



World Meteorological
Organization



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION (OF UNESCO)

THE ELEVENTH SESSION OF THE MANAGEMENT COMMITTEE OF THE JOINT WMO-IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY (MAN-11)

Geneva, Switzerland
20 October 2014

FINAL REPORT

[page left intentionally blank]

**THE ELEVENTH SESSION OF THE MANAGEMENT
COMMITTEE OF THE JOINT WMO-IOC
TECHNICAL COMMISSION FOR OCEANOGRAPHY
AND MARINE METEOROLOGY (MAN-11)**

Geneva, Switzerland
20 October 2014

FINAL REPORT

MAN Meeting Report No. 117

NOTES

WMO AND IOC DISCLAIMERS

WMO 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.

WMO 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).

© World Meteorological Organization, 2014

The right of publication in print, electronic and any other form and in any language is reserved by WMO. Short extracts from WMO publications may be reproduced without authorization provided that the complete source is clearly indicated. Editorial correspondence and requests to publish, reproduce or translate this publication (articles) in part or in whole should be addressed to:

Chair, Publications Board
World Meteorological Organization (WMO)
7 bis, avenue de la Paix
P.O. Box No. 2300
CH-1211 Geneva 2, Switzerland

Tel.: +(41 22) 730 84 03
Fax: +(41 22) 730 80 40
E-mail: Publications@wmo.int

IOC (OF UNESCO) DISCLAIMER

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariats of UNESCO and IOC concerning the legal status of any country or territory, or its authorities, or concerning the delimitation of the frontiers of any country or territory.

CONTENTS

Session report	2
Annex I List of Participants	27
Annex II Agenda	32
Annex III Opening Remarks	34
Annex IV List of Actions	38
Annex V Terms of Reference	45



(group picture)

GENERAL SUMMARY OF THE WORK OF THE SESSION

1. ORGANIZATION OF THE SESSION

1.1 Opening

The Eleventh Session of the Management Committee of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (MAN-11) opened at 09:30 on Monday 20 October 2014, at the Headquarters of the World Meteorological Organization in Geneva, Switzerland. The two Co-Presidents of JCOMM, Mr Johan Stander and Professor Nadia Pinardi chaired the Session jointly.

Mr Jerry Lengoasa, Deputy Secretary General welcomed the Committee on behalf of the World Meteorological Organization (WMO). He highlighted that the work of this Joint Commission demonstrates how partnerships between international organizations can be effectively developed and how the marine meteorological and oceanographic communities can work together to enhance marine meteorological services in support of the socioeconomic needs of marine and coastal communities. This session is timely and vitally important, and the outcomes of this meeting will provide a road map and guidance in the overall activities and objectives of JCOMM future activities, and make contribution to the seventeenth session of the World Meteorological Congress and the twenty-eighth IOC Assembly. Complete statement in (Annex IV).

Albert Fischer, on behalf of the IOC, welcomed the Committee, and expressed his gratitude to the members of the Committee for their dedication. The Commission, being halfway through its session, had a lot of activity at the expert team level. This meeting gives an opportunity for some strategic thought, particularly about the cross-program activities and how JCOMM fits into the changing world around it. JCOMM should continue to focus on its unique role for intergovernmental cooperation in oceanography and marine meteorology, and ensure that it makes a difference at the national level. He noted the importance of Capacity Development to IOC Member States, and expressed pleasure that this was a major point of discussion in the agenda.

1.2 Adoption of the agenda

The Committee adopted the agenda for the Session based on the provisional agenda prepared by the Secretariat. (Annex 01)

1.3 Working arrangements

The Committee agreed its hours of work and other practical matters for the Session. The Secretariat introduced the meeting documents, which are available on the JCOMM web page (<http://www.jcomm.info/man11>), as well as other information. The documentation, and the meeting itself, were conducted in English only.

2. REPORTS BY CO-PRESIDENTS AND SECRETARIAT

2.1 Reports by Co-Presidents

The Co-Presidents presented a report on their activities in support of JCOMM since the MAN-10. After providing a summary of JCOMM related activities undertaken since the last MAN meeting; Co-President Johan Stander expressed his gratitude towards the secretariat, MAN members and Co-President Nadia Pinardi for the continuous support. He indicated that it is time for JCOMM to be willing to change in an ever-changing environment and be proactive in our decision-making. There are many challenges lying ahead for the Management Committee and we have to be ready to assist and resolve them as they arise. There is also hard work lying ahead of us, especially with respect to the preparation for the WMO Congress in 2015 and we have to ensure that all our resolutions are solid with sufficient substance for proper consideration and acceptance by the Congress. Nadia Pinardi presented her activities related to the marine programme for the period May 2013 to September 2014, as listed in the management meeting documentation and recalled the main JCOMM Strategic objectives. Furthermore, she illustrated briefly the European Copernicus Service products and the new European activities to evaluate ocean monitoring system by an end-to-end approach as an example of new assessment methodology. [as an example of the approach, she wished to take with JCOMM].

The Committee welcomed the reports by the Co-Presidents and emphasized the need within the very broad mandate of JCOMM to identify the activities where JCOMM could make the most difference, making those priorities in its work plans.

2.2 Reports by Secretariats

The Secretariats presented a brief report on intersessional activities including the review of status for the implementation of agreed actions at the previous session (MAN-10; May 2013, Paris, France), based on the Commission's workplan for the period 2012-2017. The list of meetings and activities in Appendix 02.

The WMO Secretariat reported the expectation that resources for JCOMM would remain steady during the present financial period through the next WMO Congress in 2015. WMO and IOC both were involved in a number of initiatives and coordination mechanism related to ocean affairs in the UN system, and the coordination platform UN-Oceans. This provides additional importance to the cooperative work between WMO and IOC in JCOMM, as well as with IMO and IHO on marine safety, that remain the priority for the marine programme at WMO. The international expectations for marine observations and services were increasing.

The IOC Secretariat, reminded the Committee of the IOC Medium-Term Strategy 2014-2021, which from a vision and high-level objectives, defined six functions for IOC Programmes: Research, Observations and Data Management, Early Warning, Assessment, Information for Management and Governance, and a crosscutting Capacity Development Function. JCOMM was important for three of these Functions of the IOC. He recalled that it was important for JCOMM to communicate to IOC Member States on its value in building an infrastructure in observations, data management, and services, its role in capacity development, and the link to marine meteorology and other WMO activities. In reporting to the Assembly, the specific value of JCOMM to individual Member State goals was important to emphasize.

The secretariat support to JCOMM from the IOC was evolving slightly: a new P3 position for JCOMM and Tsunami activities was being recruited to start early in 2015, and Peter Pissierssens was reducing his support time to JCOMM DMPA activities due to his new role as IOC Capacity Development coordinator - although he remains at the head of the IODE Secretariat. JCOMM had benefited from the secondment of Long Jiang (China) by the State Oceanic Administration, which was scheduled to end in April 2015, although SOA had indicated that it might be willing to second

further staff. The regular budget funding for JCOMM was reasonable healthy despite the financial situation of the IOC. Again, the IOC Assembly in 2015 would revisit the budgets of all IOC programmes for 2015-2016, and so clear communication of value including through IOC Member State delegations was important.

The Committee welcomed the report of the Secretariats, and suggested organizing a JCOMM side event at the next WMO Congress and IOC Assembly (**Action** for Secretariat and MAN). The Committee **noted** that considering the expanding JCOMM activities in order to fulfil its core objectives, an increase in resources (human and financial) is required. It also noted its appreciation for the support of SOA to IOC staff supporting JCOMM, and encouraged SOA and other Member States to consider staff or financial contributions to JCOMM (**Action** for Co-Presidents/Secretariat, to write a letter of thanks to SOA and request continuing support).

3. IMPLEMENTATION OF JCOMM INTERSESSIONAL WORKPLAN (2012-2017)

3.1 Programme Areas

The three Programme Area (PA) Coordinators - Observations, Data Management and Services and Forecasting Systems - reported on the achievements in implementing the PA workplans since MAN-10, and plans for the remainder of the intersessional period.

3.1.1 Services and Forecasting Systems Programme Area (SFSPA)

Nick Ashton, the Vice-chair of SFSPA presented the work of the Services & Forecast Systems Programme Area. He reported on the work of the PA on its core mandates of ensuring maritime safety services and support to emergency response and reducing the risks of natural disasters, particularly for coastal communities and establishing operational ocean forecasting services. The report also highlighted some emerging opportunities including supporting navigation safety in respect of the impact of volcanic ash in the marine environment and through the provision of warnings in respect of solar activity. In addition, following the identification of a number of shortcomings in support to marine environmental emergency response, projects were initiated to consider the scientific capabilities for support and, in particular to develop a system of tracking radioactive material in the environment and also to set up a Task Team to develop a strategy for enhancing the international support to response to marine environmental emergencies. Other key activities for SFSPA include the updating of manuals, guidance documents & IMO resolutions:

The Committee recalled that the WMO Executive Council at its 64th session (2012) decided to review and revise the WMO Technical Regulations (WMO-No. 49), Volume I: General Meteorological Standards and Recommended Practices, to which the Manual on Marine Meteorological Services (WMO-No.558) has been notified as the status of Technical Regulations, as Annex VI. It also recalled an intersessional plan for JCOMM, to be led by its Expert Team on Maritime Safety Services ETMSS, to review the overall structure of the WMO-No.558 and the Guide to Marine Meteorological Services (WMO-No.471), in view of new structures for those mandatory publications avoiding duplication and/or potential conflict in contents.

Noting that WMO guidance and regulation documents, including WMO-No.558 and WMO-No.471, are considered as ISO documents by NMHSs, the Committee emphasized the importance of this work to fulfill the responsibility of a technical commission, and in this context welcomed the progress made through an ad hoc working session of the key ETMSS members and METAREA Coordinators on the review of WMO-No.558 (25 - 26 August 2014, Wellington, New Zealand). The

Committee noted that the ad hoc working session identified a small drafting group (Neal Moodie, ETMSS chair and the lead; Steve Ready, METAREA XIV Coordinator; Helge Tangen, METAREA XIX Coordinator) that would complete the SFSPA project #15 (Review of WMO-No.558 and WMO-No.471).

The Committee reviewed the outcome of this working session including the proposed new structure of the WMO-No.558, and agreed on the proposed revision of the structure as following:

- to have a separate section on Marine Climatology
- to have a separate section on Search and Rescue
- to make reference to existing Manuals and regulations and remove replications (e.g. introductory part for WMO-No.49, reference to SafetyNet and NAVTEX Manuals)
- to move training aspects for Port Meteorological, Seafarers and Marine Observers to WMO-No.471 and remove duplications between two publications, and make reference to the Marine Weather Forecasters Competence Framework that would become part of WMO technical regulations as recommended practices

The Committee expressed its appreciations to the leaders of ETMSS, Mr Neal Moodie and Mr John Parker, and the participating METAREA Coordinators for their significant contribution to the process. It advised that the process would require continuous input from and consultation with other JCOMM teams and groups, including the Expert Team on Sea Ice ETSI, Expert Team on Operational Ocean Forecasting ETOOFS and Expert Team on Marine Climatology ETMC, and encouraged the Expert Team on Maritime Safety Services ETMSS to ensure close coordination among those teams and associated experts. The Committee endorsed the proposed plan to submit a proposed revision to the 68th WMO Executive Council in 2016, and requested the SFSPA Coordinator and ETMSS chair to regularly report to the Committee on the progress.

In response to the presentation of work of the PA, the following points were raised:

- It was requested that the Expert Team on Operational Ocean Forecasting should be recognized appropriately (at WMO Congress) for the work that they have done, particularly in the context of achievements of JCOMM. [Action for Co-Presidents in presentations to Congress and Assembly]

(See Agenda item 3.2.10 for specific actions for related to the ETOOFS and GODAE OceanView relationship)

- The work of ETOOFS in developing the Guide for Operational Ocean Forecasting Systems was also highlighted and it was pointed out that this work had actually become a higher priority than originally thought and this, along with progress on other specific projects should be highlighted to Congress. [Action for Co-Presidents to Congress/Assembly]

Recent outcomes from CBS were also highlighted in the context of how they might relate to SFSPA. In particular, it was pointed out that a task team had been set up to develop a roadmap on the seamless path from data processing to forecasting. It was requested that SFSPA should make contact with CBS OPAG-DPFS and -PWS to ensure consistency across PAs in this respect. The Committee asked CBS for more clarity on the proposed Terms of Reference for the [intercommission] task teams on seamless forecasting and impact-based forecasting, so that this could be considered further by MAN. (Action for chair SFSPA and Secretariat, by MAN-12). The WMO strategy for Service Delivery was also highlighted, and in particular the concept of “impact based” outputs; it was felt that this may have particular applications in the fields of wave and surge forecasting.

3.1.2 Data Management Programme Area (DMPA)

Sissy Iona, The DMPA Coordinator reported on the DMPA activities since MAN 10 Meeting of May 2013 and the plans for the remaining intersessional period. She recalled that the DMPA priorities for the period 2012-2017 have been formulated to support the needs for more and better data and referred to the progress status of the DMPA work plan activities and its deliverables.

