WORLD METEOROLOGICAL ORGANIZATION

JOINT WMO/IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY (JCOMM)

EXPERT TEAM ON SEA ICE – FOURTH SESSION

STEERING GROUP FOR THE PROJECT GLOBAL DIGITAL SEA ICE DATA BANK (GDSIDB) – TWELTH SESSION

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Report by the ETMSS Chairperson

(Submitted by Henri Savina, ETMSS Chairperson)

Summary and Purpose of Document

This document provides a short summary report on ETMSS activities since it last session (ETMSS-II, Angra dos Reis, Brazil, January 2007) and priorities for the next JCOMM intersessional period 2010-2012

ACTION PROPOSED

The Expert Team on Sea Ice (ETSI) is invited to:

(a) Note and comment on the information provided as appropriate;

(b) Provide additional recommendations and suggestions for its future workplan as appropriate.

Short report on ETMSS activities since ETMSS-II

1 The Expert Team on Maritime Safety Services (ETMSS) continues to assist Members/Member States in implementing met-ocean services in support of the international maritime navigation. ETMSS experts have participated in several International Maritime Organization (IMO) and International Hydrographic Organization (IHO) meetings to coordinate the expansion of the Global Maritime Distress and Safety System (GMDSS) into the Arctic waters and the revision of relevant regulatory publications and IMO Resolutions. ETMSS has reinforced its cooperation with the IHO World-Wide Navigational Warning Service Sub-Committee (IHO/WWNWS), whose results are as follows:

(a) IMO Resolutions A705(17) on Promulgation of Maritime Safety Information and A706(17) on the IMO/IHO World-Wide Navigational Warning Service, were updated. Those Resolutions, endorsed by the WMO Executive Council, were submitted to IMO/COMSAR-12 in April 2008 and adopted by IMO/MSC-85 in November/ December 2008, and will enter into force on January 2010;

(b) A new version of the *joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI)*, containing an updated section on met-ocean MSI including the new METAREA map, was produced. This new version was endorsed by WMO and IHO in October 2008, and was subsequently submitted to COMSAR-13, in January 2009, and adopted by IMO/MSC-86 in May/June 2009;

(c) A new version of the *International SafetyNET Manual* was finalized at the first session of the IHO/PRNW, in August 2009. This new version is to be submitted to IHO Committee, WMO Executive Council and IMO/COMSAR for approval and subsequently adoption by IMO/MSC, in 2010;

(d) The new specifications for the *Inmarsat System Definition Manual*, including the new Arctic areas, have been prepared;

(e) Following the request by the WMO Executive Council, at its sixty-first session (Geneva, June 2009), an IMO/WMO World-Wide Met-ocean Information and Warning Service (WWMIWS) guideline document was prepared [see Appendix III of doc. 2.5.5], to complement the existing IMO/IHO World-Wide Navigational Warning Services (WWNWS, IMO Resolution A.706(17)). The WMO Executive Council will consider the WWMIWS, at its sixty-second session (Geneva, June 2010), and subsequently it will be submitted to IMO/COMSAR for adoption and inclusion in the regulatory publications.

2 Recognizing the increased use in the Arctic region by the marine community, the IMO decided to expand the GMDSS into the whole Arctic Ocean, enhancing a proposal submitted by the Russian Federation. It therefore established (IMO/COMSAR-10, London, March 2006) a joint IMO/IHO/WMO Correspondence Group on Arctic Maritime Safety Information (MSI) services to address this issue. The Expert Team on Maritime Safety Services has been active in this joint IMO/IHO/WMO Correspondence Group in ensuring that all relevant issues for the METAREA Issuing Services are properly addressed. This item is presented in details in doc. 2.5.2 .

3 ETMSS has reviewed the *Manual on Marine Meteorological Services* (WMO-No. 558) and the *Guide to Marine Meteorological Services* (WMO-No. 471) and proposed amendments for consideration by JCOMM-III [see Appendices I and II of doc. 2.5.5].

4 The JCOMM GMDSS-Weather Website (http://weather.gmdss.org) continues to provide access, in complement to the official dissemination channels, to the official Maritime Safety Information and warnings supplied by the existing METAREA Issuing Services. Météo-France has been managing and hosting this website, which has been in operation for 6 years. The website, which will also include the GMDSS products for Arctic areas when available, includes:

(a) Met-ocean MSI prepared for SafetyNET dissemination (high seas);

(b) Met-ocean MSI prepared for International NAVTEX dissemination (coastal waters), which is under preparation. A number of NAVTEX bulletins are already available online (e.g., METAREAs I, II, III, IV and XI) [see for example http://weather.gmdss.org/II.html];

(c) A specific page gathering the available links to the NAVAREA Websites [see http://weather.gmdss.org/navareas.html]. This is the first step of cooperation with IHO towards the joint use of the URL *gmdss.org* for the provision of both meteorological and navigational warning information

(d) Relevant maps showing limits of METAREAs and sub-areas, which are available in publication WMO-No. 9, Volume D – *Information for Shipping*.

