

**SERVICES AND FORECASTING SYSTEMS  
COORDINATION GROUP  
FIFTH SESSION**

MELBOURNE, AUSTRALIA, 7 TO 8 MAY 2010

***FINAL REPORT***

JCOMM Meeting Report No.76

## **NOTES**

### **WMO DISCLAIMER**

#### **Regulation 42**

Recommendations of working groups shall have no status within the Organization until they have been approved by the responsible constituent body. In the case of joint working groups the recommendations must be concurred with by the presidents of the constituent bodies concerned before being submitted to the designated constituent body.

#### **Regulation 43**

In the case of a recommendation made by a working group between sessions of the responsible constituent body, either in a session of a working group or by correspondence, the president of the body may, as an exceptional measure, approve the recommendation on behalf of the constituent body when the matter is, in his opinion, urgent, and does not appear to imply new obligations for Members. He may then submit this recommendation for adoption by the Executive Council or to the President of the Organization for action in accordance with Regulation 9(5).

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## **GENERAL SUMMARY OF THE WORK OF THE SESSION**

### **1. Opening of the session**

#### **1.1. Opening**

1.1.1 The fifth session of the Services and Forecast Systems Program Area Coordination Group of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) opened at 0900 hours on Friday, 7 May 2010, at the Bureau of Meteorology, in Melbourne, Australia. The session was chaired by Dr Ming Ji, Services and Forecast Systems Program Area (SFSPA) coordinator. He noted that the main expected outcome of the SCG Session would be the Services and Forecast Systems Program Area work plan, with a focus on a list of high priority, achievable projects identified for the current intersessional period.

1.1.2 Peter Dexter, International Oceans Policy Advisor in the Bureau of Meteorology and Co-president of JCOMM, welcomed participants to the meeting on behalf of the Bureau and also WMO and IOC, the JCOMM parent Organizations.

1.1.3 The list of participants in the meeting is in *Annex I*.

#### **1.2. Adoption of the agenda**

1.2.1 The meeting adopted the agenda for the session on the basis of the provisional agenda prepared by the chairperson. Four sub-items were introduced under Item 5 – QMS; Rolling Requirements Review; GMDSS website; and JCOMM Newsletter. The revised agenda is given in *Annex II*.

#### **1.3. Working arrangements**

1.3.1 The meeting agreed its hours of work and other practical session arrangements. The documentation was introduced by the chairperson.

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#### **2. Guidance and requirements from JCOMM-III**

2.1 The chairperson reported on relevant decisions of JCOMM-III. The meeting reviewed these decisions and requirements by the Commission, with particular emphasis on actions that needed to be initiated, targets and priorities for the SFSPA and each Expert Team, taking into account cross-cutting issues among them. The report of the chairman is at:

[http://www.jcomm.info/index.php?option=com\\_oe&task=viewDocumentRecord&docID=5360](http://www.jcomm.info/index.php?option=com_oe&task=viewDocumentRecord&docID=5360)

### **3. Outcomes of and actions arising from the informal session of the JCOMM Management Committee**

3.1 The JCOMM Co-president presented a brief report on the outcomes of and actions arising from the informal JCOMM Management Committee at the conclusion of the JCOMM-III (Marrakech, Morocco, November 2009). He reiterated the limited nature of the regular budget funding available in both WMO and IOC to support the JCOMM programme and subsidiary bodies during the present intersessional period, necessitating the identification of extra-budgetary funds to support activities wherever possible. Nevertheless, funds were available to cover at least one session of all the SFSPA expert teams during the intersessional period.