She mentioned that the Implementation Details of the Management Plan have been updated and by end of this year, the final version will be published on the JCOMM website. On the Marine Climate Data System (MCDS), developments it was outlined the actions that are needed from the MAN-11 and she described the current status on the CMOC/China evaluation process.

The Committee agreed to accept the CMOC application from China, recalling the continuing evaluation procedure through the DMCG. The regional focus of proposed CMOC activities is welcomed and encouraged as a positive contribution to JCOMM. Furthermore, CMOC activities should complement existing activities such as the ICOADS, and the World of Darkness WOD, and not duplicate them. It agreed that Team for Integrated Marine Meteorological and Oceanographic Services within WIS TT-MOWIS should consider the MCDS as part of its overall strategy for data flow into the WMO Information Systems WIS, including making recommendations for improvement of any procedures now in place. The Committee therefore concurred with the DMCG recommendation to establish CMOC/China, subject to the fulfilment of their stated conditions; **Action:** JCOMM co-Presidents to consult JCOMM in writing per WMO Regulation 77 and give Members/Member States 90 days to possibly object; and draft a Resolution on the establishment of CMOC/China to be submitted to Cg-17 and IOC 28th Assembly in 2015 (**Action** for IOC/WMO Secretariats). See item 3.2.5.

She recalled for the need of identifying additional contributors to the Ocean Standards Process of IODE than the EU funded Projects of SeaDataNet and **Ocean Data Interoperability Platform** (ODIP). She then described the ODIP Project context and the importance of maintaining close linkage with the advanced EU data management activities. **Action** - to maintain enhanced links with ongoing European Data Management projects (for DMPA chair).

Concerning the need to make ocean data more available, the DMPA coordinator referred to the very important The “Data Systems Relevant to JCOMM Activities” report by B. Keeley was noted as complete. Extensive recommendations are noted for OPA observing networks and noted that what we need now is to follow up on the recommendations for improving the use and interoperability of the data, both on a network and a variable basis as well as to encourage people to use these recommendations in as many ways as possible to improve the data system. **Action** - for DMPA groups and teams - to follow up on the Actions and Recommendations in this report. (see also OPA action)

For the next year WMO Congress and IOC Assembly, she noted that it is important for JCOMM to provide high-level guidance on DMPA related activities to these WMO and IOC governing bodies and to enhance the links with the EU activities.

Finally, on the succession planning and following OPA and SFSPA examples, she invited MAN members to contribute to the identification of a DMPA/DMCG Co-Chair. The Committee noted that two new co-chairs of IODE would be elected in March 2015. **Action:** The Co-Presidents, in consultation with Sissy Iona and MAN, should name a DMPA co-chair.

3.1.3 *Observations Programme Area (OPA)*

The meeting noted that Candyce Clark, OPA chair, had retired from NOAA in June 2014 and had thus relinquished her JCOMM role during the mid-session period. While, from the JCOMM perspective, *ad hoc* arrangements had been put in place, the event had nonetheless raised the

issue of the absence of succession planning within JCOMM as a whole (see later discussion under agenda item 5.4). **Action Co-Presidents and Secretariat**

A review of the observing system status, presented by David Meldrum (interim OPA co-chair) highlighted the difficulties of achieving a consistent system overview that might inform decisions at a management level. Many agencies present monitoring statistics, but these generally could not easily be reconciled in a way that facilitated management decisions and actions regarding the observing system. In particular, monitoring systems that relied on data originating from the GTS exposed the difficulty for such systems in assuring that all available data were presented. **(Action for OCG: Explore use of other monitoring tools and approaches that address the current deficiencies)**

Aside from the routine monitoring issues, the OPA recognized that it faced major issues for the future, in particular the definition of useful system metrics that might inform management decisions, the engagement of the wider ocean observation community, and the identification of areas in which it might make a practical difference on a decadal timescale. The OPA tabled its forward-looking agenda and invited other PAs to form similar forward-looking strategic plans. **Action – other PAs to examine the applicability/feasibility of doing this, by MAN-12**

A critical issue for the OPA, and for JCOMM as a whole, was the effectiveness and continued support for its JCOMMOPS activity, the JCOMM interface to the global ocean observing community. JCOMMOPS had to a large extent functioned without active JCOMM supervision and control for many years, and had in good faith largely set its own agenda. In this context, the meeting noted that, surprisingly, no clear strategy had been identified for this critical function, and urged that immediate action be taken to give clear direction and guidance to JCOMMOPS. **Action – OPA to define JCOMMOPS strategy, by April 2015 (OCG-6)** for further MAN endorsement renewal by MAN12 (see also agenda item 3.1.4)

MAN noted that a core JCOMMOPS activity was focused on standards and flow of the metadata on instruments and platforms to data archives, and that the strategy for JCOMMOPS on this should be consistent with DMPA activities in this area as well as the WIGOS Metadata standard (Action: consult DMPA Coordinator and WIGOS in the JCOMMOPS instruments/platform metadata portion of the strategy, for OCG-6)

MAN noted several new observing communities (e.g. gliders, coastal, IOCCP/carbon) and inquired about their potential status under OPA. The Committee requested OPA to continue to seek out new communities of best practices and monitor their maturity and readiness for inclusion in OCG activities when possible.

OPA will raise these to its Technical Groups and request report recommendations be addressed. **Action – OPA to request OPA Activities/Technical Groups note completion of the Keeley report and address its recommendations. (see also DMPA action)**

The meeting noted the issues raised and asked all participants to endorse and embrace the OPA's future aspirations and its urgent intentions to work with JCOMMOPS to define its immediate work plan and future strategy.

3.1.4 JCOMMOPS:

Mathieu Belbeoch presented an update on the activities of the JCOMM in situ Observing Programme Support Centre (JCOMMOPS). JCOMMOPS will complete a move of all four staff members (Argo TC, DBCP/OceanSITES TC, Ship Coordinator, CLS engineer) to Brest in November 2014. **IOC/UNESCO will soon sign a funding agreement with local authorities (City of Brest, Finistère department, Brittany region) for three years of funding support of 100k€/year, and is in final negotiations for the agreement with Ifremer for the provision of local hosting support in Brest.** The IOC and WMO secretariats supporting JCOMM are developing a Memorandum of Understanding between the four parties involved: IOC, WMO, and the two French hosting agencies Ifremer and CLS, to clarify the responsibilities and contributions for JCOMMOPS, with the aim to have this approved by the IOC Assembly in June 2015. Contact

has been established with a new French National Commission for the IOC, chaired by Philippe Courtier (Ministry of Environment, Sustainable Development, and Energy).

JCOMMOPS held a meeting with the Observing System Monitoring Center (OSMC, NOAA/PMEL) in April 2014 to improve metrics focused on two areas: observing network maintenance and support, and observing system performance focused on Essential Ocean Variable / Essential Climate Variable metrics. A new web-based monitoring system had been developed and will be deployed in the coming months to help with these two core tasks. The Committee noted that an inauguration of JCOMMOPS is planned in Brest, in coincidence with the Argo Steering Team meeting (17-20 March 2015), and the need to consider an OCG meeting around JCOMMOPS strategy, in the new facilities.

The WMO secretariat informed on discussions with the Human Resources Divisions, the legal advisor, and the IOC secretariat, the development of a MoU for JCOMMS including the Division WMO, even as IOC/UNESCO retained in regard with leading role.

The Committee welcomed the work and outcomes of JCOMMOPS since its last meeting. The Committee noted the strong dependence of JCOMMOPS on funding from one Member/Member State (the USA, more than 60% in 2013) and emphasized the importance of broadening the funding support base for JCOMMOPS. It also emphasized the importance of OCG involvement in an overall strategy for JCOMM as well as orientation of its work plan (**Action** for OCG and JCOMMOPS, to review the draft JCOMM Strategy and bring a revised version to OCG-6 in 2015 for approval, see also section above). The Committee also requested close collaboration between JCOMMOPS and ETDMP on instrument metadata (**Action** for JCOMMOPS and ETDMP, to communicate on relative roles in supporting instrument metadata, double action above).

The Committee emphasized the importance of negotiating and finalizing a four-party Memorandum of Understanding for JCOMMOPS, and the Co-Presidents agreed to write a letter to WMO and IOC requesting they give this high importance (**Action, for Co-Presidents and Secretariat, ASAP**).

3.2 Cross-cutting Activities coordinated by MAN

3.2.1 *Task Team on Satellite Data Requirements*

Joël Dorandeu, chair of the JCOMM Cross-cutting Task Team on Satellite Data Requirements, reported on progress with this Team. Team members were named in March 2014, and a first video conference took place on 25 June 2014, with the aim of more specifically defining the Team's objectives in accordance with its Terms of Reference. The Team will propose a strategy for the "*Marine Meteorology and oceanographic forecasting service requirements for integrated satellite products*". A first draft is planned for early 2015, and is proposed to focus on the current status for each type of satellite sensor, starting from existing documents, and identifying key gaps in the observing system.

The Committee welcomed the work of the Team to date. The Committee **emphasized** the importance of taking an integrated look at satellite and in situ data and product requirements for JCOMM applications, a point perhaps not well-captured in the Terms of Reference of the Team. Dorandeu noted that while the report would specifically address coastal areas, it was difficult to many satellite data products to fully extend into the coastal zone. The Committee also welcomed the link with the WMO Space Programme and the work of the CBS Expert Team on Satellite Utilization and Products (ET-SUP).

3.2.2 *Quality Management Approach*

Brian Boase presented an overview of the work of the WMO Task Team on Quality Management (QMTT) and the work of the QMTT members undertaking QM twinning and mentoring activities with WMO Members in the process of developing their own quality management systems. He noted that the current draft Technical Regulation No 49 – Volume IV Quality Management was aviation orientated and now needs to be revised into a generic document.

3.2.3 Marine Weather Competence Standard Framework

The JCOMM Task Team on Marine Competency Requirements (TTMCR) lead by Bryan Boase, tabled their final draft of the WMO Marine Weather Forecaster Competence Framework. The Management Committee agree to continue supporting TT-MCR activities during the intersessional period, both by MAN members and by the WMO Secretariat, in view of submitting the draft competency requirement document to WMO Governing Body (Congress or Executive Council) for approval, then inclusion in the WMO-No.558 and other regulatory/guidance documents in 2014-2015.

The Committee also agreed to prepare a circular letter to all JCOMM members with the final approved draft of competence framework, with return date of early January 2015 seeking the formal approval of JCOMM members. Once approved, bring the issue to the discussion with the International Maritime Organization (IMO) for discussion on continuous development of QMS requirements for marine meteorological and oceanographic services (See also MAN-10/Doc.4.3). (**Action:** Secretariat and MAN, issuance of CL with timeline compatible with Congress documents)

3.2.4 Capacity Development

An outline of the capacity development (CD) principles was presented by Mr John Mungai, MAN member leading the capacity development coordination, followed by a review of the CD activities of 2013 -2014 of the three programme areas (Observations, Services and Forecasting System, Data Management). The Committee noted that a further review of the CD activities is necessary with a view to classifying the activities with the respective programme areas.

The Committee noted that the IODE CD activities should be considered in the wider context of the JCOMM Capacity Development, and should be presented together with those activities within the JCOMM Programme Areas. The Committee requested Mr. Mungai to work closely with the Programme Area (PA) coordinators to identify and classify the various CD activities of JCOMM. (Action for John Mungai and PA coordinators)

The Committee agreed that a feedback mechanism is required in determining the efficacy of the various CD activities undertaken in the JCOMM framework. To this end, the Committee considered that an existing template of the IODE could be used for the mainstream JCOMM CD activities as a way of determining the success and/or positive impact of the various undertaken activities. (Action: John Mungai to develop common approach/framework for evaluation, for application by all CD activities)

It further noted that the CD activities should enjoy ownership at the local/national level to ensure its success. A good example is the upcoming IIOE-2 which, if supported by the Indian Ocean rim countries, it could be used as vehicle to strengthen the national and regional oceanographic institution capacity.

The Committee agreed that CD activities should start from the user perspective. Building on a global observing and data management infrastructure that has built up over the past decades, the

Committee advised that the GODAE OceanView and ETOOFS would provide good resources to enhance capacity development in the area of ocean modeling and forecasting for JCOMM members/Member States. Another area ripe for development included developing the skills needed to apply available ocean satellite products for essential services at the national and regional level. The Committee further noted that the WMO's Global Campus and IOC Ocean Teacher Global Academy would provide essential frameworks for overall CD activities, supported by the virtual tools such as Ocean Teacher. (Action MAN and Secretariat - to develop short project proposals by March 2015, and find opportunities to spark dialogue with potential donors)

The Committee noted that capacity development involved more than just the human capacity development and included institutional infrastructural development; meanwhile, the Committee noted that the infrastructural component would best be handled at the national level by the relevant oceanographic and NMHSs due to the huge resources required.

The Committee was provided with an overview of the WMO Capacity Development strategy and activities. WMO is working in four key capacity development areas: institutional; policies and procedures; infrastructure; and, human resource development. In some other UN agencies they explicitly highlight an additional area of legislative requirements. This is built into the institutional and policies and procedures areas within WMO. The Management Group was also informed about some of the key activities WMO was undertaking under the Capacity Development Implementation Plan.

