusion front	<b>O-FRONT or OFNT</b>	Severe	<b>SEV or SVR</b>
Weakening	<b>WKN</b>	Strong	<b>STRG</b>
Building	<b>BLDN</b>	From	<b>FM</b>



<b>Terminology in full</b>	<b>NAVTEX Abbreviation</b>	<b>Terminology in full</b>	<b>NAVTEX Abbreviation</b>
Filling	<b>FLN</b>	Expected	<b>EXP</b>
Deepening	<b>DPN</b>	Latitude/Longitude	<b>LAT/LONG</b>
Intensifying/Intensify	<b>INTSF</b>	Filling	<b>FLN</b>
Improving/Improve	<b>IMPR</b>	Deepening	<b>DPN</b>
Stationary	<b>STNR</b>	Intensifying/Intensify	<b>INTSF</b>
Quasi-stationary	<b>QSTNR</b>	Improving/Improve	<b>IMPR</b>
Moving/Move	<b>MOV or MVG</b>	Stationary	<b>STNR</b>
Veering	<b>VEER</b>	Quasi-stationary	<b>QSTNR</b>
Backing	<b>BACK</b>	Moving/Move	<b>MOV or MVG</b>

## 10 EXAMPLES FOR METEOROLOGICAL WARNINGS AND FORECASTS

### 10.1 Examples of Warnings in section 9.3.

WONT50 LFPW 250903

A

SECURITE ON METAREA 2, METEO-FRANCE,  
WARNING NR 446, THURSDAY 25 OCTOBER 2014 AT 0900 UTC  
GENERAL SYNOPSIS, THURSDAY 25 AT 00 UTC  
TROPICAL STORM TONY 1002 LOCATED NEAR 30,4N 38,4W AT 25/09 UTC,  
EXPECTED NEAR 32,5N 31,8W BY 26/06 UTC, MAX WIND NEAR CENTER 40 KT,  
GUSTS 50 KT, MOVING EAST-NORTHEAST AT 20 KT.  
IRVING :  
FROM 25/18 UTC TO 26/09 UTC AT LEAST.  
CYCLONIC 8. SEVERE GUSTS.  
NORTHWEST OF METEOR :  
FROM 25/18 UTC TO 26/09 UTC AT LEAST.  
CYCLONIC 8. SEVERE GUSTS.

WWST02 SBBR 251510

1 31 05 02 12 20

WARNING NR 948/2014  
HIGH SURF WARNING  
ISSUED AT 1630 GMT - TUE - 23/10/2014  
HIGH SURF BETWEEN CITIES ANGRA DOS REIS (RJ) AND MACAÉ (RJ) STARTING  
AT 250000 GMT. WAVES FROM SW/S 2.5 METERS.  
VALID UNTIL 260200 GMT.

WARNING NR 952/2014  
ROUGH/VERY ROUGH SEA WARNING  
ISSUED AT 1130 GMT - WED - 24/OCT/2014  
AREA BRAVO. WAVES FM SW/S 3.0/4.5 METERS.  
VALID UNTIL 260000 GMT.  
THIS WARNING REPLACES THE WARNING NR 940/2014.

WARNING NR 953/2014  
ROUGH SEA WARNING  
ISSUED AT 1130 GMT - WED - 24/OCT/2014  
AREA DELTA S OF 22S STARTING AT 250600 GMT. WAVES FM SW/S 3.0/3.5  
METERS.  
VALID UNTIL 261200 GMT.

WARNING NR 957/2014  
ROUGH/VERY ROUGH SEA WARNING  
ISSUED AT 1300 GMT - THU - 25/OCT/2014  
SOUTH OCEANIC AREA S OF 25S AND W OF 035W WAVES FM SW 3.0/5.0 METERS  
VALID UNTIL 261200 GMT

THIS WARNING REPLACES THE WARNING NR 954/2014  
WARNING NR 958/2014  
ROUGH/VERY ROUGH SEA WARNING  
ISSUED AT 1300 GMT - THU - 25/OCT/2014  
SOUTH OCEANIC AREA S OF 27S AND E OF 035W WAVES FM NW/SW 3.0/6.0  
METERS  
VALID UNTIL 270000 GMT  
THIS WARNING REPLACES THE WARNING NR 955 AND 956/2014

## 10.2 Examples of Forecasts in section 9.3.1.3

FQNT21 EGRR 250800  
SECURITE

HIGH SEAS BULLETIN FOR METAREA 1  
ISSUED AT 0800 UTC ON THURSDAY 25 OCTOBER 2014  
BY THE MET OFFICE, EXETER, UNITED KINGDOM  
FOR THE PERIOD 0800 UTC ON THURSDAY 25 OCTOBER UNTIL 0800  
UTC ON FRIDAY 26 OCTOBER 2014

NO STORMS

GENERAL SYNOPSIS  
AT 250000UTC, LOW 41 NORTH 18 WEST 997 EXPECTED 42 NORTH  
12 WEST WITH LITTLE CHANGE BY 260000UTC. LOW 43 NORTH 45  
WEST 994 EXPECTED 47 NORTH 47 WEST 985 BY SAME TIME. LOW  
47 NORTH 46 WEST 995 LOSING ITS IDENTITY BY THAT TIME. AT  
250000UTC, HIGH 60 NORTH 26 WEST 1034 EXPECTED 68 NORTH  
21 WEST 1038 BY 260000UTC

AREA FORECASTS FOR THE NEXT 24 HOURS

SOLE  
EASTERLY OR NORTHEASTERLY 5 TO 7. MODERATE OR ROUGH. RAIN  
OR THUNDERY SHOWERS. MODERATE OR GOOD

SHANNON SOUTH ROCKALL  
NORTHEASTERLY 5 TO 7. MODERATE OR ROUGH. OCCASIONAL RAIN.  
MODERATE, OCCASIONALLY POOR

NORTH ROCKALL SOUTH BAILEY  
NORTHERLY OR NORTHEASTERLY 5 OR 6. SLIGHT BECOMING  
MODERATE, OCCASIONALLY ROUGH LATER. MAINLY FAIR. MODERATE  
OR GOOD

NORTH BAILEY  
EASTERLY BACKING NORTHEASTERLY 4 OR 5, OCCASIONALLY 6 FOR  
A TIME. SLIGHT BECOMING MODERATE, THEN ROUGH LATER.  
OCCASIONAL RAIN. MODERATE OR GOOD

EAST FAEROES

NORTHERLY OR NORTHWESTERLY 6 OR 7, OCCASIONALLY GALE 8  
LATER. MODERATE OR ROUGH, BECOMING VERY ROUGH OR HIGH.  
WINTRY SHOWERS. GOOD

WEST FAEROES EAST SOUTHEAST ICELAND

NORTHERLY OR NORTHEASTERLY 6 OR 7, DECREASING 4 OR 5 FOR  
A TIME. MODERATE, BECOMING ROUGH OR VERY ROUGH. WINTRY  
SHOWERS. GOOD

WEST SOUTHEAST ICELAND

EASTERLY OR NORTHEASTERLY 6 OR 7, DECREASING 4 OR 5,  
BECOMING VARIABLE 4 LATER. MODERATE BECOMING ROUGH.  
WINTRY SHOWERS. GOOD

EAST NORTHERN SECTION

IN NORTHEAST, NORTHWESTERLY 4 OR 5, VEERING EASTERLY 5 OR  
6, OCCASIONALLY 7 FOR A TIME. SLIGHT OR MODERATE.  
OCCASIONAL RAIN. MODERATE OR GOOD.  
IN NORTHWEST, VARIABLE 3 OR 4. SLIGHT OR MODERATE.  
OCCASIONAL RAIN. MODERATE OR GOOD.  
IN SOUTH, EASTERLY OR NORTHEASTERLY, 4 OR 5 OCCASIONALLY  
6 IN SOUTH. MODERATE OCCASIONALLY ROUGH IN SOUTH.  
OCCASIONAL RAIN. MODERATE OR GOOD

WEST NORTHERN SECTION

IN NORTHEAST, VARIABLE 3 OR 4, BUT NORTHEASTERLY 5 FOR A  
TIME IN FAR NORTH. SLIGHT OR MODERATE. OCCASIONAL RAIN.  
MODERATE OR GOOD.  
IN NORTHWEST, NORTHEASTERLY 5 TO 7, BECOMING CYCLONIC 4  
OR 5. MODERATE OR ROUGH. OCCASIONAL RAIN OR SNOW.  
MODERATE OR GOOD, OCCASIONALLY POOR.  
IN SOUTH, EASTERLY OR SOUTHEASTERLY, 4 OR 5, OCCASIONALLY  
6 IN SOUTH. MODERATE OR ROUGH. OCCASIONAL RAIN. MODERATE  
OR GOOD

EAST CENTRAL SECTION

EASTERLY OR NORTHEASTERLY 5 TO 7, DECREASING 3 OR 4 IN  
SOUTH. ROUGH, OCCASIONALLY VERY ROUGH IN SOUTH AT FIRST.  
RAIN OR SHOWERS. MODERATE OR GOOD

WEST CENTRAL SECTION

EASTERLY OR SOUTHEASTERLY, BECOMING CYCLONIC FOR A TIME  
IN SOUTHWEST, 5 TO 7, OCCASIONALLY GALE 8 IN WEST. ROUGH,  
OCCASIONALLY VERY ROUGH IN WEST. RAIN OR SHOWERS.  
MODERATE OR GOOD

DENMARK STRAIT

IN AREA NORTH OF 70 NORTH, NORTHWESTERLY 4 OR 5, BECOMING  
VARIABLE 3 OR 4. SMOOTH OR SLIGHT. MAINLY FAIR. GOOD.  
IN AREA SOUTH OF 70 NORTH, NORTHEASTERLY 5 TO 7, BECOMING  
VARIABLE 3 OR 4. MODERATE, OCCASIONALLY ROUGH FOR A TIME.  
OCCASIONAL RAIN OR SNOW. MODERATE OR GOOD, OCCASIONALLY POOR

NORTH ICELAND

IN WEST, NORTHERLY OR NORTHWESTERLY 5 TO 7, BECOMING VARIABLE 3 OR 4 LATER. MODERATE OR ROUGH. MAINLY FAIR. GOOD. LIGHT TO MODERATE ICING FOR A TIME IN NORTH WITH TEMPERATURES MS05 TO MS08.

IN EAST, NORTHERLY OR NORTHWESTERLY 7 TO SEVERE GALE 9, DECREASING 5 OR 6 IN NORTH LATER. VERY ROUGH OR HIGH. OCCASIONAL SNOW. MODERATE OR POOR, OCCASIONALLY VERY POOR. MODERATE TO SEVERE ICING FOR A TIME IN NORTH WITH TEMPERATURES MS03 TO MS06

NORWEGIAN BASIN

NORTHERLY OR NORTHWESTERLY 6 TO GALE 8, INCREASING SEVERE GALE 9 AT TIMES. ROUGH OR VERY ROUGH, BECOMING HIGH. SNOW OR WINTRY SHOWERS. MODERATE OR GOOD, OCCASIONALLY VERY POOR

OUTLOOK FOR FOLLOWING 24 HOURS:

SEVERE GALES EXPECTED IN NORTH ICELAND AND NORWEGIAN BASIN. GALES EXPECTED IN SOLE AND FAEROES

UNSCHEDULED STORM WARNINGS ARE BROADCAST VIA SAFETYNET AND IN

BULLETIN WONT54 EGRR AVAILABLE VIA SOME INTERNET AND FTPMAIL

OUTLETS=

FQAU20 ABRF 250818

IDQ10007

SECURITE

HIGH SEAS FORECAST FOR METAREA 10

NORTH EASTERN AREA EQUATOR TO 28S, 142E TO 170E

ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, BRISBANE FOR 24 HOURS FROM 1100UTC 25 OCTOBER 2014

PART 1 WARNINGS

Nil.

PART 2 SITUATION

AT 250600UTC.

LOW [999 HPA] NEAR 29S177E, MOVING SOUTHEAST AND WEAKENING.

TROUGH FROM 04S145E TO 07S158E TO 15S170E, MOVING SLOWLY NORTHEAST TO BE NEAR

04S145E TO 07S158E TO 107170E BY 261100UTC.

RIDGE NEAR 25S153E TO 28S156E, MOVING SLOWLY NORTHEAST TO BE NEAR 22S150E TO

28S163E AT 252300UTC AND NEAR 19S147E TO 28S165E AT 261100UTC.

PART 3 FORECAST

NORTHEAST OF TROUGH.

VARIABLE WINDS 5 TO 15 KNOTS WITH SMOOTH TO SLIGHT SEAS. LOW SE TO NE SWELLS.

SCATTERED SHOWERS AND ISOLATED THUNDERSTORMS.

SOUTHWEST OF RIDGE.

NW TO NE WINDS 10 TO 20 KNOTS WITH SLIGHT TO MODERATE SEAS. WINDS REACHING 20 TO 25 KNOTS WITH MODERATE SEAS AFTER 260600UTC. LOW TO MODERATE S TO SE SWELL.

REMAINING WATERS.

MOSTLY SW TO SE WINDS 10 TO 20 KNOTS WITH SLIGHT TO MODERATE SEAS.  
SW TO SE

WINDS INCREASING TO 15 TO 25 KNOTS WITH MODERATE SEAS SE OF 28S162E TO 23S162E

TO 23S170E. MODERATE S TO SE SWELLS. ISOLATED SHOWERS. SHOWERS TENDING SCATTERED

WITH ISOLATED THUNDERSTORMS WITHIN 120NM OF TROUGH.

WEATHER BRISBANE

## **11 SEARCH AND RESCUE NOTIFICATION**

11.1 Communications related to search and rescue operations such as distress alerts, coordination of operations, local communications and positioning signals are never MSI, even when (for some shore-to-ship alerts) they use the International SafetyNET or NAVTEX services which are also used for MSI. This guide, therefore, does not apply to them.

