



**World Meteorological
Organization**



United Nations
Educational, Scientific and
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Intergovernmental
Oceanographic
Commission

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION (OF UNESCO)

**THE TWELFTH SESSION OF THE MANAGEMENT
COMMITTEE OF THE JOINT WMO-IOC
TECHNICAL COMMISSION FOR OCEANOGRAPHY
AND MARINE METEOROLOGY (MAN-12)**

Bologna, Italia
17 - 20 October 2015

FINAL REPORT

MAN Meeting Report No. 125

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NOTES

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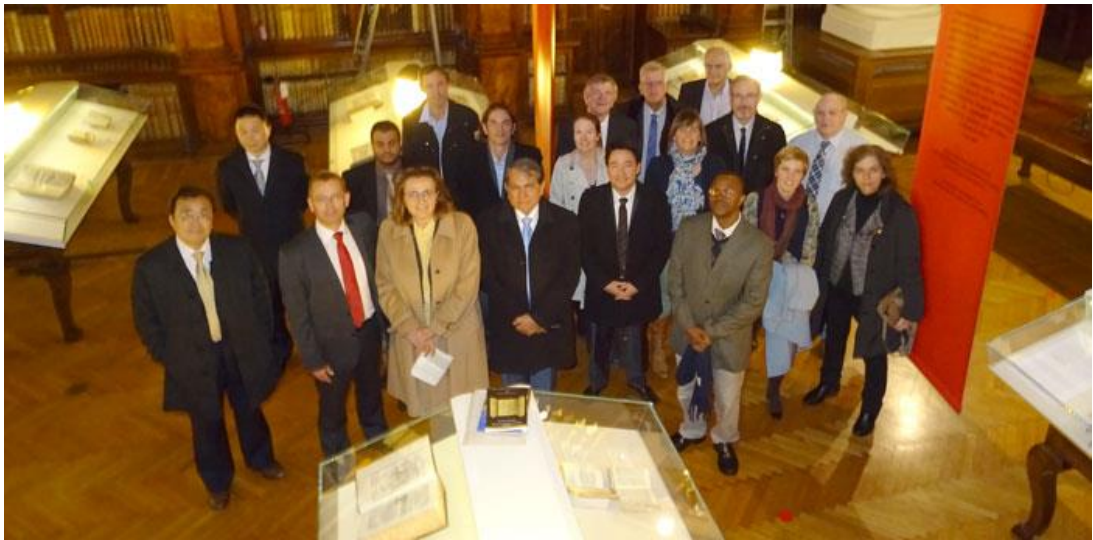
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(group picture)

GENERAL SUMMARY OF THE WORK OF THE SESSION DRAFT APPROVED BY THE SESSION

(subject to copy editing before finalization)

1. ORGANIZATION OF THE SESSION

1.1 Opening

The Twelfth Session of the Management Committee of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM MAN-12) was opened by Co-Presidents Nadia Pinardi and Johan Stander at 09:00 on Tuesday, 17 November 2015. The Session was hosted by the Istituto Nazionale di Geofisica e Vulcanologia (INGV) / Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC) office in Bologna, Italy. The two Co-Presidents of JCOMM, Nadia Pinardi and Johan Stander, chaired the Session jointly.

Albert Fischer (Head, IOC Ocean Observations and Services Section), on behalf of the IOC Executive Secretary, welcomed participants to the session and wished them a successful week. He thanked Nadia Pinardi and her team for the efforts made to host the Session, and the WMO Secretariat for their help in preparing the documentation.

Xu Tang (Director, WMO Weather and Disaster Risk Reduction Services Department), on behalf of the WMO Secretary-General, highlighted some of the key outcomes of the 17th World Meteorological Congress (Cg-17), including the seven adopted priority areas for WMO, the endorsement of the JCOMM Strategic Plan and emphasis on services, and a request for a review process for all WMO technical commissions and programmes. Mr Tang highlighted the need for an integrated service delivery framework considering the development of an integrated system on marine forecasting and prediction, and the contributions of JCOMM to Disaster Risk Reduction in a multi-hazard framework. Mr. Tang's full statement is found in Annex 1.

1.2 Adoption of the agenda

The Committee adopted the agenda for the Session based on the provisional agenda prepared by the Secretariat (Annex 2).

The List of Participants can be found in Annex 3.

1.3 Working arrangements

The Committee agreed on its hours of work and other practical Session arrangements. The Secretariat introduced meeting documents, which are available on the JCOMM web page (www.jcomm.info/man12).

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 JCOMM-4, as well as their view of the key priorities for action for the Commission and the Management Committee.

Johan Stander highlighted the impact of JCOMM at the WMO Congress, with marine highlighted by various Members, but unfortunately not adopted as an additional priority by the WMO. However, most Regional Association Presidents indicated marine as a priority for the next period.