MAN was invited to consider key aspects for taking forward the draft Marine Forecaster competencies and how these would fit into Vol 1 of WMO Publication No. 49 noting the publication will be restructured during 2015. To be consistent with the other competency standards only the top level statements and associated notes would be contained in WMO No 49 Vol 1. The detailed breakdown of the competencies would be included as a separate chapter in a Guide to competencies and competency assessment that is yet to be produced. This Guide would be created under the WMO EC Panel of Experts on Education and Training with the Technical Commissions providing chapters in their area of expertise as appropriate. [Action: MAN requested the Secretariat to take the agreed competency statements and create a draft of the proposed text to be incorporated into the Technical Regulations. This text to be cleared by the two co-Presidents prior to being circulated to Members seeking their agreement for Cg-17 to consider incorporation into the Technical Regulations as Recommended Practices, by January 2015 for Congress documents]. The Committee noted that for the work on developing the marine competencies to have any benefit to Members it will be necessary to align the content and descriptions of appropriate JCOMM courses with the competency statements to ensure that the limited education and training resources were invested in supporting the key work areas. There may be some value in identifying common roles and tasks within the oceanographic community as a first step to development of competency standards in that domain.

The Committee was informed on a survey that the Education and Training Office has run to gain an estimate of the total staffing in National Meteorological and Hydrological Services (NMHSs) and how those staff are broken down in terms of professional vs. technical and by work area. Unfortunately the first version of the questionnaire did not ask about oceanography as a work area so the numbers are very lowest estimates. Globally using data from more than 130 WMO Members there are at least 280 staff whom Members have said tasks in oceanography are their primary work area. The majority, just over 240, of them are in RA VI (Europe) with very few reported in other WMO Regions. Staff carrying out marine forecasting are most likely included in the weather services domain where there are nearly 50,000 staff globally. The Management Group noted the value of obtaining further information about the staffing numbers and profiles in the JCOMM area of interest.

The Committee noted also that WMO ETR Office have been working closely with Ocean Teacher / IODE and expect to undertake some joint activities under the Ocean Global Academy / WMO Global Campus umbrellas. There are opportunities for collaboration in the areas of data

management training (IODE / WIS) as well as courses on Oceanography for Meteorologists and Meteorology for Oceanographers.

3.2.5 *Integrated Marine Meteorological and Oceanographic Data Flow and Services in WIS Framework*

A new JCOMM Cross cutting Task Team on 'Integrated Marine Meteorological and Oceanographic Services for WIS' was discussed and provisionally approved at MAN-10 in May 2013, and then presented at the OCG-5 meeting in September. There it was decided to wait for completion of the report on *Data Systems Relevant to JCOMM Activities* (R. Keeley, author) before final approval of the Terms of Reference for the Task Team. This Report was published in July 2014 and is [available on the JCOMM website](#)¹.

The Committee expressed some concern on the large scope and specificity of the activities of the proposed Task Team, and emphasized the need to build on existing systems such as the Ocean Data Portal of IODE. The Committee clarified that the Task Team should focus on recommending a strategy including technical and governance aspects, and should limit its scope to how oceanographic and marine meteorological systems integrated into WIS.

The Committee adopted the revised Terms of Reference for the Cross-Cutting Task Team on Integrated Marine Meteorological and Oceanographic Services for WIS (TT-MOWIS) found in Appendix 03. **Action:** Co-Presidents, in close consultation with MAN, to name TT-MOWIS members.

3.2.6 *Ocean Data Portal - WIGOS/WIS*

Ocean Data Portal

The Committee reviewed the progress of the IODE Ocean Data Portal (ODP) particularly concerning with interoperability and interaction ODP with WMO Information System (WIS), and other ocean data systems with ODP and/or WIS.

The Committee was briefly informed by N. Mikhailov on the current status of IODE ODP and planned future activity in this field. ODP is now providing access to more 100 operational data sets including the data from GTSP (US NODC), surface drifters data and upper-ocean T/S gridded fields (Canada, ISDM), Argo data (France, IFREMER), GTS data and gridded analysis/forecasts data (Russian ESIMO, RNODC).

The Committee was informed that the Partnership Centre for the IODE Ocean Data Portal was established in RIHMI-WDC (Obninsk, Russian Federation) in September 2013. This center is sponsored through an in-kind contribution by Russian Federation (Roshydromet) to IOC. The Committee was also informed on current status of JCOMM Data Collection and Production Centre (DCPC) on ODP node basis (RIHMI-WDC, Obninsk). The collaboration scenario of ODP-WIS interaction has been developed and tested between the ODP Partnership centre and GISC DWD (Germany). About 6700 ocean/marine meteo datasets from WIS were connected and are currently available from the ODP portal. It is planned to finalize the establishing JCOMM DCPC at November-December 2014 and provide the WMO audit in beginning of next year.

¹ http://jcomm.info/index.php?option=com_oe&task=viewDocumentRecord&docID=13466

The Committee welcomed the progress with the IODE ODP and expressed its appreciation concerning with ODP Partnership establishing and operation. The Committee recommended to provide the JCOMM DCPC establishing in planned time, and that it work closely with TT-MOWIS

WMO Information System

Following a briefing on the status of the WMO Information System (WIS) and developments associated with it, the Committee discussed how best to exploit the WIS to support JCOMM activities.

The Committee noted the three types of WIS Centre (National Centre, Data Collection or Production Centre (DCPC) and Global Information System Centre (GISC), the different WIS functional requirements for each. It also noted that DCPCs need to be endorsed by a WMO Programme (through the responsible Technical Commission) to confirm that the information provided by the centre is appropriate and is created and managed to relevant standards. It concluded that it needed to develop a strategy for deciding which centres should be registered on behalf of JCOMM, and for assessing the capabilities of those centres. The new TT-MOWIS would be asked to develop this strategy.

Considering the Regional Marine Instrument Centres (RMICs), and noting that the Commission for Instruments and Methods of Observation had decided that registering the meteorological equivalents as WIS centres would not be appropriate, JCOMM Management Group decided that the RMICs would need to justify why registration as separate WIS centers. In doing so, Management Group noted that there would be benefit in publishing details of the services offered by the RMICs in the WIS, but that this could be achieved by providing WIS Discovery Metadata records through another JCOMM centre, for example the Ocean Data Portal.

The Committee noted that JCOMM activities had experienced problems with distributing information through the WIS in near real time and with obtaining access to those that had been provided to the Global Telecommunications System. With respect to distributing information, the Committee agreed that it would be helpful to work closely with one or more centers already connected to the Global Telecommunications System so that they could have an additional role of acting as a gateway (or “open access point”) for observations generated by JCOMM activities to the WIS, and to help researchers (in particular) to publish the WIS Discovery Metadata records that are needed for users to access the data once it has been distributed through the WIS. It asked OPA to identify such a centre (Open access WIS node for third party data: push/pull), and developing a policies that would clarify to WMO Permanent Representatives why participants in JCOMM activities need to be registered at WIS GISCs to be able to download and subscribe to observations and products through the WIS. **Action:** OPA to approach NDBC to see if they would be willing to play this role.

As representations in Table Driven Code Forms of marine and oceanographic observations are being developed, this is putting pressure on the limited number of table entries available. This would be alleviated by introducing “Master Table 10” that is planned to hold the entries corresponding to oceanographic information. **Action** for DMPA in collaboration with TT-MOWIS: To achieve this, JCOMM would need to set up procedures to manage how entries are proposed, assessed, tested and endorsed. These could be based on the procedures used by the Commission for Basic Systems (CBS) for the “Master Table 0”, but would need to be endorsed and operated by JCOMM.

Recognizing that the work of to develop a representation of operational aviation information for ICAO in XML that was built from a logical data model, and that the logical data model was built on the same underpinning standards that are being used to develop Sensor Mark-up Language (SensorML), the Committee asked its DMPA to coordinate its work with the CBS IPET-MDRD that was developing logical data models to support many WMO activities and on the specification of vocabularies to support them. (**Action** for DMPA).

Although details of data management practices in JCOMM and WIS differ in details, they are built on the same principles. Now that the WIS has defined the competences expected of those operating and using the WIS, the Committee recognized that there would be opportunities for both WIS and DPMA to exploit training facilities and materials developed by the other.

WMO-IOC Regional Marine Instrument Centres (RMICs)

Efforts to establish a RMIC for the RA I (Africa) in Casablanca, Morocco, in addition to the RMIC in USA for RA IV and the RMIC/AP in China for the Asia Pacific region, are well underway. An evaluation team comprised of a JCOMM expert and the Secretariat, visited Casablanca in July 2014 and noted the commitment and steps already taken by Morocco towards establishment of the RMIC/RA-I, with potential benefits to Members/Member States in the sub-region and beyond in RA-I. The evaluation team therefore recommended to establish the RMIC/RA-I, subject to the following conditions:

- (i) ISO 17025 accreditation for Temperature (incl. air, and water) (deadline 31/12/2014);
- (ii) MoU signed with one national oceanographic institute on future collaboration with regard to the RMIC activities (deadline 30/9/2014);
- (iii) Preparation of an RMIC/RA-I enhancement plan for the period 2015-2021 (deadline 31/10/2014);
- (iv) Statement of compliance and commitment to be submitted by the PR of Morocco to the JCOMM co-Presidents (deadline 31/10/2014).

In order to reinforce regional understanding and ownership of the RMICs, the Committee agreed on the IOC side to consult with MONGOOS on the RMIC establishment, and to forward the request to recognize the RMIC through the IOC Sub-Commission for Africa and adjacent Island Nations (IOCAFRICA) at its April 2015 session, asking it to recommend that the IOC Assembly adopt the RMIC (**Action** for IOC Secretariat). Likewise, the WMO would inform the RA-I about the RMIC establishment in Africa, and proceed with JCOMM members consultation in writing per Regulation 77 for their endorsement before action is taken by Congress (**Action** for WMO Secretariat).

JCOMM Salinity Measurement Intercomparison Pilot Project

The RMIC/AP is leading the JCOMM Salinity Measurement Intercomparison Pilot Project which purpose is to ascertain the overall proficiency for measuring seawater salinity of laboratories involved in JCOMM global marine/ocean observation programmes. The pilot project is progressing smoothly according to the schedule, with 23 laboratories from 17 countries and one manufacturer effectively participating in the project. The RMIC/AP has now undertaken a preliminary analysis in liaison with the Organizing Committee and the participants and a report is expected to be published by the end of 2014.

WMO Integrated Observing System (WIGOS)

The committee was briefed on the status of WIGOS implementation, including the following aspects:

The sixty-sixth Session of WMO Executive Council (EC-66) agreed that the implementation of the WIGOS Framework is approaching a point of maturity with the prerequisites available for a Preoperational Phase of WIGOS in the next financial period (2016-2019), with the focus shifting toward regional and national activities, along with further development of Regulatory Material and supplementary guidance, full implementation of metadata standards and Quality Management.

EC-66 noted that the development of the WMO Technical Regulations (WMO-No.49), Vol. I, Part I – WIGOS, and requested the technical commissions to accelerate the development of the other Parts of Vol. I. JCOMM, as all other Technical Commissions, was given the opportunity to review the draft materials.

EC-66 further urged the Secretariat to actively reach out to and establish agreements with partner organizations with observing systems activities (e.g. the Copernicus marine monitoring service), with the particular goal of establishing common terminology regarding metadata standards and, whenever possible, common vocabularies.

JCOMMOPS is expected to collaborate with the development of the WIR (WIGOS Information Resource), particularly with OSCAR project (Observing Systems Capability Analysis and Review tool) in order to keep the status of the marine observing systems capabilities up to date into OSCAR. Specific developments will be required at JCOMMOPS for implementing an appropriate user interface with OSCAR, and adding some required metadata. JCOMM Observation Panel and Associated Programmes members will have to make sure that the marine and ocean observing systems metadata are being collected by JCOMMOPS.

The Extraordinary Session of the WMO Commission for Basic Systems (CBS Ext. (2014)) requested its Members to contribute to the JCOMM Observations Programme Area Implementation Goals and to sustain the marine meteorological and oceanographic observing system as a top priority. It adopted Recommendation 3.1(1)/3 (CBS-Ext.(2014)) – Support of Members to the implementation of marine meteorological and oceanographic observing system in support of NWP.

CBS-Ext.(2014) noted that all stations, platforms and instruments contributing to WIGOS will need identifiers and stressed that providing WIGOS identifiers for any observing station or platform known to Members, regardless of the commitment of the operator regarding data quality or sustained operation, is essential for WIGOS.

CBS-Ext.(2014) adopted Recommendation 3.1(1)/1 (CBS-Ext.(2014)) - WIGOS Regulatory Material, developed by ICG-WIGOS Task Team on WIGOS Regulatory Material, in which JCOMM is represented, and requested the Secretary-General to make the necessary arrangements for its submission to Cg-17. Annexes 1 and 2 of such recommendation consist in the draft WMO Technical Regulations (WMO-No. 49), Volume I, PART I – WIGOS and in the draft Manual on WIGOS. CBS-Ext.(2014) also noted the development of WIGOS Metadata Standard by the ICG-WIGOS Task Team on WIGOS Metadata, in which JCOMM is represented, as Attachment 1 to that recommendation.

CBS-Ext. (2014) recommended to transform Expert Team on Satellite Utilization and Products (ET-SUP) into an Inter-Programme Expert Team, and approved its updated Terms of Reference. ET-SUP is exploring areas of collaboration with JCOMM TT-SAT, through the chairs of both Teams.