5 Direct interaction with and feedback from the marine users is required to ensure that services meet their requirements. It is also a requirement for a Quality Management System (QMS). The former Commission for Marine Meteorology (CMM) therefore initiated a Marine Meteorological Services Monitoring (MMSM) programme in 1981. The first survey was conducted in 1985. Subsequent sessions of CMM and JCOMM had reviewed the survey results, reiterated their value to WMO Members and endorsed their continuation. In the meantime, the questionnaire was regularly reviewed and updated by ETs (especially ETMSS and SOT). The last questionnaire was reviewed during the meeting of the Task Team on MSI (March 2009, Geneva, Switzerland), with ETSI and ETWS Chairpersons. This questionnaire was distributed in early 2009 to ships' masters through national PMOs as well as via the Weather-GMDSS Website. The results of the 883 returns confirm the satisfactory accuracy and usefulness of marine meteorological services through the GMDSS (SafetyNET and International NAVTEX services). Nevertheless, these results demonstrate also the increased demand for user-focused marine meteorological and oceanographic products and services and show that there remains considerable room for improvement with regards to both the quality and content of services, and their coverage and timeliness in some oceanic regions. Additionally, the great majority of respondents re-emphasized the usefulness of graphical information, like radio facsimile products, and reported significant dissatisfaction with the quality of these services (even if results were much better than the previous survey in 2005) and unannounced terminations. The provision of Sea Ice and Icebergs Information was judged as good service, providing clear and mostly accurate information on time. The results of the analysis were compiled into a report, which can be accessed at http://www.jcomm.info/SPA_MSS.

6 A first version of the template to be used for self-assessment reports by Issuing Services was prepared by the ETMSS Chairperson, based on the one used by the NAVAREA co-ordinators. This template was presented and discussed during the meeting of the Task Team on MSI in March 2009. This template is expected to be used for, and reviewed during, the forthcoming Maritime Safety Services Enhancement Workshop.

7 Since 1999, ETMSS has been working on the implementation of graphical/numerical Maritime Safety Information (MSI) broadcast within the GMDSS. The WMO Executive Council, at its sixtieth session (Geneva, June 2008) re-emphasized the continuing importance to mariners in receiving graphical products via radio transmissions and requested JCOMM to continue researching methods for transmitting graphical products to marine users. On the other hand, the WMO Executive Council, at its sixty-first session (Geneva, June 2009), encouraged WMO Members to investigate low-cost options for on-demand approaches that are compatible with Electronic Navigation Charts (ENC). In addition, the imminent increase of ENC systems on SOLAS vessels as regulatory material and the emergence of the e-navigation concept within IMO should reinforce the priority given to this requirement and the need to find appropriate resources to develop a suitable service. Both the ETMSS and ETSI have been working on this issue and ETSI has already developed the *Sea Ice Objects Catalogue* in accordance with IHO standards [see section 6 below]. The ETMSS has initiated the development of a catalogue on *Met-Ocean Object Classes and Attributes*, which would be an essential tool to enable NMHSs to develop products specifically for Electronic Navigation Chart Systems, allowing the implementation of software to decode and display met-ocean information by the manufacturers of these systems, using the S-57 and S-100 chart data exchange standards.

Planned actions, projects or priorities for the next JCOMM intersessional period 2010-2012

8 JCOMM-III re-implemented the ETMSS (Resolution 5), but significantly modified the Terms of Reference of the Team (see Appendix I). In particular, all operational activities related to marine pollution (MPERSS) and SAR activities are now under the umbrella of ETMSS. In accordance with the ToRs, the ETMSS liaises with and gathers input from other SFSPA teams - ETSI, ET on waves and surges (ETWS) and ET on Operational Ocean Forecasting Systems (ETOOFS), 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. A core membership has also been selected (see Appendix I). After JCOMM-III, the core members of the Team have proposed to identify 2 vice-chairpersons, Nick Ashton from UK (activities in liaison with MSI) and Oyvind Breivik from Norway (activities in liaison with MPERSS and SAR).

9 The Commission endorsed the priority activities for the next intersessional period for ETMSS, as described below, with no particular order :

- Improve interaction between the GMDSS Issuing Services and the AMOCs of MPERSS;
- Keep under review the implementation of the GMDSS and MPERSS in the Arctic and continue to support the Issuing Services and AMOCs, to reach the expected target in 2011 for the GMDSS;
- In association with ETWS and ETSI, develop guidelines and recommendations to update WMO-Nos. 471 and 558, especially for the provision of sea state and sea ice in MSI;
- Continue to develop the catalogue on Met-Ocean Object Classes and Attributes to define standards for ENC and e-Navigation, in collaboration with ETSI and guidance from IMO and IHO;
- Facilitate implementation of Quality Management Systems (QMSs) among Members for the provision of MMS (Recommendation 7,).

