WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

JOINT WMO/IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY (JCOMM)
EXPERT TEAM ON MARINE CLIMATOLOGY

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ITEM 2

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JCOMM ASPECTS

Report by the Secretariat

(Submitted by the Secretariat)

Summary and purpose of document

This document provides information on actions taken since the First Session of Expert Team on Marine Climatology (ETMC-I, Gdynia, Poland, July 2004), and on the activities of the Observations Programme Area (OPA), the Data Management Programme Area (DMPA), and the Services Programme Area (SPA) of interest to the ETMC. It also contains information regarding the outcome of the Second Session of the JCOMM (JCOMM-II, Halifax, Canada, September 2005), the Third Session of the Services Coordination Group (SCG-III, Exeter, United Kingdom, from 7 to 10 November 2006), and the Second Session of the Data Management Coordination Group (DMCG-II, Geneva, Switzerland, from 10 to 12 October 2006), as well as actions taken since these sessions.

ACTION PROPOSED

The Expert Team on Marine Climatology is invited to:

(a) Note and comment on the report and advise on any additional actions required of the Secretariat, as appropriate;

(b) Take the information into account when discussing relevant agenda items;

Appendices: A. JCOMM Structure
B Excerpt from the DMCG-2 Action List
C International Maritime MetOcean Services Conference 2008 (concept paper)
D WMO-IMO Consultative meeting's recommendations and agreed principles

DISCUSSION

1. GOVERNING BODIES

1.1. The Thirty-ninth Session of the IOC Executive Council was held in Paris, France, from 21 to 28 June 2006 to review progress since the Twenty-third Session of the IOC Assembly in June 2005, and to plan for the future. Considering the guidance provided by the UNESCO's *Principles and Guidelines in the Preparation of the Draft Medium-term Strategy for 2008–2013*, the Committee identified four high-level objectives as the IOC's fundamental contribution to the Strategy Plan, to include:

(i) Prevention and reduction of the impacts of natural hazards;

(ii) Mitigation of the impacts of, and adaptation to, climate change and variability;

(iii) Safeguarding the health of ocean ecosystems;

(iv) Management procedures and policies leading to the sustainability of coastal and ocean environment and resources.

1.2. The Resolution 1 (EC-XXXIX) was adopted, through the intrasessional Working Group on the Medium-term Strategy.

1.3. At its Fifty-eighth Session, the WMO Executive Council (EC-LVIII, Geneva, Switzerland, June 2006) noted the Progress/Activity report on Marine Meteorology and Oceanography Programme (MMOP).

1.4. The WMO Executive Council noted substantive achievements under the JCOMM during the past intersessional period, and urged that work in the ongoing priority areas should continue, including the new area of tsunami monitoring and mitigation systems and services, in close cooperation with the various Intergovernmental Coordination Groups for the Tsunami Warning and Mitigation Systems of the IOC. The Council also supported the new priority areas to be addressed by the JCOMM, in accordance to the JCOMM Work Plan for the 2006-2010 period. The Council urged its Members to provide additional funding to support the implementation of the programme through voluntary contributions to the JCOMM Trust Fund, and/or to the DBCP/SOT and ASAP Trust Funds, within the context of the Data Buoy, SOOP and ASAP Panels. The Council noted that the JCOMM Strategy document was adopted, and reiterated the need for the preparation of an accompanying Implementation Plan for the upcoming intersessional period, which would include a comprehensive set of specific objectives and deliverables, with associated timelines and performance indicators, across all JCOMM Programme Areas, and input to broader WMO Programme monitoring and assessment.

1.5. With regards to the requests from the WMOs Fifty-eighty Executive Council, it was noted that an Action Plan for JCOMM contributions, through its Programme Areas and component Expert Teams, to multi-hazard warning systems, was adopted by a group of experts, under the JCOMM Management Committee (MAN). It further urged the Commission to proceed with the implementation of this action plan.

1.6. The WMO Council also noted that the security issues arising from the availability of ship positions and identification data on the Internet had been discussed again at the Third International Port Meteorological Officers Workshop (PMO-III, Hamburg, Germany, from 23 to 24 March 2006). The Council also took note of the PMO-III proposals that could be implemented both nationally and regionally. The Council recognized the seriousness of the situation, which if not addressed, could ultimately lead to the disappearance of the majority of VOS reports available on the GTS, and agreed that there were many implications and associated issues to address at the international and national levels. Further, it urged its Members to carefully review the proposals presented by the JCOMM Co-presidents to address the problem, and adopted Resolution 3.4.4/2 (EC-LVIII) authorizing Members which, in consultation with ship owners, wish to protect the identity of the VOS to implement ship call

sign masking, for a trial period of one year, a process which would facilitate open distribution of masked data on the GTS. All respective Members implementing such a process should provide for the secure exchange of ship call signs and reports affected by the masking process, so as to assist in resolving real-time monitoring and climate analysis problems. The Council also requested the Secretary-General, as a high priority issue, to establish a high level dialogue, involving affected Members, the International Maritime Organization (IMO), the International Chamber of Shipping (ICS), shipping companies, and other relevant organizations and technical commissions (e.g., Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), Commission for Basic Systems (CBS)), in order to determine if there is a link between VOS data availability on external websites and piracy and other ship security issues, to review the implementation and impact of masking, and to propose a general and universally acceptable solution to the issue that would address ship owners and masters' concerns as well as the data monitoring and quality information feedback requirements, for consideration to the Fifty-ninth Session of the Executive Council in 2007 (EC-LIX).