The ad hoc Satcom Forum (International Forum of Users of Satellite Data Telecommunication Systems), France October 2013, **recommended to consider placing the Satcom Forum not only under the umbrella of CBS, but also of JCOMM, so that it becomes a joint JCOMM-CBS body.**

The Committee noted and concurred with the following recommendations (DOC.3.2.7(1) WIGOS):

1. To actively reach out to and establish agreements with partner organizations with observing systems activities (e.g. the Copernicus marine monitoring service), with the particular goal of establishing common terminology regarding metadata standards and, whenever possible, common vocabularies. (**Action** for DMPA (ETDMP and TT-table-driven-codes) and JCOMMOPS, to be considered as part of strategy by TT-MOWIS)

2. To request JCOMMOPS to collaborate with the OSCAR Platform development project in order to keep the status of the marine observing systems capabilities up to date into OSCAR. (**Action** for after JCOMMOPS and OSMC define metrics)

To take steps to formalize the Satcom Forum under the umbrella of the CBS and JCOMM, so that it becomes a joint JCOMM-CBS body. (**Action** for David M. to work with Secretariats for CBS (Dave Thomas) and JCOMM (Etienne Charpentier) to ensure this is in Congress documentation).

WMO EC 4.4.51 - Council noted that CBS had continued work towards establishment of Satcom Forum. Requested CBS to review the reports of ad hoc meetings for consultation by Cg-17 including budget implications, should a forum be established. CBS decided it wanted to go ahead at its last session.

3.2.7 *JCOMM Contribution to Disaster Risk Reduction*

The Committee received a brief report by the WMO Secretariat on the latest development in the general direction of the WMO Disaster Risk Reduction priority. The United Nations system has been leading the organization of the Third World Conference on Disaster Risk Reduction (WCDRR-III), to be held from 14 to 18 March 2015 in Sendai, Japan, where the post-2015 Framework for Disaster Risk Reduction would be adopted. Noting the strategic importance of this Conference, the 66th Executive Council of WMO (EC-66) decided through Resolution 8 (EC-66) to develop a clear direction for a WMO-wide DRR activities ("DRR Roadmap"), and to actively participate in and provide input to the post-2015 Framework as well as the WCDRR-III event. The Committee noted that this DRR roadmap would be a critical deliverable to the Cg-17, providing guidance to all WMO Members for their national, regional and global activities for DRR, and to be part of WMO Strategic and Operating Plan.

The Committee further noted that the WMO Executive Council emphasized that the DRR activities of WMO Members are part of their service delivery mandates to ensure readiness, response and resilience, and therefore, requested the Secretary-General to ensure alignment of the WMO DRR-related programmes and activities with the WMO Strategy for Service Delivery. In this context, the Committee noted that, various JCOMM activities respond to these emerging requirement through; 1) assisting strategic planning and programmatic implementation; 2) offering best practices (e.g. CIFDP), and; 3) assisting implementation of (multi-hazard) Early Warning Systems for marine and coastal communities, and support enhancing user engagement (e.g. shipping, coastal communities).

The Committee suggested that, in particular, the core JCOMM activities of meteorological Maritime Safety Information (meteorological MSI) and joint support with the WMO Commission for Hydrology (CHy) for the national implementation of CIFDP should be highlighted as direct contribution to the DRR Services. (**Action** for Secretariat/Co-Presidents for JCOMM report to Cg-17).

Coastal Inundation Forecasting Demonstration Project

The Committee received a brief progress report in the implementation of the Coastal Inundation Forecasting Demonstration Project (CIFDP: <http://www.jcomm.info/CIFDP>), to demonstrate how integrated coastal inundation forecasting and warnings can be improved and effectively coordinated by the National Meteorological and Hydrological Services (NMHSs). It noted with satisfaction the progress in ongoing National Sub-Projects of CIFDP: in particular; for Bangladesh (CIFDP-B) for the successful implementation of Phase 2 in developing a ready-to-operate coastal inundation forecasting model and associated training for forecasters; for Fiji (CIFDP-F) completing its Phase 1 in October 2013 and preparing the launch of Phase 2, and for Indonesia (CIFDP-I) completing its Phase 1 with successful review by the Project Steering Group in October 2014. The Council further noted a decision made at the 5th meeting of the CIFDP Steering Group (CIFDP-PSG-5, 14-16 May 2014, Geneva) to re-scope the former sub-project for Dominican Republic (CIFDP-DR) into a regional project for Caribbean (CIFDP-C), in close collaboration with the WMO

Tropical Cyclone Programme (TCP) and its regional Hurricane Committee. The Committee expressed its appreciation for the significant achievement of the Project Steering Group (PSG) and the National Coordination Teams (NCTs) of the sub-projects.

The Committee further recognized the continuous improvement and update in the general framework of the Demonstration Project; in addition to the continuous review and update of the CIFDP reference documents – Concept, Implementation Plan and Technical Recommendation for system development – the Committee noted that the PSG developed a strategic plan for Coastal Coastal Inundation Forecasting Demonstration Project which would be published as a JCOMM Technical Report. This strategic plan was developed with objectives of; 1) defining the scope of CIF services, and; 2) suggesting an organizational structure, relative roles and options to streamline activities of relevant WMO programmes, projects and technical commissions as the potential delivery arm for CIFDP services. The Committee recognized the value of this strategic plan not only to guide the service delivery aspects of the CIFDP implementation, but also to ensure successful delivery of CIFDP and continuation of CIF within a comprehensive framework of operational WMO service delivery. The Committee noted with satisfaction that the drafting process for this strategic plan has been made in close consultation with the relevant programmes and projects for the implementation of all CIFDP. Sub-projects – such as the Flood Forecasting Initiative (FFI), WMO Public Weather Service (PWS). The Committee encouraged the PSG to continue and widen its effort for consultation with relevant activities, particularly to further clarify the definition and scope of the CIF service products. (**Action** for PSG).

The Committee emphasized that the experience and expertise gained from the implementation of various CIFDP sub-projects would be the direct contribution to enhance capabilities of the National Meteorological and Hydrological Services (NMHSs) to improve its support for DRR, through a specified impact-based forecasting service for the coastal community. The Committee agreed that the technical support and advice for CIFDP implementation should remain a prioritized activity of JCOMM during the intersessional period.

3.2.8 *Joint Activities with Other Groups and Programmes*

The Committee received a brief report on the work of the Joint CCI/WCRP-CLIVAR/JCOMM Expert Team on Climate Change Detection and Indices (ETCCDI) during the intersessional period. It noted with appreciation the work of the ETCCDI has helped improve understanding and characterization of climate variability and change, and climate services development for the GFCS.

The Committee welcomed the recent development in the general direction of the ETCCDI's work, highlighting the need to develop marine climate extremes indices. The Committee apprehended that the contribution of JCOMM and its experts would be of great value to respond to these requirements, and encouraged the ETCCDI members (particularly those nominated by JCOMM) to continue their efforts to implement the work plan.

The Committee further noted the emerging requirements for regional capacity development for the monitoring of changes in extremes. It advised the ETCCDI members and relevant JCOMM teams/groups (including the ETMC and ETWCH) to identify opportunities to identify relevant training opportunities and training material that may contribute to the activities of WMO Regional Climate Centres. (**Action** for CD coordinator and ETCCDI to propose common projects).

Services for Ocean Fisheries

The Committee recalled that JCOMM jointly with the WMO Commission for Agricultural Meteorology (CAgM) has established a Joint JCOMM-CAgM Task Team on Weather, Climate and Fisheries (TT-WCF: <http://www.jcomm.info/TT-WCF>), to enhance understanding and capabilities in marine climatology/oceanography and their impact on ocean fisheries.

The Committee noted, that the TT-WCF planned to make its focused effort to produce a synthesis report / policy brief would be the major deliverable to the coming sessions of JCOMM and CAgM, with an emphasis on comparative impact / relevant importance of climate information, and with focus on climate variability's side – tools, management responses, etc. In this context, the Committee agreed that the Team's focus for the next twelve months should be given to commencing and preparing the Task Team synthesis report / policy brief. This synthesis report would build on the Intergovernmental Panel on Climate Change (IPCC) Assessment Report 5, Working Group II, both regional and fisheries chapters, and would pay particular attention to comparative impact of climate variability and the relevant importance of climate information. The synthesis report would also consider tools which may be used to develop management responses using climate information.

The Committee took note of the Team's workplan for the coming 12 months, including a proposal to organize a themed workshop on weather, climate and fisheries in conjunction with the 3rd Climate Impacts on Top Ocean Fisheries (CLIOTOP) science symposium to be held in San Sebastian, Spain, from 15 to 18 September 2015. Each TT member would discuss their interim results, together with contributions from other participants at the CLIOTOP symposium during a special one day themed workshop to develop a framework for the report. The general conclusions from this one day workshop will then be presented to all scientists attending the CLIOTOP-3 symposium for discussion and synthesis. It was also recommended that the TT-WCF members would hold a one-day meeting after the CLIOTOP-3, to review input / interim reports toward the finalization of the synthesis report.

Noting that the work of this Task Team would be the direct contribution to the implementation of GFCS, addressing the food security issue, the Committee endorsed the work plan for the TT-WCF. The Committee advised that the final synthesis report would be presented to the 5th session of JCOMM (2017) and to the 17th session of CAgM (2018), and requested the Secretariat to; 1) continue supporting the activities of TT members nominated by JCOMM, and; 2) to continue facilitating the Team's work to coordinate with the relevant programmes and groups, including the new GOOS Panel for Biology. (2 **Actions** for Secretariat)

3.2.9 *Joint Activities with GODAE OceanView*

Gary Brassington, chair of the JCOMM Expert Team on Operational Ocean Forecast Systems (ETOOFS), presented this item. The conclusion of GODAE in 2007, led to the creation of two follow-on entities for operational oceanography: GODAE OceanView (GOV) to continue research, development, and ETOOFS within the JCOMM Services and Forecast Systems Programme Area (SFSPA) to facilitate transition to full operations. ETOOFS is one of four ET's within the SFSPA. Drivers for the ET-OOFS workplan are based on responses to WMO and IOC intersessional recommendations through JCOMM-MAN and SFSPA. This includes integration across the ET's as well as across the observations and data management program areas. It has established lines of responsibility within the inter-governmental framework for observational requirements, performance monitoring and "the guide". New potential areas of work for ETOOFS emerged in the last intersessional in two key areas: (a) response to the Fukushima Daiichi nuclear disaster and (b) a call from WMO for contributions to the climate program. Membership, meetings, secretariat support, websites and other activities are tightly controlled largely in response to the limits in funding.

From the inception of ETOOFS, collaboration with the GOV was identified and "the Commission endorsed the collaborating arrangements established the two groups." GOV's role was to continue to drive research and development of operational ocean forecast systems while ET-OOFS was drive transition to operations and standardization. The relationship has been monitored through with JCOMM SCG-6 (8-11 November 2011, Seoul) reiterating the collaboration of ET-OOFS and GOV and other groups.

Some successes and collaboration pathways between the two groups have been:

- Capacity building – GOV summer school 2010
- Performance monitoring – transitioning GOVST CLASS4 intercomparisons to a framework for broad adoption of operators
- Observational requirements – engagement with the Observing System Evaluation Task Team OSE-TT to provide the evidence and statements of impact to underpin the observational requirements.
- The vision of “the guide” was for members of GOV to be contributors and reviewers.

At the same time some examples where the linkage has not been achieved with GOV have been:

- The Fukushima disaster, requiring coordination of the R&D component
- Establishing supporting linkages with seasonal community to underpin ETOOFS work plan
- Establishing linkages with the sea-ice R&D to underpin the linkage with ETSI

GOV is presently updating its strategic plan in response to a review in 2013 which commented its first five years of operation. While the GOV review recommendations cover GOVST, they do speak to GOV/ET-OOFS relations. Specifically:

- The areas of responsibility of GOV and ET-OOFS need clearer separation.
- GOV to be clearly identified with scientific leadership and advice and ET-OOFS with responsibility for standards and operations of ocean forecasting systems including routine activities as indicated by GOV Review 2013
- The Panel recommends that reporting lines from GOV to OOPC and JCOMM should be better defined and include the ability for both bodies to seek advice, and make requests for action from GOV.
- The patrons group should facilitate informing national agencies of key findings from routine monitoring of models and observing systems to assist in decision/policy making.
- The patrons group should also promote operational centers participation in routine real-time model intercomparisons and in coordinating routine observing system monitoring approaches through collaboration with GOV/ET-OOFS members.

Four possible solutions were considered (Attach document as annex to this report with the detail of the 4 options), ranging from status quo, to establishing a formal tie of GOV into intergovernmental structures. The most likely option involves continued close communication and tune-up of respective activities to more closely mesh in a complementary way.

