JCOMM/ETMSS TASK TEAM ON MARITIME SAFETY SERVICES FIRST SESSION

Geneva, Switzerland, 9-11 March 2009

FINAL REPORT

JCOMM Meeting Report No. 64

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

JCOMM/ETMSS TASK TEAM ON MARITIME SAFETY SERVICES FIRST SESSION

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NOTES

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GENERAL SUMMARY OF THE WORK OF THE SESSION

1. OPENING OF THE SESSION

1.1 Opening

1.1.1 The first session of the ETMSS Task Team on Maritime Safety Information of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) was opened by the chairperson of Expert Team on Maritime Safety Services (ETMSS), Mr Henri Savina, at 0930 hrs on Monday, 9 March 2009, at the WMO Headquarters, in Geneva, Switzerland. Mr Savina welcomed participants to the session, and invited the Director of the Weather and Disaster Risk Reduction Department (WDS), Dr Geoffrey Love, to address the session.

1.1.2 On behalf of the Secretary-General of the WMO, Mr M. Jarraud, and the Executive Secretary of the IOC, Dr P. Bernal, Dr Love welcomed participants in the JCOMM/ETMSS Task Team on Maritime Safety Information session to the WMO and to Geneva. Dr Love recalled that WMO had been collaborating closely with the International Maritime Organization (IMO), in ensuring that the best and the most comprehensive meteorological services are provided to meet the needs of mariners, wherever they may find themselves over the worlds' oceans. He noted that these services are made freely available to all maritime users by NMHSs within the context of the International Convention for the Safety of Life at Sea (SOLAS).

1.1.3 Dr Love also recalled that the JCOMM, and its predecessor, the WMO Commission for Marine Meteorology (CMM), had a long-standing programme activity relating to the provision of marine meteorological forecasts and warnings through the WMO Marine Broadcast System for the Global Maritime Distress and Safety System (GMDSS), including technical regulations to assist NMHSs in fulfilling their service obligations. He noted that when the existing WMO Marine Broadcast System was decided upon, marine meteorological services for Maritime Safety Information (MSI) broadcast facilities were not envisaged for the Polar Regions, and as the opening of the Northern Sea Route for international shipping increases, the gaps and the problems with availability, harmonization and standardization of appropriate marine meteorological services for MSI broadcasts, including sea ice, for SOLAS and non-SOLAS ships were expected to build up. Dr Love expressed his appreciation to the Team addressing these issues during the meeting.

1.1.4 Dr Love noted that for its World Maritime Day, to be celebrated on 24 September 2009, IMO had selected the theme: " Climate change: a challenge for IMO too!" He pointed out that this was indeed a vital and challenging theme for all, since it provides an opportunity to focus upon the past and the present environmental work, and contributes to the efforts being made by the rest of the international community for the protection and the preservation of our common environment. Dr Love assured participants of the full support of his staff and concluded by wishing everyone a successful meeting and an enjoyable stay in Geneva.

1.1.5 Mr Savina noted that this was the first meeting of the core members of the ETMSS, and pointed out the importance of reinforcing such a practice. He listed the main issues of the agenda to be discussed during the meeting, including: the provision of MSI for Polar Regions; the link of the GMDSS web site with the WIS; the information in graphical/numeric form, Quality Management Systems (QMS), and the future Terms of Reference and membership of the ETMSS and frequency of the meetings.

1.1.6 The list of participants in the session is provided in Annex I.

1.2 Adoption of the agenda

1.2.1 The Team adopted its agenda for the session based on the provisional agenda that had been prepared by the Secretariat. This agenda is provided in Annex II.

1.3 Working arrangements

1.3.1 The Team agreed its hours of work and other practical arrangements for the session. The documents were presented by the Secretariat, and the participants introduced themselves, to facilitate interactions throughout the session.

2. Guidance and requirements from WMO and IOC Executive Body sessions: Impacts on ETMSS activities and priorities

2.1 The Team was informed of decisions, priorities and emerging topics relevant to ETMSS raised during the last session of the WMO Executive Council (Geneva, June 2008). The Team noted that some issues have already been undertaken by ETMSS, however, there were a few requests still not addressed by the Team. The Team identified five major activities aligned mainly with the WMO Expected Result 7 (*Enhance the Capability of Members to Provide and Use Weather and Climate, Water and Environmental Applications and Services*), which needed to be initiated or kept going under ETMSS, as follows:

- User-focused services;
- Expansion of the GMDSS into the Arctic waters;
- GMDSS-weather web site;
- Graphical/numerical products;
- Quality Management Systems (QMS).

2.2 The Team noted that JCOMM had already engaged in the QMF activities related to observations and data management best practices and standards, and that the Inter-Commission Task Team on Quality Management Framework (ICTT-QMF), in its meeting in October 2008, agreed that Quality Management Systems for marine services would be required. The Team stressed that guidelines on the development and the implementation process, particularly those developed for aeronautic meteorology, would be extremely useful. It therefore, requested the Secretariat to make available existing documentation on this issue **(Action: Secretariat to make available existing documentation on Quality Management Framework, including those documents developed for aeronautic meteorology; ASAP)**.

2.3 The Team noted that some NMHSs had been implementing Quality Management Systems for marine services, and that Météo-France and the UK Hydrographic Office were already ISO certified. It therefore agreed on the need to document the existing practices. The Team requested (1) the IMO/IHO representative to provide any relevant documentation on QMS that the UK Hydrographic Office would be able to share with WMO Secretariat and ETMSS members **(Action: IMO/IHO representative to make available existing documentation on QMS implemented by the UK Hydrographic Office; ASAP)** and (2) the Team members to make available any relevant documents on the provision of marine meteorological services implemented by the NMHSs **(Action: Team members to make available existing documentation on QMS implemented by NMHSs; ASAP)**.

2.4 The Team noted that WMO had obtained the status of a Standardizing Organization in the field of meteorology and related activities. It noted that this status would enable Members to use the WMO technical publications in the same way as ISO documents in their quest for ISO 9000 certification. In this connection, the Team emphasized the need for adjusting the WMO mandatory publications, in particular the *Manual on Marine Meteorological Services* (WMO-No. 558), the *Guide on Marine Meteorological Services* (WMO-No. 471) and *Weather Reporting - Information for Shipping* (WMO-N° 9, Volume D), to Quality Management System (QMS) requirements and preparing and publishing the necessary updates.

2.5 The Team agreed to address the topics presented in paragraph 2.1 of this report under specific agenda items.

3. Reports

3.1 Progress/activity report from the chairperson

3.1.1 The Chairperson summarized the main achievements since the previous session of the ETMSS, and in particular:

- Expansion of the GMDSS into the Arctic waters – the ETMSS chairperson, in coordination and collaboration with the WMO Secretariat, had contributed to the work of the IMO/IHO/WMO Correspondence Group on Arctic MSI services, and had begun to assist Arctic METAREA Issuing Services in developing their own operation plan and timelines for the implementation of operational services. However, the implementation of operational service is still to be organized by the Issuing Services within the next 2 years, with the support and coordination of the WMO Secretariat and the ETMSS. The estimated date for IMO, IHO and WMO to simultaneously, and officially declare the system fully operational is 2010/2011.

- Update and implementation of the WMO and the joint IMO/IHO/WMO regulation material – the WMO mandatory publications, in particular the *Manual on Marine Meteorological Services* (WMO-No. 558) and the *Guide on Marine Meteorological Services* (WMO-No. 471) had been updated. The ETMSS chairperson, a member of the Team, Mr Nick Ashton (UK), and the WMO Secretariat had been deeply involved in the documentation review process of the IMO and the IHO. The progress of this work is summarized below:

  - ✓ IMO resolutions A705(17) (Promulgation of Maritime Safety Information) and A706(17) (IMO/IHO World-Wide Navigational Warning Service) were updated. The WMO Executive Council endorsed the proposed new IMO resolutions before submission to IMO/COMSAR-12 in April 2008. These resolutions were adopted by IMO/MSC-85 in November/December 2008.

  - ✓ The new version of the joint IMO/IHO/WMO Manual on MSI, endorsed by the WMO Secretary-General in October 2008, was submitted to COMSAR-13 in January 2009. The Sub-Committee approved the document with some editorial changes, and sent it to IMO/MSC-86 in May/June 2009 for adoption. This new version contains an updated section on met-ocean MSI (section 8), amendments endorsed for WMO-No. 558. This document includes also an updated METAREA map with the new Arctic areas.

  - ✓ The draft new version of the SafetyNET Manual was discussed during the 7th WWNWS documentation review meeting. Due to the large amount of structural and formatting changes agreed, the final text will not be ready before April 2009. The document will be finalized during the next session of PRNW in August 2009. It will then have to be approved by the IHO Member States and the WMO Executive Council before submission to COMSAR-14 in 2010.

- Maintenance and evolution of the GMDSS-weather web site (http://weather.gmdss.org) – thanks to the contribution of all Issuing Services, especially Météo-France, who was managing and hosting this website, the first version had been in operation for more than 4 years. Since the ETMSS-II (Angra dos Reis, Brazil, January 2007), the web site had been upgraded, currently integrating some products prepared for the International NAVTEX dissemination and all available links to the NAVAREA web sites.

3.1.2 The Chairperson also stressed that there were some activities still pending and requiring action by the Team before JCOMM-III. These include:

- Expansion of the GMDSS into the Arctic waters – the implementation plans and timelines for each Arctic METAREA should be presented at JCOMM-III. The Team requested its members, foremost the GMDSS focal points of USA, UK and France, to assist and provide technical support to the Arctic METAREA Issuing Services in preparing their implementation plans and timelines **(Action: the GMDSS focal points of USA, UK and France to assist and provide technical support to the Arctic METAREA Issuing Services in preparing their implementation plans and timelines; Ongoing, to be presented in JCOMM-III)**.

- Update and implementation of the WMO and the joint IMO/IHO/WMO regulation material – the Team requested the ETMSS chairperson, Mr Nick Ashton (UK), and the WMO Secretariat to continue being engaged in the process of updating the joint IMO/IHO/WMO regulatory documentation, and to define a common list of abbreviations for the NAVTEX and include it in these publications **(Action: the ETMSS chairperson, Mr Nick Ashton (UK), and the WMO Secretariat to continue engaged in the process of updating the joint IMO/IHO/WMO regulatory documentation, and to define a common list of abbreviations for the NAVTEX and include it in the joint IMO/IHO/WMO publications; Ongoing)**. It also requested the IMO, IHO and WMO Secretariat to clarify the definition of NAV/METAREAs boundaries and limits **(Action: IMO, IHO and WMO Secretariat to clarify the definition of NAV/METAREAs boundaries and limits; ASAP)**. In addition, the Team requested the Canadian and USA Issuing Services, in consultation with the NAVAREA IV Coordinator, to clarify the responsibility to prepare and issue met-ocean MSI for the Hudson Bay **(Action: Canada and USA Issuing Services, in consultation with the NAVAREA IV Coordinator, to clarify the responsibility to prepare and issue met-ocean MSI for the Hudson Bay; ASAP)**.

- Evolution of the GMDSS-weather web site (http://weather.gmdss.org) – the Team endorsed the continuous integration of the met-ocean MSI for the International NAVTEX dissemination in the GMDSS-weather web site, and requested its members and the WMO Secretariat to provide to Météo-France the GTS headers for these products **(Action: Team members and WMO Secretariat to provide to Météo-France the GTS headers of products being disseminated by the International NAVTEX; ASAP)**.

- Quality Control of the Marine Meteorological Services – the Team reviewed the marine Meteorological Services Monitoring questionnaire under the agenda item 7.2 and requested the WMO Secretariat to immediately distribute the questionnaire, in order to be able to present the results to JCOMM-III **(Action: WMO Secretariat to distribute the questionnaire as soon as possible, in order to be able to present the results to JCOMM-III; Immediately)**.

3.1.3 The Team reviewed the tables containing the ETMSS tentative work plan for the next intersessional period and agreed to address it again under the relevant agenda items. The proposed ETMSS work plan for the next intersessional period is provided in Annex III, which would be reviewed by the fourth session of the Services Programme Area Coordination Group (Geneva, Switzerland, 11-13 March 2009). Taking into account the current and future responsibilities of the METAREA Issuing Services, the Team recognized the need to raise their visibility and review their Terms of Reference (ToR) by enhancing their responsibilities. The Team therefore requested the WMO Secretariat and the ETMSS chairperson, to prepare a first draft of a formal Recommendation to be presented at JCOMM-III, reviewing the ToR of the Issuing Services in order to introduce the concept of METAREA coordinators, and to circulate among the Team members and representatives of IMO and IHO, this draft Recommendation for comments and review **(Action:**

WMO Secretariat and the ETMSS chairperson to prepare a first draft of a formal Recommendation to be presented at JCOMM-III, reviewing the ToR of the Issuing Services in order to introduce the concept of METAREA coordinators / To circulate among the Team members and representatives of IMO and IHO, this draft Recommendation for comments and review; mid-April 2009/mid-May 2009).

3.2 IMO and IHO Reports

3.2.1 The chairperson of the IMO International NAVTEX Coordinating Panel, Mr Tim Sewell, presented on behalf of Mr Peter Doherty, the chairperson of the IMO International SafetyNET Coordinating Panel, and on his own, a summary of the most significant issues raised at IMO/COMSAR and IHO/PRNW meetings regarding the state of the NAVTEX and SafetyNET infrastructure world-wide and the current issues being addressed by the Panels, since the ETMSS-II. The Team noted that there were some activities and developments regarding specific NAVAREAs, including the establishment of NAVTEX stations in new locations, upgrade of the existing NAVTEX facilities, resolution of problems such as heavy interference at night, revision of the limits of the NAVTEX service areas, and migration of the national language broadcast from 518 to 490 kHz.