### **4. Review of the draft Services and Forecast Systems Program Area work plan for the current intersessional period**

4.1 The meeting recognized that this was the main objective of this session. The meeting

reviewed the draft work plan for the current intersessional period, focused on agreeing on a specific list of high priority projects that were expected to be completed by JCOMM-IV (expected May-August 2012, Republic of Korea). In particular, the meeting identified expected outcomes, timelines/milestones, and responsible person(s) for each high priority project. During these discussions, the meeting also briefly reviewed the work of Expert Teams, focusing on follow-up actions, which might be required of the SFSPA Coordinator or the Expert Team chairs. The review and discussions covered all expert teams (Maritime Safety Services (MSS); Wind Waves and Storm Surges (WS); Sea Ice (SI); Operational Ocean Forecasting Systems (OOFSS)), as well as capacity building relevant to SFSPA. The revised work plan is given in *Annex III*.

4.2 The meeting agreed that each of the identified priority projects under the Expert Teams and capacity building should be described and presented both as PowerPoint slides and also as descriptive text, one slide/page for each project. Both formats should cover project deliverables, activities, timelines and responsibilities, with the text also including a brief narrative on the project. These documents should then be used to guide the evolution of the projects and also eventually as the basis for presenting the results to JCOMM-IV. The consolidated project documents are given in *Annex IV* (published separately and available at: [http://www.jcomm.info/index.php?option=com\\_oe&task=viewEventDocs&eventID=636](http://www.jcomm.info/index.php?option=com_oe&task=viewEventDocs&eventID=636)).

4.3 During the review and discussions, the meeting recognized:

- (i) That a number of the projects involved cross-cutting activities, both within the SFSPA and also with external bodies within and outside JCOMM, which was in line with the priority being given by WMO to activities and projects which involved several of the Organization's programmes and bodies;
- (ii) The priority being given within both WMO and IOC to the Global Framework for Climate Services concept, which was a major outcome of WCC-III. It was noted that a number of the existing SFSPA projects could already be identified as contributing to climate services in a broad sense. At the same time, the meeting agreed that all the ETs should be prepared to address climate services within the GFCS framework in more detail as the concept developed. It also agreed that JCOMM representation on the expected Inter-Commission Task Team on the GFCS should at least include someone from the SFSPA;
- (iii) In a general sense, the work plan would be an evolving document, with the ET chairs to keep the Coordinator and Secretariat informed of developments;
- (iv) That additional capacity building events were likely to be undertaken during the intersessional period, most often with external funding, and that these should be added to the work plan as they became confirmed.

## 5. Any Other Business

5.1 The meeting recalled that the MSS Enhancement Workshop, which had taken place at the same venue earlier in the week, had included a major focus, and associated training on QMS. It noted that actions were now underway to encourage and support the introduction of QMS practices in NMHS delivering MMS, with the QMS Activity Coordinator on the Management Committee involved in the preparation of guidance material on QMS for JCOMM. The meeting recognized that QMS practices were likely to be of value to other activities coordinated through the SFSPA, including both ocean forecast and sea ice services. It therefore invited the relevant ET chairs to keep the issue under review, and ensure that some consideration of QMS was undertaken at future Expert Team sessions.

5.2 The SCG vice-chair, Ali Mafimbo, reported on the CBS Rolling Requirements Review. He recalled that he had specific responsibilities within the SFSPA for updating the requirements database with requirements expressed by the SFSPA ETs. He urged all the ET chairs to provide him with the required input as soon as possible, taking into consideration that the updated SoG is

required to reach the WMO Secretariat by 31 October 2010. (**Action:** ET chairs to review and provide input to Ali Mafimbo on the requirements data base) Gary Brassington noted that he had already provided updates to the database at a previous SCG session, and that although these updates were in the database on the CBS website, they had not been included in the document made available to Ali. The co-president agreed to request the Secretariat to look into this issue. (**Action:** Co-president to request Secretariat to review status of requirements database updates).