1.7 Therefore, a High-level WMO-IMO Consultative Meeting was held at WMO Headquarters in Geneva, Switzerland, from 12 to 13 February 2007. Sixteen people attended the meeting to include five WMO Members representatives (Australia, France, Japan, United Kingdom, and the USA), three WMO Technical Commissions (CBS, JCOMM, and CCl) as well as the IMO, ICS, INTERCARGO, and INTERTANKO (the latter three organizations representing the shipping industry). Captain Gordon V. Mackie, the invited independent expert in marine science, chaired the meeting.. From the discussions, it appeared that the following issues are evident: (i.) there are not only security concerns for the shipping industry but also commercial activities concerns, and (ii.) there are different approaches and concerns within the WMO Members (e.g., Japan is concerned about piracy, the USA is concerned about protecting its partnership with the private sector). The Meeting discussed the requirements for VOS observations for operational applications (NWP, marine safety) and for climate applications. After the discussions, a number of principles could be agreed upon, and the Meeting agreed on a number of actions for the coming months (these are summarized in Appendix D). It was particularly recommended that the SOT, in liaison with the WMO Secretariat, drafts a report to the upcoming Executive Council (EC-LIX) proposing to maintain Resolution 7 (EC-LVIII) in force and to continue the ship's call sign masking trials for an additional year, on the basis of the recommendations from the SOT regarding a unified approach to call sign masking. Regarding the cooperation with the IMO, the Meeting recommended to consider proposing a Resolution to the IMO on met-ocean services similar to A.706(17) for navigational warnings and to present the first proposal to the appropriate IMO Sub-committee(s) for endorsement.

1.8. Noting that 80% of the countries in Region I are coastal, and depend on maritime navigation and fishery, concerns were expressed regarding the lack of capabilities in the marine meteorological field in the NMHSs in the African region. The Executive Council was informed that a project to strengthen and enhance the operational marine meteorological capabilities in African countries for improving maritime safety was currently under preparation.

2. ADMINISTRATIVE MATTERS

2.1. Other actions taken in support of the ETMC during the past year include:

i. Preparation of various letters and documentation;

ii. Follow-up on decisions of the ETMC-I and preparation for the upcoming ETMC-II;

iii. Close liaison with the JCOMM, in particular, in the development of coordination and integration procedures;

iv. Provide GCC annual reports to WMO Members;

v. Inform Members about Version 3 of MQC software provided by the GCCs;

vi. Liaison with CBS on codes and other related matters, with other IOC and WMO technical commissions and regional associations (or equivalent bodies) on relevant issues; and with the CLIVAR, GCOS, GOOS, and SCOR;

vii. Loan old versions of WMO Publications No. 47 to NOAA for scanning purposes (NOAA Climate Database Modernization Program (CDMP), digitalizing 1973-98 editions of WMO--No. 47);

viii. Provide a link on the WMO website to the "Dynamic Part" of the WMO *Guide to the Applications of Marine Climatology* (WMO-No. 781);

ix. Preparation of the Second Session of the Expert Team on Marine Climatology (ETMC-II).

3. JCOMM-II

3.1. The Second Session of the JCOMM (JCOMM-II, Halifax, Canada, from 19 to 28 September 2005) took place at the kind invitation of the Government of Canada. Two important events were associated with the Session to include: (i.) the launching of the 1250th drifting buoy, completing the drifting buoy array, which will be the first component of the Global Ocean Observing System to be fully implemented, and (ii.) the Scientific Conference, entitled "Operational Oceanography and Marine Meteorology for the 21st Century" which highlighted recent developments in operational systems and scientific and technological advances important to the JCOMM.

3.2. The conference hosted over 120 participating scientists from 30 countries. There were three sessions during the conference, including: (i) Recent JCOMM results, (ii.) Future science and technologies for observations, and (iii.) Future JCOMM Products and Services. The Conference attention of the Commission that the next intersessional action plan should be made, to include the following items:

(i.) Articulate to governments the need for sustained funding for the observing system and its local, national and international infrastructure (users, including private sector can provide advocacy);

(ii.) Provide more homogeneous access to data and products;

(iii.) Give greater visibility for data and products;

(iv.) Adopt and implement new technologies, while preserving continuity of information;

(v.) Support and facilitate the entry of autonomous ocean observing systems into EEZs;

3.3. It was also emphasized during the Conference, that Private Sector and User Groups should be involved in the JCOMM planning and development, through the Management Committee and Expert Teams. Regional ocean observing systems and GOOS regional alliances should also be considered in the development of the JCOMM. In conclusion, the participants noted the need to assess progress at the upcoming JCOMM-III Session.