Nadia Pinardi expressed the importance of coordinating JCOMM data management activities with the IOC International Oceanographic Data and Information Exchange (IODE), which was restructuring and embarking on new projects since its 23rd session (16-20 March 2015, Bruges, Belgium). She also noted the adoption of the JCOMM Strategy and the adoption of the CMOC in Tianjin, China by the 28th IOC Assembly (18 - 25 June 2015, Paris, France).

The Committee **welcomed** the reports by the Co-Presidents.

Succession planning

The Co-Presidents presented draft principles for succession planning of the leadership of Programme Areas, with some general principles that could also be applied to the leadership of Expert Teams. Noting that the lowering level of volunteerism for leadership positions was raised as an issue across all WMO Technical Commissions, the Committee **emphasized** the need to engage with experts in NMHSs and in IOC Member State organizations, **noting** that focused roles such as the concept of thematic vice-chairs within Programme Areas might be an incentive for personal engagement since the needed time was more manageable. After discussion, the Committee **agreed** to the revised succession planning principles in Annex 4. Co-President Stander will present these principles to the Presidents of Technical Commissions (PTC) meeting in January 2016 (**Action:** for Stander, in January 2016) as the JCOMM response to the concern over the decrease in volunteers.

Outstanding Action Items

The Co-Presidents recalled that a number of outstanding action items remained from the 11th Session, and **requested** Committee members to review and implement the outstanding actions (see Annex 5, **Action** for MAN).

2.2 **Reports by the Secretariats**

The Secretariats presented a brief report on actions taken since MAN-11, based on the Commission's workplan for the period 2012-2017 (Annex I to the JCOMM-4 report). Other activities of the WMO and IOC requiring JCOMM attention and contributions were also addressed.

Albert Fischer (IOC Secretariat) recalled that JCOMM made a strong contribution to IOC's Medium Term Strategy (2014-2021) through its functions on ocean observing and data management, early warning, and capacity development. He reported on the recently adopted IOC Capacity Development Strategy for 2015-2021 ([IOC-XXVIII/2 Annex 8](#)), and recalled the Global Ocean Observing System (GOOS) approach to identifying requirements, coordinating observations, and evaluating data streams and information products in applying the Framework for Ocean Observing. GOOS had evolved its structure to address global unifying activities through its three panels (physics and climate, biogeochemistry, and biology/ecosystems) and connection with the groups in JCOMM's Observations Programme Area Coordination Group (OCG), and to address coordinating activities driven by national and regional priorities through GOOS Regional Alliances (GRAs) and regional projects. Fischer also welcomed the addition of Denis Chang Seng to the IOC secretariat, whose responsibilities were split 50% in support of tsunami early warning and 50% in support of JCOMM Services and Forecast Systems Programme Area activities (and particularly as focal point for the Expert Team on Operational Ocean Forecast Systems ETOOFS). Due to a conflict with a session of the Intergovernmental Coordination Group for the North Eastern Atlantic and Mediterranean (NEAM) tsunami early warning system, Mr. Chang Seng was unable to attend the MAN session.

Edgard Cabrera (WMO Secretariat) reported on the resolutions and recommendations adopted by Cg-17 with relevance for JCOMM, including succession planning, the need for sustained observations, interoperability between WIS and ocean data systems, recognition of the Coastal Forecast Inondation Demonstration Projects, the need to enhance marine services, as well as discussions around the potential for cost recovery. He recalled that the IOC and WMO secretariats held regular coordination meetings, and that once every two years the WMO Bureau and IOC Officers met in a joint meeting.

The Committee **requested** the Secretariats to prepare a visualization and/or short document that highlighted the JCOMM contribution to other IOC programmes (including GOOS and IODE in particular), and the JCOMM contribution to other WMO programmes (including WIGOS, WIS, services provision, GFCS, and others), as well as other joint programmes with WMO and IOC co-sponsorship such as WCRP and GCOS (**Action**, for Secretariats for review by MAN, by April 2016 for inclusion in WMO and IOC EC reports from JCOMM).

3. *IMPLEMENTATION OF THE JCOMM INTERSESSIONAL WORKPLAN (2012-2017) AND PREPARATIONS FOR JCOMM-5 (2017)*

3.1 Programme Areas

The three Programme Area (PA) Coordinators - Observations, Services and Forecasting Systems, and Data Management - reported on the achievements in implementing the PA workplans since MAN-11, and plans for the remainder of the intersessional period. Discussion was based on the "dashboards" for all PAs, documented for each activity with particular details of deliverables, timeline and leading/engaging experts. PA Coordinators assessed progress, the risks and potential mitigation actions in achieving the PA work plans, and identified their succession plans. The PA Coordinators identified any impediments to

achieving objectives by JCOMM-5, and any potential changes needed or Member/Member State engagement required that could be brought to the JCOMM-5 session in 2017.