11.2 Search and rescue operations may, however, involve the broadcasting of MSI in the navigational warning category, described in 4.2.3.6.

## **12 PROCEDURE FOR AMENDING THE JOINT IMO/IHO/WMO MANUAL ON MSI**

12.1 Proposals for amendments or enhancements to the Joint IMO/IHO/WMO Manual on MSI should be submitted for evaluation by the appropriate IMO Sub-Committee. Amendments will only be adopted after the approval of the Maritime Safety Committee (MSC).

12.2 Amendments to the Manual should normally be adopted at intervals of approximately two years or at such longer periods as may be determined by the Maritime Safety Committee. Amendments approved by the Maritime Safety Committee will be notified to all concerned, will provide at least 12 months notification and will come into force on 1 January of the following year.

12.3 The agreement of the International Hydrographic Organization and World Meteorological Organization and the active participation of other bodies should be sought, according to the nature of the proposed amendments.

\*\*\*





## ANNEX 13

### LIAISON STATEMENT TO ITU-R WP 5B

#### REVISION OF RECOMMENDATION ITU-R M.493-13

##### IMO's views regarding the draft revision of Recommendation ITU-R M.493-13

1 IMO's Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its first session from 30 June to 4 July 2014, reviewed the draft revision of Recommendation ITU-R M.493-13 (annex 11 to document 5B/636-E) and comments as follows.

2 With regard to section 11.2, the NCSR Sub-Committee is of the view that MSC/Circ.862 is also applicable for a two way VHF handheld radio telephone with DSC and GNSS (Class H) equipment as defined by COMSAR 13 and within the draft revision of Recommendation ITU-R M.493-13.

3 With regard to sections 12.3 and 13.3, the NCSR Sub-Committee notes that ITU-R has referenced the *Performance standards for the presentation of navigation-related information on shipborne navigational displays* (resolution MSC.191(79)) and is of the view that the standard should be applied to communication equipment.

4 With regard to section 12, the NCSR Sub-Committee notes and endorses the request for automatic correction of entries where possible, as shown here with correction of group calls, to prevent inconsistency. This is in line with the general request of IMO to improve the usability of equipment by simplifying the operation.

5 The NCSR Sub-Committee agrees to the establishment of a two-way VHF handheld radio telephone with DSC and GNSS (Class H) such equipment as defined by COMSAR 13 and within this draft revision. A defined list of functions as a closed list for certain classes of equipment is the preferable approach to ensure safe and simple operation. Optional functions should be avoided, with the intention to provide the same functionality of all equipment of one class.

6 In respect of polling operations, the NCSR Sub-Committee requests ITU-R WP 5B to limit the position request acknowledgment capability for equipment carried by vessels not subject to the SOLAS Convention. The possibility of deactivation of such functionality by the user to ensure privacy should be taken into account. However, after transmission of a distress alert, the position request acknowledgment of that particular radio should automatically be activated and stay active until reset by the user. This would ensure that search and rescue entities are able to request the position of the vessel in distress even after a Distress Acknowledgement has been sent by the coast station.

7 In general, IMO is of the view that devices or equipment which uses DSC Channels/Frequencies should show full compliance with one of the defined classes within Recommendation ITU-R M.493-13.

##### IMO's request to ITU-R WP 5B

8 IMO requests ITU-R WP 5B to take the above noted comments into consideration, as appropriate, and requests to be informed of the further discussion and outcome of the process.

\*\*\*



## ANNEX 14

### DRAFT IMO POSITION ON WRC-15 AGENDA ITEMS CONCERNING MATTERS RELATING TO MARITIME SERVICES

#### 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 1.1

1.1 *To consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with resolution 233 (WRC-12);*

#### Background

On the basis of information available in June 2014, consideration of the following frequency bands is of particular concern to the maritime community:

- .1 406 – 406.1 MHz in use for Cospas-Sarsat;
- .2 1518-1559 MHz in use for satellite terminals on board SOLAS ships;
- .3 1559-1610 MHz in use for RNSS;
- .4 1626.5-1660.5 MHz in use for satellite terminals on board SOLAS ships;
- .5 1668-1675 MHz in use as uplink paired with the downlink 1518-1525 MHz for satellite communications;
- .6 2900-3100 MHz in use for Maritime radionavigation (S-band radar); and
- .7 3400-4200 MHz partly in use for feeder links of Inmarsat.

The S-band radar is of particular importance for safety of navigation (safety of life service) and for use in adverse weather conditions, for instance heavy rain. Previous ITU-R studies on sharing with the band 2900 to 3100 MHz are no longer valid, because new generation equipment had not been taken into account.

#### IMO position

To exclude the frequency bands 406-406.1 MHz, 1518-1559 MHz, 1559-1610 MHz, 1626.5-1660.5 MHz, 1668-1675 MHz, 2900-3100 MHz and 3400-4200 MHz, or any other frequency bands that are used by maritime safety systems, as candidate bands under WRC-15, agenda item 1.1, due to the potential adverse impact to maritime safety and the efficient movement of international commerce.

If the band 2 700-2 900 MHz was decided to be a candidate band under WRC-15, agenda item 1.1., IMO requests ITU to address the impact on the band 2 900-3 100 MHz, including the consequential coexistence between different types of radars that may result from potential IMT use between 2 700-2 900 MHz.

To ensure that emissions from IMT operating in adjacent bands to the frequency bands mentioned above do not affect the operation of the existing maritime systems

### **Agenda item 1.8**

1.8 *To review the provisions relating to earth stations located on board vessels (ESVs), based on studies conducted in accordance with resolution 909 (WRC-12);*

#### **Background**

Currently, around 12,000 vessels use VSATs for broadband communication. This service is limited to distances off shore of 125 kilometres for the frequency band 14-14.5 GHz and 300 kilometres for the frequency band 5925-6425 MHz in accordance with resolution 902 (WRC-03). The agenda item is to review the provisions related to ESVs. Ships have a particular need for broadband communications when entering and leaving ports. For example:

- .1 for the synchronization of databases;
- .2 to transmit port-entry and -exit documents electronically, as harmonized, among others, in IMO's Convention on Facilitation of International Maritime Traffic (FAL Convention) and in accordance with the maritime single window concept to enhance the efficiency of port operations; and
- .3 for communication of the crew with their families.

#### **IMO position**

IMO requests that modifications to resolution 902 (WRC-2003) will permit ESVs to be operated by the mariner in an uncomplicated, straightforward manner and closer to the shore, in accordance with the outcome of studies to maintain compatibility with other services that may be affected.

### **Agenda item 1.12**

1.12 *To consider an extension of the current worldwide allocation to the Earth exploration-satellite (active) service in the frequency band 9 300-9 900 MHz by up to 600 MHz within the frequency bands 8 700-9 300 MHz and/or 9 900-10 500 MHz, in accordance with resolution 651 (WRC-12);*

#### **Background**

Over one million marine radars operate in the frequency band 9200-9500 MHz. The GMDSS Radar Search and Rescue Transponders (Radar SART) operates also in this frequency band which is included in provision No. 31.2 of article 31 of the Radio Regulations and appendix 15 to the Radio Regulations, listing the frequencies for distress and safety communications for the GMDSS and protection against harmful interference. The maritime radionavigation service in the band 9 300-9 800 MHz is protected by RR provision No. 5.476A.

Previous ITU-R studies on sharing with the band 9 200 to 9 500 MHz are no longer valid, because new generation equipment had not been taken into account.

### **IMO position**

Protection of the maritime radionavigation service, operating in the frequency band 9 200-9 500 MHz, is essential for "safety of navigation" and "safety of life" and in accordance with Nos.1.59 and 4.10 of the Radio Regulations. IMO requests that the band 9 200-9 500 MHz be excluded from consideration under agenda item 1.12, for Earth exploration satellite (active) service, due to the potential harmful impact on global shipping.

### **Agenda item 1.14**

1.14 *To consider the feasibility of achieving a continuous reference time-scale, whether by the modification of coordinated universal time (UTC) or some other method, and take appropriate action, in accordance with resolution 653 (WRC-12);*

### **Background**

Time as measured by the rotation of the earth is running slightly slower than time measured by atomic clocks (as used in GNSS) and the correction for this is to add "leap seconds" when the difference approaches one second. This has occurred 25 times over the past 40 years, the most recent being in June 2012. The corrected time is known as Coordinated Universal Time (UTC) and the arrangements for inserting the leap second are given in Recommendation ITU-R TF.460-6.

Work in the ITU-R has considered the future elimination of leap seconds resulting in UTC gradually diverging from earth rotation time without limit but no agreement has so far been reached. The advantage of eliminating the leap second is that it would remove the cost and disruption involved in adjusting equipment. The disadvantage would be that the definition of UTC would change which might have regulatory consequences.

IMO makes extensive use of UTC in its requirements and will continue to do so in future.

Some manufacturers have reported difficulties in updating equipment when having to take into account the leap seconds.

Celestial navigation is a requirement of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended and is important to the maritime community, which requires time based on Earth rotation. Inertial navigation, which is currently used by naval ships and may be introduced on merchant ships, requires an accurate time reference.

IMO recognizes that there are advantages and disadvantages of the various methods to address this agenda item and recommends Administrations to consider the methods considering that the issue goes beyond maritime matters

### **IMO position**

IMO requests that the importance of the maritime systems is acknowledged in deciding on this agenda item and attempt to minimize the impact on maritime services.

### **Agenda item 1.15**

1.15 *To consider spectrum demands for onboard communication stations in the maritime mobile service in accordance with resolution **358 (WRC-12)**;*

#### **Background**

IMO Member Governments have identified the need for the consideration of improvement and expansion of onboard communication stations in the maritime mobile service in the UHF bands.

UHF onboard communications is much used on board ships, including on board emergencies, fire fighting, berthing, passenger control, etc. There are six frequencies based on 25 kHz channel spacing and an additional four frequencies based on 12.5 kHz channel spacing available, as listed in provision No.5.287 of the Radio Regulations, but these are not always available in all countries and are not sufficient in all cases. The technology is currently defined as analogue FM by Recommendation ITU-R M.1174-2, which is found to be very robust in operations in metal ships. A revision of this Recommendation, to introduce digital technologies could provide more voice channels in one frequency but the performance in the operational environment must be evaluated together with the compatibility with existing equipment based on analogue technology.

IMT is also permitted to use this frequency band under provision No.5.286AA of the Radio Regulations and may be a future source of interference.

#### **IMO position**

IMO supports measures which would make more efficient use of the frequency band available for onboard systems and would welcome an international solution for the identification of the channels in provision No.5.287 of the Radio Regulations.

### **Agenda item 1.16**

1.16 *To consider regulatory provisions and spectrum allocations to enable possible new Automatic Identification System (AIS) technology applications and possible new applications to improve maritime radiocommunication in accordance with resolution **360 (WRC-12)**;*

#### **Background**

AIS is widely used and accepted for shipping but in some parts of the world the capacity of the channels is reaching its limit, due to the introduction of new applications. The continued introduction of new applications will require new channels which have been made available by WRC-12 for experimentation.

The need for digital information exchange (VDE) in the maritime domain, where the VHF Mobile band plays a key role in ship-to-ship communication and coastal ship-shore communication, continues to increase.

A 2008 study in the area of Tokyo bay (Tokyo wan) showed that 27.4% of AIS slots were used. In 2012 the loads of 38% were reached. This 10% increase within four years shows that in Japan the limiting factor of 50% as noted in IALA Recommendation A-124 appendix 18 "VDL Loading Management" could be reached quite soon.

## **IMO position**

Modifications should not be required to existing AIS equipment on board existing vessels. New applications using AIS technology should be allowed to evolve, supported by communication primarily on the new frequencies identified by WRC-12, while protecting the integrity of the original operational purpose of AIS on the existing AIS frequencies. This will also address the concerns expressed previously on congestion by moving various applications to alternative channels in the existing VHF mobile band.

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

## **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-03), 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.

## **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, 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.

## **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-12;*

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)**;*

### **Agenda item 9.1, issue 9.1.1**

#### **Background**

Under agenda item 9.1, issue 9.1.1 ITU-R is invited to study, in accordance with resolution 205 (**Rev.WRC-12**), the Protection of the systems operating in the mobile-satellite service in the band 406-406.1 MHz.

The Cospas-Sarsat satellite 406 MHz EPIRB is a mandatory alerting device on board SOLAS ships, is also frequently carried as the second means of alerting and carried by ships which are not subject to the SOLAS Convention.

There is evidence that the required transmitted output power of the Cospas-Sarsat 406 MHz EPIRB is greater than the system design minimum value, apparently, because of other emissions from outside and inside the frequency band.

There are developing plans for Power Line Transmission Systems, operating in a frequency band up to 470 MHz, which can have the potential of producing in-band interference to the Cospas-Sarsat system.

The proposed frequency bands for use for Public Protection and Disaster Relief (PPDR), under agenda item 1.3, include a band 380-470 MHz which also has the potential of producing in-band interference to the Cospas-Sarsat system.

#### **Draft IMO position**

It is essential to preserve the MSS frequency band 406-406.1 MHz free from any emissions that would degrade the operation of the 406 MHz satellite transponders and receivers, with the risk that satellite Emergency Position Indicating Radio Beacon (EPIRB) signals would go undetected.

### **Agenda item 9.1, issue 9.1.6**

#### **Background**

Under agenda item 9.1, issue 9.1.6 ITU-R is invited to study, in accordance with resolution 957 (**WRC-12**), toward review of the definitions of fixed service, fixed station and mobile station.

Under this agenda item ITU-R is invited to conduct the necessary studies to review the definitions of fixed service, fixed station and mobile station contained in article 1 of the Radio Regulations for possible modification. Furthermore, ITU-R is invited to study the potential impact on regulatory procedures in the Radio Regulations (coordination, notification and recording) and the impact on current frequency assignments of other services resulting from possible changes to the definitions contained in article 1.