The Committee welcomed the report and emphasized the importance of good relations between GOV and ETOOFS to achieve a higher-level collective goal of improving the operational ocean forecast systems and service delivery. GOV and ETOOFS were also important to capacity development activities for JCOMM. It requested feedback from the other SFSPA ETs on 'Option B' of closer communication and adjustment of activities (**Action** for SFSPA, by January 2015 for next MAN Webex), and agreed to develop the concept further for adoption at MAN-12 (**Action** for ETOOFS and SFSPA in collaboration with GOVST). The Committee noted that it would welcome an invitation to join the GOV Patron's group as one possible mechanism for better coordination, as long as it was clearly understood that JCOMM would have a different role from the majority of the Patrons, since it cannot financially support GOV (**Action** for Co-Presidents to informally

communicate with GOVST leadership). The Committee also agreed on the importance of building up ETOOFS membership so that all key operational ocean forecast systems were represented (**Action** for ETOOFS in consultation with SFSPA Coordinator).

4. COLLABORATIVE PROGRAMMES, PROJECTS AND ACTIVITIES ASSOCIATED WITH WMO-IOC PRIORITIES

4.1 Global Ocean Observing System (GOOS)

Albert Fischer presented a report on progress with GOOS and its relationship with JCOMM. GOOS is operating in a systems view using the *Framework for Ocean Observing* (doi:10.5270/OceanObs09-FOO) focus on developing requirements, observing network coordination, and data management and information generation activities, focusing on requirements based on *Essential Ocean Variables*, and developing evaluations of the readiness of various components. He showed a draft GOOS Strategic Mapping² graphic which shows the complex links between high-level societal drivers for sustained ocean observing, scientific questions, the Essential Ocean Variables needed to address those questions, and the observing networks supporting those. JCOMM through its OCG and JCOMMOPS coordinates a large number of the in situ observing networks that are a part of GOOS. The OCG link with the GOOS Physics and Climate panel (the GCOS-GOOS-WCRP Ocean Observations Panel for Climate OOPC) is helping to refine definitions of EOVS, observing network evaluations and recommendations, and the evaluation of feasibility important for the GOOS *Framework*.

GOOS is organized around a Steering Committee and three Panels, focused on Physics and Climate (OOPC), Biogeochemistry (led by the SCOR-IOC International Ocean Carbon Coordination Project IOCCP), and a new Biology and Ecosystems Panel, now co-chaired by Nic Bax (Australia) and Samantha Simmons (USA).

The 3rd meeting of the GOOS Steering Committee (Barcelona, 25-27 July 2014) agreed to the GOOS Strategic Mapping and associated specification sheets for EOVS and Observing Networks as a core tool for communications and coordination for GOOS. It refined the concept of GOOS Projects, which are affiliated with GOOS and benefit from interaction, visibility, and a potential legacy through GOOS. Development projects have a broad scope to fill gaps in the observing system, and pilot projects improve specific readiness of a part of observing system. These GOOS Projects will be proposed through the Steering Committee, Panels, and GOOS Regional Alliances. The first two GOOS Projects approved were the Tropical Pacific Observing System in 2020 project, and the Deep Ocean Observing Strategy.

GOOS Regional Alliances (GRAs) are a construct important to the coordination and implementation of GOOS at a regional level. The Australian Integrated Marine Observing System (IMOS) has become the 13th IOC-recognized GRA. The GRAs individually are key implementers of GOOS, which respond to regional priorities and capacities. As a group they meet once every two years as a GOOS Regional Forum, feed into the GOOS Steering Committee, learn from each other's best practices, and are developing common projects for cooperation. Their capacity (observing networks and modeling systems) have been inventoried in recent years, and a human capacity inventory is being considered.

GOOS has specifically asked JCOMM to work with the GOOS Panels and the observing networks under OCG to develop risk and vulnerability information that can be a part of system-wide evaluation activities. It also requires regularly updated information on the state of the observing networks that can be provided through the OPA and JCOMMOPS. The GOOS Regional Alliances are a resource that can be tapped to help organize capacity development activities, and a potential

² <http://lists-ioc-goos.org/goos-strategic-mapping-graphic>

link to WMO Regional Associations may be of value in certain regions for activities of most relevance to JCOMM.

The Committee welcomed the report on GOOS, and noted the important collaboration with the OCG in particular, but also with all programme areas of JCOMM. It noted that JCOMM and IODE data management systems should be reflected in the GOOS Strategic Mapping in between the observing networks and users (both JCOMM users and the research community) (joint **action** for OCG and DMPA). The TT-MOWIS (see agenda item 3.2.5) could help with this. It encouraged the development of cooperation between the GRAs and RAs, starting with invitations to appropriate GRAs to attend RA sessions (**Action** for Secretariats).

4.1.1 TPOS 2020

Katy Hill presented this independent GOOS development project. A workshop was held in January 2014, as part of a review of the Tropical Pacific Observing System, initiated by NOAA and JAMSTEC, coordinated by OOPC, and also sponsored by GCOS, GOOS, as well as KIOST and SOA. The main outcome of the meeting was to recommend the formation of a Tropical Pacific Observing System for 2020 (TPOS 2020) Project to transition the observing system from a loosely coordinated set of observing activities, to a robust and integrated TPOS by 2020.

The first session of the TPOS 2020 Steering Committee was held in Ansan, Korea (6-10 October 2014) along with a TPOS Resources Forum teleconference. The SC agreed on governance and process and, in particular, the intent to work in an orderly and purposeful manner aided by good project management practices. It agreed on 11 substantive potential lines of work, some delivering shorter term advice/outcomes, others on longer time frames. It is possible that for some subprojects, in order to align with agency/national planning timelines, some phases will occur beyond the lifetime of TPOS 2020.

The Secretariat for TPOS will be provided outside of the GOOS/GCOS secretariat, with their involvement for the link to intergovernmental and program processes. Specifically for JCOMM, the risks of observing networks in the Tropical Pacific need to be identified. The project needs links to ENSO modeling activities, the 3 GOOS Panels, JCOMM observing, data management, and modeling activities, and CLIVAR.

The Committee **welcomed** the report on the TPOS 2020 project and **agreed** that strong JCOMM input from all Programme Areas was needed to support the project. The Committee noted that the risks of sustaining the observing networks were a common thread for GOOS and TPOS, and should be addressed by the OCG (emphasis of a previous action in 4.1), but also noted that mitigating the risk was dependent on developing successful services and user communities. For this the link with GODAE OceanView, ETOOFS, and other relevant modeling and service activities was important. The Committee also emphasized the importance of a strong link between the satellite and in situ observing systems.

4.2 Global Framework for Climate Services (GFCS)

In addressing GFCS implementation, JCOMM recognizes that there are significant external and internal drivers for our work which, together with the GFCS. These drivers include:

- Enhanced vulnerability of coastal communities to coastal and ocean hazards resulting from a changing climate
- New and expanded requirements for marine meteorological data, products and services to support sustainable management of coastal and ocean areas, including for fisheries, oil and gas industries, environmental protection, etc
- New communications technologies and capabilities, particularly for users at sea
- Greatly expanded requirements in developing countries for capabilities to deliver marine data, products and services to their coastal and ocean communities to support both commercial and artisanal users

- Enhanced skill in ocean modeling and prediction, approaching that of NWP, together with greatly expanded requirements for a large range of ocean users for real-time ocean analyses and predictions
- Enhanced realization of the availability of climate data and products from the ocean and marine atmosphere, and of their application to a wide range of climate-derived services within the context of the GFCS
- New requirements of the JCOMM parent Organizations resulting from changing Organizational priorities.

While only one of these explicitly references GFCS, it is clear that all are in some way linked to it under all of the five pillars.

The Committee recognized that it had many activities of relevance to the GFCS, and recall that one of the long-term objectives for the JCOMM Strategy (2012-2017) refers *to contribute to the coordination of the development, enhancement and delivery of climate services related to the marine atmosphere and coastal and deep oceans, based on the core competencies within the Commission in marine meteorology and oceanography, as a contribution by JCOMM to the Global Framework for Climate Services (GFCS)*;

4.3 Interagency Collaboration for Metocean Information Services

Vice-chair of SFSPA introduced the Topic (document) on Interagency Collaboration for Metocean Information Services. This highlighted collaboration with IMO & IHO on Maritime Safety Information and, in particular, the introduction of the IMO resolution on World-Wide Metocean Information & Warnings Service, but cautioned on concerns expressed within both IMO & IHO about the timelines within which WMO/JCOMM operates and its possible impact on the regulatory timelines to which IHO and IMO operate.

It is also to be noted that WMO collaborated closely with IHO in assisting them with the setting up of an online version of their regular user survey.

In the field of marine environmental issues, the setting up of a Task Team to consider the future strategy for support to Marine Environmental Response was also highlighted; this team is collaborating not only with IMO & IHO on the “operational” aspects of any services, but also with IAEA in the context of both their Emergency Response requirements and also their research laboratories. Initially the work of the Task Team will concentrate on ensuring that the Emergency Response requirements are fully encompassed within the strategy. (**Action:** for TT: to develop a draft strategy, by Jan 2015 for Cg-17 documents)

In other areas, mention was made of the collaboration with IMO & IHO in the context of the review of documents; the role of ETSI in collaborating with IHO & IMO in the development of outputs relating to sea-ice and their integration into on-board systems. In addition, ETSI has been closely engaged in the development of IMO’s “Polar Code”, in ensuring that appropriate metocean inputs are incorporated into the code.

In response to the presentation, it was noted, at the recent joint Metarea and Navarea Coordinators meeting (Wellington, New Zealand, August 2014), that there is a need to identify the points of collaboration with IMO & IHO where they need input from JCOMM. It was also noted that there are fundamental differences between the roles of Navarea & Metarea Coordinators – Navarea Coordinators, in general, have a much more focussed remit to consider warning mariners of hazards to navigation whereas Metarea Coordinators have a much wider remit encompassing, for example, management of forecasting teams and a wide range of work at national level (Action: followup by ETMSS members and Secretariat, on the identified issues)

4.4 Polar Initiative Activities

Polar activities relevant to JCOMM

The meeting noted that very many agencies and organizations had assumed responsibilities for polar observations, data management and services. To date, this had not seemed to translate to action, and this frustration had spurred WCRP to initiate the International Polar Partnership Initiative (IPPI). IPPI itself was yet to declare its membership and action plan. Given JCOMM's aspiration to embrace the polar regions, and its realization that it was already active in the area through its PAs, the meeting urged the OPA to be more proactive in taking leadership in this area, at first through the existing DBCP action groups, but also through engagement with its other platform-based panels.

In particular, recognizing that most polar observation activities were invisible to JCOMM, the meeting urged the DBCP in particular to reinvigorate its polar Action Groups with a view to being much more inclusive as regards data ingestion from all parties to the GTS. Action for DBCP.

4.5 Submarine Cables Network for Climate Monitoring and Disaster Warning

The Meeting received a report and presentation from Ms Erica Campilongo, ITU Technical Officer, regarding the efforts to adapt future sub-sea telecommunications cables to carry sensors for climate change monitoring and disaster warning. This was an ITU/WMO/IOC 'Joint Task Force' (JTF) activity which had made enormous practical progress since its inception in 2011.

The most recent JTF face-to-face workshop had taken place alongside an industry conference (Submarine Networks World) in Singapore, and had cemented positive relationships with the cable industry at all levels, something which had seemed unattainable at earlier meetings. As a result, most issues (apart from long-term financing) had been resolved, industry commitment pledged, and a clear path to a pilot project established.

The meeting engaged in an active discussion of this initiative, and, noting the importance of this initiative for basic science, climate studies and tsunami warning, endorsed the JTF's objectives and pledged its continuing support to the JTF, including assistance in identifying financial support from agencies within its purview. It also undertook to raise awareness of the initiative to the highest levels that it might. **Action: to disseminate information with the PAs and ETs of JCOMM.**

[also link with IIOE-2 - action for David Meldrum and Peter Dexter.]

4.6 Second International Indian Ocean Expedition (IIOE-2)

The Committee was informed that the IOC Executive Council, through Resolution 1/EC-XLVII, had formally agreed to undertake, jointly with SCOR and Indian Ocean GOOS, an IIOE-2 as a major initiative of the IOC over the period 2105-2020, timed to coincide with the 50th anniversary of the first IIOE of the early 1960s. This resolution confirmed that SCOR would take primary responsibility for preparing the science plan for the IIOE-2, and had established an Interim Planning Committee (IPC), in conjunction with SCOR and IOGOOS, to undertake initial planning for the implementation of the initiative, based on the science plan, to include key components such as data and information management, capacity development and communication and outreach. The resolution invited partner agencies and organizations of IOC to join in the initiative, and instructed IOC's primary subsidiary bodies, including JCOMM and IODE, to develop their own plans for involvement in and support for the IIOE-2, on the basis of the science plan, and to report on this to both the IPC and the 28th Assembly in 2015.

The Committee agreed on the potential value of the IIOE-2 in terms of enhanced scientific knowledge of the Indian Ocean, its interactions with other ocean basins, and the role of the Indian Ocean in the global climate system, as well as the economic and societal benefits to be derived from such enhanced knowledge, delivered in the form of data, information and services to and by Member States. The Committee further recognized the potentially substantial contribution that JCOMM could make to the implementation of the IIOE-2 through all its Programme Areas, as well as through activity areas such as capacity development and interactions with the global ocean satellite community, and noted that WMO had itself already expressed its intention to participate in and contribute to the initiative.