Organizational Structure:

3.4. Through considerable discussions were made during the JCOMM-II, it decided that the overall framework would continue as designed in JCOMM-I for the next intersessional period, with the exception of the Capacity Building Programme Area. The Commission decided to appoint Capacity Building Rapporteurs within the Observations, Services and Data Management Programme Areas, forming a cross-cutting team, and to establish a joint JCOMM-GOOS Task Team on Resources which will report to both JCOMM Management Committee (MAN) and GOOS Scientific Steering Committee (GSSC). The Commission also decided to establish the Cross-cutting Team on Satellite Data

Requirements, with the respective Observations Rapporteurs (one meteorological and one oceanographic), and Services and Data Management Programme Areas (appointed by JCOMM Management Committee in consultation with the GOOS Scientific Steering Committee). This new structure is illustrated in Appendix A.

3.5. The Commission elected Dr Peter E. Dexter (Australia) as its Co-president for meteorology, and Dr Jean-Louis Fellous (France) as its Co-president for oceanography, during the next intersessional period.

Outcome of JCOMM-II discussions regarding the ETMC

3.6. The Commission noted with appreciation the results achieved by the First Session of the Expert Team on Marine Climatology (ETMC-I, Gdynia, Poland, July 2004). The ETMC has proposed that the currently existing data management systems and resources had been developed to improve marine climatological data management and services. It recognized that the VOSClim project was a good example of an E2EDM system (operated by the Global Collecting Centres (GCCs)). The ETMC reviewed the following items: The IMMT and MQCS; the BUFR template for ship and buoy data, electronic logbooks, Marine Climatological Summaries Scheme (MCSS), data archival, *WMO Ship Catalogue* (WMO-No. 47), contributions and requirements of the World Climate Programme (WCP) and other climate-related programmes, climate change detection monitoring and indices, Manuals, Guides, and other Technical Publications, as necessary and/or appropriate. The Commission noted that progress had been made on some of these activities since the meeting, and took action on these activities, which are as follows:

(a) The Commission agreed to amend the IMMT format and Minimum Quality Control Standards, in particular, to cover additional requirements of the VOSClim Project, with these new versions of the IMMT (IMMT-3) and MQCS (MQCS-V) to replace the existing versions from 1 January 2007;

(b) The Commission adopted modification in definition and formatting in WMO-No. 47, and recommended that a version of the Extensible Markup Language (XML) should be developed and implemented for the future exchange of the metadata included in WMO-No. 47;

(c) Requested the CBS to review, and if necessary, revise the BUFR template for ship data, based on the findings of the ETMC on the issue;

(d) Endorsed the proposal from the SOT and ETMC, supported by the Management Committee (MAN), that instead of the reduced wind at 10 m, the original wind data should always be reported in ship meteorological reports, including those generated by electronic logbooks.

3.7. The Commission noted with satisfaction that the Second JCOMM Workshop on Advances in Marine Climatology (CLIMAR-II) was successfully held in Brussels, November 2003, in conjunction with the celebration of the 150th anniversary of the landmark Brussels Maritime Conference of 1853, under the High Patronage of His Majesty King Albert II. Presentations at CLIMAR-II were incorporated into a JCOMM Technical Report (JCOMM TR-No. 22, 2004), and a selection of papers was published in a special issue of the *International Journal of Climatology* (Royal Meteorological Society, United Kingdom) on the “Advances in Marine Climatology” (Vol. 25, No. 7, 15 June 2005). This forms an update to the Dynamic part of the Guide, which was originated at the first CLIMAR Workshop (CLIMAR99) that was held in Vancouver, Canada, September 1999. Among the recommendations from the CLIMAR-II, available in full on the workshop website (http://www.cdc.noaa.gov/coads/climar2/recs.html) and publicized in a workshop report in the WMO Bulletin, was the recommendation to hold a CLIMAR-III Workshop in the future. The Commission expressed its sincere appreciation to the organizing committee for CLIMAR-II, especially to Mr Scott Woodruff (USA), Chairperson of the committee, for their excellent organization of the workshop. The Commission agreed that the workshop was valuable, and that similar workshops should continue to be held in the future. Therefore, it agreed to the proposal that

a third such self-funded workshop, CLIMAR-III, should take place in the near future. It requested the Data Management Programme Area (DMPA) Coordinator and the Secretariats to proceed with the organization of the workshop at an appropriate time.

3.8. The Commission noted that the work carried out by the ETMC was strongly focused on marine meteorology. It urged the ETMC to include in its Work Plan for the intersessional period, an examination of how both oceanographic climatologies and ice climatologies could be coordinated so as to be seen as an integrated product.