## **IMO position**

Ensure that measures taken at WRC-15 under this agenda item do not have an adverse impact on the maritime services and maritime applications.

## **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 808 (WRC-12) containing the Preliminary agenda for WRC-18 lists, as item 2.1 for inclusion in the agenda for WRC-18, to consider regulatory actions, including spectrum allocations, to support GMDSS modernization and implementation of e-navigation in accordance with resolution 359 (WRC-12).

## **Action to be taken:**

TBD

## **Draft IMO position**

Support the inclusion of this agenda item 2.1 of resolution 808 (WRC-12) into the agenda for WRC-18.

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)

*No longer needed by IMO. Probably no longer needed 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.541-9

**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)

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

---

\* This Recommendation is retained in order to provide information concerning existing equipment, but will probably be deleted at a later date. New equipment should conform to Recommendation ITU-R M.625 which provides for the exchange of identification signals, for the use of 9-digit maritime mobile service identification signals and for compatibility with existing equipment built in accordance with this Recommendation.

*Note by the Secretariat:* The references made to the Radio Regulations (RR) in this Recommendation refer to the RR as revised by the World Radiocommunication Conference 1995. These elements of the RR will come into force on 1 June 1998. Where applicable, the equivalent references in the current RR are also provided in square brackets.

RECOMMENDATION ITU-R M.585-6

**Assignment and use of identities in the maritime mobile service**

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

*Required by the maritime community and useful to IMO.*

RECOMMENDATION ITU-R M.625-3

**Direct-printing telegraph equipment employing automatic identification  
in the maritime mobile service\*\***

(Question ITU-R 5/8)

(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.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.690-1

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

(Question ITU-R 31/8)

(1990-1995)

*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.*

---

\*\* Newly developed equipment should conform to the present Recommendation which provides for compatibility with existing equipment built in accordance with Recommendation ITU-R M.476.

RECOMMENDATION ITU-R M.1084-4

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

(Question ITU-R 96/8)

(1994-1995-1997-1998-2001)

*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)

*No longer required by IMO which uses the Standard Marine Communication Phrases but required by the maritime community.*

RECOMMENDATION ITU-R M.1173

**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)

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

RECOMMENDATION ITU-R M.1174-2

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

(1995-1998)

*Required by the maritime community and useful to IMO. This recommendation is related to agenda item 1.15 for which IMO has developed a position.*

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-12)

**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-12)

**Protection of the band 406-406.1 MHz allocated to the mobile-satellite service**

*Subject to Agenda item 9.1.1*

RESOLUTION 207 (Rev.WRC-03)

**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 358 (WRC-12)

**Consideration of improvement and expansion of onboard communication stations in  
the maritime mobile service in the UHF bands**

Subject of agenda item 1.15.

RESOLUTION 359 (WRC-12)

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

Subject of agenda item 10.

RESOLUTION 360 (WRC-12)

**Consideration of regulatory provisions and spectrum allocations for enhanced  
automatic identification system technology applications and  
for enhanced maritime radiocommunication**

Subject of agenda item 1.16.

RESOLUTION 758 (WRC-12)

**Allocation to the fixed-satellite service and the maritime-mobile satellite service  
in the 7/8 GHz range**

Subject of agenda item 1.9.2.

RESOLUTION 909 (WRC-12)

**Provisions relating to earth stations located on board vessels which operate  
in fixed-satellite service networks in the uplink  
bands 5 925-6 425 MHz and 14-14.5 GHz**

Subject of agenda item 1.8.

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**

*Subject of agenda Item 1.8.*

RECOMMENDATION 316 (Rev.MOB-87)

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

*Retain.*

\*\*\*



## ANNEX 15

### LIAISON STATEMENT TO ITU-R JOINT TASK GROUP 4-5-6-7

#### WRC-15, AGENDA ITEM 1.1

#### Additional comments in relation to frequency bands identified by ITU-R for future assessment of the suitability for IMT

##### Introduction

1 IMO's Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its first session from 30 June to 4 July 2014, considered the progress made in ITU-R JTG 4-5-6-7 with regard to the development of sharing studies and draft CPM text under WRC-15 agenda item 1.1.

##### Discussion

2 The Sub-Committee noted with appreciation that JTG 4-5-6-7, at its fifth meeting from 20 to 28 February 2014 had updated IMO's concerns in the document containing the "Summary of comments received in Joint Task Group 4-5-6-7 input contributions relating to certain frequency bands which may be considered under WRC-15 agenda item 1.1" (annex 9 to document JTG 4-5-6-7/584).

3 The Sub-Committee noted further that not all studies were finalized at the fifth meeting and that, in particular, studies related to the frequency bands 2 700-2 900 MHz and 2 900-3 100 MHz were inconclusive.

4 The Sub-Committee noted also that the primary goal of the sixth and also last meeting is to complete work on the draft CPM text.

##### IMO's request to ITU-R JTG 4-5-6-7

5 IMO requests ITU-R JTG 4-5-6-7:

- .1 to exclude the frequency bands 406-406.1 MHz, 1 518-1 559 MHz, 1 559-1 610 MHz, 1 626.5-1 660.5 MHz, 1 668-1 675 MHz, 2 900-3 100 MHz and 3 400-4 200 MHz, or any other frequency bands that are used by maritime safety systems, as candidate bands under WRC-15 agenda item 1.1, due to the potential adverse impact to maritime safety and the efficient movement of international commerce;
- .2 that if the band 2 700-2 900 MHz was decided to be a candidate band under WRC-15 agenda item 1.1, to consider the impact on the band 2 900-3 100 MHz, including the co-existence between different types of radars;
- .3 to relay the concern of IMO in the draft CPM text to ensure that emissions from IMT operating in adjacent bands to the frequency bands mentioned above do not affect the operation of the existing maritime systems; and
- .4 to relay the concern of IMO in the draft CPM text to ensure that any future sharing scenario with maritime services does not result in harmful interference compromising safety of life and protection of the environment.

\*\*\*



**ANNEX 16**

**DRAFT REVISED MSC.1/CIRC.1210**

**GUIDANCE ON THE COSPAS-SARSAT  
INTERNATIONAL 406 MHz BEACON REGISTRATION DATABASE**

1 The Maritime Safety Committee, at its [ninety-fourth session (17 to 21 November 2014)], recognizing the continuous importance of 406 MHz EPIRB registration databases to be available to SAR Authorities at all times, approved the revised guidance on Cospas-Sarsat International 406 MHz Beacon Registration Database (IBRD) prepared by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its first session, as set out in the annex.

2 This circular revokes MSC.1/Circ.1210.

3 Member Governments are invited to bring the annexed guidance to the attention of all parties concerned.

## ANNEX

### **GUIDANCE ON THE COSPAS-SARSAT INTERNATIONAL 406 MHz BEACON REGISTRATION DATABASE**

#### **Need for EPIRB registration and associated databases**

1 Emergency position-indicating radio beacons (EPIRBs) perform distress alerting and other functions to support search and rescue (SAR) services covered by the 1979 International Convention on Maritime Search and Rescue, as amended, for any person in distress at sea, and the 1974 International Convention on Safety of Life at Sea (SOLAS), as amended, requires EPIRB carriage (chapter IV, regulation 7.6) and registration.

2 The provisions relevant to EPIRB registration in chapter IV, regulation 5-1 apply to all ships on all voyages, and are as follows:

"Each Contracting Government undertakes to ensure that suitable arrangements are made for registering global maritime distress and safety system (GMDSS) identities and for making information on these identities available to rescue coordination centres on a 24-hour basis. Where appropriate, international organizations maintaining a registry of these identities shall be notified by the Contracting Government of these assignments."

3 It is crucial that 406 MHz EPIRBs be registered, and that the registration data be available to SAR authorities at all times. Experience has shown that EPIRB registration data is either critically important or otherwise often helpful in the majority of SAR cases involving an EPIRB alert.

4 406 MHz EPIRBs should be registered regardless of whether they are carried aboard ships or other marine craft, and registrations should be reinforced by national requirements.

5 It is essential that IMO Member States provide a readily-accessible mechanism (preferably one that is available by internet, as well as other conventional means) to enable EPIRB owners to fulfill their obligation to register the beacons, and to make this data available for SAR authorities 24-hours-per-day, seven-days-per-week for use in an emergency. Such arrangements can be implemented nationally, on a regional basis in cooperation with other Administrations, or by other suitable means. The Cospas-Sarsat International Beacon Registration Database is a facility available free of charge to enable beacon owners to directly register their beacons and/or to allow Administrations to upload their national registration data to ensure that it is available to SAR authorities worldwide on a 24-hours-per-day, seven-days-per-week basis.

#### **International Beacon Registration Database**

6 The International Cospas-Sarsat Programme processes 406 MHz EPIRB alerts and routes them to the identified SAR authorities. It also operates the International Beacon Registration Database (IBRD) for 406 MHz beacons, operational since January 2006.

7 The IBRD is hosted on the internet at [www.406registration.com](http://www.406registration.com), with online help capabilities.

8 Cospas-Sarsat provides the IBRD as a readily-available means for beacon owners to register their beacons unless an alternative method of registration is required by their national Administration. The registration information contained in the IBRD, whether directly entered by beacon owners or uploaded from national registration databases maintained by

Administrations, is available 24-hours-per-day, seven-days-per-week for assisting SAR Services in SAR operations. The IBRD is available free of charge to individuals directly registering beacons and to Administrations uploading or retrieving registration data.

9 Administrations that maintain their own national registers are encouraged to upload their registration data to the IBRD to make their national beacon registration data available as quickly and easily as possible to SAR personnel on a 24-hour basis.

10 The IBRD can be used not only for registering 406 MHz EPIRBs, but also 406 MHz emergency locator transmitters (ELTs) carried on board aircraft, and personal locator beacons (PLBs) designed for personal use.

## **Background**

11 The Cospas-Sarsat 406 MHz system provides distress alerts that include the unique 15-character hexadecimal identification of the transmitting beacon. This beacon identification can be decoded to obtain information that includes:

- .1 the type of beacon, i.e. ELT, EPIRB or PLB;
- .2 the country code and identification data which form the unique beacon identification; and
- .3 the type of auxiliary radio locating (homing) device, e.g. 121.5 MHz transmitter.

12 If a beacon is properly registered, the 15-character hexadecimal identification of the beacon can be used to access additional information. Beacon registration databases can provide information of great use to SAR personnel, including:

- .1 specific owner identification information;
- .2 the make/model and identification of aircraft or vessel in distress;
- .3 communications equipment available;
- .4 the total number of persons onboard; and
- .5 emergency contact information.

13 To have this valuable information available to SAR authorities in an emergency, it must be available from either a national database available 24-hours-per-day, seven-days-per-week maintained by a national Administration and/or from the IBRD provided that the national Administration allows direct registration in the IBRD by beacon owners or the Administration uploads its registration data to the IBRD for access by other SAR authorities.

14 Registration of 406 MHz beacons is required in accordance with international regulations on SAR established by the International Civil Aviation Organization (ICAO) and by the SOLAS Convention. In addition, some countries have made 406 MHz beacon registration mandatory.

## **IBRD concept of operations**

15 The IBRD is designed to support:

- .1 beacon owners who wish to directly register their beacons;
- .2 Administrations to make their registration data easily available to other SAR authorities in an emergency by uploading that information to the IBRD; and

- .3 SAR authorities that need to efficiently access beacon registration data to assist persons in distress.

16 Cospas-Sarsat has configured the IBRD to accept by default beacon registrations from beacon owners, unless the Administration associated with the beacon's country code(s) has advised Cospas-Sarsat that it:

- .1 operates a national database with a 24-hour point of contact and does not want EPIRBs with its country code(s) included in the IBRD; or
- .2 wishes to control the inclusion of beacons with its country code(s) in the IBRD.

### **Establishing an IBRD point of contact**

17 Each Administration should provide Cospas-Sarsat with a national IBRD point of contact for coordinating use of the IBRD. This contact will decide the settings in the IBRD related to beacons with its country code and help to resolve problems arising with registration of beacons with that Administration's country code(s).

18 The national IBRD point of contact should be officially identified to the Cospas-Sarsat Secretariat using a letter of the form that may be found at the Cospas-Sarsat website ([www.cospas-sarsat.int](http://www.cospas-sarsat.int) – on the "Cospas-Sarsat Professionals" page choose the "Documents" tab, then "Document Templates, and select the "IBRD" tab). This letter must be signed by the Administration's IMO representative, or by its representative to Cospas-Sarsat or to the International Civil Aviation Organization (ICAO), and sent to the Cospas-Sarsat Secretariat. Based on the letter, the Cospas-Sarsat Secretariat will allocate the requested user identifications and passwords to the Administration's national IBRD point of contact.

19 The request should specify whether user identification and passwords to be issued to the Administration's IBRD point of contact are required to:

- .1 enable the Administration to upload registration data about its beacons to the IBRD;
- .2 enable its SAR Services to access IBRD registration data in an emergency; and/or
- .3 make IBRD registration data available to authorized shore-based service facilities and vessel inspectors.

20 Passwords and user identifications will be sent via post to the national IBRD point of contact. The national IBRD point of contact must then forward the user identifications and passwords to those entities authorized by its Administration to access the IBRD.

21 It is critical that, at a minimum, passwords be requested for SAR Services to access beacon registration information in the IBRD during an emergency.

### **Providing details of your national beacon registry**

22 If an Administration maintains its own national beacon registry and decides not to allow beacons with its country code(s) to be registered in the IBRD, the Administration should review the information provided on the Cospas-Sarsat website to the public (such as beacon owners) relating to its beacon-registration policies (please see the information contained on [www.cospas-sarsat.int](http://www.cospas-sarsat.int) on the "Cospas-Sarsat Professionals" page choose the "Contact Lists" tab and select "406 MHz Beacon Register"). Please provide the

Cospas-Sarsat Secretariat immediately with any updates, as appropriate. This is a source very commonly used by beacon owners to learn where to register their beacons and, therefore, it is critically important that accurate information is provided in order to keep these web pages up to date.