3.1.1 Programme Area: Observations (OPA)

Overview

This item was introduced by David Legler, OPA Co-Coordinator. He started with an overview of the state of the ocean climate including a developing strong El Niño in the tropical Pacific Ocean, warm anomalies elsewhere in the Northeastern Pacific, and reminded the Committee of the important link to increased extremes such as tropical cyclones in the Eastern Pacific. He recalled the importance of data as a service for users, in addition to analysis and forecast systems. His report included information on the observing networks coordinated through the OPA and an update of the Observations Coordination Group Work Plan [*insert link to document*], which was action-oriented and future-oriented with a particular view to the JCOMM-5 Session in 2017 and the OceanObs'19 symposium in 2019. He highlighted some of the risks to sustainability of the observing system, and the work of the OCG in developing improved metrics of observing system implementation. He presented an update on the Work Plan of the JCOMM in situ Observing Program Support Centre (JCOMMOPS), based on three pillars: coordination of observing program implementation, data flow and completeness, and the refinement of tools to monitor the health of the observing system. JCOMMOPS was engaging in joint work with the Observing System Monitoring Center (OSMC, NOAA/PMEL) on observing system monitoring metrics, and OSMC's work on observing network data system interoperability. Legler presented proposed leadership changes for the OPA based on a single Coordinator/chair and Vice-chairs / task leads for four areas: the interface with WIS/WIGOS, standards and best practices, data and information, and new technologies for observation.

The Committee **welcomed** the report from OPA, and **agreed** to the proposed OPA chair / vice-chair structure. It **agreed** to recommend on an exceptional basis OCG meetings on an annual basis through 2017, based on IOC's capacity to support these financially. It **agreed** to the three JCOMMOPS pillars and the strengthened governance provided through OCG and its JCOMMOPS Roundtable. It **commended** the start of the OPA's work on capturing risk, **recommended** that a simple approach be developed to highlight low and high risks (perhaps through color coding), identifying the impact and likelihood of each risk (**Action:** for OPA, to complete risk information, by OCG meeting in April 2016). The Committee **requested** the SFSPA to develop a similar approach to enumerating risk for its activities (**Action:** for SFSPA, in consultation with OPA and its approach, by MAN-13).

The Committee **agreed** that the connection between OPA and DMPA activities should be strengthened, building on the energy in regional initiatives in harmonization of data management practices.

Super-OCG concept

The Observations Coordination Group plays a key role in the Global Ocean Observing System (GOOS) in coordinating implementation of in situ observing networks; complemented by scientific oversight from the GOOS Physics Panel (the Ocean Observations Panel for Physics and Climate OOPC), and innovation activities in GOOS Projects. GOOS has proposed that the coordination activities of OCG, particularly around

observing platforms, observing standards, and data management standards could, where effective and efficient, be the core of an extension of these activities to other emerging ocean observing networks, including networks focused on non-physical ocean measurements. In practice this is being done on a pilot basis (for example with gliders).

Discussions are underway in GOOS to organize a Super OCG planning workshop in 2016, and a broader Super OCG summit, to be held in 2017. An organizing committee would comprise representatives from the 3 GOOS Panels, JCOMM OCG, IOCCP, and Satellite Science Teams. The Summit would be a combination of plenary sessions on overarching issues, i.e.:

- Responding to requirements and the development of missions, targets
- Observing system Implementation/performance metrics
- Specific focus on integrating satellite/in situ?
- Coordinating global (open ocean) networks versus coastal 'communities of practice': synergies, differences, utility and roles.
- Data and information delivery.

and parallel sessions i.e.:

- technical issues related to the delivery of variables across platforms, satellite and in situ (Physics, Chemistry, Biology), and
- logistical issues regarding the use of common platforms (i.e. Ships, Moorings, Autonomous Vehicles)

Outputs of a 'Super OCG summit' should focus on recommendations for ongoing technical coordination across the ocean observations, capitalizing on synergies and opportunities by variable and by network.

The Committee **approved** the exploration of the Super-OCG concept, **emphasizing** the need to add onto existing OCG activities and attract new resources for new activities, the need to be sensitive to potential legal issues around adding biogeochemical and biological variables to existing platforms, and the potential to add to the ocean observing customer base.

JCOMMOPS

Mathieu Belbeoch (JCOMMOPS) presented on the staff and activities of JCOMMOPS, and the growing toolbox it provided for the OPA and implementers of the in situ observing system, as well as the role it played in providing metadata on the observing system. He highlighted improved capabilities that were soon to come online to provide regular reporting on the status of the observing system.