3.2.2 The Team noted that the issue of ensuring each station broadcasting on 518 kHz had agreed service area limits was significant so that those at sea know which station should be providing MSI for a given sea area. The Team further noted that the IMO International NAVTEX Coordinating Panel had initiated a policy of not issuing B1 characters for new stations on 518 kHz until service area limits are agreed with all concerned; and the NAVAREA Coordinators had been tasked with undertaking the initial coordination for new stations within their respective NAVAREA.

3.2.3 The Team was informed that, whilst the IMO International NAVTEX Coordinating Panel had been encouraged by the steady increase in the use of 490 kHz for national languages by Administrations setting up new services, only a slight progress had been made regarding existing services which had been transmitting national language broadcasts on 518 kHz in contravention with COMSAR/Circ 28 for a number of years. In this context, the Team requested the chairperson of the IMO International NAVTEX Coordinating Panel to inform (if any and if available) the WMO Secretariat and the ETMSS chairperson which NMHSs were issuing met-ocean MSI through the International NAVTEX in their national language **(Action: the chairperson of the IMO International NAVTEX Coordinating Panel to inform (if any and if available) the WMO Secretariat and the ETMSS chairperson which NMHSs were issuing met-ocean MSI through the International NAVTEX in their national language; Ongoing)**.

3.2.4 Regarding SafetyNET issues, the Team noted the need for all NAVAREA Coordinators and METAREA Issuing Service to have contingency plans in place to maintain broadcasts of warnings in the event of a catastrophic failure of an element or indeed the whole system. The Team further noted that the updated resolution A.706(17), as amended, reflects the need for NAVAREA Coordinators to take into account the need for contingency planning. This requirement had been well demonstrated on several occasions. The Team recommended the development of bilateral contingency plans between NAVAREA Co-ordinators and METAREA Issuing Services, following the example of the one organized in NAVAREA I.

3.2.5 The Team agreed to address topics such as the revision of the SafetyNET Manual and other relevant MSI documentation, and the expansion of the World-Wide Navigational Warning Service into the Arctic region in specific agenda items.

4. Provision of MSI for Polar Regions

4.1 Report of the Joint IMO/IHO/WMO Correspondence Group on MSI services

4.1.1 Mr Tim Sewell presented the report of the Joint IMO/IHO/WMO Correspondence Group (CG) on MSI services on behalf of the chairperson of the Group, Mr Peter Doherty. Mr Sewell

recalled that the Joint IMO/IHO/WMO Correspondence Group had been established by the IMO to address the expansion of the World-Wide Navigational Warning Service (WWNWS) into Arctic waters, and that a wide range of experts, including NAVAREA Coordinators, METAREA Issuing Services, National Coordinators, and representatives from IHO, IMO, WMO and IMSO, had assisted with the work.

4.1.2 Taking into account that the membership of the CG was open to all IMO/IHO/WMO Members/Member States, the Team was informed that anyone wishing to join the CG should contact the ETMSS Chairperson or the Joint IMO/IHO/WMO CG chairperson Mr. Peter Doherty (Peter.M.Doherty@nga.mil). The Team noted that any recommendations by the CG for changing the WWNWS would be reviewed by the IHO/PRNW, which is the representative body for the IHO on matters concerning the WWNWS. The Team was also informed that the IHO had established a web based bulletin board service to address the work of the CG and all information related to the CG had been posted at this web site http://iho-discussions.org.

4.1.3 The Team noted that, taking into account the proposed amended resolutions A.705(17) and A.706(17), including the relevant decisions of COMSAR-10, COMSAR-11 and COMSAR-12, the Joint IMO/IHO/WMO CG on Arctic MSI Services gave consideration to, and provided comments and recommendations on:

- How will the broadcast of MSI messages by each Arctic NAVAREA Coordinator/METAREA Issuing Service as well as the international coordination and monitoring of such messages be accomplished?

- Review Inmarsat's proposal with a view to identifying the preferred solution for updating the Inmarsat System Definition Manual (SDM) as well as to establish a timeline for updating the existing SafetyNET terminals to allow receipt of MSI within the new NAVAREAs, including the current coverage gaps elsewhere in the world.

- Determine the implementation timeline for full Arctic MSI services.

- Determination of the training, assistance, and support necessary to achieve full operational capability of Arctic MSI services as requested by the relevant Administrations and Data Providers.

4.1.4 The Team noted that the CG recommended the use of "rectangular addressing" for providing Arctic MSI services as the preferred solution until the modification and inclusion of all Arctic boundary limits can be incorporated into the Inmarsat System Definition Manual (SDM) and thus recognized by all Inmarsat-C models. The Team further noted that the CG therefore discussed the need for an overlap zone between the new Arctic NAVAREAs in order to ensure that ships received relevant information prior to arrival in the area. It was agreed to that the overlap zone should be approximately 300 miles. In order for the overlap coverage to be consistent for each Arctic NAVAREA, it was agreed that the IHO/PRNW would work with the CG and Inmarsat to determine the necessary rectangular addressing boundary limits for each of the Arctic NAVAREAs. The Team noted that there was a need to (1) contribute to this definition and to adopt for METAREAs the same NAVAREAs' overlap zone limits in the use of rectangular area addressing for SafetyNET and (2) develop Arctic METAREA/NAVTEX coverage diagram including service areas and times of transmission.

4.1.5 The Team noted that the CG discussed the implementation timeline for full Arctic MSI services and recommended that the "Operational Status" should be declared simultaneously for all Arctic METAREAs/NAVAREAs. The CG suggested that a live testing period would be necessary to ensure appropriate training, policies and procedures in place and working, prior to the full implementation timeline. The CG recommended a timeline for live testing to be in the 2009 and 2010 timeframe, with a milestone goal of "Full Operational Status" being declared at COMSAR-15, in 2011. The CG considered that this event would be a significant milestone in the delivery of MSI

worldwide and was worthy of major IMO, IHO and WMO celebration.

4.1.6 The Team noted that the IMO considered that it would be necessary to continue with the work of the Joint IMO/IHO/WMO Correspondence Group on Arctic MSI Services and re-established the Correspondence Group with the Terms of Reference presented in Annex IV.

4.1.7 The Team recalled that Hudson Bay is part of the METAREA IV, and requested the Canada and USA Issuing Services, in consultation with the NAVAREA IV Coordinator, to clarify the responsibility to prepare and issue met-ocean MSI for the Hudson Bay **(Action: Canada and USA Issuing Services, in consultation with the NAVAREA IV Coordinator, to clarify the responsibility to prepare and issue met-ocean MSI for the Hudson Bay; ASAP)** – see also agenda item 3.1.

4.2 Implementation of GMDSS in Arctic METAREAs

4.2.1 The ETMSS chairperson informed the Team on the status of the implementation of GMDSS in Arctic METAREAs, with particular emphasis on actions that might need to be initiated by the Team. The Team noted the requirements by the new Arctic METAREA Issuing Services regarding technical guidance on the provision of Maritime Safety Information. Full status reports by the GMDSS Focal Points for the new Arctic METAREAs are provided in Annex V. Based on discussions under the previous agenda items, and taking into account that the implementation plans and timelines for each Arctic METAREA should be presented at JCOMM-III, the Team requested its members, foremost the GMDSS focal points of USA, UK and France, to assist and provide technical support to the Arctic METAREA Issuing Services in preparing their implementation plans and timelines **(Action: the GMDSS focal points of USA, UK and France to assist and provide technical support to the Arctic METAREA Issuing Services in preparing their implementation plans and timelines; Ongoing, to be presented in JCOMM-III)** – see also agenda item 3.1.

4.2.2 Based on discussions under the previous agenda item, the Team requested the Arctic Issuing Services to provide their information on the service areas and desired time of transmission to the ETMSS chairperson, who would compile this information in coordination with the chairperson of the CG **(Action: the Arctic Issuing Services to provide their information on the service areas and desired time of transmission to the ETMSS chairperson, who would compile this information in coordination with the chairperson of the CG; June 2009)** – see also agenda item 4.1.

4.2.3 The ETSI chairperson, Dr Vasily Smolyanitsky, presented information on the sea ice services in the world. The Team noted that 16 countries were providing sea ice services for the Polar Regions and 6 countries were providing such services to the Antarctic region. The Team was informed of the typical products provided by the Ice Services. Detailed information is provided in Annex VI. The Team noted that the WMO-No. 574 (*Sea Ice Services in the World*) is available at http://www.jcomm-services.org/modules/documents/documents/wmo_574_reduced_res.pdf. The Team recommended that a national coordination between the Issuing Service and the Ice Service be established in order to ensure that sea ice information is included in the weather and sea bulletins for the Arctic METAREAs, or in the navigational warnings for the Arctic NAVAREAs, as appropriate. The Team also requested the WMO Secretariat to ensure that these coordination aspects would be clearly stated in the formal Recommendation to be presented at JCOMM-III **(Action: WMO Secretariat to ensure that coordination aspects between Issuing Services and Ice Services were clearly stated in the formal Recommendation to be presented at JCOMM-III; mid-May 2009)** – see also agenda item 3.1.

5. Information delivery

5.1 Met-ocean information in graphical/numerical form and E-Navigation charts

5.1.1 The Team recalled that, as stated in the 2001 amendments to the SOLAS, Chapter V,

weather information in graphical form should be made available for shipping. The Team also recalled that despite various actions in past years, the JCOMM-II (Halifax, Canada, September 2005) noted that the project to improve the GMDSS through expansion of services to provide products in graphical format via the Inmarsat SafetyNET service had been underway for several years, but had yet to achieve any of the objectives or expectations placed upon it.

5.1.2 The IHO representative, Mr Tim Sewell, presented the work being undertaken by the Joint IHO/IEC Harmonization Group on Marine Information Overlays (HGMIO). In particular, the Team was informed on the current MIO standards development and the status of MIO-related activities. The Team noted that documentation related to HGMIO was available at the IHO web site, as follows: http://www.iho.int > Committees and WG > HSSC > CHRIS20 Documents.

5.1.3 The Team noted the extensive work plan and experience of the ETSI on graphical sea ice information, including the development of the Ice Objects Catalogue (version 4.0) based on IHO S-57 standards, which is the basis for the Sea Ice Register that is a part of the overall IHO Register. The noted with appreciation that sea ice product specification had been developed by *CARIS* under contract with the Canadian Ice Service (CIS), based on the *General Content Specification for MIOs* (version 1.1.1). In order to generate some sample data, CIS would extract the relevant ice information out of historical ice charts and provide to *CARIS* in *ArcVu SHP* format. In turn, *CARIS* will convert to S-57 using their *CARIS S-57 Composer* software to produce a MIO test dataset. Once produced (December 2008), the Sea Ice MIO test dataset would be tested in the St. Lawrence River onboard Canadian Coast Guard Icebreakers and with Portable Piloting Units (PPUs) used by the Laurentian Pilotage Authority. In conjunction with the Sea Ice MIO "Test bed", CIS also planed to post daily Sea Ice coverage MIO products on the CIS web site (http://ice-glaces.ec.gc.ca/). The Team noted that similar approach had been followed by the AARI, being the tests conducted, in collaboration with *Transas Ltd*, for the Barents and Kara Seas and Sakhalin waters.

5.1.4 The Team noted that *Object Classes and Attributes for Weather* (Version 1.0) were first proposed by *SevenCs* in November 1999. However, only basic colours or symbols for these objects were developed. The Team further noted that so far no progress had been reported and requested the IHO representative to check the status of the *Object Classes and Attributes for Weather* and provide this information to the WMO Secretariat **(Action: the IHO representative to check the status of the *Object Classes and Attributes for Weather* and provide this information to the WMO Secretariat; ASAP)**.

5.1.5 The Team noted that the seventh session of the JCOMM Management Committee (Melbourne, Australia, December 2008) addressed this issue and decided to establish a Task Team on Methods for Transmission of Graphical Products to Marine Users, led by Mr Robert Keeley, the DMPA coordinator, to develop a roadmap for developing this activity. The Team requested the DMPA coordinator to provide a status report on this issue **(Action: DMPA coordinator to provide a status report on the roadmap for developing methods for transmission of graphical products to marine users; May 2009)**. Additionally, the Team was informed that the USA Issuing Service had been looking at the use of polygons, gridded data – forecasted generator and vector charts, before starting developing graphical products in S-57.

5.1.6 The Team was informed that WMO would have an Intern starting in June 2009, for three months, who would be working on these issues. The Team therefore requested the ETSI Task Group on Electronic Navigational Chart Ice Objects (TG-ENCIO), the DMPA coordinator and Mr Tim Rulon (USA) to provide technical support and the available documents on met-ocean information in graphical/numerical form to the WMO Secretariat **(Action: the ETSI/TG-ENCIO, the DMPA coordinator and Mr Tim Rulon (USA) to provide technical support and the available documents on met-ocean information in graphical/numerical form to the WMO Secretariat; from 2 June to 31 August 2009)**. The Team also requested the IHO representative to evaluate the availability and willingness of Mr Barrie Greenslade, or other member of the Joint IHO/IEC Harmonization Group on Marine Information Overlays (HGMIO), to provide guidance and technical support to WMO on IHO standards for displaying MIOs **(Action: IHO representative to evaluate**

the availability and willingness of Mr Barrie Greenslade, or other member of the HGMIO, to provide guidance and technical support to WMO on IHO standards for displaying MIOs; ASAP).