4. OPA

4.1 Ship Observations Team (SOT)

4.1.1. The Third Session of the SOT was held in Brest, France, from 7 to 12 March 2005. Dr Miroslaw Mietus (Poland) reported on the ETMC activities. Dr Mietus recalled the new International Marine Meteorological Archive (IMMA) format, metadata, the history of CMM decisions concerning VOS and MCSS, bilateral data exchange within GCCs, development of the new IMMT format (IMMT-3) and the new version of MQCS (MQCS-V) which meets the needs of the VOSClim Project, etc. Dr Mietus pointed out that data management, including data quality, is a very important issue for VOS/VOSClim data and the continuation of the MCSS. He also mentioned that cooperation with the JCOMM Expert Team on Data Management Practice (ETDMP) was an important issue for the ETMC.

4.1.2. The SOT-III supported the ETMC recommendations, as well as the proposed role and responsibilities of the GCCs, complemented by their responsibility for the revision of the MQCS-software for the GCCs and Contributing Members (CMs).

4.1.3. The new format of the WMO Publication No. 47, developed in cooperation between the ETMC and the SOT Task Team on Metadata for WMO-No. 47, was approved by the JCOMM-II in September 2005. The Meeting also considered the recommendation from the Task Team to use XML as a future method of exchanging Pub. 47 metadata. The Meeting agreed with the ETMC's recommendation for trial use of XML in the VOSClim project. It was agreed that the SOT had the appropriate expertise to make proposals on revisions to Pub. 47, and that the SOT should assume the responsibility for the future revisions. With regard to the need for a dedicated ASAP metadata database, the Team suggested that the SOT would be the more appropriate body to consider this issue. The Team agreed that the ETMC could assist, if so requested by the SOT and the ASAP Panel.

4.1.4. The SOT stressed the need to regularly update the WMO Publication No. 47, and agreed that the historical editions of Pub. 47 are an important resource for climate research; and the accessibility to the up-to-date metadata is an important issue for research and operational purposes.

4.2 Data Buoy Cooperation Panel (DBCP)

4.2.1. The Twenty-second Session of the DBCP was held in La Jolla, California, USA, from 16 to 20 October 2006. The Panel has been in collaboration with the ETMC in the past in defining the ODAS metadata format, which is now being used by the JCOMM ODAS metadata centre operated by the National Marine Data and Information Service (NMDIS), China (http://jcomm.coi.gov.cn/). The Panel has developed a buoy metadata collection scheme which has been implemented at the JCOMM *in situ* Observing Platform Support Centre (JCOMMOPS) to collect metadata from the buoy operators and the manufacturers of newly deployed buoys (http://wo.jcommops.org/cgi-bin/WebObjects/meta). The DBCP is acting as a component of the META-T Pilot Project.

4.2.2. Buoy data are being routinely archived by the Responsible National Oceanographic Data Centre for Drifting Buoys (RNODC/DB), which is operated by MEDS, Canada.

4.2.3. The DBCP has also started an active dialogue with the JCOMM Expert Team on Wind Waves and Storm Surges (ETWS). The Panel recognised the requirement for additional high-quality wave measurements in under-sampled areas of the world oceans in support of the SPA's activities in the area

of Maritime Safety Services (MSS), and agreed to: (i.) recommend adding wave measurements to the DBCP Implementation Strategy, (ii.) invite buoy operators and Panel Members to increase wave measurements, particularly from open ocean areas, in the Southern Ocean, and the tropics, (iii.) invite the DBCP Evaluation Group to address wave measurement technology issues and to communicate with the ETWS and OOPC on user requirements, and (iv.) make recommendations to the JCOMM/OCG in this regard and to liaise with the ETWS and OOPC on wave data requirement issues. The Panel urged the ETWS to work with the JCOMM Observations Programme Area, through its component groups and sub-groups including the DBCP, to put forward a more detailed set of requirements for additional high-quality wave measurements as soon as possible, and to transmit those requirements through the SPA Coordination Group to the OCG for further action.

5. DMPA

5.1 DMCG-2

5.1.1. The Second Session of the DMCG (DMCG-II) was held in Geneva, Switzerland, from 10 to 12 October 2006. Mr Scott Woodruff represented the ETMC at the meeting, and presented an overview of the accomplishments of the ETMC since JCOMM-II. These accomplishments include: The ETMC and RECLAIM websites hosted by NOAA, results of the JCOMM questionnaire on the future of the Marine Climatological Summaries Scheme (MCSS) Summaries, dynamic Part of the WMO *Guide to the Application of Marine Climatology*, CLIMAR-III arrangements for 2008, GCC website and MQCS Version 3, participation of the ETMC (Dr E. Kent and Mr S. Woodruff) at the Joint Commission for Climatology (CCl) / Climate Variability and Predictability programme (CLIVAR) / JCOMM Expert Team on Climate Change Detection and Indices.

5.1.2. The ETMC was also requested to consider the possibility of developing, with the Expert Team on Wind Waves and Storm Surges (ETWS) and other appropriate groups, a JCOMM extreme wave event archive. The Group recommended to prepare a proposal in this regard for submission to the IODE-XIX. Finally, the possibility of broadened connections to other marine (e.g., Numerical Weather Prediction (NWP)) and oceanographic Quality Control (QC) was noted.