5.3 The meeting noted that the GMDSS website was presently hosted and supported by Meteo France on behalf of the JCOMM. It requested Henri Savina to determine Meteo France requirements with regard to a possible long-term commitment to maintaining the website, and report on this to the Management Committee through the SFSPA coordinator. (**Action:** Henri Savina to advise MAN on the future of the GMDSS website). More generally regarding the JCOMM website, the meeting requested the Coordinator and Co-president to negotiate with the Secretariat to establish editing permission by the individual ET chairs for their respective pages. It also suggested that efforts should be made once more to determine if the JCOMMOPS facility could be developed as a front end for JCOMM related products, with appropriate links to national websites. (**Action:** PA Coordinator and Co-president to discuss with JCOMMOPS hosts and Secretariat possible extended use of the facility for JCOMM related products).

5.4 The meeting noted that the next edition of the JCOMM Newsletter was currently under preparation. It urged all ET chairs to prepare short texts relating to key team projects and activities, and pass these to the Secretariat (Ms Boram Lee), by the required deadline. (**Action:** ET chairs to provide input to Newsletter, by 17 May 2010).

## **6. Closure of the session**

### **6.1. Adoption of the report**

6.1.1 The meeting reviewed and adopted the report of the session, noting that two of the annexes would be completed after the meeting. In particular, all participants were requested to provide the PA Coordinator, the co-president and the Secretariat with their specific project PowerPoint slides and descriptive text, for consolidation and inclusion in Annex IV, by 25 May 2010 at the latest. (**Action:** Project descriptions to coordinator and co-president by 25 May).

### **6.2. Closure**

6.2.1 The SCG proposed that, if possible, its next session should be scheduled for around 6 months prior to JCOMM-IV, to review progress and plan for the next intersessional period. Korea kindly offered to host this next session.

6.2.2 The 5<sup>th</sup> session of the JCOMM Services and Forecast Systems Coordination Group closed at 1200 on Saturday 8 May 2010.

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**AGENDA**

1. Opening of the session
  - a. Opening
  - b. Adoption of the agenda
  - c. Working arrangements
2. Guidance and requirements from JCOMM-III
3. Outcomes of and actions arising from the informal session of the JCOMM Management Committee
4. Review of the draft Services and Forecast Systems Program Area work plan for the current intersessional period
  - a. Maritime Safety Services (MSS)
  - b. Wind Waves and Storm Surges (WS)
  - c. Sea Ice (SI)
  - d. Ocean Forecasting Systems (OFS)
  - e. Capacity Building (CB)
5. Any Other Business (AOB)
  - 5.1 QMS
  - 5.2 Rolling Requirements Review
  - 5.3 GMDSS Website
  - 5.4 JCOMM Newsletter
6. Closure of the session
  - a. Adoption of the report
  - b. Closure