5.2 Improvement of sea-state information specification for MSI (text bulletins and graphical products)

5.2.1 The chairperson of the ETWS, Mr Val Swail, presented some suggestions for the specification of wave information for MSI (text bulletins and graphical products). The Team noted that this document could be significantly improved and requested the ETWS members to continue work on this document, in collaboration with the ETMSS, and taking into consideration the user requirements **(Action: ETWS members to continue work on this document, in collaboration with ETMSS, and taking into consideration the user requirements, Ongoing)**. In this context, the Team requested the WMO Secretariat to contact the agencies representing users' interests (e.g. the International Chamber of Shipping (ICS)) to get their views on this issue **(Action: WMO Secretariat to contact the agencies representing users' interests (e.g. the International Chamber of Shipping (ICS)) to get their views on requirements for sea state information; ASAP)**.

5.2.2 The Team requested the WMO Secretariat, the ETMSS and ETWS chairpersons to prepare a survey on current practices in specifying sea state information in weather and sea bulletins issued by the METAREA Issuing Services, taking into consideration the existing surveys developed in the past **(Action: WMO Secretariat, the ETMSS and ETWS chairpersons to prepare a survey on current practices in specifying sea state information in weather and sea bulletins issued by the METAREA Issuing Services, taking into consideration the existing surveys developed in the past; ASAP)**. Additionally, the Team recommended that a Joint ETWS/ETMSS workshop on wave forecasting should be convened. It therefore requested the WMO Secretariat to evaluate the feasibility of holding this workshop during the next intersessional period **(Action: WMO Secretariat to evaluate the feasibility of holding this workshop during the next intersessional period; ASAP)**.The Team recognized that icing forecasting should also be addressed by the ETWS.

5.2.3 Taking into account the need for a description of sea state specification in the WMO-No. 558, the Team requested the WMO Secretariat to make available the electronic version of this publication to the Team **(Action: WMO Secretariat to make available the electronic version of the WMO-No. 558 to the Team; ASAP)**. Noting the need for approval by the Commission of any changes in the WMO-No. 558, the Team requested the WMO Secretariat to prepare a formal Recommendation to be presented at JCOMM-III regarding the updates of the WMO-No. 558 during the next intersessional period **(Action: WMO Secretariat to prepare a formal Recommendation to be presented at JCOMM-III regarding the updates of the WMO-No. 558 during the next intersessional period; end May 2009)**, and the ETWS chairperson to provide the appropriate information on sea state to be included in this formal Recommendation **(Action: ETWS chairperson to provide the appropriate information on sea state to be included in this formal Recommendation; end April 2009)**.

5.3 Update sea ice information specification for weather and sea bulletins

5.3.1 The chairperson of the ETSI, Dr Vasily Smolyanitsky, presented some suggestions for the specification of sea ice information for MSI (text bulletins and graphical products). The Team noted that the extensive work developed by the ETSI on the definition of sea ice products needed to ensure safety of marine operations, based on common practices applied by the National Ice Services to answer requirements of the customers. These include:

a) routine ice charts with various complexity, scale and periodicity (hours - 7 days), providing tactical and regional recommendations (binary product);

b) sea ice boundary, icebergs propagation boundary with daily periodicity (textual product);

c) high-resolution annotated satellite imagery, commonly providing tactical recommendations to the masters (1 hour – 1 day) (binary product);

d) prognostic (hours - 7 days) ice charts for ice parameters critical for safety and success of navigation (binary product);

e) supplementary synoptic and prognostic (hours - 7 days) meteorological charts or grids (binary or textual products);

f) NAVTEX, SafetyNET and plain text textual warnings and forecasts for ice and weather parameters critical for safety and success of navigation;

g) medium to long-term ice and meteorological phenomena forecasts with a lead-time of more than 7 days (commonly based on empirical models) (mostly textual products).

5.3.2 Based on discussions under previous agenda items, the Team requested the ETSI chairperson to provide to WMO Secretariat the appropriate information on sea ice to be included in the formal Recommendation to be presented at JCOMM-III regarding the updates of the WMO-No. 558 during the next intersessional period **(Action: ETSI chairperson to provide to WMO Secretariat the appropriate information on sea ice to be included in the formal Recommendation to be presented at JCOMM-III regarding the updates of the WMO-No. 558 during the next intersessional period; end April 2009)**.

5.4 Update tsunami information specification for weather and sea bulletins

5.4.1 Mr Phil Parker reported on progress made towards providing the building blocks necessary for assimilating tsunami related advisory and warning information into MSI, bulletins intended to improve the safety of vessels at sea. The Team noted that a proposal, outlining the range of connections that are needed to be made between international, national and local agencies or authorities involved in preparing, promulgating and disseminating MSI for shipping was presented at ETMSS-II (Angra dos Reis, Brazil, January 2007) – see Annex X of the JCOMM Meeting Report No. 46, available at: ftp://ftp.wmo.int/Documents/PublicWeb/amp/mmop/documents/JCOMM-MR/J-MR-46_ETMSS-II.pdf.

5.4.2 The Team recalled that JCOMM-II (Halifax, Canada, September 2005) resolved that the ETMSS should *cooperate with the IHO and IMO to coordinate the provision of maritime safety information (MSI) related to tsunami warnings and to address the international organizations' role (IOC, WMO, IHO and IMO)*. The Team also recalled that IMO offered the use of the International SafetyNET system to distribute warnings from regional centres to both national authorities and vessels at sea (COMSAR/Circ. 36). The Team noted that little progress had been done so far due to unclear definition of roles and responsibilities. It therefore requested the WMO Secretariat to clarify with the UNESCO/IOC the role of the ETMSS and the METAREA Issuing Services in the provision of tsunami related MSI and, if appropriate, define mechanisms for the Issuing Services being able to access to warnings issued by UNESCO/IOC regional centres **(Action: WMO Secretariat to clarify with the UNESCO/IOC the role of the ETMSS and the METAREA Issuing Services in the provision of tsunami related MSI and, if appropriate, define mechanisms for the Issuing Services being able to access to warnings issued by UNESCO/IOC regional centres; end March 2009)**.

5.5 GMDSS-weather web portal and the WMO Information System (WIS) and its application in the collection and dissemination of MSI

5.5.1 The ETMSS chairperson presented a report on the status of the GMDSS web site, its structure, contents and periodic updates, as well as the appropriate links to the Ice Logistics Portal (http://ipy-ice-portal.com/), and other relevant issues, including the extension to NAVTEX products and the cooperation with IHO for incorporating Navigational Warnings.

5.5.2 The Team endorsed the work plan for next intersessional period regarding the development of the GMDSS-weather web site, which includes:

- Integration of the products prepared for the International NAVTEX dissemination – the Team requested the WMO Secretariat to provide to Météo-France the list of headers of "NAVTEX bulletins" available on the GTS, and to check if there are Members issuing met-ocean MSI through the International NAVTEX but not disseminating through the GTS and to encourage them to do it **(Action: WMO Secretariat to provide to Météo-France the list of headers of "NAVTEX bulletins" available on the GTS, and to check if there are Members issuing met-ocean MSI through the International NAVTEX but not disseminating through the GTS and to encourage them to do it; ASAP)**. The Team requested the ETMSS chairperson to make a demonstration of the GMDSS-weather web site during the JCOMM-III session **(Action: ETMSS chairperson to make a demonstration of the GMDSS-weather web site during the JCOMM-III session; November 2009)**;

- Establishment of appropriate links to the Ice Logistics Portal (http://ipy-ice-portal.com/);

- Establishment of appropriate links to the WMO-No. 9, Volume D;

- Inclusion of a web-based or a "fill-able" pdf form questionnaire for the Marine Meteorological Monitoring Programme (MMSM);

- Liaison with IHO and IMO for coordinating the use of the common URL *gmdss.org* for the provision of both meteorological and navigational warning information;

- Development of appropriate means to promote the GMDSS-weather web site;

- Development of some graphic functionalities;

- Application of WIS in the collection and dissemination of MSI, including the integration of the GMDSS web site products and services into WIS.

5.5.3 Mr Eliot Christian presented an overview of the WMO Information System (WIS) and its potential application in the collection and dissemination of MSI, including the integration of the GMDSS-weather web site products and services into WIS. Taking into consideration the little developments required and the benefits in integrating the GMDSS-weather web site products and services into WIS, the Team requested the ETMSS chairperson to initiate a dialogue with WIS experts in the WMO Secretariat to evaluate required changes (if any) in the GMDSS-weather web site to become compliant with WIS in the future **(Action: ETMSS chairperson to initiate a dialogue with WIS experts in the WMO Secretariat to evaluate required changes (if any) in the GMDSS-weather web site to become compliant with WIS in the future; Ongoing)**. The Team noted that similar approach could be followed by the ETSI regarding the Ice Logistics Portal and requested the ETSI chairperson to discuss this issue with the ETSI members **(Action: ETSI chairperson to discuss the potential integration of the Ice Logistics Portal into WIS with the ETSI members; October 2009)**.

6. Review of regulations and operational information

6.1 *Manual on Marine Meteorological Services* (WMO-No.558) and *Guide to Marine Meteorological Services* (WMO-No.471)

6.1.1 The Team recalled that regulations and guidance material for the provision of marine

meteorological services are given in the WMO publications No. 558 (*Manual on Marine Meteorological Services*) and No. 471 (*Guide to Marine Meteorological Services*). The Team noted that WMO Congress, at its fifteenth session (Geneva, May 2007), requested the WMO Secretary-General to make available on-line publications that describe guidelines, rules and procedures to prepare and broadcast MSI to ships at sea. Noting the need for updating these publications before publish them on the Internet, the Team requested the WMO Secretariat, in collaboration with members of the Team (Mr Henri Savina, Mr Nick Ashton, Mr Tim Rulon and an expert from Australia (TBD)), to throughout review these publications **(Action: WMO Secretariat, in collaboration with members of the Team (Mr Henri Savina, Mr Nick Ashton, Mr Tim Rulon and an expert from Australia (TBD)), to throughout review the publication WMO-No. 558; Part 1 bis by end of May 2009 and the remaining parts by end August 2009)**. The WMO Secretariat agreed to review publication WMO-No. 471 based on the revisions of publication WMO-No. 558.

6.2 *Weather Reporting* (WMO-No.9), Volume D *Information for Shipping*

6.2.1 The Team noted that publication WMO-No. 9, Volume D comprises information on the meteorological broadcasts by radiotelegraphy and radiotelephony, meteorological broadcasts by radio-facsimile, global maritime distress and safety system, coastal radio stations and Inmarsat land earth stations accepting ships' weather and oceanographic reports, marine meteorological services available for main port, ship weather routeing services, and visual storm warning signals. The Team further noted that, for WMO Members, this publication is the main source of metadata concerning the services provided by countries in other parts of the world, although the speed and regularity of updates was a cause of concern.

6.2.2 The Team recognized that, in seeking to maintain a high standard of accuracy in the material published in WMO-No. 9, Volume D, the WMO Secretariat depends entirely on the goodwill of the meteorological services and their partners throughout the world. Their cooperation in keeping the WMO Secretariat fully informed of all changes is a decisive factor in attaining this aim. The Team noted that similar publications were available from different sources, however WMO-No. 9, Volume D is free of charge for the WMO Members. The Team therefore requested the WMO Secretariat to prepare a formal Recommendation to be presented at JCOMM-III, regarding the usefulness of this publication and to circulate among the Team members this draft Recommendation for comments and review **(Action: WMO Secretariat to prepare a formal Recommendation to be presented at JCOMM-III, regarding the usefulness of this publication / To circulate among the Team members this draft Recommendation for comments and review; mid-April 2009/mid-May 2009)** – see also agenda item 3.1.

6.3 Joint IMO/IHO/WMO publications

6.3.1 The IMO/IHO representative, Mr Tim Sewell, presented a summary of the past and future work of the WWNWS Document Review Working Group. Mr Sewell recalled that the Working Group decided to take a top-down approach and focused initially on IMO Assembly Resolutions A.705(17) (Promulgation of Maritime Safety Information) and A.706(17) (World-Wide Navigational Warning Service). Revised versions of these documents were submitted to COMSAR-12, which forwarded them to MSC 85 for approval. The Team noted that they were adopted and subsequently issued as MSC Circulars (MSC.1/Circ.1287 and MSC.1/Circ.1288 respectively), and would enter into force on 1 January 2010. The Team requested the WMO Secretariat to make available these MSC Circulars to Team members **(Action: WMO Secretariat to make available the MSC Circulars to Team members; ASAP)**.

6.3.2 The Team noted that a revised version of the Joint IMO/IHO/WMO Manual on Maritime Safety Information was submitted to COMSAR-13, in January 2009. Subject only to minor editorial changes, it was forwarded to MSC 86 for adoption. The Team also noted that the Working Group would commence the revision of the NAVTEX Manual.

6.4 Proposed template for an Issuing Services' Annual Report

6.4.1 The Team recalled that, in accordance with its Terms of Reference, the ETMSS should monitor and review the operations of marine broadcast systems and the technical and service quality standards for meteorological and oceanographic Maritime Safety Information, particularly for the GMDSS. The Team therefore agreed that regular feedbacks from all Issuing Services were required in order to keep the WMO GMDSS Marine Broadcast System under review, and to be able to ensure efficient coordination and cooperation with concerned organizations, foremost IMO and IHO. A proposed template for an *Issuing Service Self-Assessment Report* is provided in Annex VII. Noting that the table in item 5 of the template is an excellent contribution to the development of QMS, the Team requested the WMO Secretariat to prepare a list of potential criteria for QMS (Excel sheet) and circulate it among the Team members for review and determine those to be included in the first version of the template **(Action: WMO Secretariat to prepare a list of potential criteria for QMS (Excel sheet) and circulate it among the Team members for review and determine those to be included in the first version of the template; ASAP / comments by end May 2009)**.