23 Based on the information that Administrations provide, beacon owner who attempts to register a beacon on the IBRD will be advised through a "pop up" window on the IBRD website of how and/or where to register the beacon (based on the country code programmed into the beacon and the policies of that Administration reported to the Cospas-Sarsat Secretariat).

24 If no information is available regarding a national beacon registry for an Administration, Cospas-Sarsat policy is to assume that no such registry exists and allow the direct registration in the IBRD by owners of beacons with that Administration's country code(s) ([www.406registration.com](http://www.406registration.com)).

### ***National Administration control of beacon registration in the IBRD***

25 If an Administration has elected to prohibit direct registration by owners of their beacons in the IBRD, but wishes upload to the IBRD some or all of its national beacon registration records, a national IBRD Point of Contact should be designated as described above so that the necessary arrangements can be made to enable the uploading of records.

26 The Administration will be able to upload in bulk its beacon registration data or, if desired, keep sole control of individual record inputs or updates. In that case, beacon owners who attempt to register beacons with that Administration's country code(s) will be directed by the IBRD website to the Administration's national website or point of contact for beacon registration.

### **Means of registration**

27 Beacon registrations allowed on the IBRD only will be accepted via the online facilities of [www.406registration.com](http://www.406registration.com) and, under no circumstances can registrations be accepted in paper format nor by telephone, facsimile or any other communication facilities.

### ***Other supported beacon types***

28 In addition to EPIRBs, the IBRD supports two other types of beacons:

- .1 Emergency Locator Transmitters (ELTs), for use in aircraft; and
- .2 Personal Locator Beacons (PLBs), small beacons for individuals to carry or wear; these beacons sometimes may be used for purposes similar to an EPIRB or ELT, as allowed by local regulations and, therefore, sometimes may be coded to transmit distress messages that have the same content as an EPIRB or ELT, and/or registered as an EPIRB or ELT in the IBRD.

### **Further Information**

29 Further information can be found at [www.cospas-sarsat.int](http://www.cospas-sarsat.int), or by email at [dbadmin@406registration.com](mailto:dbadmin@406registration.com).

\*\*\*





**ANNEX 17**

**DRAFT REVISED MSC.1/CIRC.1182**

**GUIDE TO RECOVERY TECHNIQUES**

1 The Maritime Safety Committee, at its [ninety-fourth session (17 to 21 November 2014)], with a view to providing specific guidance to seafarers on recovery techniques, approved the Guide on recovery techniques, prepared by the Sub-Committee on Navigation, Communications and Search and Rescue at its first session (30 June to 4 July 2014), as set out in the annex.

2 This circular revokes MSC.1/Circ.1182.

3 Member Governments and international organizations in consultative status are invited to bring the annexed guide to the attention of all concerned, in particular distribution to seafarers.

4 Member Governments, international organizations and others concerned are encouraged to enhance the attached Guide with pictorial and other relevant information, as appropriate.

## ANNEX

### PROPOSED AMENDMENTS TO MSC.1/CIR.1182

#### GUIDE TO RECOVERY TECHNIQUES

## 1 INTRODUCTION: YOUR PART IN RECOVERY AT SEA

1.1 As a seafarer, you may have to recover people in distress at sea. This might be someone overboard from your own ship – a fellow crew member, or a passenger – or your ship might be responding to someone else's emergency; for example a ship abandoned because of flooding or fire, or a ditched aircraft. You may have little warning, and lives may be in your hands.

1.2 In many areas of the world, especially when out of range of shore-based search and rescue (SAR) facilities, your ship may be the first, or the only, rescue unit to arrive in time. Even if you are joined by specialized units, you will still have a vital role to play, especially in a major incident involving many people.

1.3 Many ships are required to have ship-specific plans and procedures for recovery of persons from the water<sup>1</sup>, and the IMO has agreed that it is beneficial to have recovery procedures planned for any vessel<sup>2</sup>. This guide also considers recovery from small craft such as liferafts etc.

1.4 If you are required to recover people in distress, it is your capability that matters. To ensure that you can respond safely and effectively, you need to know the plans and procedures for recovery specific to your ship and to think about the general issues *beforehand*.

1.5 The recovery process is often difficult. For example, it may be complicated by:

- .1 the size of your ship: survivors may have to climb or be lifted considerable distances to get aboard;
- .2 differences in relative movement between your ship and the craft or people alongside: it may be difficult to stay alongside or for survivors to get onto ladders etc. or in through shell openings; and
- .3 the physical capability of those to be recovered: they may be able to do little or nothing to help themselves.

1.9 This guide discusses these problems, and some solutions. It suggests practical recovery techniques which have been used successfully to recover people in distress at sea.

## 2 AIMS AND CONTENTS OF THIS GUIDE

2.1 This guide focuses on recovery and the work you may have to do to achieve it. It is intended to be used as a reference document. You should read it now and you should refer to it again while proceeding to the scene of the emergency, as part of your preparation for the recovery operation.

---

<sup>1</sup> SOLAS regulation III/17-1

<sup>2</sup> Resolution MSC.346(91)

- 2.2 The guide's principal aims are to help *you* – as master or crew of a responding ship – to:
- .1 ASSESS and decide upon appropriate means of recovery aboard your own vessel;
  - .2 TRAIN in the use of these means of recovery, in general preparation for emergencies; and
  - .3 PREPARE yourself and your vessel when actually responding to an emergency.

2.3 This guide includes and supports the recovery guidance in Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, "Mobile Facilities", which should be available on board.

2.4 Recovery – getting people in distress into your ship – is just a part of the overall rescue operation. For guidance on SAR operations as a whole you should refer to the IAMSAR Manual.

2.5 For simplicity, this guide refers to lifeboats, liferafts, etc. as "survival craft". It is also possible that you will be recovering people from other small craft such as small SAR units; directly from small vessels in distress such as yachts or fishing boats; or from the water, etc. In general the same recovery principles apply throughout.

2.6 The guidance is set out as follows:

Possible recovery problems .....	section 3
Planning considerations .....	section 4
Providing assistance <i>before</i> recovery .....	section 5
The recovery process – general considerations .....	section 6
The approach .....	section 7
Rescue craft and lines .....	section 8
Getting people aboard – factors to consider .....	section 9
Climbing and lifting .....	section 10
Providing assistance when standing by .....	section 11
The immediate care of people recovered .....	section 12
Recovery checklist .....	appendix

### **3 THE TASK OF RECOVERY: POSSIBLE PROBLEMS**

3.1 When proceeding to the scene of an emergency at sea, you will probably only have limited information about what you will find when you get there. What you may find are people in survival craft or in the water. You should prepare for their recovery.

3.2 Unless it is properly prepared for, the recovery process may be a difficult and dangerous operation. The following are some of the problems which you may have to face.

- .1 Recovery from survival craft is not simple – see section 3.3 below.
- .2 In a man-overboard situation, or in a rapid or uncontrolled abandonment when not everybody has been able to get into survival craft, you may find people in the water, or clinging to floating wreckage, etc. These people are less likely to be able to help themselves than if they were in survival craft. Nor will they survive so long.

- .3 People may still be aboard the craft in distress and direct recovery may be required, without the intermediate use of survival craft.
- .4 Small craft are especially vulnerable if they are in close proximity to your ship. Their masts, rigging or other gear may become entangled and there is the danger of crushing or other damage as the two vessels move in the seaway.
- .5 People may need to be recovered from other places which they have reached before your arrival (rocks, reefs, sandbanks, shorelines only accessible from the sea, navigational marks, moored vessels, etc.).
- .6 In addition to recovering people yourself, you may have to receive people from other SAR units such as rescue boats or helicopters. These units may wish to transfer people to your ship rather than take them directly ashore, so that they can return to pick up others more quickly. Many of the problems associated with recovering people from survival craft also apply to the transfer of people from (small) rescue boats into (large) ships.
- .7 Transfer from helicopters has its own special requirements, including training and preparation on board – see IAMSAR Volume III.

3.3 There are likely to be further complications, even after a controlled evacuation in which people have entered survival craft successfully.

- .1 Types of survival craft vary.
  - .1 Powered survival craft may be able to manoeuvre themselves alongside your ship but those without power cannot do so.
  - .2 Many survival craft are covered and these covers may not be removable. Getting out of enclosed survival craft may be difficult when the craft is in a seaway, particularly if the exit points are small.
- .2 Those awaiting recovery may lack the ability to help themselves or others. This may be because of injury, illness (including seasickness after a period in a survival craft), the effects of cold or heat, age (whether elderly or very young) or infirmity.
- .3 People awaiting recovery may have little or no experience of transferring between small craft and larger ones such as your ship. For example, stepping onto a pilot ladder and then climbing it is not difficult for a fit person used to doing so – but it may be effectively impossible for others.
- .4 There may be language difficulties. If instructions are not properly understood, the consequences can be dangerous. You may not have a language in common with the person to be recovered, and even when you do they may not understand your instructions.

- .5 There may be a large number of people to recover. In the case of a passenger ship, this number may amount to hundreds or even thousands of people. This possibility brings additional problems with it, including:
  - .1 SCALE: the sheer size of the problem can be daunting and the stress of the situation may lead you to lose focus and efficiency.
  - .2 PRIORITY: who should be recovered first? It is clear that people in the water should take priority over those in survival craft. It is less clear whether the injured or infirm should take priority over the more capable, who can be recovered more quickly.
  - .3 RESOURCES: facilities aboard your ship may become overwhelmed. Survivors will need shelter, warmth, water, food and, probably, some medical attention.
  - .4 PEOPLE: you will need sufficient numbers of people to navigate your ship, to operate the means of recovery and to escort those recovered to shelter.

#### **4 PLANNING FOR RECOVERY**

- 4.1 The circumstances you find when you arrive will differ from incident to incident; but general planning must be done.
- 4.2 When planning how best to bring people aboard your ship you should consider:
  - .1 who will be required for the recovery process;
  - .2 who will manage the ship in the meantime;
  - .3 what can be done to help people prior to recovery;
  - .4 the means of recovery available to you;
  - .5 where on the ship the survivors should be taken after recovery;
  - .6 how they will be looked after once they are aboard; and
  - .7 how you will keep your own crew and any passengers informed of what is going on.
- 4.3 Make sure everyone understands the recovery plan and their own place in it, and have everyone ready, with all the equipment they need, before commencing the operation.
- 4.4 You may not have much time to think about details when the emergency happens; but if you have thought about your capabilities beforehand and you have trained to use them effectively – in short, if you are *prepared* – you will not need much time.
- 4.5 Remember that plans are of no use unless you know how to put them into effect. This requires training, and the testing of both plans and training by conducting drills.

## **5 PROVIDING ASSISTANCE PRIOR TO RECOVERY**

5.1 People can still die after you have found them but before you can get them on board. Recovery takes time – and those in distress may not have much time, especially if they are in the water, unprotected and/or unsupported. You should be ready to help them stay alive until you are able to recover them.

5.2 Depending on how long the recovery is likely to take, they may need:

- .1 buoyancy aids such as lifebuoys, lifejackets and liferafts;
- .2 detection aids such as high-visibility/retro-reflective materials, lights, a SART or an EPIRB;
- .3 survival aids such as shelter, clothing, drink, food and first aid supplies; and
- .4 communications equipment such as a handheld radio.

5.3 The simpler buoyant items – lifebuoys in particular – can be dropped or thrown to those in distress on an early pass by the ship. If the ship is stopped, contact should be established by messenger (a rocket line, rescue throw-line, or heaving line) and the items passed under control. You will need to get the messenger very close to those in distress if they are to have a chance of seeing and getting hold of it.

5.4 Items may be veered down to survivors while the ship stands clear, on lines made fast to a lifebuoy, for example; or they can be towed into a position where those in distress can get hold of them.

5.5 If the recovery operation looks like it might take some time, one or more of your own liferafts can be deployed. Remember, however, that a liferaft may drift faster than those in distress can swim. You will need to guide it to the people you are assisting, using a line made fast to the raft before deploying it. Do not rely on the raft's own painter, which may tear away.

5.6 You can also help those in distress while you ready your ship for the recovery operation by making a lee for them or, if contact can be established by line, by towing them out of immediate danger such as that posed by the wreck itself or by spilt hazardous cargo, or by a lee shore.

## **6 THE RECOVERY PROCESS – GENERAL CONSIDERATIONS**

6.1 During the recovery process itself, there will be three basic tasks to complete:

- .1 bringing people to the side of the ship so that they can be recovered;
- .2 getting people into the ship; and
- .3 dealing with them once they are aboard.

6.2 Some guidance on each of these tasks is given in sections 7-12. Think carefully about each of them in your planning and preparation. If you have done so, the recovery process should be easier when you have to carry it out.

## 7 BRINGING PEOPLE TO THE SIDE OF THE SHIP – THE APPROACH

7.1 Manoeuvring a large ship in a seaway to come alongside, and then remain alongside, a small object like a survival craft or a person in the water will be difficult.

- .1 The main danger in this case is that of running over the object.
- .2 It is also possible to over-compensate for that risk, so that the object will be missed because still too far away.
- .3 Both your ship and the recovery object are likely to be affected, unequally, by wind, sea state, and water currents.