The Committee noted that the science plan being developed by SCOR would be available by December 2014. It agreed that a strategy for JCOMM support for the IIOE-2, delivered within the overall scope of the science plan, should be based around existing activities of the PAs in the Indian Ocean, enhanced as required and where feasible. Such activities should include at least *in situ* observing systems, real time data management processes, ocean modeling and forecasting and capacity development, but would likely expand as the IIOE-2 evolved. The Committee therefore requested the PA Coordinators, in consultation with their respective Coordination Groups and others as required, to develop outline plans for involvement in the IIOE-2. Such plans should include, as a minimum, a listing of existing activities in the Indian Ocean, which would contribute to the initiative, together with an estimate of potential enhancements, which could be made to support the requirements of the science plan, and the resources needed to implement these. These plans should be made available to the Secretariat and co-presidents by end February 2015, for compilation into a comprehensive draft JCOMM plan to support the IIOE-2, for presentation to the IPC in March 2015 and IOC Assembly 27 in June 2015. (**Actions:** (i) PA plans to support IIOE-2 prepared by PA Coordinators and Coordination Groups and submitted to Secretariat and Co-presidents by end February 2015; (ii) Secretariat and Co-presidents to submit consolidated JCOMM plan to the Interim Planning Committee for the IIOE-2 in March 2015 and IOC Assembly in June 2015.)

5. STRATEGIC AND STRUCTURAL ISSUES

5.1 Review of JCOMM Strategy

The Co-presidents introduced the finalized Strategy for JCOMM 2012-2017, in line with WMO Strategic Plan and IOC Medium-Term Strategy as well as against the guidance and decisions at JCOMM-4, and revise it as appropriate. The Committee endorsed the Strategy, to; 1) ensure Commission's priorities during the intersessional period would respond to those of WMO and IOC; and, 2) efficiently use available resources to meet the requirements of the Members/Member States.

In addition and as it was agreed at JCOMM MAN-10, there was a need to assess the performance of JCOMM. As Bryan Boase presented in the item 3.2.2 on a QM a two phased approach was recommended that firstly focuses on the JCOMM Management Committee members and secondly, JCOMM key internal and external stakeholders. The assessment of the JCOMM Management Committee will assess their performance against JCOMM's Terms of Reference (TORs). The second phase of the assessment will utilise a survey tool that will be sent to specific key stakeholders. The Committee agreed that to ensure the results of the first phase could be presented at Congress in May 2015 and the IOC Assembly in June 2015, the MAN members would complete the assessment against the TORs by the end of December 2014. (**Action** for B. Boase to send out survey for MAN members to reply by the end of December, input to Boase for compilation; Action for Co-President Pinardi and Secretariat, on the identification of specific contact details for stakeholders).

The Committee agreed that this second phase would use a web survey tool such as SurveyMonkey. (**Action:** to perform the survey and analyze results by MAN-12, for Secretariat).

5.2 JCOMM Operating Plan and Secretariat Resources

The Secretariats presented an update of the corresponding Operating Plans of WMO and IOC to JCOMM, including information on expected human and financial resources available during the intersessional period, taking account of financial implications for the plan and challenges.

The Committee recalled the need to review the proposed intersessional activities in the draft OP against the resources available at WMO and IOC Secretariats, in order to advise on means and approaches to manage the Commission's activities in responding to the Members' / Member States' requirements. (**Action** JCOMM Co-President and Secretariat).

5.3 Management of Teams/Groups and their Intersessional Activities

Recalling the decisions made at JCOMM-4 and MAN-10 regarding the succession planning for JCOMM teams and groups, the Committee reviewed the status and make recommendations in view of ensuring that the teams will consistently engage chairpersons and vice-chairpersons in the key activities of each teams/groups to ensure continuity in the JCOMM implementation.

The Committee considered the prospect for membership for those JCOMM teams and groups regarding potential vacancies that might occur within the intersessional period, and reaffirm the general principles and procedure for selection of the members/experts within the established rules and procedure of WMO and IOC. **Action** : Co-President and Secretariat

The Committee agreed to ensure a succession plan at the PA coordinator level (Action Co-Presidents, reference DMPA action on co-chair above, to report in Co-Presidents' report at MAN-12). Co-presidents to look at potential co-CD coordinator appointment. (Action for Co-Presidents).

Action: for PA coordinators to ensure that the ETs in each PA have succession plans in place (**Action** for PA coordinators, as part of PA coordinators' report at MAN-12).

5.4 Preparation for and Recommendations to the WMO Congress and IOC Assembly

Based on the precedent discussions and decisions, the Committee considered the main topics to be addressed to the 17th World Meteorological Congress (Cg-17, 2015) and the 28th IOC Assembly (2015), and agree on the plans to complete the required work within the given timeline. For WMO: end of January 2015; for IOC end of March 2015. Action: Co-Presidents and Secretariat.

The two key documents for the WMO Cg-17 include:

- report from JCOMM Co-Presidents including results of the self-assessment;
- report from MMOP including a Draft Resolution on Marine Weather Competence framework, CMOC, RMIC.

The two key documents for the IOC Assembly:

- JCOMM including report on activities and future plans: DR on CMOC, RMIC
- JCOMMOPS document - draft 4-party MoU for hosting.

6. FINAL DISCUSSION ON CHALLENGES

The Meeting noted that it was at the mid of the inter-sessional period for both JCOMM and for the OceanObs cycle of meetings, and that it should use the juncture to take stock as regards its achievements to date and to look forward.

With regard to the former, it was timely to document JCOMM achievements to date and to record them succinctly and approachably to help establish JCOMM visibility at all levels, both at the programme levels and amongst the decision makers and funding agencies.

With regard to the forward look, numerous inter-playing issues were involved: technical, financial and organizational. The ultimate reality is that all JCOMM PAs might be expected to deliver more within a shrinking financial envelope. Within the OPA for example, that it might divert attention from a simplistic strategy of attempting a uniform distribution of ocean observing platforms towards a much more intelligent and targeted approach. For example, the requirements for calibrating remotely-sensed sea surface temperature using surface drifters are changing in light of new knowledge and needs (e.g., ice-free Arctic). Moreover, decades of surface current observations from drifters had allowed the elucidation of monthly surface current climatologies. Climatologies such as these for the first time give a means to better define the optimal network of free-drifting instruments and their re-seeding strategies. This is only a first step towards defining a composite, multi-platform, observing system that responds to multiple demands, but does bring into focus the need to be smarter about the where/when/how of observing platform deployments **Action: Coordinate with OOPC, GOOS, and others to prioritize and catalyse the review and updating of ocean observing system strategies and designs.**

Co-President Stander recalled the need to keep on highlighting JCOMM activities at WMO EC and IOC assembly encouraging members to work with one another (Met with Ocean and Ocean with met).

Ed Harrison noted the challenges to be undertaken by JCOMM for the next few years. He pointed out that Ocean Forecasting Systems, represented in JCOMM ETOOFS, are a crucial and innovative component of the JCOMM undertakings that will affect the development of all the other PAs. The JCOMM challenge will be to try to maintain a cross-cutting approach to raise awareness on the impact that ocean forecasting systems will have in the development of observational and data management systems. Furthermore, another challenge for JCOMM will be to maintain a focus on the emergency response services (TT on Marine Environment Emergency Response), from oil spill to radioactive releases, to show the value of oceanographic and marine meteorological systems in Disaster Risk Reduction activities.

Another challenge for JCOMM will be to envisage a strategy to sustain traditional observing systems such as Voluntary Observing Ships (VOS) which started early and offer the possibility for long time series at the basis of GFCS. Finally it was pointed out that one of the major and essential components of JCOMM stakeholders is the research community and awareness raising activities should be increased in this direction. In order to accomplish this, it is suggested to organise science and technology JCOMM sessions at AGU and EGU general assemblies in the next two years, to show the main outcomes of international coordination from JCOMM Expert Teams.

The Committee emphasized "right-sizing" the activities of JCOMM to the available human and financial resources, focusing on areas where we can best leverage JCOMM. Fundamentally, JCOMM worked on volunteer effort, and there was a big challenge to identify community leaders in new areas for JCOMM and convince them to participate. It was important to try to get JCOMMOPS, WMO, and IOC involved in the appropriate regional projects (such as EU projects) related to its areas of work, in order to stay relevant.

JCOMM can promote its systematic role - in evaluating and coordinating new integrated requirements and systems - in all of its programme areas.

JCOMMOPS has a crucial role in this systems view of the observing system, but a challenge for JCOMM was to have a better link between in situ and satellite systems.

The Committee agreed that one of the main Co-President's responsibilities is to building awareness within the governing bodies of the importance of JCOMM.

In regard with the communications, they need to be focused on the Members/Member States and potential funders as the key audience (i.e.g. Need to showcase JCOMMOPS). The Committee **decided** to make this a high priority: development of a Communications Strategy by MAN-12.

Option 1: fundraising and hiring of consultant to help MAN develop a proper communications plan, aligned with IOC and WMO existing communications strategy and procedures.

Option 2: Secretariats find a intern with a communication background to help MAN develop such plan.

Action: Co-Presidents and Secretariat to pull issues from this discussion for agenda/documents more detailed discussion at MAN Webexes and MAN-12.

7. ANY OTHER BUSINESS

The committee considered the following remaining issued for the intersessional period.

Place and venue for JCOMM-V - **Action** WMO Secretariat to communicate with government of Indonesia to develop firm offer, following the expressed intention during JCOMM-IV.

To plan for a JCOMM Science & Technology workshop - **Action** for Co-Presidents and Secretariat to explore holding special JCOMM sessions within AGU and EGU meetings in (Fall 2016 AGU, April 2016 EGU) - submit proposals to AGU and EGU]

The Committee agreed that Prof George Wiafe to act as JCOMM/ocean representative on the RAIDEG group (**Action** for Co-President Stander and Secretariat).

Place and venue for MAN-12 – The Committee agreed to conduct the forthcoming session in Bologna (Italy) as a kind offer of Co-President Pinardi **Action:** Co-President Pinardi to confirm the optimal dates by end of this week so DBCP can be told and the Secretariat to make the proper arrangements.

8. CLOSURE OF THE SESSION

8.1 Adoption of the report

The Committee adopted the report in session, with an edit for style and missing elements to be done by the Secretariat.

8.2. Closure

The Eleventh Session of the JCOMM Management Committee was closed at 15:52 on Thursday 23 October 2014.

ANNEX I

LIST OF PARTICIPANTS

Mr Nick ASHTON
Key Account Manager
Met Office
127 Clerkenwell Road
London
EC1R 5LP
United Kingdom
Tel: +44 1392 885402

Mr Bryan BOASE
National Manager Quality Assurance and Governance
Bureau of Meteorology, Melbourne
Australian Bureau of Meteorology 1100 Hay Street
West Perth Western Australia 6005
Australia
Tel: +61488441049

Dr Peter DEXTER
Former Co-president of JCOMM
Bureau of Meteorology, Melbourne
International Oceans Policy Advisor
Bureau of Meteorology
GPO Box 1289
Melbourne VIC 3001
Australia
Tel: +61 (0) 3 9669 4870
Fax: +61 (0) 3 9669 4725

Sissy IONA
Head HNODC
Hellenic Centre for Marine Research (HCMR), Hellenic National Oceanographic Data Centre
(HNODC)
46.7 Km, Athens-Sounio Ave.
PO BOX 712 Anavyssos
190 13 Anavyssos, Attica
Greece

Tel: +30-22910-76367
Fax: +30-22910-76347

Dr David LEGLER
Chief, Climate Observations
National Oceanic and Atmospheric Administration Office of Oceanic and Atmospheric Research
1100 Wayne Ave
Suite 1202
Washington DC 20910
United States
Tel: +1 301 427-2460
Fax: +1 301 427-0033

Mr David MELDRUM
Research Fellow, Technology Development
Scottish Association for Marine Science
Scottish Marine Institute
Oban, Scotland
PA37 1QA
United Kingdom
Tel: +44 1631 559 273
Fax: +44 1631 559 001

Mr Nikolai MIKHAILOV
Head, Oceanographic Data Centre
All-Russian Research Institute Hydrometeorological Information - World Data Center, Obninsk
6, Koroleva Street

Obninsk
Kaluga region, 249020
Russian Federation
249020
Tel: +7-484 397 49 07

Fax: +7-499 795 22 25

Mr. John MUNGAI
Senior Meteorologist
Kenya Meteorological Department
P.O. Box 30259

Nairobi
00100
Kenya
Tel: + 254 (20) 3876957
Fax: +254 (20) 3876955

Prof. Nadia PINARDI
Co-President (Oceanography)
Via S.Alberto 163

48100 Ravenna
Italy
Tel: +39 0544 937332
Fax: +39 0544 937323

Mr Johan STANDER

Co-President (Meteorology)
South African Weather Service
Weather Office,
P O Box 21,
International Airport
Cape Town
7525
South Africa
Tel: +27 (0) 21 934 0450
Fax: +27 (0) 21 934 3296

Invited Experts and Observers

Dr Glenn NOLAN
Section Manager, Marine Climate Change
Marine Institute Headquarters, Galway, Ireland
Rinville

Oranmore
Co. Galway
Ireland

Secretariat

Mr Edgard CABRERA
Chief, Marine Meteorology and Ocean Affairs Division
World Meteorological Organization
7bis, avenue de la Paix
Case Postale 2300
1211 Geneva
Switzerland
Tel: +41 22 730 82 37
Fax: +41 22 730 81 28