6.4.2 The Team agreed that the frequency for regular feedbacks should be annual, and would be independent of the frequency of ETMSS meetings and workshops for the Issuing Services. The Team stressed that this survey would offer regular opportunities for Issuing Services to report on their experience, progress, success and difficulties in implementing and coordinating the system within their respective METAREAs (SafetyNET, international NAVTEX services, others means that could be used e.g. for dissemination in the Arctic areas) or to request or offer assistance and capacity building. The Team requested the WMO Secretariat to send out the survey first to Issuing Services and later to NMHSs issuing met-ocean MSI through the International NAVTEX (the template should be adapted) **(Action: WMO Secretariat to send out the survey first to Issuing Services and later to NMHSs issuing met-ocean MSI through the International NAVTEX (the template should be adapted); mid 2009 / beginning 2010)**.

7. WMO Quality Management Framework (QMF)

7.1 WMO Quality Management Systems for the provision of marine meteorological services for International Navigation

7.1.2 Mr Scylla Sillayo presented an overview of the concepts and principles for the development of a Quality Management System in support of the provision of aeronautic meteorological services for International Navigation. He recalled that WMO Congress, at its fifteenth session (May 2007), requested the implementation of quality management systems (QMS) at, at least one of its Members, and that the documentation developed during this process be shared with other developing countries, with a view to facilitating and expediting QMS implementations. In this context, Mr Sillayo also presented the status of the QMS demonstration project in Tanzania. The Team noted the tremendous similarities between aeronautic and marine services.

7.1.2 The Team noted that a first draft of a Resolution to be submitted to IMO regarding the *IMO/WMO World-Wide Met-ocean Information and Warning Service* (WWMIWS) – similar to the IMO resolution A706(17) on the *IMO/IHO World-Wide Navigational Warning Service* – was prepared by Mr Nick Ashton (UK), and would be the first step to develop a Quality Management System for the provision of marine meteorological services for International Navigation. The Team was informed that this draft was currently being reviewed by the WMO Secretariat and would be circulated among the members of the Team for comments **(Action: WMO Secretariat to circulate the draft IMO Resolution among the members of the Team for comments and review; ASAP)**. The Team noted that this Resolution would be presented to JCOMM-III, in November 2009, and then to WMO Executive Council and finally to IMO/MSC, in 2010. The Team requested the WMO Secretariat to initiate a dialogue with IMO to ensure its involvement in the development of QMS for the provision of met-ocean MSI services **(Action: WMO Secretariat to initiate a dialogue with IMO to ensure its involvement in the development of QMS for the provision of met-ocean MSI services; ASAP)**.

7.1.3 In addition to the above recommendations and requests and also those presented in item 2 of this report, the Team requested the WMO Secretariat, in collaboration with Mr Nick Ashton (UK) and Mr Bryan Boase (Australia), to prepare a document for JCOMM-III focused on QMS for the provision of met-ocean MSI services through the GMDSS (first), but considering the inclusion of all met-ocean MSI services in the future (taking in consideration the development of potential projects in Australia and UK) **(Action: WMO Secretariat (MMO and AEM Divisions), in collaboration with Mr Nick Ashton (UK) and Mr Bryan Boase (Australia), to prepare a document for JCOMM-III focused on QMS for the provision of met-ocean MSI services; May 2009)**.

7.2 Quality Control of the marine meteorological services

7.2.1 The Team recalled that the development of the marine meteorological services (MMS) monitoring programme was initiated by the former Commission for Marine Meteorology (CMM) in 1981. Subsequent sessions of the CMM, and then JCOMM, had reviewed the results of these surveys, and re-iterated their value to WMO Members and endorsed their continuation of support. JCOMM-II (Halifax, Canada, September 2005) agreed on the need to continue maintaining a systematic long-term global MMS monitoring programme, based on the questionnaire and response format presently in use. In addition, the Team recalled that the JCOMM also requested the ETMSS, to investigate the feasibility of expanding the survey to non-GMDSS users, to continue to make the survey available via the relevant JCOMM Web sites, and to publicise this availability amongst mariners as much as possible.

7.2.2 The Team noted that a new questionnaire, adapted for the SOLAS and non-SOLAS vessels, was discussed and adopted by ETMSS-II (Angra dos Reis, Brazil, January 2007), including some changes proposed by the SOT-III in 2005 to clarify terms for ships where English was not necessarily the first language. In addition, ETMSS-II asked Michael Myrsilidis (Greece – ETMSS member), Val Swail (Canada – ETWS chairperson) and Vasily Smolyanitsky (Russian Federation – ETSI chairperson) to adapt the questionnaire to include sections on sea-state and sea-ice information and on use of abbreviations in NAVTEX bulletins. The new updated questionnaire was then reviewed and adopted by the SOT-IV in April 2007. The Team reviewed again this questionnaire, as provided in Annex VIII.

7.2.3 The Team requested the WMO Secretariat to disseminate the revised questionnaire among the users through appropriate channels, including through the Internet, the British Antarctic Institute and the German Hydrographic Office, in order to present the results to JCOMM-III **(Action: WMO Secretariat to disseminate questionnaire among the users through appropriate channels, including through the Internet, the British Antarctic Institute and the German Hydrographic Office, in order to present the results to JCOMM-III; Immediately; deadline to receive the filled in questionnaire: end May 2009)**. The Team also requested the WMO Secretariat to make the questionnaire available on the web **(Action: WMO Secretariat to make the questionnaire available on the web; immediately)**. The Team requested the IHO representative to evaluate the feasibility to make the questionnaire available on the IHO web site **(Action: IHO representative to evaluate the feasibility to make the questionnaire available on the IHO web site; ASAP)**. The Team requested the WMO Secretariat, the ETMSS chairperson and Mr Michael Myrsilidis (Greece) to analyse the received filled in questionnaires and prepare a document with the results for JCOMM-III **(Action: WMO Secretariat, the ETMSS chairperson and Mr Michael Myrsilidis (Greece) to analyse the received filled in questionnaires and prepare a document with the results for JCOMM-III; end July 2009)**.

8. Any Other Business (AOB)

8.1 The Team reviewed and revised the ETMSS Terms of Reference (ToR) for the next intersessional period. It agreed on the ETMSS core membership. The proposed ToR and membership, provided in Annex IX, would be presented to the fourth session of the Services Programme Area Coordination Group (Geneva, Switzerland, 11 to 13 March 2009) for further review before discussion at the JCOMM-III, in November 2009. The Team recommended that the

ETMSS should meet every year and the Issuing Services should get together in a workshop every two years, ideally.

9. Closure of the session

9.1 Adoption of the report

9.1.1 Under this agenda item, the Team reviewed and approved the final report, including actions and recommendations raised from the meeting.

9.2 Closure

9.2.1 On behalf of the WMO Secretariat, Mr Edgard Cabrera expressed his sincere appreciation to the ETMSS chairperson and to the participants for their excellent contributions to the success of this important meeting.

9.2.2 In closing the meeting, the ETMSS chairperson, Mr Henri Savina, expressed his appreciation to all participants for their very positive and valuable input to the discussions, to what had been a very successful meeting, and looked forward to working with all participants on the many ongoing action items. Mr Savina concluded by thanking, on behalf of all participants, the Secretariat for the ongoing support.

9.2.3 The first session of the Task Team on Maritime Safety Information (TT-MSI) closed at 12.32 hours on Wednesday, 11 March 2009.

Annex I

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Annex II

AGENDA

1. Opening of the session

1.1. Opening
1.2. Adoption of the agenda
1.3. Working arrangements

2. Guidance and requirements from WMO and IOC Executive Body sessions: Impacts on ETMSS activities and priorities

3. Reports

3.1 Progress/activity report from the chairperson
3.2 IMO and IHO Reports

4. Provision of MSI for Polar Regions

4.1 Report of the Joint IMO/IHO/WMO Correspondence Group on MSI services
4.2 Implementation of GMDSS in Arctic METAREAs

5. Information delivery

5.1 Met-ocean information in graphical/numerical form and E-Navigation charts
5.2 Improvement of sea-state information specification for MSI (text bulletins and graphical products)
5.3 Update sea ice information specification for weather and sea bulletins
5.4 Update tsunami information specification for weather and sea bulletins
5.5 GMDSS-weather web portal and the WMO Information System (WIS) and its application in the collection and dissemination of MSI

6. Review of regulations and operational information

6.1 *Manual on Marine Meteorological Services* (WMO-No.558) and *Guide to Marine Meteorological Services* (WMO-No.471)
6.2 *Weather Reporting* (WMO-No.9), Volume D *Information for Shipping*
6.3 Joint IMO/IHO/WMO publications
6.4 Proposed template for an Issuing Services' Annual Report

7. WMO Quality Management Framework (QMF)

7.1 WMO Quality Management Systems for the provision of marine meteorological services for International Navigation
7.2 Quality Control of the marine meteorological services

8. Any Other Business (AOB)

9. Closure of the session

9.1 Adoption of the report
9.2 Closure

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Annex III

Proposed ETMSS work plan for the next intersessional period

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Expansion of the Global Maritime Distress and Safety System (GMDSS) into the Arctic waters : implementation of a full operational met-ocean MSI service by the ad-hoc Issuing Services	High	- Regular coordination meetings with IHO and IMO to review and adjust the overall implementation plan for the provision of Arctic MSI services; and to evaluate the progress in expanding the GMDSS into the Arctic region; - ETMSS meeting to review and adjust the overall implementation plan for the provision of Arctic met-ocean MSI within the GMDSS; to review mandatory technical publications; - E-mail exchanges, teleconferences and training event (if required) with Arctic METAREA Issuing Services to assist them and provide guidance in implementing MSI met-ocean services for the Arctic region; - Confirmation by METAREA Issuing Services of the implementation of full operational service for their Areas - Simultaneous declaration of operational status by IMO, IHO and WMO	ETMSS (new structure as proposed in MAN-7 doc. 5.4)	KPT: Full operational capability to provide MSI for Arctic regions KPI: 1) Number of Arctic METAREA Issuing Services providing full met-ocean MSI service for Arctic regions within the GMDSS 2) when operational, same KPI as the other Issuing Services	X	X			Likelihood: low Severity: high	WMO ER7 & ER6	NO

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Develop and implement new WMO regulation & guidance material for the provision of MSI in graphical / numerical form(s), especially within the GMDSS	High	- Participation & coordination with IMO and IHO bodies working on graphical information and e-navigation. - Definition of content, format(s) and representation of graphical/numerical MSI, in consistency with ISO, WMO, IMO and IHO policies, to propose update WMO regulation or guidance documentations. - Discussion and proposals for broadcast systems - Plan operational tests as appropriate Develop a Demonstration Project: operational issuance & delivery for (a) selected area(s) (sea ice for a part of the Arctic Area?) Appointed expert(s) needed. Annual (or more) meetings and E-Mail exchanges needed.	ETMSS (new structure as proposed in MAN-7 doc. 5.4)	**KPT:** improve the capacities of Members, especially the Issuing Services, in the provision of MSI in harmonized graphical/numerical form **KPI:** Number of Issuing Services having implemented the provision of such service	x	x	x	x	Likelihood : high Severity : medium	WMO ER7	Connection with similar projects (aviation, etc.)

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Develop and implement new WMO regulation & guidance material to enhance the capacities of Members to issue more efficient, harmonized and clear MSI	Medium	Improve information on sea state (text & graphic) and on sea ice (text) in MSI • Define recommended parameters or indicators for complex & dangerous seas, including risk of freak waves when feasible • Update the WMO regulation & guidance material (for text and graphical products for sea state, for text messages for sea ice), including within the GMDSS • For sea state, facilitate the implementation by providing (Developing) Members with appropriate software or real-time parameters fields from numerical models (ECMWF, etc.) • Promote the implementation especially among the Issuing Services. (Regional) workshops or specific capacity building project(s) would certainly help for sea state. • Study, if feasible, the possibility to propose harmonized threshold(s) for sea state warnings within the GMDSS. Regular meetings, at least every 2 years, and E-Mail exchanges needed.	ETMSS (new structure as proposed in MAN-7 doc. 5.4)	**KPT:** improve the usefulness of information included in MSI for the safety at sea, through the enhancement of capacities of Members in the provision of marine early warnings and services **KPI:** 1 & 2) numbers of Members and Issuing Services having implemented complex or dangerous seas warnings or information in MSI 3 & 4) numbers of Members and Issuing Services having added or adapted sea ice information in MSI in text form	x	x	x	X	Likelihood : medium Severity : medium	WMO ER7 & ER6	NO

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Develop, contribute to develop and implement new regulation & guidance material to enhance the capacities of Members to issue more efficient, harmonized and clear MSI	Medium	Detail appropriate tsunami information to mariners • Update the WMO regulation & guidance documentation regarding the delivery of tsunami information to mariners, including for the GMDSS, in cooperation with IHO and IOC. • Contribute to take into account the mariners in the emergency plans at both regional and national levels. • Develop appropriate guidelines from Members building or updating their emergency plans to implement automatic warning systems for mariners, base on the information provided by Regional or National Tsunami Warning Centres. Regular meetings, at least every 2 years, and E-Mail exchanges needed.	ETMSS (new structure as proposed in MAN-7 doc. 5.4)	**KPT:** enhance capacities of Members in the dissemination of efficient marine early tsunami warnings **KPI:** Numbers of 1) Members and 2) Issuing Services involved in their National or Regional Tsunami Emergency Plan for the provision of MSI	x	x	x	x	Likelihood : medium Severity :	WMO ER6 IOC ER1	IOC Tsunami Programme