10 After JCOMM-III, the SFSPA coordinator prepared with ET chairs a draft list of projects. Those that could invlove both ETMSS and ETSI are as follow :

- Coordination of Implementation of GMDSS, including sea ice bulletins, for Arctic Ocean by 2011 (**ETMSS/ETSI)**
- Preparation of a catalogue of marine and oceanographic parameters/attributes for Electronic Navigation Chart (S-57/S-100 compatible). Wind, wave height, surface currents have been suggested as the initial parameters (**ETMSS/ETSI)**
- Develop/Demonstrate an experimental suite of Arctic marine/sea ice service products that could be disseminated in the On-Demand fashion (**ETMSS/ETSI,** support: ETOOFS). This probably would consist of two parts/stages:
  - text product suite that would be disseminated via existing, low baud rate (cheap) means of communication (such as Iridium);
  - Numerical/Graphic product suite that may be disseminated via Internet or other higher bandwidth means.
- Produce a demonstration suite of numerical/graphical products, including satellite images, and provide them via the Weather.gmdss.org site (**ETMSS**, other ETs to support)

11 The priority is clearly to make sure that the component of GMDSS met-ocean MSI for the arctic METAREAs, including the provision of sea ice information, will be operational at the end of 2010 or the very beginning of 2011, for IMO, IHO and WMO to be able to officially

declare this system fully operational in 2011. In the mean time, it is a good opportunity to update as necessary the WMO-Nos. 471 and 558 for the provision of sea ice in MSI in text form (for GMDSS, bullets b and f of paragraph 7 doc. 2.5.5). The aim is to ensure that those documents are consistent with the practises put in place for the GMDSS, and that similar type of information will be provided to SOLAS vessels throughout the Arctic (for navigable waters). The update that will be prepared during ETSI-IV could be presented during the forthcoming MSS Enhancement Workshop (see following paragraph), and adopted during ETMSS-III, that could take place in autumn 2010 (if WMO Secretariat resources permitted). It would be also appropriate to be able to declare operational the component of GMDSS met-ocean MSI for the arctic METAREAs during ETMSS-III.

12 A Maritime Safety Services Enhancement Workshop, gathering the representatives of all Issuing Services, is expected to take place 3-6 May 2010 in Melbourne, Australia. The Workshop will be focused on QMS training and practises (identified as a priority by the commission), but will also consider the maintenance and update of the GMDSS, including the implementation of the operational service on Arctic METAREAs.

13 ETMSS need a strong support from ETSI to continue to develop the catalogue on Met-Ocean Object Classes and Attributes to define standards for ENC and e-Navigation. The experience of ETSI experts in this field and the links they have built with relevant IHO group(s) will be very helpful. A focal point could be identified to work with ETMSS on this topic.

14 It would be appropriate to add on the GMDSS website (http://weather.gmdss.org), either sea ice graphical/numerical safety products or appropriate links with other portals providing such information, like the IPY Ice Logistics Portal (http://ipy-ice-portal.com/). The Team is invited to make suggestions.

Attachments
Appendix I - ToR and Membership of ETMSS

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Appendix I

Terms of Reference and Membership of Expert Team on Maritime Safety Services (ETMSS)

Terms of reference

The Expert Team on Maritime Safety Services, in close collaboration with international organizations and other entities representing users' interests, such as the International Maritime Organization, International Hydrographic Organization, International Chamber of Shipping , International Mobile Satellite Organization, and other concerned organizations and bodies on maritime safety, search and rescue and marine pollution issues, including the Global Maritime Distress and Safety System (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 International Convention for the Safety of Life at Sea;

(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* (WMO-No. 9, Volume D – *Information for Shipping*), 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 consistency with the International Convention for the Prevention of Pollution from Ships , and other international conventions);

(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 ETOOFS 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 (for example, from the International Hydrographic Organization), graphical/numerical product specification for marine parameters, foremost wind, sea state, currents and sea ice, in Electronic Navigation Chart Systems;

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

(i) Continue to liaise closely with relevant groups and teams of organizations, such as IMO, IHO, ICS, IMSO, EMSA, etc., to coordinate and improve maritime safety services, SAR and marine accident emergency support.

As a general principle, these terms of reference will be implemented through specific, defined, time-limited projects.

General membership

The membership consists of a core membership of up to eight members, including the 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.
The following experts serve as core members of the ETMSS :

Alasdair Hainsworth (Australia)
Mohamed Aitlaamel (Morocco)
Nicholas Ashton (United Kingdom)
Oyvind Breivik (Norway)
Timothy Rulon (United States)
Valery Martyshchenko (Russian Federation)
Zenghai Zhang (China)

Additional experts may be invited as appropriate, representative of a range of activities related to the implementation of services for maritime safety and efficiency, SAR operations and marine pollution response, as well as representatives of 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.