Albert FISCHER
Head, Ocean Observations and Services section
Intergovernmental Oceanographic Commission of UNESCO

7, place de Fontenoy
75732 Paris cedex 07
France

Tel: +33 1 45 68 40 40
Fax: +33 1 45 68 58 13

Dr Stephen FOREMAN
Chief, Data Representation, Metadata and Monitoring
World Meteorological Organization
7bis, avenue de la Paix
Case Postale 2300
1211 Geneva
Switzerland

Dr Boram LEE
Scientific Officer

World Meteorological Organization
7bis, avenue de la Paix
Case Postale 2300
1211 Geneva
Switzerland
Tel: +41 22 730 8273
Fax: +41 22 730 8128

Mr Filipe Domingos Freires LÚCIO
World Meteorological Organization
7bis, avenue de la Paix
Case Postale 2300
1211 Geneva
Switzerland
Tel: +41 22 730 8579
Fax: +41 22 730 8037

Dr Xu TANG
Director, WDS
World Meteorological Organization
7bis, avenue de la Paix
Case Postale 2300
1211 Geneva
Switzerland
Tel: +41 (0) 22 730 82 64
Fax: +41 (0) 22 730 81 28

Dr. Wenjian ZHANG
Director of the WMO Observing and Information Systems Department
World Meteorological Organization
7bis, avenue de la Paix
Case Postale 2300
1211 Geneva
Switzerland
Tel: +41 (22) 730 8567
Fax: +41 (22) 730 8021

ANNEX II

AGENDA

1 ORGANIZATION OF THE SESSION

- 1.1 Opening
- 1.2 Adoption of the Agenda
- 1.3 Working Arrangements

2 REPORTS BY CO-PRESIDENTS AND SECRETARIAT

- 2.1 Reports by Co-Presidents
- 2.2 Reports by Secretariats

3 IMPLEMENTATION OF JCOMM INTERSESSIONAL WORKPLAN (2012-2017)

- 3.1 Programme Areas (PAs)
 - 3.1.1 Services and Forecasting Systems Programme Area (SFSPA)
 - 3.1.2 Data Management Programme Area (DMPA)
 - 3.1.3 Observations Programme Area (OPA)
 - 3.1.4 JCOMMOPS
- 3.2 Cross-cutting Activities Coordinated by MAN
 - 3.2.1 Task Team on Satellite Data Requirements
 - 3.2.2 Quality Management Approach
 - 3.2.3 Marine Weather Competence Standard Framework
 - 3.2.4 Capacity Development
 - 3.2.5 Integrated Marine Meteorological and Oceanographic Data Flow and Services in WIS Framework
 - 3.2.6 Operational Marine Data Processing and Forecasting System
 - 3.2.7 Ocean Data Portal – WIGOS/WIS
 - 3.2.8 JCOMM Contribution to Disaster Risk Reduction
 - 3.2.9 Joint Activities with other Groups and Programmes
 - 3.2.10 Joint Activities with GODAE Ocean View

4 COLLABORATIVE PROGRAMMES, PROJECTS AND ACTIVITIES ASSOCIATED WITH WMO-IOC PRIORITIES

- 4.1 Global Ocean Observing Systems (GOOS)
- 4.2 Global Framework for Climate Services (GFCS)
- 4.3 Interagency Collaboration for Metocean Information Services
- 4.4 Polar Initiative Activities
- 4.5 Coordination with Regional Bodies
- 4.6 Submarine Cables Network for Climate Monitoring and Disaster Warning

4.7 2nd International Indian Ocean Expedition

5 STRATEGIC AND STRUCTURAL SERVICES

- 5.1 Review of JCOMM Strategy
- 5.2 JCOMM Operating Plan and Secretariat Resources
- 5.3 Resource Identification
- 5.4 Management of Teams/Groups and their Intersessional Activities
- 5.5 Preparation for the Recommendation to the WMO Congress and IOC Assembly

6 ANY OTHER BUSINESS

7 CLOSURE OF THE SESSION

- 7.1 Adoption of the report
 - 7.2 Closure
-

ANNEX III

OPENING REMARKS

11TH MEETING OF THE JCOMM MANAGEMENT COMMITTEE

(Room 8 Jura, Geneva, 20-23 October 2014)

DRAFT OPENING REMARKS

by

**Jerry Lengoasa
Deputy Secretary-General
World Meteorological Organization**

Mr Johan Stander and Professor Nadia Pinardi, JCOMM Co-presidents,

Distinguished Members, Ladies and Gentlemen,

On behalf of the World Meteorological Organization (WMO) and on my own behalf, it is my pleasure to welcome you to the eleventh session of the JCOMM Management Committee. This Joint Commission demonstrates how partnerships between international organizations can be effectively developed and how the marine meteorological and oceanographic communities can work together to enhance marine meteorological services in support of the socioeconomic needs of marine and coastal communities.

This meeting of the Management Committee will focus on the deliverables of JCOMM to the upcoming sessions of the governing bodies of WMO and IOC, the seventeenth World Meteorological Congress in May and the twenty-eighth IOC Assembly in June. The Committee will discuss and make necessary decisions regarding the activities of the Commission during the inter-sessional period. I wish to mention the following:

- Implementation of intersessional work plan by JCOMM Programme Areas;
- Cross-cutting activities coordinated by JCOMM, including satellite data requirements, capacity development, quality management approach and integrated data management for efficient metocean services;
- Key issues regarding the activities of the Commission, such as the contribution to the implementation of the GFCS and the review of WMO Technical Regulations;

- Joint activities of JCOMM with other Groups, Programmes and Projects associated with WMO and IOC priorities;
- Strategic and structural issues relating to the work of the Commission.

I am pleased to know that since the fourth session of JCOMM in 2012 significant progress has been achieved in the implementation of major cross-cutting activities of both WMO and IOC. These include the GFCS, services for disaster risk reduction through the implementation of CIFDP (Coastal Inundation Forecasting Demonstration Project) and IOTEWS (Indian Ocean Tsunami Early Warning System), WIGOS/WIS, GOOS, TPOS (Tropical Pacific Observing System) and the Quality Management Framework.

The Management Committee has played an important role in monitoring and coordinating the implementation of decisions, the workplan and the strategic plan of JCOMM. The Committee will also continue to provide forward-looking recommendations to the next sessions of the World Meteorological Congress and the IOC Assembly and to the fifth session of JCOMM, planned for 2017.

Dear Colleagues, Ladies and Gentlemen,

Concerning future challenges, I wish to draw your attention to the following.

The development and implementation of Operational Marine Data Processing and Forecasting Systems represents one of the biggest challenges. In relation to this, it would be essential to develop a long-term plan to maintain the in situ observing system, supported by contributions from different countries to observing networks and to JCOMMOPS. In this regard, I am pleased to note that the cooperation between JCOMM and the IOC International Oceanographic Data and Information Exchange Programme (IODE) has been very fruitful.

Input to GFCS implementation should be enhanced, given JCOMM unique role in supporting the five pillars of GFCS. For example, an extended effort through the expertise of the Commission for Agricultural Meteorology and JCOMM should be encouraged in the development of a project, data sets and tools to enable NMHSs and other agencies, in particular in SIDS, to assess and respond appropriately to the impacts of climate variability and change on oceanic fisheries.

Another priority is the implementation of quality management systems in national services, within an overall Quality Management Framework, including a competency standard framework.

It would be useful to consolidate existing marine services, and identify and develop a future roadmap for DRR services. At their last sessions, the World Meteorological Congress and the IOC Assembly had identified DRR and the mitigation and reduction of the impacts of marine hazards as major priority areas for the next intersessional period. JCOMM has already made a significant contribution to this area through the SFSPA (Services and Forecasting Systems Program Area) and all its component expert teams, especially in coastal hazard risk reduction and maritime safety, including sea ice, as well as through the CIFDP Project. JCOMM-4 agreed that for the coming intersessional period, the Expert Team on Waves and Coastal Hazards should take the lead for JCOMM in coordinating with the DRR/Marine Hazards services.

I wish to underline also the importance of the ongoing implementation of WIGOS/WIS, including Metocean Information Services, as well as capacity development and resource mobilization in marine meteorology and oceanography.

Finally, constant support should be ensured to the new initiative of the 2nd International Indian Ocean Expedition in 2015-2020 in collaboration with SCOR (Scientific Committee on Oceanic Research) and IOGOOS (Indian Ocean Global Observing System), and the polar initiative activities under the IPY (International Polar Year).

Ladies and Gentlemen,

The moment is right to review and to meet the needs and challenges for service delivery for the application of science and technology for the new WMO and IOC priority areas. This is a good opportunity to review also the JCOMM strategy and its implementation plan.

The challenges for JCOMM persist: increased complexity of problems and restrictions in available resources call for more coordinated and streamlined cross-cutting and cross-programme approaches. At this time of changing environments, new approaches and initiatives are necessary to meet emerging requirements.

This session is timely and vitally important. I trust that the outcomes of this meeting will provide a road map and guidance in the overall activities and objectives of JCOMM future activities, and make contribution to the seventeenth session of the World Meteorological Congress and the twenty-eighth IOC Assembly.

I wish you a successful session and a very pleasant stay in Geneva.

Thank you.

ANNEX IV

LIST OF ACTION ITEMS ARISING FROM THE SESSION

Item	Action	Responsible	End Date
3.1.2 <i>Data Management Programme Area (DMPA)</i>	To consult JCOMM in writing per WMO Regulation 77 and give Members/Member States 90 days to possibly object	JCOMM co-Presidents	2014/12
3.1.4 <i>JCOMMOPS</i>	To write a letter to WMO and IOC requesting they give the importance of negotiating and finalizing a four-party Memorandum of Understanding for JCOMMOPS.	Co-Presidents and Secretariat	2014/12
3.2.6 <i>Ocean Data Portal - WIGOS/WIS</i>	To publish the JCOMM Salinity Measurement Intercomparison Pilot Project report.	RMIC/AP	2014/12
7. <i>Any other business</i>	To approach George Wiafe as JCOMM/ocean representative on RA-I IDEG	Stander	2014/12
3.1.1 <i>Services and Forecasting Systems Programme Area (SFSPA)</i>	To highlight the work of ETOOFS in developing the Guide for Operational Ocean Forecasting Systems that become a higher priority, along with progress on other specific projects.	Co-Presidents and Secretariat	2015/01
3.1.3 <i>Observations Programme Area (OPA)</i>	Explore use of other monitoring tools and approaches that address the current deficiencies in assuring that all available data were presented.	OCG	2015/01
3.2.9 <i>Joint Activities with GODAE OceanView</i>	To request feedback from the other SFSPA ETs on 'Option B' of closer communication and adjustment of activities	SFSPA	2015/01 by for next MAN Webex
4.3 <i>Interagency Collaboration for Metocean Information Services</i>	To develop a draft strategy for support to Marine Environmental Response,	TT	2015/01 for Cg-17 documents
5.4 <i>Preparation for and Recommendations to the WMO Congress and IOC Assembly</i>	to be addressed to the 17 th World Meteorological Congress (Cg-17, 2015) and the 28 th IOC Assembly (2015), and agree on the plans to completed required work within the given timeline.	Co-Presidents and Secretariat	2015/01 For WMO: 2015/01; for IOC: 2015/03
2.2 <i>Reports by Secretariats</i>	Organize a JCOMM side event at the next WMO Congress and IOC Assembly	Secretariat and MAN	2015/03
2.2 <i>Reports by</i>	to write a letter of thanks to SOA and request continuing support on staff or financial	Co-Presidents and	2015/03

JCOMM MR No. **Error! Reference source not found.**, ANNEX IV

Item	Action	Responsible	End Date
<i>Secretariats</i>	contributions to JCOMM	Secretariat	
3.1.1 <i>Services and Forecasting Systems Programme Area (SFSPA)</i>	To recognize properly the work of Expert Team on Operational Ocean Forecasting should be recognized, particularly in the context of achievements of JCOMM.	Co-Presidents	2015/03
3.1.2 <i>Data Management Programme Area (DMPA)</i>	Draft Resolution on the establishment of CMOC/China to be submitted to Cg-17 and IOC 28th Assembly.	IOC/WMO Secretariats	2015/03
3.1.2 <i>Data Management Programme Area (DMPA)</i>	To name a DMPA co-chair.	The Co-Presidents, in consultation with Sissy Iona and MAN	2015/03
3.1.3 <i>Observations Programme Area (OPA)</i>	To define a succession planning within JCOMM for CC	Co-Presidents and Secretariat	2015/03
3.1.3 <i>Observations Programme Area (OPA)</i>	To request OPA Activities/Technical Groups note completion of the Bob Keeley report and address its recommendations.	OPA	2015/03
3.1.4 <i>JCOMMOPS</i>	To communicate on relative roles in supporting instrument metadata, on broadening the funding support base for JCOMMOPS and on OCG involvement in an overall strategy for JCOMM as well as orientation of its work plan.	JCOMMOPS and ETDMP	2015/03
3.2.3 <i>Marine Weather Competence Standard Framework</i>	To prepare a Circular Letter with timeline compatible with Congress documents	Secretariat and MAN	2015/03
3.2.4 <i>Capacity Development</i>	To identify and classify the various Capacity Development activities of JCOMM	John Mungai and PA coordinators	2015/03
3.2.4 <i>Capacity Development</i>	To develop common approach/framework for evaluation, for application by all Capacity Development activities	John Mungai	2015/03
3.2.4 <i>Capacity Development</i>	To develop short project proposals and find opportunities to spark dialogue with potential donors	MAN and Secretariat	2015/03
3.2.4 <i>Capacity Development</i>	To request the Secretariat to take the agreed competency statements and create a draft of the proposed text to be incorporated into the Technical Regulations	Secretariat	2015/03