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Communication services: evolution of the GMDSS web portal	Low	- Demonstration project (WMO/IHO/IMO): Complete the content of the GMDSS web portal (http://weather.gmdss.org), with Navtex products and the future graphical information. - Include appropriate links with relevant information of WMO n°9 vol. D, n°558 and n°471 - Study the need of ergonomic changes (clickable maps,etc.) - Continue to cooperate with IMO & IHO to use the domain gmdss.org Regular meetings, at least every 2 years, and E-Mail exchanges needed.	ETMSS (new structure as proposed in MAN-7 doc. 5.4)GMDSS Issuing Services	**KPT :** Enhance visibility and capabilities of Members to provide MSI **KPI :** Numbers of 1) Members and 2) NAVTEX stations with MetOcean NAVTEX products available on the portal	x	x	x	x	Likelihood : medium Severity : low	WMO ER7	NO

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Contribute to define and implement the QMS and the quality control of the Marine Meteorological Services	Medium	- Definition of the basic indicator(s) to be implemented and checked by the GMDSS Issuing Services (based on the IMO & WMO regulations and Master Plan) - Review and support the implementation of the indicator(s) by the Issuing Services - Provision of those indicator(s) in the regular Report Assessment requested from Issuing Services - Promote the implementation of such kind of indicator(s) by all Members issuing MSI. - Demonstration project following the above-mention activities in Issuing Services that might want to start the implementation of QMS for marine services. Regular meetings, at least every 2 years, and E-Mail exchanges needed.	ETMSS (new structure as proposed in MAN-7 doc. 5.4)GMDSS Issuing Services	**KPT :** Enhance capabilities of Members to provide MSI **KPI :** Numbers of 1) Member s and 2) Issuing Services having implemented the identified indicator(s)	x	x	x	x	Likelihood : high Severity : medium	WMO ER7	

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Contribute to update and implement joint IMO/IHO/WMO regulation material to enhance the capacities of Members to issue more efficient MSI	High	- Participation in the IHO WWNWS sessions and in the WWNWS Doc Review meetings, to continue the process of updating IMO and Inmarsat documentation (in particular the SafetyNET and NAVTEX manuals) - Endorsement by JCOMM and the WMO Executive Council before submission to IMO	ETMSS (new structure as proposed in MAN-7 doc. 5.4)	**KPT:** provide Issuing Services and other Members with update background reference doc, to allow then to enhance their capacities to disseminate MSI efficiently within the GMDSS **KPI:** *To be fixed in cooperation with IMSO or the IMO SafetyNET Panel*	x	x			Likelihood : medium Severity : medium	WMO ER7	NO

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Enhance coordination with IHO and IMO	Medium	Study the possibility to organize JCOMM/ETMSS and IHO/WWNWS meetings in parallel, with 1 day in common, possibly in WMO Headquarters in Geneva	ETMSS (new structure as proposed in MAN-7 doc. 5.4)in collaboration with IHO Secretariat	**KPT:** enhance the capacities of Issuing Services to disseminate efficient and coordinated MSI, especially within the GMDSS **KPI:** Number of Issuing Services implementing coordination mechanisms (including back-up contingency plans) with the related NAVAREAs co-coordinator	x	x			Likelihood : medium Severity : low	WMO ER7 & ER6	NO

Deliverables	Priority (low, medium, high)	Summary of the Activity(ies)	By whom (Group/Team) (Suggest changes on the PA structure if required)	Key Performance Target(s) and Indicator(s)	Timelines				Risks (likelihood of occurrence (low, medium, high) and severity of the consequences from occurrence (low, medium high)	Contribute to Expected Result(s) (WMO/IOC)	Links with other Programmes in WMO and IOC
					2010	2011	2012	2013			
Contribute to update the WMO regulation material to enhance the capacities of Members to issue more efficient MSI	Medium	Study the possibility to make available online (in WMO 9 vol. D ?) a database of limits of areas and sub-areas used by Members to promulgate MetOcean MSI, that can be used in GIS and ENC, especially for the GMDSS	ETMSS (new structure as proposed in MAN-7 doc. 5.4)and WMO Members	**KPT:** enhance the capacities of Members and Issuing Services to disseminate efficient and coordinated MSI, especially within the GMDSS **KPI:** Numbers of 1) Members and 2) Issuing Services with related information in the WMO database	x	x			Likelihood : high Severity : low	WMO ER7	NO

Annex IV

Joint IMO/IHO/WMO Correspondence Group on Arctic MSI Services Terms of Reference

1. Monitor the testing of Arctic NAVAREAS/METAREAS including status, infrastructure, monitoring of messages and relationships with information providers (i.e. International Ice Patrol, METAREA Issuing Authorities, Search and Rescue authorities, National administrations and other NAVAREA Coordinators)

2. Facilitate the coordination of transmissions on the NAVTEX frequencies of 518 kHz, 490 kHz and 4209.5 kHz through the NAVTEX Coordinating Panel

3. Facilitate the coordination of transmissions of SafetyNET messages through the International SafetyNET Panel, including identification of prospective Service Providers

4. Determine NAVAREA/METAREA overlap zone limits in the use of rectangular area addressing for SafetyNET

5. Develop Arctic NAVAREA/METAREA/NAVTEX coverage diagram including service areas and times of transmission

6. Monitor Inmarsat's progress on updating the System Definition Manual; and

7. Monitor the status of training, assistance and support to achieve operational capability of Arctic MSI services, and

8. Report to COMSAR-14.

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Annex V

METAREAs XVII and XVIII Status Report

by Dave Wartman, MSC, Environment Canada

The Meteorological Service of Canada (MSC) has begun its internal processes of live testing to ensure readiness for the METAREAS XVII and XVIII by 2010. This entails marine weather and Ice information broadcast via Inmarsat-C SafetyNET by the Meteorological Service of Canada appointed as Issuing Services within the framework of the WMO Marine Broadcast System for the Global Maritime Distress and Safety System. Here is the information in terms of the key components of the implementation plan:

National Coordination

The MSC is working closely with our colleagues in the Canadian Coast Guards, who are the NAVAREA Issuing Service partners to secure a common understanding of our respective roles.

International Coordination

The MSC has commenced preliminary discussions with the US National Weather Service (US NWS) as a Preparation Service for METAREA XVII.

We have not, yet, coordinated an activity with the Danish Meteorological Institute (DMI) as a Preparation Service for METAREA XVIII.

Telecommunications

The MSC will work through the Canadian Coast Guard to broadcast our messages north of 75 degrees North through HF Radio.

In the coming fiscal year (1 April 2009 to 31 March 2010), the MSC will establish a contract with a satellite uplink provider to broadcast on SafetyNET, through INMARSAT-C. Through this service contract, we will upload our Canadian Marine and Ice products along with the Marine and Ice products from the US-NWS and DMI.

Implementation Schedule

1. The NAVAREA focal points for the Arctic are planning to be ready for live testing in January 2010. Our Marine weather and Ice products are in suspension for the north during the winter months given the seasonal nature of our programmes. The MSC will take steps to coordinate with other METAREA focal points for live testing in May 2010 when our season begins to open in the north. This would allow us to monitor the live information and the traffic in parallel to our operational national programmes.

2. For the Canadian marine meteorological information, the MSC will use existing information from our meteorological forecast database. We will configure new products that will cover the respective METAREA footprints for both the SafetyNET and HF Radio. These products will resemble the international NAVTEX format including the required warnings, synopsis and weather forecast information.

3. For our Canadian ice products, we will be transmitting existing Ice bulletins through SafetyNET with minimal new product development required. The essential product development is underway and should be concluded by the fall 2009.

4. Our software systems will be ready for internal production testing by December 2009. Staff training would take place during the test period.

Requested Assistance

We request assistance to:

1. Facilitate coordination with our Preparation Services and neighbouring Issuing Services. A meeting in the spring or summer of 2009 to coordinate the implementation plan is proposed.

2. Provide guidance on establishing the broadcast schedule on SafetyNET for the Canadian, US and Danish Marine and Ice Products.

3. Provide guidance on the Canadian product suite to ensure congruence with international expectations given the variety of products currently available on the GMDSS website.

4. Assist the MSC to ensure our operational procedures meet the expected standard including our commitment to our role of monitoring of the SafetyNET products.

The MSC is confident we will be prepared for the live testing in 2010. Our plan is to begin the services with the existing seasonal program we have for Marine and Ice information with an expectation to expand the METAREA service as our national service expands in the north, along with any expansion to the national programmes of the preparation services.

METAREA XIX Status Report

by Helge Tangen, Norwegian Meteorological Institute

For met.no, in the responsible position for METAREA XIX, it has been to great help to share information with the Norwegian Coastal Administration (NAVAREA XIX responsible) and with Telenor Maritime Radio.

Here are some issues for consideration by the Task Team:

1. In the process of establishing the bulletins for weather, waves, sea ice etc, it would be helpful to coordinate with existing and new (Canada and Russia Federation) providers for METAREAS. For instance, UK Met Office has a long and existing responsibility for METAREA I would probably be able to give training and information for the new providers. This might also be done bi-laterally (e.g. UK-Norway).

2. In the establishing of full implementation plans, a coordinating activity would be appreciated, as it would ensure common understanding and practice. This could be done either by physical meeting(s), or by an expert review of the individual plans followed by recommendations for changes.

3. Before implementing full operational services, testing of the issuing and transmissions of MSI services should take place. For METAREA XIX we are planning such activities, but a cross-area evaluation of the tests might be helpful, again to be able to learn from one another.

There are plans for testing, probably a short period during the fall of 2009 (mainly to check routines and communications). More regular/extended tests will be performed in 2010.

METAREAs XX and XXI Status Report

by Valery Martyschenko and Vasily Smolyanitsky, Roshydromet and AARI

1. Review the status of preparation and transfer of GMDSS information for the Northern Sea Route area within METAREA XX and XXI METAREA for 2004-2008

1.1 According to decision of the Government of the Russian Federation (1997) «On the creation and operation of the Global Maritime Distress communications and Security System» (GMDSS), and in line with the decisions of the Ministry of Transport of Russia (1997-1999), in 2001 transfer of navigational - hydrographic, weather and ice information (MSI) to the SafetyNET network was organized for the Northern Sea Route (NSR) area.

1.2 The MSI transmittance to the SafetyNET network for the NSR area is performed by the Federal State Unitary Hydrographic Enterprise (FSU HE) - responsible organization of Federal Agency of Marine and River Transport (former Ministry of Transport) with the appropriate certificate of the International Maritime Organization (IMO). MSI is transferred to the western part of the NSR area (Pechora Sea - Khatangskiy Gulf) year-round, while to the eastern part of the NSR area (Khatangskiy Gulf - Bering Strait) - 4 months a year (from July to October). Schema of forecasts subareas is given in Appendix 1.

1.3 In Roshydromet, lead organization and coordinator of the preparation of weather and ice information for the NSR area is the Arctic and Antarctic Research Institute (AARI), which transmits this information to FSU HE for further transfer, together with the navigation of messages to the SafetyNET network. Co-executors of AARI for this work are the Arctic Roshydromet divisions and centers located in Arkhangelsk, Yakutsk and Pevek.

1.4 Preparation and transmission of weather and ice information to the SafetyNET network is accomplished in accordance with the following documents:

- IMO “International SafetyNET manual” (1994);
- “Guide to Marine Meteorological Services", WMO No. 471;
- “Joint IMO/IHO/WMO manual on maritime safety information (MSI)” (1998);
- Russian national "Guideline on preparation and transmission through the SafetyNET network of INMARSAT system of formalized information on safety of navigation for the Northern Sea Route area (2002) and other active Roshydromet guidelines.

1.5 In line with these documents, Roshydromet divisions and centers in Arctic two times a day (0600 and 1800 UTC) prepare and transmit to AARI meteorological weather bulletins and storm warnings within their areas of responsibility. After processing and English translation of the report, AARI compiles weather bulletins for the NSR area in accordance with the international requirements of the SafetyNET network and transmits them to the FSU HE. Three times a week (Monday, Wednesday and Friday) at 1800UTC AARI prepares brief summary description of ice conditions for the NSR area.

1.6 In 2008, MSI information for the western part of the NSR was transmitted during the period 1 July - 30 November 2008 in a form of weather bulletins two times a day, and ice summaries – three times a week on Mondays, Wednesdays and Fridays. The same MSI weather and ice information for the eastern part of the NSR was transmitted during the period 1 July - 10 October 2008 and for the area of the Anadyr Gulf (METAREA XIII) – during the period 1 July - 31 December 2008. Sample bulletins for the western, eastern parts of the NSR area and Anadyr Gulf are provided in Appendix 2. In January and February of 2009 due to complexities of financing, transmittance of MSI information for the NSR area was not provided. It is expected that in the near future the transfer of information data will be resumed.

1.7 Thus, the system of preparation and transmission of weather and ice information for the NSR area has been implemented and, after elimination in the near future of problems, is capable for sustainable operation.