7.2 There may be other factors which make this task more difficult still. Be prepared for them. For example:

- .1 Room to manoeuvre may be limited by nearby navigational hazards, or there may be more than one recovery object in the area.
- .2 Beware of running down people in the water (who may be very hard to see) while making your approach to your chosen recovery object. Post good lookouts with direct communications to the Bridge while in the incident area. Ensure that the lookouts know to report *all* sightings: people in the water, survival craft, the casualty vessel, debris, etc.
- .3 Although powered craft may be able to get alongside your ship and keep themselves there, this can be difficult in a seaway. In rough seas, craft or the people aboard them may be damaged if thrown against the ship's side. Have boat ropes ready, and fenders if you have them.
- .4 People in the water may be able to swim short distances to get to the ship's side. It is possible that people will enter the water in order to do so as you approach, although they should be told not to if possible – at least until you are ready to recover them.

7.3 Prepare your means of recovery, yourself and your crew before you arrive at the scene.

7.4 Prepare onboard communications, so that lookouts and the recovery team will be able to communicate readily with the Bridge team.

7.5 Think about the approach before making it:

- .1 determine what will be the most significant factor in creating a lee for the casualty – wind, sea or swell;
- .2 assess navigational hazards in the area;
- .3 decide on which side you want to make the lee';
- .4 consider circling the casualty: this can have a significant calming effect on the sea, but you need to bear in mind your ship's stability and manoeuvring characteristics, the amount of sea room available, and the possibility that there are other survivors in the area;

- .5 consider running by the casualty first, if time permits, to help you make your assessment;
- .6 consider stopping well short of the casualty during the final approach, to get the way off your vessel and to assess the effects of wind, sea and swell when stopped/at slow speeds;
- .7 approach with the significant element (wind, sea or swell) fine on the weather bow and your recovery object fine on the lee bow; and
- .8 as you come up to the object, turn away from the weather and stop to create the lee, with your recovery object close on your lee side.

7.6 Be ready to receive craft and/or people alongside, with boat ropes rigged and other equipment (including safety lines and buoyant equipment) ready to hand.

7.7 Manoeuvring your ship at slow speed, judging its movement and that of the recovery object, is a skill. Appropriate training should be encouraged by ship operators.

## **8 BRINGING PEOPLE TO THE SIDE OF THE SHIP – RESCUE CRAFT AND LINES**

8.1 It may be unsafe – or simply impossible – to bring survivors alongside your ship directly. You may have to find another way of reaching them. One way to do this is to launch a rescue craft, *if this can be achieved safely*. Another way is to pass a line.

8.2 Launching a rescue craft will serve three purposes:

- .1 it will make the final approach to the recovery object easier;
- .2 primary recovery (into the rescue craft) will be easier, because of the rescue craft's lower freeboard and similar motion to that of the recovery object; and
- .3 completing the recovery by returning to the ship and being lifted back aboard using the rescue craft's own recovery system should also be easier.

8.3 The best lee for launching and recovery of rescue craft is likely to be obtained by putting the sea on a quarter, steaming slowly ahead, and doing the boat work on the opposite side.

8.4 But for most ships launching rescue craft may only be an option in reasonably good weather conditions. The use of your own rescue craft must be for the master to decide, depending on the particular circumstances of the incident. Factors to consider include:

- .1 The severity of the risk to those in distress: can they be left where they are until more suitable help arrives (supported in other ways by the assisting ship in the meantime – see section 11) or are alternative means of recovery available?
- .2 On-scene weather conditions: particularly sea state, but also wind strength and direction, ambient temperatures and visibility.



- .3 The capability of the rescue craft:
  - .1 the efficiency of its launch and recovery equipment;
  - .2 the competence and experience of 'its crew;
  - .3 the availability of personal protective equipment for 'its crew;
  - .4 the effectiveness of communications between the rescue craft and the ship;
  - .5 the proximity of navigational hazards; and
  - .6 the rescue craft's ability to navigate, whether independently or conned from the ship, so as to avoid hazards and locate those in distress.
- .4 The ship's manoeuvrability: can you get into a position to launch and recover the rescue craft safely?
- .5 The proximity of navigational hazards limiting the ship's ability to manoeuvre in support of the rescue craft or to provide alternative help to those in distress.

8.5 An alternative to sending out a rescue craft is to pass lines to those needing recovery, so that they may be pulled alongside the ship. Rocket lines, rescue throw-lines and heaving lines may be used for this purpose, and should be ready for use.

8.6 Buoyant appliances such as lifebuoys or an inflated liferaft may be veered down to those in distress on secure lines, and then pulled back to the ship.

8.7 Streaming lines astern is another option, preferably with buoyancy and means of attracting attention to them attached – lifebuoys, for example, with lights at night. The ship should then be manoeuvred around those in distress so that they may take hold of the streamed line. Once this is done the ship stops and those in need of recovery can be pulled alongside.

## **9 GETTING PEOPLE ABOARD THE SHIP: FACTORS TO CONSIDER**

9.1 Once people are in a position from which they can be recovered, the next part of the task is to get them aboard the ship. This will depend on:

- .1 the prevailing weather and sea conditions;
- .2 the condition of the people to be recovered;
- .3 the size of your ship;
- .4 your ship's design;
- .5 the equipment available; and
- .6 the competence of those using it.

9.2 Weather and sea conditions on scene will be important, particularly the sea state:

- .1 How is the recovery object moving in relation to your ship?

- .1 Sea and swell waves will affect your ship and a small craft (or a person in the water) differently. Ship and recovery object may move vertically in relation to each other.
- .2 Your ship and the object will be subject to leeway in different ways. They may be blown together or apart. Water currents may also have different effects.
- .3 As people climb or are lifted into your ship, the craft they have just left may rise on a wave, striking or trapping them against the ship's side.
- .2 Your ship's own movements will also be a factor.
  - .1 As the ship moves in sea and swell, people may be swung against the ship's side as they climb or are lifted to an embarkation point.
  - .2 People may swing away from the side and collide with another hazard, including the craft they have just left.

9.3 You should attempt to minimize the difficulties caused by rough seas. Consider the following when planning recovery operations:

- .1 Try to keep sufficiently off the wind to reduce the ship's roll and pitch and to create a lee. Find by experiment (if time permits) the position in which the recovery object lies most easily alongside.
- .2 Steaming slowly ahead with the object secured alongside and the weather on the opposite quarter should ease differential movement, although it does introduce other risks. Craft may be damaged, lines may part, or people may fall into the water during the recovery operation, and drift astern.
- .3 Try to secure recovery objects alongside if possible, to prevent them being blown away or left behind.
- .4 When lifting people, control lines should be rigged to the hoist and tended to minimize swinging.
- .5 Safety lines should always be used to secure the casualty in case he/she falls or is injured during the recovery.

9.4 If the differential movement is too violent, you will need to consider other options.

- .1 It may be possible to transfer those to be recovered to an intermediate platform such as a liferaft veered down to them or acting as a fender against the ship's side.
- .2 It may be necessary to have them enter the water, suitably equipped with flotation aids and safety lines from the ship, to be pulled across a safety gap between the ship and the craft they are leaving.
- .3 Ultimately, however, the only option may be to abandon the attempt at recovery and to stand by, supplying whatever assistance you can until a more capable recovery unit arrives or conditions ease (see section 11).

9.5 The condition of the people to be recovered is another critical factor. When responding to an emergency, you will often not know their condition until you arrive.

- .1 People's condition can range from the fit and healthy to the entirely helpless who, because of their age or through injury, infirmity, hypothermia, seasickness or fear can do nothing to assist in their own recovery.
- .2 This wide range of capability may be found across a group of people to be recovered, so that some of the group will be able to climb unaided into the recovering ship while others will need assistance. Even the fit and experienced seafarer's capability will erode over time, and may erode quickly. Weather conditions – ambient temperatures in particular – and the level of protection available prior to recovery are critical.
- .3 You may find that people in distress are able to help themselves (and others). You may find that you will have to do all the work yourself. You are likely to find a mix of these conditions.
- .4 There may be children to be recovered. Older children may be able to help in their own recovery, although the equipment in use may have to be adapted to their size (and remember that adults come in a wide range of sizes too). Other children may, and infants will, need adult help. You may have to provide means of securing a small child to an adult while being recovered. Alternatively, you may have to provide a lifting device to or in which the child may be securely fastened.
- .5 Fear is a factor deserving attention. Some survivors may try to be recovered first or (if afraid for missing friends or family members, or if simply afraid of the recovery process itself – children, for example) they may *resist* recovery. In either case they may act dangerously. Be ready for such unpredictable behaviour, including having extra life-saving equipment to hand in case someone ends up in the water. The aim is to retain control of the recovery process overall: loss of control by individuals can be tolerated unless it directly affects others' safety.

9.6 Be ready to deal with each of these possibilities. You should plan ahead, so far as is practicable:

- .1 People in the water should take priority over people in survival craft etc.
- .2 It may be best to bring at least some of the more capable survivors aboard first. You will probably be able to recover more capable people more quickly than you can recover the incapable, and, once aboard, they may be able to help you, by looking after other survivors, for example.
- .3 But some of the most capable should also be among the last to be recovered, as you will need them to help prepare the incapable for recovery.
- .4 Communications with those awaiting recovery are therefore very important. A controlled and prioritized recovery process should be established and maintained.

9.7 The size of your ship, relative to your recovery object, will affect differential movement, as discussed above. It will also determine how far those being recovered have to climb or be lifted; which, in turn, may affect:

- .1 how long recovery takes;

- .2 how many people can be recovered;
- .3 whether they are exposed to additional risks such as swinging against the ship's side; and
- .4 how anxious they are about the operation.

9.8 The ship's design may make recovery simpler. A high-sided ship may be able to use low freeboard areas or openings in her hull such as pilot, bunkering, or cargo doors.

9.9 The entry points identified in the ship's recovery plan should be re-assessed with the prevailing conditions in mind. The questions to be considered include:

- .1 Where can ladders or other climbing devices be rigged?
- .2 Where can lifting devices be used? What are the leads and power sources for such devices?
- .3 Are there any low freeboard areas or hull openings? Can they be safely accessed in bad weather or difficult sea conditions? Can the means of recovery be rigged there? Can those recovered be safely removed from there to shelter?
- .4 If thinking of using accommodation ladders sited aft, is there a danger of survivors or craft near the foot of the ladder being trapped under the hull as it tapers to the stern?
- .5 Is there belting along the ship's sides? If so this is a particular hazard to small craft, with significant danger of the craft being trapped beneath it. Recovery points should be at any breaks in the belting.
- .6 Can sufficient lighting be rigged in the recovery area?

9.10 The equipment available and the number of people competent to operate it are also key factors. If there are not enough people trained to operate the available means of recovery, or if 'adequate recovery equipment has not been prepared, efficiency of recovery will obviously be impaired:

- .1 ASSESS your equipment.
- .2 PLAN its use.
- .3 ASSIGN people to operate it.
- .4 ENSURE that they know how to operate it.

## **10 GETTING PEOPLE ABOARD THE SHIP: CLIMBING AND LIFTING**

10.1 The methods of recovery discussed in this guide are in addition to any purpose-built means of recovery carried aboard the ship. They are methods that seafarers have used successfully in the past. Consider which ones can be used aboard your ship; or whether you can devise others.

10.2 The following CLIMBING devices should be considered:

- .1 pilot ladders and lifts;
- .2 accommodation ladders;

- .3 your own survival craft embarkation ladders; and
- .4 other ladders and nets.

10.3 Some or all of these may be rigged, in most cases whatever the conditions. The following points should be borne in mind:

- .1 Lifting survivors is preferable to having them climb a ladder or net – see section 10.4-5.
- .2 Ladders and nets should be so rigged as to minimize the climb; that is, where the freeboard is lowest or at suitable openings in the ship's side.
- .3 They should be rigged on the flat sides of the ship, away from bow and stern.
- .4 Their lower ends should be weighted so as to hang about two metres below the water level, enabling people in the water to get onto them.
- .5 If possible, rig nets and jacob's ladders so that they hang clear of the ship's side, to enable people to grasp the rungs or cross-ropes more readily.
- .6 Pilot ladders – or, if they can be rigged safely in the prevailing conditions, accommodation ladders – are preferable to nets and jacob's ladders.
- .7 All ladders and nets should be tended.
- .8 Safety lines should be deployed alongside them, with rescue strops or loops in the end for the casualty's use. These safety lines should be correctly secured and tended.
- .9 A liferaft can be deployed at the foot of the ladder or net, to act as a transfer platform.
- .10 People may not be able to make the climb. In such circumstances a crew member from the recovering ship, wearing personal protective equipment and a safety line, may have to go down to assist. Note, however, that this should be *planned* for. Going overside in an unplanned manner may be fatal.
- .11 If people are incapable of making the climb, the ladder or net may have to be recovered with them secured to it. For individual survivors, this may be possible manually – see section 10.9. Alternatively, a winch or other power source will have to be used.

10.4 In general, lifting survivors is preferable to having them try to climb ladders or nets. The following LIFTING devices should be considered:

- .1 cranes (including stores cranes, etc.), gantries, derricks;
- .2 davits;
- .3 windlass, winches; and
- .4 purpose-built recovery devices, including manual-lifting devices.

10.5 The following points should be borne in mind:

- .1 Lifting devices should be rigged so that those recovered can be lifted clear of hazards and landed on deck in a safe area.

- .2 If possible, lines led from windlass or winches should be rigged so that the casualty can be lifted above the deck edge.
- .3 Control lines should be rigged to the lower end of the lift, so that swinging against the ship's side can be limited.
- .4 The lower end of the lift should be equipped with at least a rescue strop or a secure loop.
- .5 A purpose-built or improvised rescue basket, or a purpose-built recovery device, is better than strops and loops.
- .6 People who have been in the water, the injured and the incapable, should be lifted in a horizontal or near-horizontal position if possible (for example, in a basket, or in two strops or loops; one under the arms, the other under the knees). This minimizes the risk of cardiac arrest.
- .7 However, if the survivor's airway is under threat – as it may be when alongside, even in calm conditions, because of side-splash – recover by the quickest method possible.
- .8 A crew member from the recovering ship, wearing personal protective equipment and a safety line, may be able to go down with the lift to assist those incapable of helping themselves into the strop, loop, basket or other device. Remember, however, that this should be *planned* for.