5.1.3. The DMCG agreed that the management, formatting and QC of delayed-mode Voluntary Observing Ship (VOS) data have long formed important tasks of the ETMC. These form the other (non-Summaries) part of the MCSS, and remain crucial for climate applications, including because of security issues, developing with the Global Telecommunication System (GTS), reporting of VOS, plus other longstanding GTS code limitations.

5.1.4. The DMCG-2 agreed that one important task will be to resolve the future of the MCSS Summaries. A related task is an examination, as requested by the JCOMM-II, of how both oceanographic and ice climatologies could be coordinated with the marine meteorological data to be seen as an integrated product; this might naturally be tied into modernization of the MCSS Summaries. The International Maritime Meteorological Archive (IMMA) format, widely used for ICOADS, was suggested for wider review within the ETMC, possibly followed by formal JCOMM publication.

5.2.5. The DMCG recommended to discuss MQCS issues and better integration of the VOS and the Global Ocean Surface Underway Data Pilot Project (GOSUD) within the MQCS. It suggested to prepare a scoping document on common issues (including consideration of the SAMOS).

5.1.6 The DMCG discussed the role of the ETMC with regard to delayed-mode Voluntary Observing Ship (VOS) data, and decided to establish a Task Team on Delayed-Mode Voluntary Observing Ship data (TT-DMVOS). Details and Terms of References for the Task Team are provided in Document 3.1.

5.1.7. The DMCG expressed appreciation to the NOAA Climate Database Modernization Program (CDMP) for the work done on the imaging and digitization of WMO Publication No. 47.

5.1.8. The DMCG recommended to organize the Third CLIMAR Conference (CLIMAR-III) to be tentatively held in Poland, in 2008.

5.1.9. The DMCG recommended to establish a connection between the Expert Team on Sea-Ice (ETSI) and the ETMC.

5.2 Expert Team on Data Management Practices (ETDMP)

5.2.1 Since the ETMC-I, the ETDMP has placed efforts in developing and testing End-To-End Data Management technology (E2E technology). The goals of this technology are to: (i.) integrate the non-homogenous real-time and delayed-mode local data systems into a unified distributed marine data system that will provide transparent exchange between the local data systems, and (ii.) provide end-user access to any data or information generated by the systems. The E2E technology is now a WIS prototype component constituting a WIS Data Collection and Production Centre (DCPC) is based at the Russian National Oceanographic Data Centre (NODC) in Obninsk.

5.2.2. There are a number of initiatives such as the Ocean Biogeographical Information System (OBIS), the WIS, Pan-European infrastructure for Ocean and Marine Data Management (SeaDataNet) with very similar objectives using various technical solutions and standards. Therefore, the DMCG-2 stressed the importance of providing a common (or compatible) system vision and basic technical metadata/data standards for system interoperability. Taking this into consideration, the DMCG established a Task Team that will focus on E2E technology.

5.2.3. Considering that the ETDMP has been focusing on the E2E and WIS, the DMCG agreed to broaden the scope of the Team, particularly to assist in helping the diverse data systems in place in JCOMM to converge. The Chairpersons of the DMCG and ETDMP resolved to develop a workplan that reflected broader interests, and requested the Secretariats to prepare invitations for membership for the ETDMP.

5.2.4. The DMCG stressed the importance of starting work on the JCOMM / International Oceanographic Data and Information Exchange (IODE) Ocean Data Portal that will be based on E2E technology. The DMCG requested the Chairperson of the ETDMP, in consultation with the Chairperson of the DMCG to prepare a checklist of technical requirements for participation in the Ocean Data Portal, for consideration by the IODE-XIX.

5.2.5. The ETMC related action items from the DMCG-2 meeting are provided in Appendix B.

5.3 Instrumental metadata

See document 5.3 for details on ODAS metadata and the META-T Pilot Project.

6. Services Programme Area

6.1. The Third Session of the Services Coordination Group (SCG-III) was held in Exeter, United Kingdom, from 7 to 10 November 2006. The Meeting identified a range of activities under the SPA that could be carried out in close collaboration with the ETMC, to:

(i) Continue to develop the extreme wave database (ETWS - ETMC cooperation). The objective is to develop a database of high-quality measured data (e.g., ship, buoy, and OceanSITES). This archive would form an invaluable data set of measurements that could be used to validate wind wave models and also satellite altimeter wave estimates, which have largely unknown characteristics at these heights. A more comprehensive database, including satellite, should be proposed at the JCOMM-III;

(ii) Develop climatologies and statistics for mapping oil spills and Harmful Algal Blooms (HAB) (ETMAES - ETMC cooperation, target JCOMM-III);

(iii) Explore how climatologies of storm surge inundation zones can be constructed (ETWS -ETMC cooperation, target JCOMM-III). This should be considered as a component of the JCOMM

Extreme Water Level Pilot Project (JEWL-PP);

(iv) Convene a sea ice data analysis and assimilation workshop, to support the preparation and assimilation of sea ice and icebergs analysis and climatology products in numerical forecasting and climatic analysis (ETSI – ETMC - GCOS cooperation, target early 2008);

(v) Contribute to the International Maritime MetOcean Services Conference 2008 (IMMSC 2008) which is planned in October 2008 (see Appendix C).