## SFSPA Projects and Work Plans for the Intersessional Period

08 May 2010

|   | <b>Workplan /<br/>expected outcome, deliverables</b>   | <b>How<br/>(Key Activities/Actions)</b>  | <b>Lead (bold)<br/>Members</b>                   | <b>Timelines</b>  | <b>Associated<br/>meetings<br/>(discussion item in)</b> | <b>Resource<br/>Required<br/>for<br/>(apart from<br/>meetings)</b> | <b>ETs (bold)/<br/>Linked<br/>With</b>             |
|---|--|--|--|---|---|--|--|
| 1 | Develop a Guide to Operational Ocean Forecasting (Rec 8.1/1)   | <ul style="list-style-type: none"> <li>Establish a process</li> <li>Develop the contents</li> </ul>  | <i>Alistair Sellar</i>                           | <ul style="list-style-type: none"> <li>Oct'10: establish the process</li> <li>June 12: first draft</li> </ul>   | ETOOFS (Oct'10)   |  | <b>ETOOFS</b><br>National Agencies                 |
| 2 | Define (assess) operational ocean observation requirements: updated SoG documents; Contribution to the RRR   | <ul style="list-style-type: none"> <li>Establish survey documents based on SoG and RRR</li> <li>Collate submissions from member centers</li> </ul>   | <b>Sudheer Joseph,<br/>Eric Dombrowsky</b>       | <ul style="list-style-type: none"> <li>Oct'10 SoG revision</li> <li>Dec.'11 SoG final version</li> </ul>  | ETOOFS (Oct'10)   |  | ETOOFS,<br>National Agencies                       |
| 3 | Develop operational performance metrics to monitor operational ocean forecasts: Internet accessible operational performance metrics  | <ul style="list-style-type: none"> <li>Define metrics, publish through JCO MM.info</li> </ul>  | <b>Frank Bub<br/>Gary Brassington</b>            | <ul style="list-style-type: none"> <li>Oct'10: first draft metrics</li> <li>Dec. 11: implementation of metrics</li> </ul>   | ETOOFS (Oct'10)   |  | ETOOFS,<br>Godae<br>OceanView<br>National Agencies |
| 4 | Updating user requirements for marine wx and oceanographic services <ul style="list-style-type: none"> <li>Conduct a joint survey (ETMSS, ETOOFS) on user requirements and service feedbacks</li> </ul>          | <ul style="list-style-type: none"> <li>Design/update survey questions</li> <li>Conduct a survey;</li> <li>Analyze the response data</li> </ul>   | <b>Gary Brassington<br/>Henri Savina<br/>...</b> | <ul style="list-style-type: none"> <li>Oct'10 draft survey questions</li> <li>Jan' 11 survey design agreed</li> <li>'11 survey conducted</li> <li>Jan'12 analysis on responses completed</li> </ul> | ETMSS (Oct'10)<br>ETOOFS(Oct'10)                        |  | <b>ETOOFS,<br/>ETMSS, IHO</b>                      |
| 6 | Ocean data management: Consolidation of OPeNDAP, NetCDF with WMO   | <ul style="list-style-type: none"> <li>Address issues relating to the transition of a GODAE data service into operations</li> </ul>  | <b>Frederique Blanc<br/>Gary Brassington</b>     | <ul style="list-style-type: none"> <li>Oct'10 SAR/MAES specifications</li> <li>Dec'11 Revision and extension</li> </ul>   | ETOOFS (Oct'10)   |  | ETOOFS<br>DMPA                                     |
| 7 | Facilitate implementation of Quality Management Systems (QMSs) for NOP among Members for the provision of Marine Accident Emergency Support  | <ul style="list-style-type: none"> <li>Facilitate implementation of QMS</li> </ul>   | <b>Pierre Daniel<br/>Gary Brassington</b>        |   |   |  | ETOOFS<br>ETMSS                                    |
| 8 | Support Climate Service: Developing an extreme wave database: <ul style="list-style-type: none"> <li>Establish a template for the extreme wave database</li> <li>Establish the database at NOAA/ NODC</li> </ul> | <ul style="list-style-type: none"> <li>Develop the template for extreme wave documentation (with ETMC)</li> <li>Request input from countries, through OPA groups &amp; Secretariat</li> <li>Extending the DB to include satellite altimeter wave data</li> </ul> | <b>Val Swail</b>                                 | <ul style="list-style-type: none"> <li>May'10 template agreed,</li> <li>Oct. 10 ETMC/NODC template agreed</li> <li>Request input from countries (continue)</li> </ul>                               | ETMC (Feb'10)<br>ETWS (May'10)                          |  | ETWS, <b>ETMC</b><br>NOAA/NODC,<br>DMPA groups     |