JCOMM MR No. **Error! Reference source not found.**, ANNEX IV

Item	Action	Responsible	End Date
3.2.5 <i>Integrated Marine Meteorological and Oceanographic Data Flow and Services in WIS Framework</i>	To name TT-MOWIS members.	Co-Presidents, in close consultation with MAN	2015/03
3.2.6 <i>Ocean Data Portal - WIGOS/WIS</i>	To approach NDBC to see if they would be willing to be able to download and subscribe to observations and products through the WIS.	OPA	2015/03
3.2.6 <i>Ocean Data Portal - WIGOS/WIS</i>	To set up procedures to manage how entries are proposed, assessed, tested and endorsed.	DMPA in collaboration with TT-MOWIS	2015/03
3.2.6 <i>Ocean Data Portal - WIGOS/WIS</i>	To coordinate the adaptation of SensorML to maritime activities with the CBS IPET-MDRD that was developing logical data models to support many WMO activities and on the specification of vocabularies to support them.	DMPA	2015/03
3.2.6 <i>Ocean Data Portal - WIGOS/WIS</i>	To inform the RA-I about the RMIC establishment in Africa, and proceed with JCOMM members consultation in writing per Regulation 77 for their endorsement.	WMO Secretariat	2015/03
3.2.6 <i>Ocean Data Portal - WIGOS/WIS</i>	To formalize the Satcom Forum under the umbrella of the CBS and JCOMM, so that it becomes a joint JCOMM-CBS body.	David Meldrum, Secretariat (for CBS), and JCOMM	2015/03
3.2.7 <i>JCOMM Contribution to Disaster Risk Reduction</i>	To highlight as direct contribution to the DRR Services the core JCOMM activities of meteorological Maritime Safety Information (meteorological MSI) and joint support with the WMO Commission for Hydrology (CHy) for the national implementation of CIFDP	Secretariat/Co-Presidents for JCOMM	2015/03
3.2.7 <i>JCOMM Contribution to Disaster Risk Reduction</i>	To clarify the definition and scope of the CIF service products.	PSG	2015/03

JCOMM MR No. **Error! Reference source not found.**, ANNEX IV

Item	Action	Responsible	End Date
3.2.8 <i>Joint Activities with Other Groups and Programmes</i>	To identify relevant training opportunities and training material that may contribute to the activities of WMO Regional Climate Centres. To propose common projects.	CD coordinator and ETCCDI	2015/03
3.2.8 <i>Joint Activities with Other Groups and Programmes Services for Ocean Fisheries</i>	To present the final synthesis report to the 5th session of JCOMM (2017) and to the 17th session of CAgM (2018)	WMO Secretariat	2015/03
3.2.8 <i>Joint Activities with Other Groups and Programmes Services for Ocean Fisheries</i>	To continue supporting the activities of TT members nominated by JCOMM,	WMO Secretariat	2015/03
3.2.8 <i>Joint Activities with Other Groups and Programmes Services for Ocean Fisheries</i>	To continue facilitating the Team's work to coordinate with the relevant programmes and groups, including the new GOOS Panel for Biology.	WMO Secretariat	2015/03
3.2.9 <i>Joint Activities with GODAE OceanView</i>	To define how to report to OOPC and JCOMM, including the ability for both bodies to seek advice.	GOV	2015/03
3.2.9 <i>Joint Activities with GODAE OceanView</i>	To build up ETOOFS membership so that all key operational ocean forecast systems are represented.	ETOOFS in consultation with SFSPA Coordinator	2015/03
4.3 <i>Interagency Collaboration for Metocean Information Services</i>	To identify the points of collaboration with IMO & IHO where they need input from JCOMM.	ETMSS members WMO Secretariat	2015/03
4.4 <i>Polar Initiative Activities</i>	To reinvigorate polar Action Groups with a view to being much more inclusive as regards data ingestion from all parties to the GTS.	DBCP	2015/03
4.4 <i>Polar Initiative Activities</i>	To take leadership in Polar activities relevant to JCOMM	OPA	2015/03
4.5 <i>Submarine Cables</i>	To disseminate information about the ITU/WMO/IOC Joint Task Force for 'Green' Cables	PAs and ETs of	2015/03

JCOMM MR No. **Error! Reference source not found.**, ANNEX IV

Item	Action	Responsible	End Date
<i>Network for Climate Monitoring and Disaster Warning</i>		JCOMM, Secretariat	
<i>4.5 Submarine Cables Network for Climate Monitoring and Disaster Warning</i>	To link previous with IIOE-2	David Meldrum and Peter Dexter	2015/03
<i>4.6 Second International Indian Ocean Expedition (IIOE-2)</i>	To support IIOE-2 and to submit to Secretariat and Co-presidents	PA Coordinators and Coordination Groups	2015/03
<i>4.6 Second International Indian Ocean Expedition (IIOE-2)</i>	To submit consolidated JCOMM plan to the Interim Planning Committee for the IIOE-2 And IOC Assembly	Secretariat and Co-presidents	2015/03
<i>5.1 Review of JCOMM Strategy</i>	To identify specific contact details for stakeholders	Nadia Pinardi and IOC Secretariat	2015/03
<i>5.1 Review of JCOMM Strategy</i>	To perform the survey and analyze results	Secretariat	2015/03 MAN-12
<i>6. Final discussion on challenges</i>	To pull issues from this discussion for agenda/documents more detailed discussion at MAN Webexes and MAN-12.	Co-Presidents and Secretariat	2015/03
<i>6. Final discussion on challenges</i>	To develop a Communications Strategy	Secretariats	2015/03 By MAN-12.
<i>3.1.3 Observations Programme Area (OPA)</i>	To define JCOMMOPS strategy.	OPA et al	2015/04 (OCG-6)
<i>3.1.3 Observations Programme Area (OPA)</i>	To consult DMPA Coordinator and WIGOS in the JCOMMOPS instruments/platform metadata portion of the strategy	OPA, Secretariat	2015/04 (OCG-6)
<i>3.1.4 JCOMMOPS</i>	To review the draft JCOMM Strategy and bring a revised version for approval, see also section above).	OCG and JCOMMOPS	2015/04 (OCG-6)
<i>3.2.6 Ocean Data Portal - WIGOS/WIS</i>	To consult with MONGOOS on the RMIC establishment, and to forward the request to recognize the RMIC through the IOC Sub-Commission for Africa and adjacent Island Nations (IOCAFRICA), asking it to recommend that the IOC Assembly adopt the RMIC	IOC Secretariat	2015/04
<i>3.1.1 Services and</i>	To clarify the proposed Terms of Reference for the Interrcommission task teams on seamless	Chair SFSPA and	2015/10

JCOMM MR No. **Error! Reference source not found.**, ANNEX IV

Item	Action	Responsible	End Date
<i>Forecasting Systems Programme Area (SFSPA)</i>	forecasting and impact-based forecasting	Secretariat	By MAN-12
<i>3.1.2 Data Management Programme Area (DMPA)</i>	To maintain enhanced links with ongoing European Data Management projects	DMPA chair and Co-President Pinardi	2015/10 By MAN-12
<i>3.1.2 Data Management Programme Area (DMPA)</i>	To follow up on the Actions and Recommendations in the MAN-11 report.	DMPA groups and teams	2015/10 By MAN-12
<i>3.1.3 Observations Programme Area (OPA)</i>	To examine the applicability/feasibility of doing the definition of useful system metrics that might inform management decisions, the engagement of the wider ocean observation community, and the identification of areas in which it might make a practical difference on a decadal timescale.	other PAs	2015/10 2015/03 by MAN-12
<i>3.2.6 Ocean Data Portal - WIGOS/WIS</i>	To reach out to and establish agreements with partner organizations with observing systems activities, with the particular goal of establishing common terminology regarding metadata standards and, whenever possible, common vocabularies.	DMPA (ETDMP and TT-table-driven-codes) and JCOMMOPS	2015/10
<i>3.2.6 Ocean Data Portal - WIGOS/WIS</i>	To request JCOMMOPS to collaborate with the OSCAR Platform development project in order to keep the status of the marine observing systems capabilities up to date into OSCAR.	JCOMMOPS. OSMC define metrics	2015/10
<i>3.2.9 Joint Activities with GODAE OceanView</i>	To develop the concept further for adoption at MAN-12	ETOOFS and SFSPA in collaboration with GOVST	2015/10
<i>3.2.9 Joint Activities with GODAE OceanView</i>	To invite to join the GOV Patron's group as one possible mechanism for better coordination.	Co-Presidents to informally communicate with GOVST leadership	2015/10
<i>4.1 Global Ocean Observing System (GOOS)</i>	To reflect the JCOMM and IODE data management systems in the GOOS Strategic Mapping in between the observing networks and users (both JCOMM users and the research community).	OCG and DMPA	2015/10
<i>4.1 Global Ocean Observing System (GOOS)</i>	To develop cooperation between the GRAs and RAs, starting with invitations to appropriate GRAs to attend RA sessions	Secretariats	2015/10
<i>5.3 Management of</i>	To prospect those JCOMM teams and groups regarding potential vacancies that might occur	Co-President and	2015/10

JCOMM MR No. **Error! Reference source not found.**, ANNEX IV

Item	Action	Responsible	End Date
<i>Teams/Groups and their Intersessional Activities</i>	within the intersessional period, and to reaffirm the general principles and procedure for selection of the members/experts within the established rules and procedure of WMO and IOC.	Secretariat	
<i>5.3 Management of Teams/Groups and their Intersessional Activities</i>	To ensure a succession plan at the PA coordinator level Action ongoing for Co-Presidents, reference DMPA action on co-chair above, to report in Co-Presidents' report at MAN-12).	Co-Presidents	2015/10
<i>5.3 Management of Teams/Groups and their Intersessional Activities</i>	To look at potential co-CD coordinator appointment.	Co-Presidents	2015/10
<i>5.3 Management of Teams/Groups and their Intersessional Activities</i>	To ensure that the ETs in each PA have succession plans in place	PA coordinators	2015/10
<i>6. Final discussion on challenges</i>	To coordinate with OOPC, GOOS, and others to prioritize and catalyse the review and updating of ocean observing system strategies and designs	Co-Presidents and Secretariat	2015/10
<i>7. Any other business</i>	To communicate with government of Indonesia to develop firm offer / draft JCOMM-V conference agreement	WMO Secretariat	2015/10
<i>7. Any other business</i>	To explore holding special JCOMM sessions within AGU and EGU meetings in (Fall 2016 AGU, April 2016 EGU) - submit proposals to AGU and EGU]	Co-Presidents and Secretariat	2015/10

ANNEX V

TERMS OF REFERENCE, MEMBERSHIP AND OBJECTIVES OF THE JCOMM CROSS-CUTTING TASK TEAM FOR INTEGRATED MARINE METEOROLOGICAL AND OCEANOGRAPHIC SERVICES WITHIN WIS (TT-MOWIS)

Approved by JCOMM MAN-11, 23 October 2014

Terms of Reference, Membership and Objectives of the JCOMM Cross-cutting Task Team for Integrated Marine Meteorological and Oceanographic Services within WIS (TT-MOWIS)

Terms of Reference

1. Building on existing systems and strategies, TT-MOWIS shall take all steps within its powers to suggest a JCOMM strategy (including technology and governance) for to building and activating the interfaces between Marine Meteorological and Oceanographic services and the WMO Information System (WIS).
2. The co-chairs of TT-MOWIS shall be appointed by the JCOMM co-presidents and shall serve until JCOMM-5. The co-chairs shall appoint additional members as necessary, taking advice from MAN as appropriate (see Annex A).
3. TT-MOWIS shall draft a workplan for Year 1 based on the requirements listed in Annex B and submit it to the co-presidents and the members of MAN for review and approval.
4. Draft workplans for subsequent years will be submitted to the annual MAN sessions for review and approval.
5. TT-MOWIS shall function as the JCOMM Focal point for the interface with WIS for the Management Committee, OPA, DMPA and SFSPA coordination groups, appropriate Expert Teams, and shall report to these groups as required by them.
6. TT-MOWIS shall decide its working practices but shall only meet face-to-face opportunistically.
7. The continuation of TT-MOWIS shall be decided at JCOMM-5 in 2017.

Membership

The following Co-Chairs are proposed:

- – Co-Chair

- – Co-Chair

Guidance for selecting membership of the TT:

- 1) JCOMM PA representatives
- 2) IODE representative
- 3) OOPC representative
- 4) MCDS representative
- 5) GRA representative
- 6) JCOMMOPS representative
- 7) GODAE OceanView
- 8) CLIVAR GSOP
- 9) Other WMO relevant groups (WIS representative Steve Foreman)

Other IOC relevant groups