6.2. Also, the SCG-III noted that the JCOMM-II had agreed that the ETSI should be the responsible designated body for information and assessment of sea ice as an Essential Climate Variable (ECV). The Group also noted that during the GCOS meetings, it was agreed that the GDSIDB data products, as well as individual data sets, will be widely used for the implementation of the GCOS tasks, including validation and co-analysis with SSM/I products and provision of sea ice climatology. In this regard, and to support the preparation and assimilation of sea ice and icebergs analysis and climatology products in numerical forecasting and climatic analysis, the Group endorsed the Sea Ice Data Analysis and Assimilation Workshop proposed by the ETSI Chairperson.

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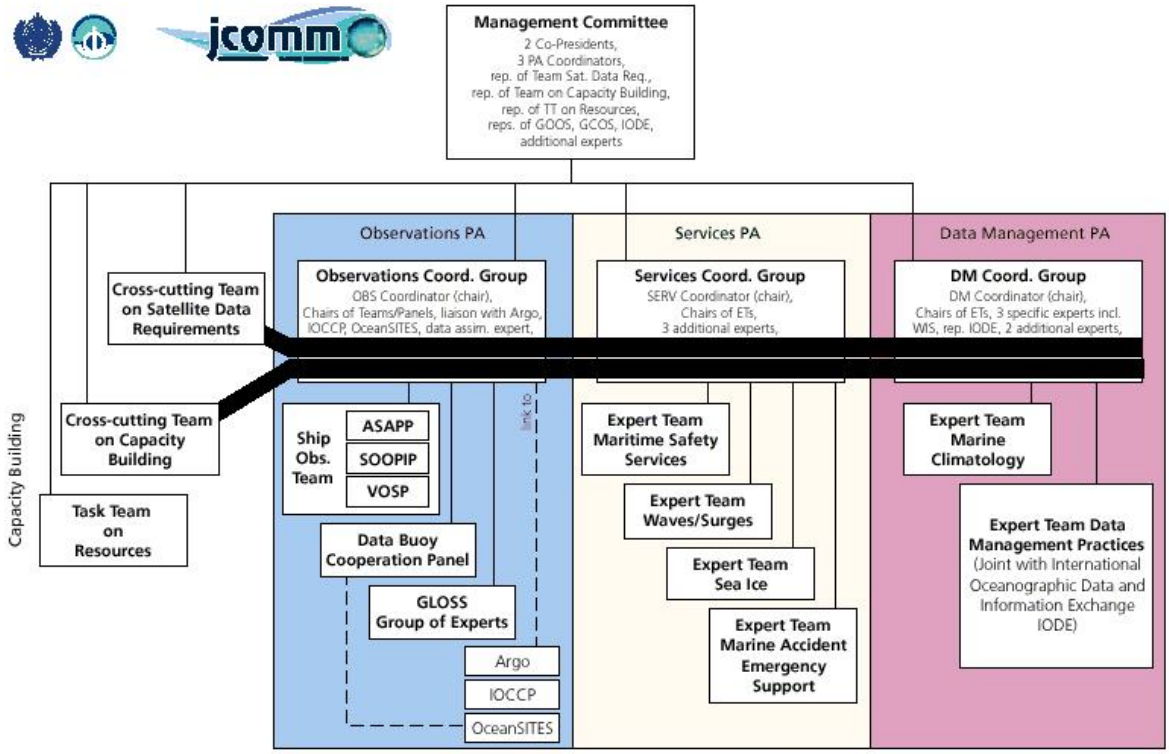
Appendices: 4

APPENDIX A

JCOMM Structure



APPENDIX B

Excerpt from the DMCG-2 Action List

2.3 ETMC					
a. Establish a new JCOMM Task Team on Delayed-Mode Voluntary Observing Ship data *(JCOMM-II: Recommendation 9 (JCOMM-II): Implement the new version of the International Maritime Meteorological Tape format for all data collected as of 1 January 2007)*	Membership List and Work Plan to the DMPA Chairperson	Chairperson ETMC	January 2006	0	0
b. Explore the connection between the ETSI and ETMC (GDSIDB)	Report to chair DMCG	Chairperson ETMC	April 2007	0	0
c. Develop a proposal for an Extreme Wave Event Archive	Project proposal presented to the IODE-XIX	Chairperson DMCG (lead) Chairperson ETWS Chairperson ETMC	March 2007 (IODE-XIX)	0	0
d. Prepare a document on common issues of quality control of surface marine variables	Document to the DMCG	Chairperson ETMC (lead) Chairperson SAMOS Chairperson GOSUD Chairperson DMCG	May 2007	0	0
e. Determine interest of GODAR in Historical Ship Data Rescue activity	results to the DMCG	Chairperson ETMC	End of 2006	0	0
f. Organization for the upcoming CLIMAR-III *(responds to JCOMM-II : Paragraph 7.1.17 : Organize a Third JCOMM Workshop on Advances in Marine Climatology to be held in 2007)*	Event	Chairperson ETMC	May 2008	0	0
g. WMO to issue Circular Letter if deadline to meet minimum QC standards have been met (MQCS and IMMT)	Circular Letter	WMO	January 2007	0	0
JCOMM-II: Recommendation 9 (JCOMM-II): Implement the new version of the Minimum Quality Control Standards for all data collected of 1 January 2007	*report on progress of implementation from Chairperson of the ETMC to the Chairperson of the DMPA*	*Members / Member States and ET on MC*	*JCOMM-III*		
JCOMM-II: Recommendation 9 (JCOMM-II): Review the implementation and value of the revised format and quality control standards	*report from Chairperson of the ETMC to Chairperson of the DMPA*	*ET on MC*	*JCOMM-III*		