2. Changes in the preparation and transmission of GMDSS information in the Arctic region in 2008

2.1 In 2008, IMO has identified the boundaries of new NAVAREA regions within the NSR area:

- NAVAREA XX bound by:
  From the border between Norway and Russia (Inland) to:
  69° 47'. 68N 030° 49, 16E, 69° 58'. 48N 031° 06, 24E,
  70° 22'. 00N 031° 43, 00E, 71° 00'. 00N 030° 00, 00E,
  From this co-ordinate (71° 00'. 00N - 030°00'. 00E) further north along the 030° 00'.00E Meridian to:
  90°00'. 00N 030°00'. 00E, 90°00'. 00N 125°00'. 00E,
  then south to the Russian Federation Coastline along the 125°00'. 00E meridian; and
- NAVAREA XXI bound by:
  From a position on the Russian Federation Coastline at the 125°00'. 00E meridian to:
  90°00'. 00N 125°00'. 00E,
  90°00'. 00N 168°58'. 00W,
  67°00'. 00N 168°58'. 00W,
  west to a position on the Russian Federation Coastline along the 67°00'. 00N parallel;

2.2 Coordinator for the collection, preparation and transfer of MSI in the areas NAVAREA XX and NAVAREAI was defined as FSU HE. Adopted by the Russian Federation regions of METAREA XX and METAREA XXI fully conform to NAVAREA XX and XXI regions and include the western and eastern parts of the NSR used presently in practice.

3. Activities planned by Roshydromet for 2009

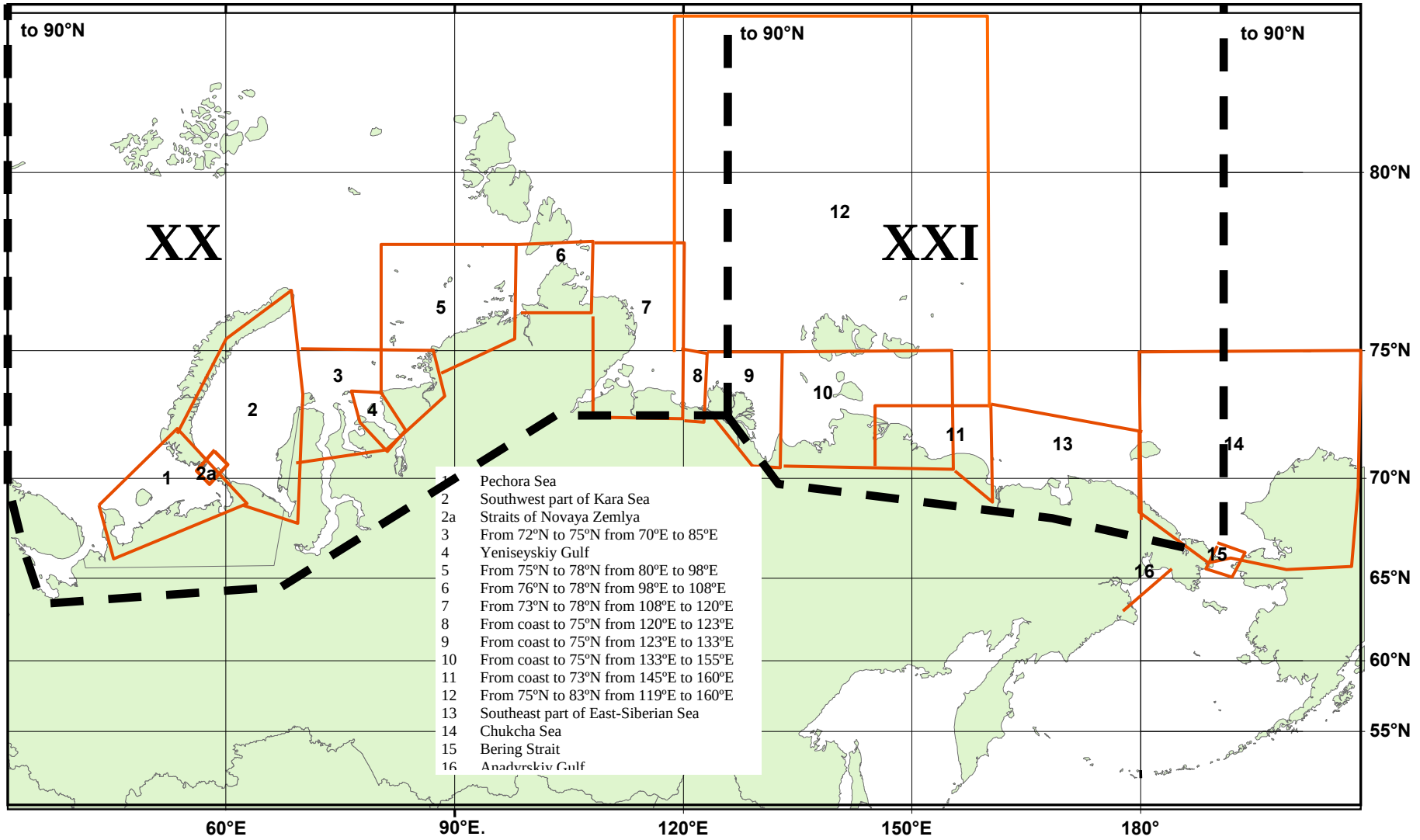
3.1 Activities planned by Roshydromet for 2009 include:

- harmonization of work on regular transmission of information to the SafetyNET network for all areas of METAREA XX and XXI with Russian coordinator of this activity – FSU HE;
- involvement of Roshydromet forecast center in Murmansk;
- coordination of the release of MSI information in the vicinity of METAREA XX and XXI borders with the corresponding issuing organizations in Canada and Norway;
- specification of subregions within METAREA XX and XXI in accordance with the NSR forecast subareas currently used in practice and other high-latitude navigational routes in the Arctic;
- pilot production of MSI information in the areas METAREA XX and XXI with transition to a regular one in 2010.

3.2 It is worthwhile to consider the specifications of MSI preparation and transmittance for high-latitude sub-regions of the Arctic METAREAs with permanent ice cover in accordance with tailored requirements of the customers. It should be noted that safety of navigation in the Arctic METAREAs is largely dependent on the solution of technical issues of the dissemination of sea ice graphic information in binary formats.

Appendix 1

Russian Federation, SafetyNET, METAPEA XX and XXI, Northern Sea Route forecast sub-areas



Appendix 2

SafetyNET bulletins for the western and eastern parts of the Northern Sea Route (METAREA XX and XXI) for 04 July 2008, 1800 UTC

SECURITY
WEATHER BULLETIN FOR WEST NORTHERN SEA ROUTE
67N44E/80N44E/67N125E/80N125E
ISSUED BY THE ARCTIC AND ANTARCTIC RESEARCH INSTITUTE ST PETERSBURG
ON THE 07 JULY 2008 AT 1800UTC
PART 1
AT 071800UTC
GALE WARNING
PECHORSKOYE SEA
FROM 071800UTC TO 080600UTC
WINDS E S/E 17 TO 20 MS
AFTER 080600UTC WINDS S/E S 12 TO 16 MS
STRAITS OF NOVAYA ZEMLYA
WINDS S/E E GUST 17 TO 20 MS
PART 2
SINOPSIS AT 071800UTC
LOW 995 HPA 67N 42E DEEPENING
HIGH 1015 HPA 73N 66E
HIGH 1015 HPA 73N 63E STATIONARY
ICE
PECHORSKOYE SEA
OPEN WATER AND 1-3 BALLS OF DRIFT ICE
STRAITS OF NOVAYA ZEMLYA
7-10 BALLS OF DRIFT ICE AND FAST ICE
SOUTHWEST PART OF THE KARA SEA
OPEN WATER,1-6,7-10 BALLS 0F DRIFT ICE AND FAST ICE
FROM 72N TO 75N FROM 70E TO 85E
OPEN WATER, 1-6 OF DRIFT ICE AND FAST ICE
YENISEYSKIY GULF
OPEN WATER AND FAST ICE
FROM 75N TO 78N FROM 80E TO 98E
OPEN WATER,1-6, 7-10 BALLS OF DRIFT ICE AND FAST ICE
FROM 76N TO 78N FROM 98E TO 108E
9-10 BALLS OF DRIFT ICE AND FAST ICE
LAPTEV SEA: FROM 73N TO 78N FROM 108E TO 128E
OPEN WATER,7-10 BALLS OF DRIFT ICE AND FAST ICE
KHATANGSKIY GULF
OPEN WATER, FAST ICE
FROM COAST TO 75N FROM 113E TO 119E
OPEN WATER,7-10 BALLS OF DRIFT ICE AND FAST ICE
FROM COAST TO 75N FROM 119E TO 128E
OPEN WATER,9-10 BALLS OF DRIFT ICE AND FAST ICE
FROM COAST TO 74N FROM 128E TO 133E
OPEN WATER, 9-10 BALLS OF DRIFT ICE AND FAST ICE
PART 3
FORECAST FROM 071800UTC TO 081800UTC
PECHORSKOYE SEA
WINDS E S/E 17 TO 22 MS AFTER 080600UTC S/E S 12 TO 16 MS
VIS 4 TO 6 KM LOCALLY RAIN
TEMP PLUS 6 TO PLUS 11 DEGREES
SEAS 2.0 TO 2.5 M
SOUTHWEST PART OF THE KARA SEA STRAITS OF NOVAYA ZEMLYA

WINDS S/E S 9 TO 14 MS
STRAITS OF NOVAYA ZEMLYA WINDS S/E E GUST 17 TO 20 MS
VIS 4 TO 6 KM LOCALLY RAIN
TEMP PLUS 5 TO PLUS 10 DEGREES
FROM 72N TO 75N FROM 70E TO 85E YENISEYSKIY GULF
WINDS N/E N 8 TO 13 MS YENISEYSKIY GULF 11 TO 16 MS
VIS 10 KM FROM 72N TO 75N FROM 70E TO 85E LOCALLY 0.5 TO 1.0 KM FOG
TEMP 0 TO PLUS 5 DEGREES YENISEYSKIY GULF PLUS 8 TO PLUS 13 DEGREES
FROM 75N TO 78N FROM 80E TO 98E
WINDS N/E E 6 TO 11 MS
VIS 10 KM LOCALLY 0.5 TO 1.0 KM FOG
TEMP MINUS 2 TO PLUS 3 DEGREES
FROM 76N TO 78N FROM 98E TO 108E
WINDS N/E E AFTER 080600UTC W 7 TO 12 MS
VIS 10 KM LOCALLY 2 TO 4 KM PRECIPITATION HAZE
TEMP MINUS 2 TO PLUS 3 DEGREES
FROM 73N TO 78N FROM 108E TO 113E
WINDS N/E N AFTER 080600UTC W 7 TO 12 MS
VIS 10 KM SOMETIMES 2 TO 4 KM PRECIPITATION HAZE
TEMP MINUS 2 TO PLUS 3 DEGREES

KHATANGSKIY GULF
WINDS N/E E 6 TO 11 MS
VIS 6 TO 10 KM SOMETIMES WEAK PRECIPITATION
TEMP PLUS 2 TO PLUS 7 DEGREES REGION KHATANGSKIY PLUS 12 DEGREES
FROM COAST TO 75N FROM 113E TO 119E
WINDS N/E E 4 TO 9 MS OF NORHT 72N S/E S 4 TO 9 MS
VIS 6 TO 10 KM SOMETIMES WEAK PRECIPITATION
TEMP PLUS 1 TO PLUS 6 DEGREES
FROM COAST TO 75N FROM 119E TO 128E
WINDS N N/E 4 TO 9 MS AFTER 080000UTC OF NORHT 72N E S/E 4 TO 9 MS
VIS 4 TO 10 KM SOMETIMES WEAK PRECIPITATION HAZE
TEMP 0 TO PLUS 5 DEGREES
FROM COAST TO 74N FROM 128E TO 133E
WINDS N N/E 3 TO 8 MS AFTER 080600UTC E S/E 3 TO 8 MS
VIS 2 TO 6 KM SOMETIMES WEAK PRECIPITATION HAZE
TEMP 0 TO PLUS 5 DEGREES COASTAL REGION PLUS 9 DEGREES
NNNN

SECURITY
WEATHER BULLETIN FOR EAST NORTHERN SEA ROUTE
63N125E/80N125E/63N165W/80N165W
ISSUED BY THE ARCTIC AND ANTARCTIC RESEARCH INSTITUTE ST PETERSBURG
ON THE 07 JULY 2008 AT 1800UTC
PART 1
AT 071800UTC
GALE WARNING
FROM COAST TO 73N FROM 159E TO 171E
FROM 071800UTC TO 080600UTC
WINDS N/W GUST 17 TO 20 MS
ANADYRSKIY GULF
FROM 071800UTC TO 080600UTC
WINDS S GUST 17 TO 20 MS
PART 2
SINOPSIS AT 071800UTC
LOW 988 HPA 81N 158E MOVING N/W 25 KMH DEEPENING