10.6 The rescue basket mentioned above is a particularly useful recovery tool. It may be possible to improvise such a basket; but it is recommended that a purpose-built unit be carried on board.

10.7 The rescue basket usually takes the form of a metal frame with floats/fenders around its perimeter and the lifting hook made fast to the top of the frame, clear of people inside. The basket floats partially submerged, so that people can easily enter it or be pulled into it. The floats double as fenders during the lift, should the basket swing against the ship's side. Some baskets are designed to fold for ease of stowage. The size of the basket, and how many people it can lift at once, largely depends on the ship's lifting capability.

10.8 The control lines mentioned above – usually rigged fore and aft along the ship's side, and tended during the lift to minimize swinging – may be supplemented by a line to the craft from which people are being recovered. This line serves two functions. It may be tended by those still aboard the craft as an additional means of controlling the hoist's lateral movements. It also serves to maintain contact with the craft throughout, so that the hoist may be brought back more easily for the next lift.

10.9 It may not be possible to use machinery to lift people. If so, entry points into the ship should be selected so that at least two crew (preferably more) can lift each survivor manually, without risk to themselves. Use a lightweight ladder or net, or knotted ropes: the knots should be spaced about 50 cm apart, and help those lifting to grip the rope. Rig a separate, tended safety line. Purpose-built manual lifting devices are available.

10.10 Survivors should not be expected to simply hold on to a line being lifted. If no other lifting devices are available, a loop in the end of the line to stand in, with a second loop about 1.5m from the end to put over the head and under the arms, and to hold on to, will have to suffice.

10.11 Your own ship's life-saving appliances may be used for recovery purposes.

- .1 Liferafts and lifeboats, left on the falls, may be used as lifts in relatively good conditions. Lowering these units to water level enables people to be transferred into them and then lifted to the embarkation deck:
  - .1 Care should be taken to prevent operation of any on-load release gear or automatic release hook.
  - .2 Take care not to overload davit winches designed to recover craft with only their own crew aboard.
  - .3 Ships fitted with marine evacuation systems of the slide type can deploy them to recover people by pulling them up the slide, and/or light ladders may be carried for deployment down the slide, to enable people to climb it unaided.

10.12 A further option to consider if winch-fitted helicopters are on scene is to use them as transfer lifts. People can be winched directly onto the ship – which is a quicker operation than taking them into the helicopter's cabin first. The helicopter is effectively used as a crane.

## **11 STANDING BY WHEN PEOPLE CANNOT BE RECOVERED**

11.1 There will be times when recovery cannot be attempted or completed without undue risk to the ship, her crew or those needing recovery. Only the assisting ship's master can decide when this is the case.

11.2 Assistance can still be given to those in distress, even if you cannot recover them. Standing by until other help arrives or conditions improve will:

- .1 give comfort to the survivors, especially if communications can be established;
- .2 assist the Rescue Coordination Centre, as you will be able to provide updated and detailed reports on the situation; and
- .3 assist other SAR facilities:
  - .1 your ship is easier to locate than a survival craft;
  - .2 you can provide updated and detailed reports; and
  - .3 units such as helicopters will be able to transfer casualties to you even when you cannot recover them directly.

11.3 But, as discussed above, more direct help can also be given:

- .1 Your own life-saving appliances – including liferafts – can be deployed to those in distress, particularly people in the water.
- .2 If lines can be passed to the survivors' craft, they may be kept out of immediate danger; towed to a position where conditions are easier and recovery may be attempted; or even towed to a nearby place of safety.

- .3 You can provide a lee for small craft, protecting them from the worst of the conditions: consider circling if practicable.
- .4 You may be able to supply more direct aid, passing supplies by floating them down on lines fast to a lifebuoy, for example.

## **12 THE IMMEDIATE CARE OF PEOPLE RECOVERED**

12.1 Recovery does not end when the survivor sets foot on your deck. He or she still needs immediate help – and is still at some risk, in a strange environment and having been under great stress.

12.2 People recovered will need simple directions, and preferably an escort, to shelter. You should decide beforehand where you wish survivors to go aboard your ship, how they are going to get there, who will take them, and who will look after them once they arrive. This should include provision for people who are disorientated and perhaps unable to understand instructions. It should also include provision for those who are physically incapable of moving about the ship.

12.3 Survivors' condition may vary and will need to be assessed. Those assessed as being most at risk may require immediate priority care. Ask for medical advice via the Rescue Coordination Centre.

12.4 Remember in particular the risks of hypothermia and of cardiac arrest induced by sudden transfer from the water. People who have been in the water, the injured and the incapable, should, if possible, be lifted and carried in a horizontal or near-horizontal position. Refer to appropriate guidance, including that contained in the IMO's *Pocket Guide to Cold Water Survival*.

12.5 You should also decide what you are going to do with the dead. Bodies may be recovered, or people recovered alive may die aboard your ship. Some immediate action should be taken, if only to remove them from the place where you are sheltering the living. Attention is drawn to the guidance contained in the IMO's *Pocket Guide to Cold Water Survival* and, in particular, to the advice that people suffering from hypothermia may *appear* to be dead, yet can still be resuscitated. Ask for medical advice.

12.6 Further guidance on the care of people recovered may be found in IAMSAR Volume III (Mobile Facilities). As this further care is post-recovery, it is beyond the scope of this guide. You are recommended to refer to the IAMSAR Manual for help with the next stage of the rescue operation.

## **13 CONCLUSION**

13.1 If you find yourself answering a distress call and faced with the prospect of recovering people at sea, it helps to consider the possibilities beforehand: possible problems and possible solutions. It helps to plan and to prepare – and preparation means assessing the recovery options aboard your ship, and training in their use.

13.2 It could save a life (even yours!). It could save many lives:

- .1 ASSESS the recovery options aboard your ship;
- .2 TRAIN in their use; and
- .3 PREPARE to save lives.



## APPENDIX

### Recovery: Master's Checklist

#### On passage to the scene of the incident

- Establish communications with the Rescue Coordination Centre (RCC)
- Establish communications with the On Scene Coordinator (OSC), if appointed
- Reread the ship-specific recovery plan
- Reread this guidance, sections 3-12 in particular
- Check the relevant sections of the IAMSAR Manual
- Check the relevant sections of the IMO's guidance on cold water survival
- Consider on-scene conditions
- Consider the number and type of people you may have to recover, and the condition they may be in – section 9.5
- Consider whether to launch rescue craft – section 8.2-4
- Assess the best points of entry into the ship with the prevailing conditions in mind – section 9.9
- Advise RCC and/or OSC of your expected recovery capability
- Brief crew, and any passengers aboard
- Prepare recovery equipment, including control and safety measures – section 10
- Prepare additional life-saving equipment in case of accidents during recovery
- Prepare reception facilities for those recovered – section 12
- Prepare to provide assistance prior to, or instead of, recovery – sections 5 & 11
- Assign crew to
  - handling the ship
  - lookout duties – section 7.2.2
  - recovery – sections 8, 9.2-6, 9.9 & 10
  - care of survivors – section 12 (passengers may be able to assist with this)

#### Approaching the scene

- Post lookouts, well-briefed and in communication with the Bridge – section 7.2.2
- Have recovery team(s) standing by, well-briefed, equipped with personal protective equipment, and in communication with the Bridge – sections 8, 9.2-6, 9.9 & 10
- Assess your ship's manoeuvrability and recovery capability in the prevailing conditions – sections 7 & 9.3.1-3
- Prepare to launch rescue craft, if conditions permit – section 8.2-4
- Prepare to receive craft and/or people alongside – sections 7.6 & 8.5-7
- Think about your best approach – section 7.5
- Determine the priorities – sections 3.2.2, 3.5.2 & 9.6
- Advise RCC and/or OSC of your arrival and capabilities

#### During the recovery operation

- Continue to assess the priorities
- Continue your risk assessment, including your own ongoing recovery capability, the survival chances of those not yet recovered, and the availability of other recovery resources
- Keep RCC and/or OSC advised of your progress and future capability.

\*\*\*



## ANNEX 18

### DRAFT REVISED TEXT FOR RENUMBERED CHAPTERS 9 (SAFETY OF NAVIGATION) AND 10 (COMMUNICATION) OF THE DRAFT POLAR CODE

#### CHAPTER 9 – SAFETY OF NAVIGATION

##### 9.1 Goal

The goal of this chapter is to provide for safe navigation.

##### 9.2 Functional requirements

In order to achieve the goal set out in paragraph 9.1 above, the following functional requirements are embodied in the regulations of this chapter.

###### 9.2.1 *Nautical information*

Ships shall have the ability to receive up-to-date information including ice information for safe navigation.

###### 9.2.2 *Navigational equipment functionality*

9.2.2.1 The navigational equipment and systems shall be designed, constructed, and installed to retain their functionality under the expected environmental conditions in the area of operation.

9.2.2.2 Systems for providing reference headings and position fixing shall be suitable for the intended areas.

###### 9.2.3 *Additional navigational equipment*

9.2.3.1 Ships shall have the ability to visually detect ice when operating in darkness.

9.2.3.2 Ships involved in operations with an icebreaker escort shall have suitable means to indicate when the ship is stopped.

##### 9.3 Regulations

###### 9.3.1 *Nautical information*

9.3.1.1 In order to comply with the functional requirement of paragraph 9.2.1 above, ships shall have means of receiving and displaying current information on ice conditions in the area of operation.

###### 9.3.2 *Navigational equipment functionality*

9.3.2.1 In order to comply with the functional requirement of paragraph 9.2.2.1 above, the following apply:

- .1 ships shall have either two independent echo-sounding devices or one echo-sounding device with two separate independent transducers;
- .2 ships shall comply with SOLAS regulation V/22.1.9.4, irrespective of the date of construction and the size and, depending on the bridge configuration, a clear view astern;

- .3 means to prevent the accumulation of ice on antennas required for navigation and communication shall be provided;
- .4 In addition, for ships ice strengthened in accordance with chapter 3, the following apply:
  - .1 where equipment required by SOLAS chapter V or this chapter have sensors that project below the hull, such sensors shall be protected against ice; and
  - .2 in category A and B ships [constructed on or after [date]] the bridge wings shall be enclosed or designed to protect navigational equipment and operating personnel.

9.3.2.2 In order to comply with the functional requirement of paragraph 9.2.2.2 above, the following apply:

- .1 ships shall have two non-magnetic means to determine and display their heading. Both means shall be independent and shall be connected to the ship's main and emergency source of power; and
- .2 ships proceeding to latitudes over 80 degrees shall be fitted with at least one GNSS compass or equivalent, which shall be connected to the ship's main and emergency source of power.

### **9.3.3 Additional navigational equipment**

9.3.3.1 In order to comply with the functional requirement of paragraph 9.2.3.1 ships, with the exception of those solely operating in areas with 24 hours day light, shall be equipped with two remotely rotatable, narrow-beam search lights controllable from the bridge to provide lighting over an arc of 360 degrees, or other means to visually detect ice.

9.3.3.2 In order to comply with the functional requirement of paragraph 9.2.3.2, ships involved in operations with an icebreaker escort shall be equipped with a manually initiated flashing red light visible from astern to indicate when the ship is stopped. This light shall have a range of visibility of at least two (2) nautical miles, and the horizontal and vertical arcs of visibility shall conform to the stern light specifications required by the International Regulations for Preventing Collisions at Sea.

## **CHAPTER 10 – COMMUNICATION**

### **10.1 Goal**

The goal of this chapter is to provide for effective communication for ships and survival craft during normal operation and in emergency situations.

### **10.2 Functional requirements**

In order to achieve the goal set out in 10.1 above, the following functional requirements are embodied in the regulations of this chapter:

### **10.2.1 Ship communication**

10.2.1.1 Two-way voice and/or data communications ship-to-ship and ship-to-shore shall be available at all points along the intended operating routes; and

10.2.1.2 Suitable means of communications shall be provided where escort and convoy operations are expected;

10.2.1.3 Means for two-way on-scene and SAR coordination communications for search and rescue purposes including aeronautical frequencies shall be provided; and

10.2.1.4 Appropriate communication equipment to enable telemedical assistance in polar areas shall be provided.

### **10.2.2 Survival craft and rescue boat communications capabilities**

10.2.2.1 For ships intended to operate in low air temperature, all rescue boats and lifeboats, whenever released for evacuation, shall maintain capability for distress alerting, locating and on-scene communications; and

10.2.2.2 For ships intended to operate in low air temperature, all other survival craft, whenever released, shall maintain capability for transmitting signals for location and for communication.

10.2.2.3 Mandatory communication equipment for use in survival craft (including liferafts) and rescue boats shall be capable of operation during the maximum expected time of rescue.

## **10.3 Regulations**

### **10.3.1 Ship communication**

10.3.1.1 In order to comply with the functional requirements of paragraph 10.2.1.1 above, communication equipment on board shall have the capabilities for ship-to-ship and ship-to-shore communication, taking into account the limitations of communications systems in high latitudes and the anticipated low temperature.

10.3.1.2 In order to comply with the functional requirements of paragraph 10.2.1.2 above, ships intended to provide icebreaking escort shall be equipped with a sound signaling system mounted to face astern to indicate escort and emergency manoeuvres to following ships as described in the International Code of Signals.

10.3.1.3 In order to comply with the functional requirements of paragraph 10.2.1.3 above, two-way on-scene and SAR coordination communication capability in ships shall include:

- .1 voice and/or data communications with relevant rescue coordination centres; and
- .2 equipment for voice communications with aircraft on 121.5 and 123.1 MHz.

10.3.1.4 In order to comply with the functional requirements of paragraph 10.2.1.4 above, the communication equipment shall provide for two-way voice and data communication with a Telemedical Assistance Service (TMAS).