APPENDIX C

INTERNATIONAL MARITIME METOCEAN SERVICES CONFERENCE 2008

(concept paper)

Background

1. Enhancing all aspects of safety at sea is the primary objective of marine forecast and warning programmes. But there are a wide variety of other applications that have became increasingly important, such as offshore resource exploration, military and defence operations, marine engineering, sub-sea communications, tsunami, storm surges and coastal defence, ship routing and navigation, operations in the marginal ice zone, pollution monitoring prevention and clean-up, sustainable management of commercial fishing activities, marine and coastal environmental management, and, most recently, seasonal and climate forecasting. All of these applications require marine meteorological and oceanographic observational data sets and prognostic products that are accurate, timely and supported by innovative and accessible services.

2. Today, the quality and breadth of data products expected by marine industries has expanded considerably and the challenge is to ensure that they provide value to the present and future generation of maritime applications. Operational met-ocean services rely on complex and expensive data collection and real time synthesis systems that must interact in real-time across international boundaries. The IOC/WMO Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) has been created to facilitate the development and application of globally distributed marine meteorological and oceanographic services and their supporting observational, data management and capacity building programmes.

3. A close dialog between those people pioneering the development of the next generation of maritime service infrastructures and those using their output in maritime applications is essential to ensure value for money and maximum impact across all maritime operational services. The IMMSC 2008 Conference provides a unique opportunity for international leaders (executive-level decision makers) of the maritime Industry, governments, maritime service providers, marine scientists and engineers for maritime safety, marine accident and emergency systems, wind wave and storm surge systems and services in the Arctic and Antarctic to help shape the future of JCOMM activities that will assist the delivery of a new generation of systems for the maritime service sector.

IMMSC 2008 Aim

4. The aim of the International Maritime MetOcean Services Conference 2008 (IMMSC 2008) is to:

- Establish and agree on international MetOcean services requirements, identifying shortcomings of present systems and reviewing long and short-term solutions.

5. The objectives of the IMMSC 2008 are:

- To understand present and future MetOcean needs of the international maritime industry;
- To build on scientific and technical excellence to respond and better meet these needs;
- To integrate international regional/global efforts with that of others to increase efficiency and capability and minimize duplication of effort;
- To ensure the JCOMM acts as a flexible, streamlined organization capable of coordinating international maritime services;
- Enhance coordination of worldwide marine meteorological and oceanographic services and their supporting observational, data management and capacity building programmes;
- Influence the development of best practices.

6. IMMSC 2008 will provide a forum and close dialog between leaders working with marine meteorological and oceanographic (MetOcean) products and services, including private and public

maritime application industries, system and service providers, marine scientists and engineers to improve communication and mutual understanding.

IMMSC2008 Deliverables

7. The primary output from the conference will be:

- Clear requirements on information providers and user applications ensuring targeted development of the most appropriate and useful MetOCean products and services;
- IMMSC 2008 marine meteorological and oceanographic key products and services assessment report (hard copy and dynamic web components);
- IMMSC 2008 marine meteorological and oceanographic products and services user community directory of MetOcean requirements (hard copy and dynamic web components);
- IMMSC 2008 marine meteorological and oceanographic products and services user community handbook (MarServR, hard copy and dynamic web components). The MarServR will provide a practical and easy-to-use reference of international maritime MetOcean data products and services that will be updated on a four-year cycle.

IMMSC 2008 Scope

8. The IMMSC Scope:

(a) The Conference is planned for a one-week period (Monday-Friday) in October 2008;

(b) A limited number of trade stands will be available in the Met Office street area;

(c) Poster presentation areas, plenary presentation and limited parallel sessions/breakout groups;

(d) Places are limited to 200 people with a preferred 50:50 mix of world leading scientist/engineers and application specialists;

(e) The proposed Conference will work with/benefit from other conferences, particularly industrial conferences such as the GODAE, MERSEA, BLUElink> and other major operational ocean projects.