HIGH 1010 HPA 74N 117E MOVING S/E
LOW 990 HPA 70N 173E MOVING E 30 KMH
ICE
KHATANGSKIY GULF
OPEN WATER, FAST ICE
FROM COAST TO 75N FROM 113E TO 119E
OPEN WATER, 7-10 BALLS OF DRIFT ICE AND FAST ICE
FROM COAST TO 75N FROM 119E TO 128E
OPEN WATER, 9-10 BALLS OF DRIFT ICE AND FAST ICE
FROM COAST TO 74N FROM 128E TO 133E
OPEN WATER, 9-10 BALLS OF DRIFT ICE AND FAST ICE
FROM COAST TO 74N FROM 133E TO 141E
OPEN WATER, 7-10 BALLS OF DRIFT ICE AND FAST ICE
FROM COAST TO 75N FROM 141E TO 150E
OPEN WATER, 7-10 BALLS OF DRIFT ICE AND FAST ICE
FROM COAST TO 74N FROM 150E TO 159E
OPEN WATER, 1-6, 7-10 BALLS OF DRIFT ICE AND FAST ICE
FROM COAST TO 73N FROM 159E TO 171E
OPEN WATER, 7-10 BALLS OF DRIFT ICE
FROM COAST TO 72N FROM 171E TO 178W
OPEN WATER, 7-10 BALLS OF DRIFT ICE
FROM COAST TO 71N FROM 178W TO 168W
OPEN WATER, 1-3, 7-10 BALLS OF DRIFT ICE AND FAST ICE
BERING STRAIT
OPEN WATER
ANADYRSKIY GULF
OPEN WATER
PART 3
FORECAST FROM 071800UTC TO 081800UTC
KHATANGSKIY GULF
WINDS N/E E 6 TO 11 MS
VIS 6 TO 10 KM SOMETIMES WEAK PRECIPITATION
TEMP PLUS 2 TO PLUS 7 DEGREES REGION KHATANGSKIY PLUS 12 DEGREES
FROM COAST TO 75N FROM 113E TO 119E
WINDS N/E E 4 TO 9 MS OF NORHT 72N S/E S 4 TO 9 MS
VIS 6 TO 10 KM SOMETIMES WEAK PRECIPITATION
TEMP PLUS 1 TO PLUS 6 DEGREES
FROM COAST TO 75N FROM 119E TO 128E
WINDS N N/E 4 TO 9 MS AFTER 080000UTC OF NORHT 72N E S/E 4 TO 9 MS
VIS 4 TO 10 KM SOMETIMES WEAK PRECIPITATION HAZE
TEMP 0 TO PLUS 5 DEGREES
FROM COAST TO 74N FROM 128E TO 133E
WINDS N N/E 3 TO 8 MS AFTER 080600UTC E S/E 3 TO 8 MS
VIS 2 TO 6 KM SOMETIMES WEAK PRECIPITATION HAZE
TEMP 0 TO PLUS 5 DEGREES COASTAL REGION PLUS 10 DEGREES
FROM COAST TO 74N FROM 133E TO 141E
WINDS W N/W 4 TO 9 MS
VIS 1 TO 6 KM SOMETIMES PRECIPITATION HAZE
TEMP MINUS 1 TO PLUS 4 DEGREES COASTAL REGION PLUS 9 DEGREES
FROM COAST TO 75N FROM 141E TO 150E
WINDS W N/W 4 TO 9 MS OF NORHT 73N 7 TO 12 MS
VIS 4 TO 10 KM SOMETIMES PRECIPITATION HAZE
TEMP MINUS 1 TO PLUS 4 DEGREES
FROM COAST TO 74N FROM 150E TO 159E
WINDS N/W 5 TO 10 MS
VIS 4 TO 10 KM SOMETIMES PRECIPITATION HAZE
TEMP MINUS 1 TO PLUS 4 DEGREES COASTAL REGION PLUS 9 DEGREES

FROM COAST TO 73N FROM 159E TO 171E
WINDS N/W 7 TO 12 MS GUST 17 TO 20 MS
VIS 10 KM LOCALLY 0.5 TO 1.0 KM FOG
TEMP PLUS 0 TO PLUS 5 DEGREES
SEAS 1.0 TO 2.0 M
FROM COAST TO 72N FROM 171E TO 178W
WINDS N/W 5 TO 10 MS GUST 11 TO 16 MS
VIS 10 KM LOCALLY 0.5 TO 1.0 KM FOG
TEMP PLUS 2 TO PLUS 7 DEGREES
SEAS 0.5 TO 1.0 M
FROM COAST TO 71N FROM 178W TO 168W
WINDS S/W 4 TO 9 MS GUST 11 TO 16 MS
VIS 10 KM
TEMP PLUS 5 TO PLUS 10 DEGREES
SEAS 1.0 TO 2.0 M
ANADYRSKIY GULF
WINDS S 8 TO 13 MS GUST 17 TO 20 MS
VIS 10 KM
TEMP PLUS 13 TO PLUS 18 DEGREES
SEAS 1.0 TO 2.0 M

NNNN

Annex VI

Sea Ice Services in the World

1. According to currently available information, the following regions of the Northern hemisphere are covered by the Ice Services or Centres from the 16 countries:

- Hemispherical analysis: USA
- Arctic Ocean: Russia, USA
- Canadian Arctic: Canada
- Eurasian Arctic, Bering, Okhotsk, Tatar Strait and White Seas and : Russia
- North Atlantic and Barents Sea: Norway
- North Pacific, Bering, Beaufort and Chukcha Seas: USA
- Greenland Sea, Davis Strait, Baffin Bay: Denmark, Canada
- Iceland Sea: Iceland
- Baltic Sea (Baltic Sea Ice Services: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Netherlands, Norway, Poland, Russia, Sweden)
- Far East Seas: China, Japan, USA
- Caspian Sea: Russia, Kazakhstan/Denmark
- Black and Azov Seas: Russia
- Great Lakes: North American Ice Service (Canada-USA)

2. Ice services in the Southern hemisphere are provided for the following regions:

- Hemispheric analysis: USA
- Regional analysis: Ross Sea, USA
- Regional analysis: Atlantic, Indian and Pacific sectors, Russia
- Sectoral analysis: Argentina, Australia, UK, Italy

3. Typical products issued by the Ice Services may be divided into the following groups and according to their scale and complexity:

- Low-resolution hemispheric products include ice distribution and age produced by several centres. These kind of products are usually based on the passive microwave satellite imagery (Spatial resolution ~25 km), produced weekly or bi-weekly, occasionally daily and is aimed on the navigation support for long-range planning as the spatial resolution is not sufficient for ship routing through ice.

- Semi-hemispheric products are similar in attributes to hemispheric products with additional higher resolution (up to 1-6 km) satellite data may be used and more manual analysis may be applied.

- Regional ice charts are typically produced manually weekly or bi-weekly, using standard WMO nomenclature, coding system and colour scheme across all national ice services.

- High-resolution ice charts and high-resolution annotated satellite imagery are produced on scale hours – 1 day, and are largely based on a manual analysis of satellite imagery: optical (AVHRR, MODIS etc) with a resolution of ~ 250m - 1km, SAR (RADARSAT, ENVISAT etc) with resolution 25 – 100 m and others.

- Prognostic (usually 1-7 days) ice charts for ice parameters critical for safety and success of navigation (ice distribution and thickness, ridges, ice motion, compacting, diverging, leads) both on tactical and regional scales.

- Supplementary synoptic and prognostic (usually 1-7 days) meteorological charts or grids.

– Textual warnings and forecasts for ice and weather parameters critical for safety and the success of navigation.

– Medium to long-term ice and meteorological phenomena forecasts with a lead-time of more than 7 days (commonly based on empirical models).

Annex VII

Template for Issuing Service Self-Assessment Report

MSI Self Assessment METAREA [**Insert No**]

Year [**Insert No**]

Submitted by [Insert country / organization]

SUMMARY

Executive Summary: [Insert summary]

Action to be taken: [Insert paragraph number]

Related documents: [Insert details if any]

1. Background:

[describe METAREA including details of the geographic boundaries of the METAREA, include any Sub-Area for Preparation Services if any, SafetyNET Satellite broadcast used (ex. AOR –E), the GMDSS service provider, the schedule broadcasts per day, GTS headers and other information appropriate for the management of messages on the GMDSS website (http://weather.gmdss.org)]

2. Comments:

[specifics of MSI within METAREA, include how many SafetyNET messages were promulgated over 3yr period e.g. METAREA XXX 2006 - xx, 2007 - xx, 2008 - xx]

3. NAVTEX Coverage:

[diagram of NAVTEX stations and service areas within METAREA, the schedule broadcasts per day, GTS headers and other information appropriate for the management of messages on the GMDSS website (http://weather.gmdss.org)]

4. Operational Issues:

[new infrastructure in accordance with GMDSS Master Plan or implementation of new WMO regulation or guidance; problems encountered; contingency plans and testing of the plans]

5. Quality Management Survey

[Please complete the following table with Yes / No or provide a comment]

METAREA	ISO 9001 - 2000	Warnings for 8 Beaufort and above	Promulgate at least two scheduled broadcasts per day	Include wind and sea state in scheduled	Visibility in descriptive terms	24/7 watch	Monitor Broadcast in almost real time

[statistics on punctuality,…]

6. Capacity Building:

[Offer of and/or demand for Capacity Building, Training received, offered, status of national, bilateral, multilateral or regional development projects with MSI component]

7. Other Activities:

[Participation in WMO, IHO or IMO Working Groups, regional conferences over past year]

8. METAREA Website:

[Address, statistics (If permitted by national legislation), frequency of update, etc]

9. METAREA GMDSS focal point contact:

[Provide updated contact details + state change / no change]

10. Actions or suggestions proposed:

[If any]

11. Synopsis:

[Provide a synopsis of your report, which could be included in a summary report if needed]

Annex VIII

MARINE METEOROLOGICAL SERVICES MONITORING PROGRAMME QUESTIONNAIRE

To Masters, Deck Officers, Skippers, Sailors, icebreaking services and other marine users

In order to monitor the effectiveness of the weather and sea bulletins produced and transmitted by Meteorological Services, the World Meteorological Organization would appreciate your cooperation in completing the following questionnaire. The objective of this programme is to improve the level of meteorological support to all marine user communities.

Ship's Name & Call Sign	
Type of ship (SOLAS or non-SOLAS)	
or other marine user activity (specify)	
Type (merchant, ferry, cruising, fishing, recreational, icebreaking), size and length of the vessel	
Country of registry	
Name of master	
Operational area(s)	
Voyage from	to
Date, time, position when the questionnaire completed	

Please complete the following questionnaire by placing a cross (x) under the appropriate column heading and providing additional information or comments as appropriate.

			Not used	Good	Average	Poor	Issuing Met Service	Station
1	**Reception of GMDSS info. Please rate the quality of reception:** (should be filled at least by SOLAS vessels)							
A	via INMARSAT SafetyNET							
B	via Navtex (518 kHz)	1st station						
		2nd station						
		3rd station						

Comments

			Not used	Good	Average	Poor	Issuing Met Service	Station
2	**Reception of other Safety information**				(This section should be filled at least by non-SOLAS vessels)			
A	via Navtex (490 or 4209.5 kHz)[1]	1st station						
		2nd station						
		3rd station						
B	via HF Radio							

[1] Information on the reception of Maritime Safety Information via the 4th or more stations should be provided in Section 10.

		Not used	Good	Average	Poor	Issuing Met Service	Station
C	via VHF Radio						
D	via visual signals						
E	via e-mail						
F	via GMDSS web site (http://weather.gmdss.org)[2]						
G	Via any other web interface						

Comments

		Not used	Good	Average	Poor	Issuing Met Service	Station
3	**Storm and Gale warnings. Please rate the following:**						
A	Comprehension of warnings						
B	Accuracy of warnings						
C	Terminology used						
D	Usefulness (anticipation, parameters, thresholds…)						

Comments

		Not used	Good	Average	Poor	Issuing Met Service	Station
4	**Sea Ice and Icebergs Information (for mariners in areas with floating ice). Please rate the following:**						
A	Clarity of information						
B	Accuracy of information						
C	Timeliness						
D	Terminology used						

Comments

[2] GMDSS web site provides access to Maritime Safety Information world-wide.

		Not used	Good	Average	Poor	Issuing Met Service	Station
5	**Wave and Storm Surge Information. Please rate the following:**						
A	Clarity of information						
B	Accuracy of information						
C	Timeliness						
D	Terminology used						

Comments

		Not used	Good	Average	Poor	Issuing Met Service	Station
6	**Other parameters in Weather and Sea bulletins. Please rate the following:**						
A	Comprehension of bulletins (including abbreviations)						
		Not used	**Good**	**Average**	**Poor**	**Issuing Met Service**	**LES/Navtex Station**
B	Accuracy of bulletins						
C	Are bulletins on time?						
D	Terminology used in bulletins?						
E	Usefulness (parameters,…)						

Comments

		Not used	Good	Average	Poor	Issuing Met Service	Station
7	**Graphic/numeric broadcasts (e.g. Facsimile). Please rate the following:**						
A	Are charts received on time?						
B	Accuracy of information on charts						
C	Comprehension of symbols						
D	Quality of reception						
E	Is this a useful service?	**Yes** ☐ **No** ☐					

If Yes, please comment on how the service could be improved.

Comments

8 Land Earth Stations (LES) Inmarsat		Not used	Good	Average	(This section should be filled only by Voluntary Observing Ships)
A	Rate your success in contacting a LES to send your weather observation messages (OBs)				LES: ____
B	Do you experience delays in sending your OBs?	Yes ☐ No ☐			
C	Do any LES refuse to accept your OBs?	Yes ☐ No ☐			LES (if Yes): ____

Comments

9 Other related problems (if any) – include ship's position, date and time.

10	**Any other comments not considered under the previous items and suggested improvements (e.g. met-ocean information in ECDIS, other required met-ocean parameters not mentioned under previous items)**

Use additional sheets if necessary.