|    | <b>Workplan /<br/>expected outcome, deliverables</b>   | <b>How<br/>(Key Activities/Actions)</b>   | <b>Lead (bold)<br/>Members</b>                                    | <b>Timelines</b>  | <b>Associated<br/>meetings<br/>(discussion item in)</b> | <b>Resource<br/>Required<br/>for<br/>(apart from<br/>meetings)</b>    | <b>ETs (bold)/<br/>Linked<br/>With</b>    |
|----|--|---|---|---|---|---|---|
| 9  | Support Climate Service: Assist ETMC to establish the SS climatology <ul style="list-style-type: none"> <li>· A plan for S.S. climatology</li> <li>· A data base at host institution(s)</li> </ul> | <ul style="list-style-type: none"> <li>· Develop the plan with ETMC</li> <li>· Develop the SS climo. Database (with ETMC)</li> </ul>  | <b>Val Swail</b>  | <ul style="list-style-type: none"> <li>· ETMC (Feb'10) agree on the objectives</li> <li>· ETWS(2010) to decide on timeline</li> <li>· SSC2010 (Sep'10) discussion session on ongoing activities re SSclimatology</li> <li>· (date?) plan established</li> </ul> | ETMC (Feb'10)<br>ETWS (May'10)<br>SSC2010 (Sep'10)      |   | <b>ETWS, ETMC<br/>LOICZ</b>               |
| 10 | Implement the recommendations from the 1 <sup>st</sup> JCOMM SS Symposium:<br>Support related S&T fora   | <ul style="list-style-type: none"> <li>· Support SSC2010 (JCOMM experts participation to organization &amp; presentations)</li> <li>· Plan the 2<sup>nd</sup> SS Symposium</li> </ul>   | <b>Val Swail</b><br>Kevin Horsburgh<br>Thomas Bruns               | <ul style="list-style-type: none"> <li>· Sep'10 SSC2010 discussion on SS climatology</li> <li>· May'12 approval on 2<sup>nd</sup> SS Symposium (after 2012) plan</li> </ul>   | ETWS (May'10)<br>SSC2010 (Sep'10)                       | Expert participation to SSC2010 (external resources)                  | <b>ETWS, ETMC<br/>LOICZ</b>               |
| 11 | Guide UNESCO pilot project on coastal hazard forecasting<br>Establish action plans for the next phase of the project (expected outcome)  | <ul style="list-style-type: none"> <li>· SS Experts / ET members participation in NIO workshop</li> <li>· Review project progress in view of JCOMM work plan implementation</li> </ul>  | <b>Kevin Horsburgh</b><br>Val Swail<br>Hans De Vries<br>Don Resio | <ul style="list-style-type: none"> <li>· May 10: ETWS meeting</li> <li>· Feb. 11: NIO workshop</li> <li>· Aug. 11: Action plan developed</li> </ul>   | ETWS (May'10)<br>UNESCO NIO workshop (Feb'11)           | Expert participation to NIO workshop (external resources: UNESCO/IOC) | <b>ETWS,<br/>IOC/ICAM<br/>IIT (India)</b> |
| 12 | Support JCOMM/CHy Coastal Inundation Forecast Demonstration Project  | .   | <b>Val Swail</b><br><b>Don Resio</b>                              | .   |   |   | ETWS<br>WMO/CHy<br>WMO/DRR                |
| 13 | Facilitate the development of Storm Surge Watch Schemes (SSWS) for regions subject to tropical cyclones  | .   | <b>Val Swail</b>  | .   |   |   | ETWS                                      |
| 14 | Support WMO Severe Weather Forecasting Demonstration Project (SWFDP) with respect to wave and storm surge issues   | .   | <b>Val Swail</b><br><b>Eugeny Nesterov</b>                        | .   |   |   | ETWS                                      |
| 15 | Wave measurement evaluation and test:<br>Guidance on best practices for wave measurement to WIGOS/WIS  | <ul style="list-style-type: none"> <li>· Lead DBCP Pilot Projects on wave measurement evaluation and test (P-P-WET)</li> <li>· Review &amp; update wave measurement requirements as necessary</li> <li>· Participate in, and provide guidance to intercomparison exercise &amp; analysis</li> </ul> | <b>Val Swail</b><br><b>Bob Jensen</b>                             | <ul style="list-style-type: none"> <li>· Jan'10 intercomparison website launch</li> <li>· Sept'10: report to DBCP-XXVI</li> <li>· Nov'10 PP 1<sup>st</sup> phase PP complete, plan for 2<sup>nd</sup> phase</li> </ul>  | PP SC (Feb'10)<br>ETWS (May'10)<br>DBCP26 (Sep'10)      | Website development (external resources)                              | ETWS<br>OPA/DBCP                          |