### **10.3.2 *Survival craft and rescue boat communications capabilities***

10.3.2.1 For ships intended to operate in low air temperature, in order to comply with the functional requirements of paragraph 10.2.2.1 above, all rescue boats and lifeboats, whenever released for evacuation, shall:

- .1 for distress alerting, carry one device for transmitting ship to shore alerts;
- .2 in order to be located, carry one device for transmitting signals for location;
- .3 for on-scene communications, carry one device for transmitting and receiving on-scene communications.

10.3.2.2 For ships intended to operate in low air temperature, in order to comply with the functional requirements of paragraph 10.2.2.2 above, all other survival craft shall:

- .1 in order to be located, carry one device for transmitting signals for location;  
and
- .2 for on-scene communications, carry one device for transmitting and receiving on-scene communications.

10.3.2.3 In order to comply with the functional requirements of paragraph 10.2.2.3 above, the following shall apply:

- .1 Recognizing the limitations arising from battery life, procedures shall be developed and implemented such that mandatory communication equipment for use in survival craft (including liferafts) and rescue boats are available for operation during the maximum expected time of rescue.

\*\*\*

**ANNEX 19**

**DRAFT REVISIONS TO SECTIONS 2.2 (NAVIGATION EQUIPMENT) AND 2.3 (COMMUNICATION EQUIPMENT) OF THE RECORD OF ADDITIONAL EQUIPMENT AND OPERATIONAL LIMITATIONS FOR THE POLAR SHIP CERTIFICATE**

**Record of Additional Equipment and operational limitations for the Polar Ship Certificate<sup>1</sup>**

This record shall be permanently attached to the  
Polar Ships Certificate

RECORD OF EQUIPMENT FOR COMPLIANCE WITH CHAPTER XIV OF  
THE INTERNATIONAL CONVENTION FOR THE SAFETY  
OF LIFE AT SEA, 1974, AS MODIFIED BY THE PROTOCOL  
OF 1988 RELATING THERETO

**1 Particulars of ship:**

Name of ship:.....  
Distinctive number or letters:.....

**2 Record of equipment**

**2.1 Life-saving appliances**

1	Immersion suits with insulation:	.....
1.1	for crew	.....
1.2	for passengers	.....
2	Thermal protective aids	.....
3	Personal and Group Survival Equipment	.....
3.1	Personal survival equipment – for number of persons	.....
3.2	Group survival equipment – for number persons	.....
[3.3	Capacity of liferafts in compliance with chapter 9 of the Code	.....
3.4	Capacity of lifeboats in compliance with chapter 9 of the Code]	.....

<sup>1</sup> This equipment is in addition to other equipment required under the SOLAS Convention and recorded under the relevant SOLAS certificates.

**2.2 Navigation equipment**

1	Two independent echo-sounding devices or a device with two separate independent transducers	.....
2	Remotely rotatable, narrow-beam search lights controllable from the bridge or other means to visually detect ice – Yes/No	.....
3	Manually initiated flashing red light visible from astern (for ships involved in icebreaking operations) – Yes/No <sup>1</sup>	.....
4	Two or more non-magnetic independent means to determine and display heading – Yes/No <sup>1</sup>	.....
5	GNSS compass or equivalent (for ships proceeding to latitudes over 80 degrees) – Yes/No <sup>1</sup>	.....

**2.3 Communication equipment**

1	For ships intended to provide ice breaking escort: sound signaling system mounted to face astern to indicate escort and emergency manoeuvres to following ships as described in the International Code of Signals.	.....
2	Voice and/or data communications with relevant rescue coordination centres.	.....
3	Equipment for voice communications with aircraft on 121.5 and 123.1 MHz.	.....
4	Two-way voice and data communication with a Telemedical Assistance Service (TMAS).	.....
5	For ships certified to operate in low air temperature: All rescue boats and lifeboats, whenever released for evacuation, have:	
	.1 one device for transmitting vessel to shore alerts;	.....
	.2 one device for transmitting signals for location;	.....
	.3 one device for transmitting and receiving on-scene communications.	.....
6	All other survival craft have:	
	.1 one device for transmitting signals for location; and	.....
	.2 one device for transmitting and receiving on-scene communications.	.....



THIS IS TO CERTIFY that this Record is correct in all respects

Issued at.....  
*(Place of issue of the Record)*

.....  
*(Date of issue)*  
Record)

.....  
*(Signature of duly authorized official issuing the*

*(Seal or stamp of the issuing authority, as appropriate)*

**Record of Operational limitations**

[intentionally kept blank]

\*\*\*



## ANNEX 20

### DRAFT ADDITIONAL GUIDANCE ON RENUMBERED CHAPTERS 9 (SAFETY OF NAVIGATION) AND 10 (COMMUNICATION) FOR POSSIBLE INCLUSION IN PART I-B OF THE DRAFT POLAR CODE

#### Additional guidance to chapter 9 (Safety of navigation)

Ships should be fitted with:

- .1 a suitable means to de-ice sufficient conning position windows to provide unimpaired forward and astern vision from conning positions; and
- .2 an efficient means of clearing melted ice, freezing rain, snow, mist and spray from outside and accumulated condensation from inside. A mechanical means to clear moisture from the outside face of a window should have operating mechanisms protected from freezing or the accumulation of ice that would impair effective operation.

#### Additional guidance to chapter 10 (Communication)

##### 1 Limitations of communication systems in high latitude

Current maritime digital communication systems were not designed to cover Polar waters.

VHF is still largely used for communication at sea, but only over short distances (line of sight) and normally only for voice communication. HF and MF are also used for emergency situations. Digital VHF, mobile phone systems and other types of wireless technology offer enough digital capacity for many maritime applications, but only to ships within sight of shore-based stations, and are, therefore, not generally available in polar waters. AIS could also be used for low data-rate communication, but there are very few base stations, and the satellite-based AIS system is designed for data reception only.

The theoretical limit of coverage for GEO systems is 81.3° north or south, but instability and signal dropouts can occur at latitudes as low as 70° north or south under certain conditions. Many factors influence the quality of service offered by GEO systems, and they have different effects depending on the system design.

Non-GMDSS systems may be available and may be effective for communication in polar waters.

##### 2 Advice for the operation of multiple alerting and communication devices in the event of an incident

A procedure should be developed to ensure that when survival craft are in close proximity, not more than two alerting or locating devices are activated (as required by regulation 10.3.2) at the same time. This is to:

- .1 Preserve battery life;

- .2 Enable extended periods of time for the transmission of alerting or locating signals; and
  - .3 Avoid potential interference.
- 3 For satellite distress beacons, although multiple beacon transmissions can be detected successfully by the satellite system, it is not recommended to activate multiple beacons, unless the survival craft operating the beacons are widely dispersed, as this can cause interference on direction-finding equipment.
- 4 Advice on location and communication equipment to be carried by rescue boats and survival craft

In determining the equipment to be carried for transmitting signals for location, the capabilities of the search and rescue resources likely to respond should be borne in mind. Responding ships and aircraft may not be able to home to 406/121.5 MHz, in which case other locating devices (e.g. AIS-SART) should be considered.

\*\*\*

**ANNEX 21**

**DRAFT MSC CIRCULAR**

**UNIFIED INTERPRETATIONS OF SOLAS REGULATION V/23.3.3**

1 The Maritime Safety Committee, at its [ninety-fourth session (17 to 21 November 2014)], approved a unified interpretation of SOLAS regulation V/23.3.3.2 on Pilot transfer arrangements, prepared by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its first session, as set out in the annex.

2 Member Governments are invited to use the unified interpretations as guidance when applying the relevant provisions of SOLAS regulation V/23.3.3 for pilot transfer equipment and arrangements and to bring them to the attention of all parties concerned.

ANNEX

**UNIFIED INTERPRETATIONS OF SOLAS REGULATION V/23.3.3**

**SOLAS regulation V/23.3.3 states:**

*Safe and convenient access to, and egress from, the ship shall be provided by either:*

- .1 a pilot ladder requiring a climb of not less than 1.5 m and not more than 9 m above the surface of the water so positioned and secured that:*
  - .1.4 the single length of pilot ladder is capable of reaching the water from the point of access to, or egress from, the ship and due allowance is made for all conditions of loading and trim of the ship, and for an adverse list of 15°; the securing strong point, shackles and securing ropes shall be at least as strong as the side ropes; or*
- .2 an accommodation ladder in conjunction with the pilot ladder (i.e. a combination arrangement), or other equally safe and convenient means, whenever the distance from the surface of the water to the point of access to the ship is more than 9 m.*

**Interpretation**

Sub-paragraphs 1 and 2 of SOLAS regulation V/23.3.3. address two different and distinct arrangements – the former when only a pilot ladder is provided; the latter when a combined arrangement of "an accommodation ladder used in conjunction with the pilot ladder" is provided.

1 SOLAS regulation V/23.3.3.1 limits the climb to not more than 9 m on a single ladder. If only a pilot ladder is to be used, the maximum height of 9 m from the "safe and convenient access to, and egress from, the ship" to the surface of the water is to include consideration of an adverse list of 15°.

2 SOLAS regulation V/23.3.3.2 and section 3 of resolution A.1045(27) applies to a combined arrangement of "an accommodation ladder used in conjunction with the pilot ladder" for "Safe and convenient access to, and egress from, the ship" for which a 15° list requirement does not apply.

3 Member Governments are invited to use the unified interpretations provided in paragraphs 1 and 2 above as guidance when applying the relevant provisions of SOLAS regulation V/23.3.3 for pilot transfer equipment and arrangements and to bring them to the attention of all parties concerned.

\*\*\*

**ANNEX 22**

**DRAFT MSC CIRCULAR**

**UNIFIED INTERPRETATIONS PERTAINING TO COMPLETION OF ITEMS 2.1 AND 2.2 OF PART 3 OF THE FORM E AND ITEMS 2.1 AND 2.2 OF PART 5 OF FORMS P AND C**

1 The Maritime Safety Committee, at its [ninety-fourth session (17 to 21 November 2014)], approved a unified interpretation on Completion of items 2.1 and 2.2 of Part 3 of the Form E and items 2.1 and 2.2 of Part 5 of Forms P and C, prepared by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its first session, as set out in the annex.

2 Member Governments are invited to bring them to the attention of all parties concerned.

ANNEX

**UNIFIED INTERPRETATIONS PERTAINING TO COMPLETION OF ITEMS 2.1 AND 2.2 OF PART 3 OF THE FORM E AND ITEMS 2.1 AND 2.2 OF PART 5 OF FORMS P AND C**

**SOLAS regulation V/19.2.1.4**

*All ships, irrespective of size, shall have ... nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. An electronic chart display and information system (ECDIS) is also accepted as meeting the chart carriage requirements of this subparagraph. Ships to which paragraph 2.10 applies shall comply with the carriage requirements for ECDIS detailed therein;*

**SOLAS regulation V/27**

*Nautical charts and nautical publications, such as sailing directions, lists of lights, notices to mariners, tide tables and all other nautical publications necessary for the intended voyage, shall be adequate and up to date.*

**Record of Equipment for the Cargo Ship Safety Equipment Certificate (Form E) – Part 3 Details of navigational systems and equipment**

<i>Item</i>	<i>Actual provision</i>
2.1 Nautical charts/Electronic chart display and information system (ECDIS) <sup>2</sup>	
2.2 Back-up arrangements for ECDIS	

<sup>2</sup> Delete as appropriate

**Record of Equipment for the Passenger Ship Safety Certificate (Form P) and Record of Equipment for the Cargo Ship Safety Certificate (Form C) – Part 5 Details of navigational systems and equipment**

<i>Item</i>	<i>Actual provision</i>
2.1 Nautical charts/Electronic chart display and information system (ECDIS) <sup>3</sup>	
2.2 Back-up arrangements for ECDIS	

<sup>3</sup> Delete as appropriate

**Interpretation**

Items 2.1 and 2.2 of Part 3 of the Form E and items 2.1 and 2.2 of Part 5 of Forms P and C shall be completed according to the following scenarios:

**1. Nautical Charts only**

<i>Item</i>	<i>Actual provision</i>
2.1 Nautical charts/Electronic chart display and information system (ECDIS)	" Provided"
2.2 Back-up arrangements for ECDIS	" - "



**2. Two ECDIS only (no nautical charts)**

<i>Item</i>	<i>Actual provision</i>
2.1 <del>Nautical charts</del> /Electronic chart display and information system (ECDIS)	"Provided"
2.2 Back-up arrangements for ECDIS	"ECDIS"

**3. ECDIS + Nautical Charts**

<i>Item</i>	<i>Actual provision</i>
2.1 Nautical charts/Electronic chart display and information system (ECDIS)	"Both provided"
2.2 Back-up arrangements for ECDIS	"ECDIS" or "Nautical Charts"*

\* Enter as appropriate.

**Or**

2.1 <del>Nautical charts</del> /Electronic chart display and information system (ECDIS)	"Provided"
2.2 Back-up arrangements for ECDIS	"Nautical Charts"

**NOTES:**

- 1 The ship's management is responsible to determine what form of charts is to be used onboard as the primary means of navigation. Where paper charts are used as the primary means of navigation then they may also be regarded as the ECDIS back-up arrangements.
- 2 Paper charts or ECDIS provided as the "back-up arrangement" may be used alternatively with the primary ECDIS, and not be limited to use only when the primary ECDIS is inoperable.