For each case, complete one questionnaire

After completion, please return to the following address:

Marine Meteorology and Ocean Affairs Division
Weather and Disaster Risk Reduction Services Department
World Meteorological Organization
7 bis, avenue de la Paix
Case postale No. 2300
CH-1211 Geneva 2
Switzerland
Telefax: +41 22 730 8128
E-mail: mmo@wmo.int

Annex IX

Proposed ETMSS Terms of Reference and Membership

The Expert Team on Maritime Safety Services, in close collaboration with international organizations and other entities representing users' interests, such as the IMO, IHO, ICS, IMSO, and other concerned organizations and bodies on maritime safety, search and rescue and marine pollution issues, including the GMDSS, shall:

(a) In support of the Maritime Safety, Efficiency, and Search and Rescue (SAR) operations:

(i) Monitor and review the operations of marine broadcast systems, including for the GMDSS and others for vessels not covered by the SOLAS Convention

(ii) Monitor and review technical and service quality standards for meteorological and oceanographic maritime safety information, particularly for the GMDSS, and provide assistance and support to Members/Member States as required

(iii) Propose actions as appropriate to meet requirements for international coordination of meteorological and related communication services

(iv) Develop technical advice and guidance material on Marine Meteorological Services, including keep under review the *Manual on Marine Meteorological Services* (WMO-No. 558), the *Guide on Marine Meteorological Services* (WMO-No. 471) and *Weather Reporting - Information for Shipping* (WMO-N° 9, Volume D) , and provide assistance and support to Members/Member States as required;

(b) In support of the Marine Pollution Emergency Response Support System (MPERSS):

(i) Monitor implementation and operations of MPERSS; review and suggest, as necessary, improvements to the contents of the overall system plan; (in consistence with MARPOL, and other international convections)

(ii) Facilitate coordination and cooperation amongst the Area Meteorological and Oceanographic Coordinators (AMOCs) of MPERSS, in particular, with a view to ensuring full and ongoing operations in all areas, as well as the exchange of relevant advice, information, data and products between AMOCs, as appropriate and required;

(*c*) Monitor requirements by ensuring feedback from the user communities is obtained through appropriate and organized channels and applied to improve the relevance, effectiveness and quality of services;

(d) Liaise with and gather input from ETSI, ETWS and ETOFS on all aspects of sea ice, sea state, storm surge and ocean circulation relevant to the operation and improvement of maritime safety services and maritime accident emergency support;

(e) Ensure effective coordination and cooperation with concerned organizations, bodies and Members/Member States on maritime safety issues and marine accident emergency support needs

(f) Assist Members/Member States in the implementation of services and in the development of standardized methods for the quality assurance related to the provision of MSI, especially for the GMDSS, through Capacity Building activities

(g) Develop, in accordance with existing standards (e.g. from IHO), graphical/numerical product specification for marine parameters, foremost wind, sea state, currents and sea ice, in Electronic Navigation Chart Systems (ENCs);

(g) Provide advice to the Services Coordination Group and other JCOMM groups, as required, on issues related to maritime safety services and marine accident emergency support.

General membership

The Membership will consist of a *core* membership of up to 10 members, including the Chairperson and a Vice-Chairperson, selected to ensure an appropriate range of expertise in the provision of services for maritime safety and efficiency, SAR operations and marine pollution response. Specifically two members will be selected to address tasks specifically related to keep a liaison with other organizations and users feedback; two members to address graphical/numerical products; two members for marine accident emergency support, including SAR; two members to address aspects related to Polar Regions; one member for wind waves and storm surges, 1 member for QMS.

Additional experts may be invited as appropriate, representative of the range of activities related to the implementation of services for maritime safety and efficiency, SAR operations and marine pollution response, and international organizations and other entities representing users' interests, such as the IMO, IHO, ICS, IMSO, and other user groups, on a self-funded basis, and in general with no resource implications to JCOMM

Annex X

LIST OF ACTIONS

Para	Action	By whom	When/target
2.2	Make available existing documentation on Quality Management Framework, including those documents developed for aeronautic meteorology	WMO Secretariat	ASAP
2.3	Make available existing documentation on QMS implemented by the UK Hydrographic Office	IMO/IHO representative	ASAP
2.3	Make available existing documentation on QMS implemented by NMHSs	Team members	ASAP
3.1.2 and 4.2.1	Assist and provide technical support to the Arctic METAREA Issuing Services in preparing their implementation plans and timelines	GMDSS focal points of USA, UK and France	Ongoing, to be presented in JCOMM-III
3.1.2	Continue engaged in the process of updating the joint IMO/IHO/WMO regulatory documentation, and to define a common list of abbreviations for the NAVTEX and include it in the joint IMO/IHO/WMO publications	ETMSS chairperson, Mr Nick Ashton (UK), and the WMO Secretariat	Ongoing
3.1.2	Clarify the definition of NAV/METAREAs boundaries and limits	IMO, IHO and WMO Secretariat	ASAP
3.1.2 and 4.1.7	Clarify the responsibility to prepare and issue met-ocean MSI for the Hudson Bay	Canada and USA Issuing Services, in consultation with the NAVAREA IV Coordinator	ASAP
3.1.2 and 5.5.2	Provide to Météo-France the GTS headers of products being disseminated by the International NAVTEX	Team members and WMO Secretariat	ASAP
3.1.2 and 7.2.3	Distribute the questionnaire as soon as possible, in order to be able to present the results to JCOMM-III	WMO Secretariat	Immediately
3.1.3 and 6.2.2	Prepare a first draft of a formal Recommendation to be presented at JCOMM-III, reviewing the ToR of the Issuing Services in order to introduce the concept of METAREA coordinators / Circulate among the Team members and representatives of IMO and IHO, this draft Recommendation for comments and review	WMO Secretariat and the ETMSS chairperson	mid-April 2009/mid-May 2009
3.2.3	Inform (if any and if available) the WMO Secretariat and the ETMSS chairperson which NMHSs were issuing met-ocean MSI through the International NAVTEX in their national language	chairperson of the IMO International NAVTEX Coordinating Panel	Ongoing
4.2.2	Provide their information on the service areas and desired time of transmission to the ETMSS chairperson, who would compile this information in coordination with the chairperson of the CG	Arctic Issuing Services	June 2009

Para	Action	By whom	When/target
4.2.3	Ensure that coordination aspects between Issuing Services and Ice Services were clearly stated in the formal Recommendation to be presented at JCOMM-III	WMO Secretariat	mid-May 2009
5.1.4	Check the status of the *Object Classes and Attributes for Weather* and provide this information to the WMO Secretariat	IHO representative	ASAP
5.1.5	Provide a status report on the roadmap for developing methods for transmission of graphical products to marine users	DMPA coordinator	May 2009
5.1.6	Provide technical support and the available documents on met-ocean information in graphical/numerical form to the WMO Secretariat	ETSI/TG-ENCIO, the DMPA coordinator and Mr Tim Rulon (USA)	From 2 June to 31 August 2009
5.1.6	Evaluate the availability and willingness of Mr Barrie Greenslade, or other member of the HGMIO, to provide guidance and technical support to WMO on IHO standards for displaying MIOs	IHO representative	ASAP
5.2.1	Continue work on this document, in collaboration with ETMSS, and taking into consideration the user requirements	ETWS members	Ongoing
5.2.1	Contact the agencies representing users' interests (e.g. the International Chamber of Shipping (ICS)) to get their views on requirements for sea state information	WMO Secretariat	ASAP
5.2.2	Prepare a survey on current practices in specifying sea state information in weather and sea bulletins issued by the METAREA Issuing Services, taking into consideration the existing surveys developed in the past	WMO Secretariat, the ETMSS and ETWS chairpersons	ASAP
5.2.2	Evaluate the feasibility of holding this workshop during the next intersessional period	WMO Secretariat	ASAP
5.2.3	Make available the electronic version of the WMO-No. 558 to the Team	WMO Secretariat	ASAP
5.2.3	Prepare a formal Recommendation to be presented at JCOMM-III regarding the updates of the WMO-No. 558 during the next intersessional period	WMO Secretariat	end May 2009
5.2.3	Provide the appropriate information on sea state to be included in this formal Recommendation	ETWS chairperson	end April 2009
5.3.2	Provide to WMO Secretariat the appropriate information on sea ice to be included in the formal Recommendation to be presented at JCOMM-III regarding the updates of the WMO-No. 558 during the next intersessional period	ETSI chairperson	end April 2009
5.4.2	Clarify with the UNESCO/IOC the role of the ETMSS and the METAREA Issuing Services in the provision of tsunami related MSI and, if appropriate, define mechanisms for the Issuing Services being able to access to warnings issued by UNESCO/IOC regional centres	WMO Secretariat	end March 2009

Para	Action	By whom	When/target
5.5.2	Make a demonstration of the GMDSS-weather web site during the JCOMM-III session	ETMSS chairperson	November 2009
5.5.3	Initiate a dialogue with WIS experts in the WMO Secretariat to evaluate required changes (if any) in the GMDSS-weather web site to become compliant with WIS in the future	ETMSS chairperson	Ongoing
5.5.3	discuss the potential integration of the Ice Logistics Portal into WIS with the ETSI members	ETSI chairperson	October 2009
6.1.1	Review of the publication WMO-No. 558	WMO Secretariat, in collaboration with members of the Team (Mr Henri Savina, Mr Nick Ashton, Mr Tim Rulon and an expert from Australia (TBD))	Part 1 bis by end of May 2009 and the remaining parts by end August 2009
6.2.2	Prepare a formal Recommendation to be presented at JCOMM-III regarding the usefulness of WMO-No. 9, Volume D / Circulate among the Team members this draft Recommendation for comments and review	WMO Secretariat	mid-April 2009/mid-May 2009
6.3.1	Make available the MSC Circulars to Team members	WMO Secretariat	ASAP
6.4.1	Prepare a list of potential criteria for QMS (Excel sheet) and circulate it among the Team members for review and determine those to be included in the first version of the template	WMO Secretariat	ASAP / comments by end May 2009
6.4.2	Send out the survey first to Issuing Services and later to NMHSs issuing met-ocean MSI through the International NAVTEX (the template should be adapted)	WMO Secretariat	July 2009 / beginning 2010
7.1.2	Circulate the draft IMO Resolution among the members of the Team for comments and review	WMO Secretariat	ASAP
7.1.2	Initiate a dialogue with IMO to ensure its involvement in the development of QMS for the provision of met-ocean MSI services	WMO Secretariat	ASAP
7.1.3	Prepare a document for JCOMM-III focused on QMS for the provision of met-ocean MSI services	WMO Secretariat (MMO and AEM Divisions), in collaboration with Mr Nick Ashton (UK) and Mr Bryan Boase (Australia)	May 2009

Para	Action	By whom	When/target
7.2.3	Disseminate questionnaire among the users through appropriate channels, including through the Internet, the British Antarctic Institute and the German Hydrographic Office, in order to present the results to JCOMM-III	WMO Secretariat	Immediately; deadline to receive the filled in questionnaire: end May 2009
7.2.3	Make the MMSM questionnaire available on the web	WMO Secretariat	ASAP
7.2.3	Evaluate the feasibility to make the questionnaire available on the IHO web site	IHO representative	ASAP
7.2.3	Analyse the received filled in questionnaires and prepare a document with the results for JCOMM-III	WMO Secretariat, the ETMSS chairperson and Mr Michael Myrsilidis (Greece)	end July 2009

Annex XI

ACRONYMS AND OTHER ABBREVIATIONS

AARI	Arctic and Antarctic Research Institute
AEM	Aeronautic Meteorology Division (WMO/WDS)
AOB	Any Other Business
ASAP	As Soon As Possible
CG	Correspondence Group
CIS	Canadian Ice Service
CMM	Commission for Marine Meteorology (WMO)
COMSAR	Sub-Committee on Radiocommunications, Search, and Rescue (IMO)
CPRNW	IHO Commission on the Promulgation of Radio Navigational Warnings
CHRIS	Commission of Hydrographic Requirements for Information System (IHO)
DMPA	Data Management Programme Area (JCOMM)
ENC	Electronic Navigational Chart
ET	Expert Team
ETMSS	Expert Team on Maritime Safety Services (JCOMM)
ETSI	Expert Team on Sea Ice (JCOMM)
ETWS	Expert Team on Wind Waves and Storm Surges (JCOMM)
GMDSS	Global Maritime Distress and Safety System
GTS	Global Telecommunication System (WWW)
HGMIO	Harmonizing Group on Marine Information Objects
ICS	International Chamber of Shipping
IHO	International Hydrographic Organization
IITT-QMF	Inter-Commission Task Team on Quality Management Framework
IMO	International Maritime Organization
IMSO	International Mobile Satellite Organization
IOC	Intergovernmental Oceanographic Commission (of UNESCO)
ISO	International Standards Organization
JCOMM	Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology
MIO	Marine Information Objects
MMO	Marine Meteorology and Ocean Affairs Division (WMO/WDS)
MMS	Marine Meteorological Services
MMSM	Marine Meteorological Services Monitoring Programme
MSC	Maritime Safety Committee (IMO)
MSI	Maritime Safety Information
NAVTEX	International system for reception of marine safety information
NIS	National Ice Services
NMHS	National Meteorological and Hydrological Service
NMS	National Meteorological Service
QMF	Quality Management Framework
QMS	Quality Management Systems
SAR	Search and Rescue
SCG	Services Programme Area Coordination Group (JCOMM)
SDM	Inmarsat System Definition Manual
SOLAS	International Convention for the Safety of Life at Sea
SOT	Ship Observations Team (OPA)
SPA	Services Programme Area
TBD	To Be Decided
TG-ENCIO	Task Group on Electronic Navigational Chart Ice Objects (JCOMM/ETSI)
TOR	Terms of Reference
TT-MSI	Task Team on Maritime Safety Information (JCOMM/ETMSS)
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America
VOS	Voluntary Observing Ship

WDS	Weather and Disaster Risk Reduction Services Department (WMO
WIS	WMO Information System
WMO	World Meteorological Organization
WWMIWS	World-Wide Met-ocean Information and Warning System (IMO/WMO)
WWNWS	World-Wide Navigational Warning Service (IHO/IMO)