|    | <b>Workplan /<br/>expected outcome, deliverables</b>   | <b>How<br/>(Key Activities/Actions)</b>   | <b>Lead (bold)<br/>Members</b>             | <b>Timelines</b>   | <b>Associated<br/>meetings<br/>(discussion item in)</b> | <b>Resource<br/>Required<br/>for<br/>(apart from<br/>meetings)</b> | <b>ETs (bold)/<br/>Linked<br/>With</b> |
|----|--|---|--|--|---|--|--|
| 16 | Expansion of the Wave Forecast Verification Exchange Project in coordination with the ESA GlobWave project   | <ul style="list-style-type: none"> <li>Review &amp; update wave measurement requirements as necessary</li> <li>ET members / experts participation</li> </ul>  | <b>Val Swail</b><br>Jean Bidlot            | <ul style="list-style-type: none"> <li>Global wave meeting (May'10)</li> <li>Spatial intercomparison completed (May'12)</li> </ul>   | ETWS (May'10)   |  | ETWS, ECM WF, ESA                      |
| 17 | Develop and update guidance documents: <ul style="list-style-type: none"> <li>Revised WMO 702</li> <li>Dynamic part of wave and storm surge online</li> </ul>                        | <ul style="list-style-type: none"> <li>Update wave guide by ET input + consultant work</li> <li>Update dynamic part of SS guide as necessary (ET input)</li> </ul>  | <b>Val Swail</b><br>Thomas Bruns           | <ul style="list-style-type: none"> <li>May'10 outline/contents of Wave guide agreed</li> <li>May'12 Wave guide publication</li> <li>Technical reports (June 10)</li> </ul> | ETWS (May'10)   | WMO publication cost   |  |
| 19 | Developing MPERSS capabilities including the Arctic Ocean: New capability for the Arctic Ocean; Recognitions outside WMO (e.g., IMO); updated user requirements for MPERSS           | <ul style="list-style-type: none"> <li>Coordinating with Issuing and Ice Services to implement MPERSS for the Arctic Ocean</li> <li>Interaction/outreach to key international bodies (e.g., IMO/MEPC)</li> </ul>            | <b>Henri Savina</b>                        | <ul style="list-style-type: none"> <li>Initial MPERSS capability for the Arctic Ocean (July'11)</li> </ul>   |   |  | <b>ETMSS, ETSI, ETOOFS</b>             |
| 20 | Supporting the Issuing Services and AMOCs and the implementation of the GMDSS and MPERSS in the Arctic.  | <ul style="list-style-type: none"> <li>Develop a suite of Arctic marine/sea ice product – Text (PP)</li> <li>Develop an experimental suite of on demand Arctic marine/sea ice product – Numerical/Graphical (PP)</li> </ul> | <b>Henri Savina</b><br>Vasily Smolyanitsky | <ul style="list-style-type: none"> <li>Jan. 2011 Text suite available</li> </ul>   | ETSI (Mar'10)<br>ETMSS (Oct'10)<br>ETOOFS (Oct'10)      |  | <b>ETMSS, ETSI, ETOOFS</b>             |
| 21 | In association with ETWS, develop guidelines and recommendations to update WMO n°471 and 558, especially for the provision of sea state in MSI                                       |   | <b>Henri Savina</b><br>Val Swail           | <ul style="list-style-type: none"> <li>May'10 ETWS input provided</li> <li>End'11 complete</li> </ul>  | ETWS (May'10)<br>ETMSS (Oct'10)                         |  | <b>ETMSS, ETWS</b>                     |
| 22 | Catalogue on Met-Ocean Object Classes to define standards for ENC and e-Navigation: Met-Ocean object class for wind/wave height/surface currents based on ice object class catalogue | <ul style="list-style-type: none"> <li>Coordinate with IHO to validate requirements</li> <li>Finalize the draft object catalogue</li> </ul>   | <b>Henri Savina</b><br>Vasily Smolyanitsky | <ul style="list-style-type: none"> <li>Oct. 10: Meeting between WMO/IMO/IHO (WMO Secretariat)</li> <li>Jan. 12: Finalize the Met-Ocean Object class</li> </ul>             | ETSI (Mar'10)<br>ETMSS (Oct'10)                         |  | <b>ETMSS, ETSI, IMO, IHO</b>           |
| 23 | Facilitate implementation of Quality Management Systems (QMSs) among Members for the provision of MMS: Initial training for Issuing Services; Guidance documents.                    | <ul style="list-style-type: none"> <li>QMS training for Issuing services</li> <li>Preparation for guidance documents</li> </ul>   | <b>Henri Savina</b>                        | <ul style="list-style-type: none"> <li>MSS training workshop (May'10)</li> <li>Draft document for implementation (Sept'10)</li> </ul>                                      | MSS training workshop (May'10)<br>ETMSS (Oct'10)        |  | ETMSS, ETSI, ETOOFS, MAN               |
| 24 | Update sea ice standards: <ul style="list-style-type: none"> <li>WMO Sea Ice Vol 1 &amp; 2 supplement 6;</li> <li>SIGRID 3</li> </ul>  | <ul style="list-style-type: none"> <li>Update and publish the WMO sea ice nomenclature</li> </ul>   | <b>Vasily Smolyanitsky</b>                 | <ul style="list-style-type: none"> <li>Sep 10: Publish SIGRID-3 update;</li> <li>Mar 11: Publish sea ice nomenclature</li> <li>Jun 12: new format prototype</li> </ul>     |   |  | <b>ETSI, ETOOFS, SCG</b>               |