\*\*\*



**ANNEX 23**

**PROPOSED BIENNIAL STATUS REPORT OF THE SUB-COMMITTEE  
FOR THE 2014-2015 BIENNIUM**

<b>SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)</b>								
<b>Planned output number</b>	<b>Description</b>	<b>Target completion year</b>	<b>Parent organ(s)</b>	<b>Coordinating organ(s)</b>	<b>Associated organ(s)</b>	<b>Status of output for Year 1</b>	<b>Status of output for Year 2</b>	<b>References</b>
1.1.2.2	Response to matters related to the Radiocommunication ITU R Study Group and ITU World Radiocommunication Conference	Annual	MSC		NCSR	In progress		
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC / MEPC		III / PPR / CCC / SDC / SSE / NCSR	Continuous		MSC 78/26, paragraph 22.12
1.3.4.1	Amendments to the IAMSAR Manual	Continuous	MSC		NCSR	Continuous		
2.0.3.1	Further development of the Global SAR Plan for the provision of maritime SAR services	2015	MSC		NCSR	In progress		
2.0.3.2	Annual list of IMO documents and publications to be held by MRCCs	Annual	MSC		NCSR	In progress		Delete, as this work is undertaken under 2.0.3.3
Notes: This work is always carried out as regular work under planned output 2.0.3.3 and hence can be deleted.								
2.0.3.3	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters	2014 2015	MSC		NCSR	Postponed		
Notes: Extension for this output is requested as work related to this planned output has been tasked to the ICAO/IMO Joint Working Group by NCSR 1.								

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
2.0.3.4	Procedures for routing distress information in the GMDSS	2015	MSC		NCSR	In progress		
5.1.2.2	Measures to protect the safety of persons rescued at sea	2014	MSC / FAL	NCSR	III	Postponed		MSC 84/24, paragraph 22.25
Notes: Move to post-biennial agenda with 2 sessions for completion.								
5.2.1.3	Review of general cargo ship safety	2014 2015	MSC		III / SDC / NCSR / HTW	Postponed		MSC 90/28, paragraph 25.10
Notes: The NCSR Sub-Committee has not been involved in this planned output yet.								
5.2.1.15	Mandatory Code for ships operating in polar waters	2015	MSC / MEPC	SDC	HTW / PPR / SSE / NCSR	In progress		MSC 86/26, paragraph 23.32 MSC 93/22, paragraph 10.44
Notes: The work on this output from the Sub-Committee's perspective has been completed.								
5.2.1.16	Non mandatory instrument on regulations for non-convention ships	2015	MSC	III	PPR / SDC / SSE / NCSR / HTW	In progress		MSC 92/26, section 12
5.2.1.23	Guidelines for wing-in-ground craft	2015	MSC	SDC	SSE / NCSR / HTW	In progress		MSC 88/26, paragraph 23.30
5.2.2.11 (UO)	Recognition of Galileo as a component of the WWRNS	2015			NCSR	Not on agenda		MSC 93/22, paragraph 20.22.1
Notes: Unplanned output agreed by MSC 93 - and endorsed by C 112 - TCY 2016								
5.2.4.1	Routing measures and mandatory ship reporting systems	Continuous	MSC		NCSR	Continuous		
5.2.4.2	Updates to the LRIT system	Continuous	MSC		NCSR	Continuous		

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.4.3	New symbols for AIS aids to navigation	2014	MSC		NCSR	Completed at NAV 59		
Notes: This planned output was already completed at NAV 59.								
5.2.4.4	Revised guidelines for the on board operational use of shipborne automatic identification systems (AIS)	2014	MSC		NCSR	Completed		
5.2.4.5	Consolidation of ECDIS-related IMO circulars	2014	MSC	NCSR	HTW	Completed		
Notes: The draft circular has been sent to HTW 2 for review and consequential forwarding to MSC 95 for approval.								
5.2.4.6	Explanatory footnotes to SOLAS regulations V/15, V/18, V/19 and V/27	2014	MSC		NCSR	Completed		MSC 90/28, paragraph 25.27
5.2.4.7	Approved satellite navigation system "BeiDou" in the maritime field	2014	MSC		NCSR	Completed		MSC 91/22, paragraph 19.20
5.2.4.8	Guidelines on the carriage of ECDIS	2014	MSC		NCSR	Completed		
5.2.4.9	Performance standards for multi-system shipborne navigation systems	2015	MSC		NCSR	In progress		
5.2.5.1	Guidelines on MSI (maritime safety information) provisions	Continuous	MSC		NCSR	Continuous		
5.2.5.2	First outline of the Detailed Review of the Global Maritime Distress and Safety System	2015	MSC	NCSR	HTW	In progress		MSC 90/28, paragraph 25.18

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
	(GMDSS)							
5.2.5.3	Analysis of developments in maritime radiocommunication systems and technology	2014 2015	MSC		NCSR	Postponed		
Notes: NCSR 1, while recognizing that it is very important to consider developments in maritime radiocommunication systems and technology and that further proposals might be submitted, has requested for extension.								
5.2.5.4	Analysis of information on developments in Inmarsat and Cospas-Sarsat	Continuous	MSC		NCSR	Continuous		
5.2.6.1	E-navigation strategy implementation plan	2015	MSC	NCSR	HTW	In progress		
7.1.2.2	Designated Special Areas and PSSAs and their associated protective measures	Continuous	MEPC		NCSR	Continuous		
12.1.2.1	Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC / MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR	No work requested of organ by parent		MSC 92/26, paragraph 22.29

OUTPUTS ON THE COMMITTEE'S POST-BIENNIAL AGENDA THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
ACCEPTED POST-BIENNIAL OUTPUTS								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to High-level Actions	Description	Parent organ(s)	Coordinating organs(s)	Associated organ(s)	Timescale (sessions)	References
38	2012-2013	5.2.5	Approval of the modernization plan of the Global Maritime Distress and Safety System (GMDSS)	MSC	NCSR	HTW	2	MSC 90/28, paragraph 25.18
42	2012-2013	5.2.1	Review of the 2009 Code on Alerts and Indicators	MSC	SDC	NCSR	2	MSC 89/25, paragraph 22.25
68	2012-2013	5.2.4	Interconnection of NAVTEX and Inmarsat SafetyNET receivers and their display on Integrated Navigation Display Systems	MSC		NCSR	1	MSC 92/WP.1, paragraph 23.13
74	2014-2015	5.2.2	Recognition of Galileo as a component of the WWRNS	MSC		NCSR	1	Output 5.2.2.11
75	2014-2015	5.1.1	Amendments to SOLAS chapter II 1, part B-4, Stability Management, and associated guidelines, to include requirements on damage control drills for passenger ships	MSC	SDC	NCSR	1	Output 5.1.1.6
	2014-2015	5.1.2	Measures to protect the safety of persons rescued at sea	MSC/FAL	NCSR	NCSR	2	Output 5.1.2.2

\*\*\*





## ANNEX 24

### PROPOSED PROVISIONAL AGENDA FOR NCSR 2\*

- Opening of the session
- 1 Adoption of the agenda
  - 2 Decisions of other IMO bodies
  - 3 Routeing measures and mandatory ship reporting systems (5.2.4.1)
  - 4 Recognition of Galileo as a component of the WWRNS (5.2.2.11 UO)
  - 5 Updates to the LRIT system (5.2.4.2)
  - 6 E-navigation strategy implementation plan (5.2.6.1)
  - 7 Performance standards for multi-system shipborne navigation systems (5.2.4.9)
  - 8 Analysis of developments in maritime radiocommunication systems and technology (5.2.5.3)
  - 9 First outline of the Detailed Review of the Global Maritime Distress and Safety System (GMDSS) (5.2.5.2)
  - 10 Further development of the GMDSS master plan on shore-based facilities (n/a)
  - 11 Guidelines on MSI (maritime safety information) provisions (5.2.5.1)
  - 12 Response to matters related to the Radiocommunication ITU R Study Group (1.1.2.2)
  - 13 Response to matters related to ITU World Radiocommunication Conference (1.1.2.2)
  - 14 Analysis of information on developments in Inmarsat and Cospas-Sarsat (5.2.5.4)
  - 15 Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters (2.0.3.3)
  - 16 Further development of the Global SAR Plan for the provision of maritime SAR services (2.0.3.1)
  - 17 Procedures for routeing distress information in the GMDSS (2.0.3.4)
  - 18 Amendments to the IAMSAR Manual (1.3.4.1)

---

\* Agenda items are aligned with the output titles contained in resolution A.1061(28), including the associated output numbers.

- 19 Unified interpretation of provisions of IMO safety, security, and environment related Conventions (1.1.2.3)
- 20 Biennial agenda and provisional agenda for NCSR 3
- 21 Election of Chairman and Vice-Chairman for 2016
- 22 Any other business
- 23 Report to the Maritime Safety Committee

\*\*\*

## ANNEX 25

### STATEMENTS BY DELEGATIONS\*

#### ITEM 27

#### Statement by the delegation of the United States

#### UNITED STATES STATEMENT CONCERNING DPRK MISSILE LAUNCHES ON 26, 29 JUNE AND 2 JULY 2014

Thank you, Mr. Chairman.

The United States refers to Assembly resolution A.706(17), as amended, which provides guidance on the IMO/IHO World-Wide Navigational Warning Service and to MSC/Circ.893 which appeals to all Member States to abide by resolution A.706(17). By this resolution, member governments are asked to notify the designated coordinators of incidents which might affect the safety of navigation, in order to transmit navigational warning and maritime safety information to the ships in the sea area concerned.

In connection with this resolution, the United States is aware of reports that on 26 June and 2 July, the Democratic People's Republic of Korea (DPRK) conducted missile launches from its east coast. In addition, the United States understands that the DPRK launched two Scud-class ballistic missiles from its southeast coast on 29 June; both missiles flew in an easterly direction and impacted the sea. All launches were conducted without issuing prior notices or warnings consistent with resolution A.706(17). Media reports suggest that the various missiles flew 190 to 500 kilometres. It is unclear how many merchant ships, fishing vessels, or any other types of vessels were operating in or near the vicinity during the time of the reported launches; it is further unclear how many vessels were exposed to the hazard of these missiles.

These incidents are not the first time that the DPRK has launched missiles without giving prior navigational warnings. Earlier this year, and in previous years, the DPRK launched missiles without prior warnings, thereby exposing ships and seafarers to a potentially grave threat. These unannounced missile launches are a serious threat to neighbouring States and to the established order of maritime safety. As such, they are unacceptable to all IMO Member States who have interests in the safe use of the sea.

The United States wishes to take this opportunity to urge all IMO Member States to conduct such exercises consistent with resolution A.706(17). We call on the Democratic People's Republic of Korea to provide adequate notice for all operations that affect the safety of navigation.

Thank you, Mr. Chairman.

---

\* Statements have been included in this annex in the order in which they were given, sorted by agenda items, and in the language of submission (including translation into any other language if such translation was provided). Statements are available in all the official languages on audio file:  
<http://docs.imo.org/Meetings/Media.aspx>

### **Statement by the delegation of the Republic of Korea**

Thank you Mr. Chairman.

The Republic of Korea fully supports the statement of the United States.

Under resolution A.706(17), Member States of IMO are obliged to notify the designated coordinators of incidents which might affect the safety of navigation, including the launch of missiles, in order to transmit navigational warning and maritime safety information to States and ships in the sea area concerned.

This resolution was established to remove threats to navigational safety in international waters before they occur.

However, we understand that the Democratic People's Republic of Korea has launched missiles recently without any prior navigational warnings as set out in resolution A.706(17).

In this context, the Republic of Korea would like to highlight that the Democratic People's Republic of Korea should abide by and implement the resolution for ensuring the safety of ships' navigation.

Moreover, we would like to point out that the missile launch by the DPRK is in violation of international law, for United Nations Security Council resolution 2094 states that the DPRK shall not conduct any launches that use ballistic missile technology.

Thank you Mr. Chairman.

### **Statement by the delegation of Japan**

Thank you, Mr. Chairman,

Japan fully supports the points made by the United States, in respect to the danger to navigation raised by the Democratic People's Republic of Korea's launch of missiles without giving navigational warnings.

Recognizing that such acts should be taken as a serious problem by all IMO Member States from the viewpoint of navigational safety, Japan joins the United States and others in calling on the Democratic People's Republic of Korea to provide adequate advance notice for all operations that affect the safety of navigation, in compliance with the IMO Assembly resolution A.706(17).

Thank you, Mr. Chairman.

**Statement by the delegation of Australia**

THE LAUNCH OF MISSILES WITHOUT GIVING NAVIGATIONAL WARNINGS –  
AUSTRALIAN STATEMENT

Australia supports the statements of the United States, the Republic of Korea and Japan.

The firing of missiles into the sea poses a threat to safety of navigation and life at sea. This risk is dramatically heightened when there is no notification that such a test may occur. Australia is firmly of the view that international shipping and seafarers should not be exposed to such risk. It is an appropriate opportunity to remind Member States of obligations under chapter V of SOLAS and of the need for sufficient notification through the World Wide Navigational Warning Service.

**Statement by the delegation of the Marshall Islands**

(STATEMENT FOLLOWING UNITED STATES, REPUBLIC OF KOREA,  
JAPAN AND AUSTRALIA)

Marshall Islands would support the statements which we have received in this connection, and we would agree with the concerns that any un-notified activities of this nature could have safety implications for shipping and seafarers. We would also note that member governments should abide by and implement the relevant IMO resolutions.

**Statement by the delegation of the Democratic People's Republic of Korea**

"A few days ago, researchers in the field of national defence and workers in the munitions industry field of the Democratic People's Republic of Korea developed and successfully test-fired ultra-modern high-precision tactical guided missiles.

This was followed by successful launching drill of tactical guided missiles by the Strategic Force of the Korean People's Army.

The test-fire and launch of tactical guided missiles that took place at a time when the dangerous war provocation moves of the United States and its allies have reached an extreme phase are the legitimate exercise of the sovereignty that showed in practice that those who infringe upon the sovereignty and the dignity of the country can never get rid of the striking range of various high-precision firepower strike means wherever and whenever they are and whether they are individual or group targets.

The test-fire and launch of tactical guided missiles have conducted under the excellent scientific calculation and have not made any minor affects to the safety of navigation and marine environment."

---