Appendix D

WMO-IMO Consultative Meeting, Geneva, Switzerland, 12-13 February 2007

1) Recommendations or agreed principles

- It is difficult to establish the link between the availability of VOS observations on public websites and piracy. However, the perception is that the link still exists in the shipping industry and such security concerns have to be addressed. There are also concerns of commercial considerations amongst the shipping companies.
- Ship's identification and location should not appear on public websites in real-time when this is not authorized by the ship owners and masters.
- Any proposed scheme to address ship owners and masters concerns should be compliant with the Resolution 40 (Cg-XII) and there is no need to recommend any changes in the terms of the Resolution nor to reclassify VOS data.
- It is preferable for the longer term to adopt a universally accepted global and standardized solution using an agreed international system of masked call signs (yet to be developed).
- The following approach is acceptable: (i.) making the data openly available according to WMO Resolution 40 (Cg-XII), and (ii.) selectively masking the ship's identification when requested to do so by the ship owners and masters. Only users who sign an agreement are authorized to receive the non-masked reports.
- Protecting the partnership of the WMO Members in the private sector, consistent with principles stated in WMO Resolution 40 (Cg-XII) is a matter of concern.
- The meteorological report, including date, time, position and the measured geo-physical variables from VOS reports is essential for time critical meteorological applications as far as the relevant shipping companies allow for the exchange of VOS reports with no conditions on use according to WMO Resolution 40 (Cg-XII). Other variables such as some unique ship identification, and the name of the country recruiting the ship could be considered as critical to various applications although it was considered that this should be addressed by the SOT. The ship's call sign was not considered as essential in the context of WMO Resolution 40 (Cg-XII) provided that the above variables are made available.
- A unique identification number is required for data assimilation (bias correction, automatic removal of suspect observations), quality monitoring, quality information feedback to Port Meteorological Officers (PMOs), and climate studies. The ship's call sign does not necessarily have to be considered as an essential data provided that any proposed scheme permits to meet the requirements expressed in Annex I of WMO Resolution 40 (Cg XII).
- In case a unique identification numbering scheme was adopted, some restriction could eventually be applied to the WMO Publication No. 47 in order to avoid cross-reference between a unique number and the ship's recruiting country.
- Identification of the country of recruitment in any unique identification scheme may not be necessary.
- Simple and generic design standards could potentially facilitate the recruitment of ships in the VOS fleet and the installation and siting of meteorological instruments. The active support and assistance of shipowners and of the classification societies was required. Reservations by INTERCAGO, INTERTANKO, and ICS were noted. Serious consideration must be made regarding new ship design requirements for the making of weather observations. The shipowners eventually decide on what building standards they will use.

2) Actions resulting from the meeting

Action	By	Deadline	Ref.
To investigate whether it would be feasible to routinely make the database of IMO numbers available to the WMO community and under what conditions	IMO	mid-2007	4.6
To cooperate with MSC sub-committee for investigating the use of LRIT to transmit weather observations	SOT, IMO	2008	4.5
To invite ICS, IMO, CBS, and CCl at the SOT-IV meeting	WMO	03/2007	5.6, 7.7
To improve timeliness of the original data and to directly discuss with the UK Met Office how the technical procedures could be adjusted in order to minimize the impact.	JMA, Met Office	04/2007	5.5
to investigate whether the private sector users of these data could help in reducing the cost or impact of a solution.	USA	mid-2007	5.8
To consider removing the country name from unique identification schemes	SOT	SOT-IV	5.7
To promote the added value of VOS observations in support of marine meteorology and climatology and maritime safety with the shipping industry	SOT	SOT-IV	7.2
To complete the proposed applications/concerns vs. security levels table in such a way to reflect as many possible concerns in the table	Pierre Blouch	EC-LIX	7.6
To undertake a review of the implementation impact of masking	SOT	2008	7.7
To consult nationally in order to present a coherent and more focused proposals at SOT-IV, that could be reviewed by the SOT and possibly endorsed	Australia, France, Japan, UK, USA	SOT-IV	7.7
To establish an ad hoc task team on call sign masking schemes	SOT	ASAP	7.8
To explore long term solutions	SOT	SOT-IV	7.9, 7.10
To prepare a report to EC-LIX proposing to maintain Resolution 7 (EC LVIII) in force and to continue the trials for another year, on the basis of the recommendations from the SOT regarding a unified approach to call sign masking.	SOT USA WMO	30/04/2007	7.11
to liaise with USA and Japan in order to inform the WMO Members in advance about the implementation of their respective trial schemes	WMO	ASAP	5.9
To draft new version of MSC 1017 and then submit it to MSC-89 for approval	SOT WMO & IMO	SOT-IV MSC-89	8.2.2
To consider proposing a Resolution to the IMO on Metocean services similar to A.706(17) for navigational warnings. To present the first proposal to the appropriate IMO Sub-committee(s) for endorsement	WMO & IMO	mid-2007 IMO sub-comm. IMO Assembly	8.4
To focus WMO and IMO common activities in specific topics to be considered as Pilot Projects (e.g., GMDSS website).	WMO & IMO	mid-2007	8.6
To encourage the use of AWS	SOT	SOT-IV	9.1
To draft a document on ship design. ICS then to investigate impacts.	SOT ICS IACS	mid/late 2007	9.5 9.8
To prepare a promotional DVD	SOT WMO	mid/late 2007	9.9