|    | <b>Workplan /<br/>expected outcome, deliverables</b>   | <b>How<br/>(Key Activities/Actions)</b>   | <b>Lead (bold)<br/>Members</b>                    | <b>Timelines</b>  | <b>Associated<br/>meetings<br/>(discussion item in)</b> | <b>Resource<br/>Required<br/>for<br/>(apart from<br/>meetings)</b> | <b>ETs (bold)/<br/>Linked<br/>With</b> |
|----|--|---|---|---|---|--|--|
| 25 | Develop sea ice climatology based on ice charts and maintenance of the Global Digital Sea Ice Data Bank (GDSIDB): Updated GDSIDB | <ul style="list-style-type: none"> <li>Historical data submitted and QC-ed;</li> <li>Outreach to potential users of the new data</li> </ul>           | <b>Vasily Smolyanitsky</b>                        | <ul style="list-style-type: none"> <li>GDSIDB update yearly</li> <li>Jun 12: Statistics (Normals) updated</li> </ul>  | ETSI (Mar. 10)  |  | ETSI, NSIDC                            |
| 26 | Contribute to the development and implementation numerical forecasting systems   | .   | <b>Vasily Smolyanitsky</b><br>...                 | .   |   |  | ETOOFS                                 |
| 27 | Enhance the efficiency and safety of navigation in ice infested waters by harmonizing sea ice products                           | .   | <b>Vasily Smolyanitsky</b><br>...                 | .   |   |  |  |
| 28 | Coordinate the implementation of GMDSS for the Arctic Ocean:<br>- GMDSS implemented for Arctic METAs in 2011                     | <ul style="list-style-type: none"> <li>Revise WMO manuals and guides</li> <li>Establish procedures for coordinated delivery of services</li> </ul>    | <b>Henri Savina</b><br><b>Vasily Smolyanitsky</b> | <ul style="list-style-type: none"> <li>Jun 10: revised Manuals and Guides</li> <li>Oct 11: procedures established</li> <li>July 2011: GMDSS services implemented in Arctic Ocean</li> </ul> | MSS/MPERSS workshop (May 10)                            |  | ETMSS<br>ETSI                          |
| 29 | Continue to develop and manage technical documentation for ENC and sea ice services and information                              | .   | <b>Vasily Smolyanitsky</b><br>...                 | .   |   |  |  |
| 30 | Participate in the DBCP Pilot Project on wave measurement from drifters (PP-WMD)   | <ul style="list-style-type: none"> <li>Review&amp;update wave measurement requirements as necessary</li> <li>Provide guidance as necessary</li> </ul> | <b>Val Swail</b><br><b>Bob Jensen</b><br>...      | <ul style="list-style-type: none"> <li>Nov'10 PP 1<sup>st</sup> phase PP complete, plan for 2<sup>nd</sup> phase</li> </ul>   | ETWS (May'10)<br>DBCP26 (Sep'10)                        |  | ETWS<br>OPA/DBCP                       |
| 33 | Ice information in ENCs:<br>Standard for exchange files; Ice catalogue 5.0; Demonstration suite.                                 | <ul style="list-style-type: none"> <li>Harmonize the standards documents</li> <li>Develop data and software package as a demonstration</li> </ul>     | <b>Vasily Smolyanitsky</b>                        | <ul style="list-style-type: none"> <li>Jun 11: Harmonized standards</li> <li>Jun 12: Demonstration package</li> </ul>   |   |  | ETSI,<br>Experts from<br>Transas       |
| 35 | GMDSS website: inclusion of MSI for NAVTEX dissemination (50-70%);<br>link to graphic products for one-stop-shop                 | <ul style="list-style-type: none"> <li>Make arrangements for NAVTEX availability on GTS;</li> <li>Collect metadata for NAVTEX products</li> </ul>     | <b>Henri Savina</b>                               | <ul style="list-style-type: none"> <li>May 2010: 10%</li> <li>Oct'2010: 30%</li> <li>Summer 2012: 50-70%</li> </ul>   | ETMSS (Oct'10)  |  | ETMSS,<br>Issuing<br>Services          |

**Green – Project outcomes achieved by JCOMM-IV**

**Yellow – Possible to achieve the outcomes by JCOMM-IV**

**White – Completion time line to be determined**

**Blue – Lead by other PAs/Organizations**

**Table 2: Capacity Building Projects**

|    |  |   |                              |  |  |                                     |                   |
|----|--|---|------------------------------|--|--|-------------------------------------|-------------------|
| 5  | Technology transfer/training on ocean forecasting systems                | GODAE Summer School   | Gary Brassington (ETOFS)     | Jan. 2010, Perth, Australia  |  |                                     |                   |
| 18 | Capacity building on coastal hazard forecasting                          | North Indian Ocean SS workshop  | Val Swail (ETWS), UNESCO     | Feb. 2011  |  | S.S, experts (w/ external resource) | WMO/VCP; IOC/IODE |
| 31 | Marine forecasting training  | Training workshop in Dakar, Senegal   | SFSPA (WMO), U.S. Navy, NOAA | April/May 2010   |  |                                     | WMO/VCP;          |
| 32 | Sea Ice Analysis Training:<br>- COMET Modules<br>- Manuals and workshops | Publish 1 <sup>st</sup> COMET module<br>Develop 2 <sup>nd</sup> COMET module<br>3 <sup>rd</sup> Ice analysis workshop<br>Review English version of Manual for ice experts | ETSI (Caryn), AARI           | - Sep 10: COMET module 1<br>- Dec 11: COMET module 2<br>- Jun 11: IAW workshop |  |                                     | ETSI, IIC WG      |
| 34 | Application of Satellite obs.  | Training workshop in Brussels, Belgium<br>Training workshop – Brazil (2010/2011)  | SFSPA, ESA                   | Dec. 2009  |  |                                     |                   |
| 36 |  |   |                              |  |  |                                     |                   |

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