The Committee **welcomed** the JCOMMOPS willingness to take on additional duties, cautioned JCOMMOPS to focus on its core objectives. It **congratulated** it on its recent progress, including its valuable contribution of metadata to the WIGOS OSCAR database. It **identified** value in pushing standardized monthly and annual reporting on changes in the observing system made available through JCOMMOPS for a user audience beyond the implementers of the observing system, also including analysis and forecast systems. The Committee **requested** that the availability of these reports be advertised to all JCOMM Members (**Action:** for JCOMMOPS, to push monthly standardized reports of status of observing system out to an e-mail list, starting with the full list of JCOMM e-mails (IOC Secretariat MailChimp opt-in list), once these reports are ready). It **requested** the WMO

Secretariat to explore appropriate ways of pushing these reports to interested WMO program audiences (**Action:** for WMO Secretariat, by MAN-13). The yearly reports were seen as valuable to bring to IOC and WMO governing body meetings.

(See also Agenda Items 3.2.2 WIGOS and 3.2.3 Observing requirements).

3.1.2 Programme Area: Services and Forecast Systems (SFSPA)

Overview

This item was introduced by Nick Ashton (SFSPA Coordinator). It included an update on the work of the Expert Teams under the SFSPA as well as its interaction with other Programme Areas. Ashton noted the diversity and varying workloads of the four expert teams: Sea Ice - being the most focused; Waves Coasts and Hazards which was quite focused on the CIFDP project (with finite lifetime); Maritime Safety Services (MSS); and ETOOFS - a relatively new team and still defining its role and deliverables to JCOMM. He cautioned that the 31 projects of the SFSPA in their dashboard was perhaps too ambitious given the volunteer nature of the teams. He noted the large responsibilities of the MSS team, particularly given the merging into it of the responsibilities of the former Expert Team on Marine Accident Emergency Response at JCOMM-4, leading to some mission creep. MSS is also challenged by the management of SOLAS activities, which require the careful management of the partnership with IMO and IHO. There were often challenges in improving delivery of marine services whose providers came from a very traditional perspective and were not always receptive to an improved scientific approach. In the marine environment, the primary concern is telecommunications (for example, in Polar regions). Ashton cited the coming update of WMO Publications 558 and 471 (before JCOMM-5) as a major and significant undertaking.

The issue of Cost Recovery for marine services was raised, and the Committee **cautioned** that JCOMM should consider carefully how to proceed. JCOMM could learn from the example of aviation meteorology, although the level of maturity of marine products made an aggressive approach very risky with key stakeholders such as the shipping industry. JCOMM needs to be clear about the clientele using marine services (e.g., ship owners through the International Chamber of Shipping), and develop a long-term negotiating strategy.

The Committee **welcomed** the report from the SFSPA, but noted that cross-team activity within the PA had been hampered by the lack of a recent Coordination Group meeting (last held in March 2013). The Committee **stressed** that it was important that a Coordination Group meeting take place early in 2016, and **recommended** that the CG look at these strategic issues:

1. Risk and impact-based services: could a pilot project or approach be put in place to develop a strategy, and to identify user community requirements? The results of this discussion should be brought back to MAN,
2. What are the right connections for SFSPA to make regarding subseasonal-to-seasonal forecasting (including ENSO), with relevant existing WMO and IOC scientific groups (including the TPOS 2020 project),
3. Ocean reanalyses as a contribution to the Global Framework for Climate Services - ETOOFS could partner with GODAE OceanView and CLIVAR GSOP on this topic.

4. Cost recovery: consideration of a cautious and phased approach to long-term negotiation and testing of ideas,
5. Downscaling at the coast as a cross-cutting SFSPA issue that looks forward to present emerging and future capabilities,
6. Quality management of data streams for services: both technical aspects and political aspects of who will implement, and
7. Succession planning and structure for SFSPA vice-chairs / task leads.

The Committee **emphasized** the importance of having all SFSPA ETs represented at the meeting, as well as representation from the OPA and DMPA.

The Committee **requested** the SFSPA CG to define draft Terms of Reference for a new Task Team on seasonal predictions to identify the needed links between WMO programmes (CBS teams, WCRP, GFCS), ETOOFS, GODAE Ocean View, CLIVAR GSOP, TPOS 2020 modeling TT, and relevant observing teams with the goal of improving coupled seasonal predictions (**Action** for SFSPA, led by N. Ashton or G. Brassington), for review by MAN and all the relevant stakeholders mentioned above.

(See also Agenda Item 4.2 on interagency collaboration for met ocean information services)

Expert Team on Operational Ocean Forecast Systems (ETOOFS)

This item was presented by Gary Brassington (ETOOFS chair) via Webex. The Report highlighted the progress in the ETOOFS Work plan (since JCOMM-4).

A major component is the Guide to Operational Ocean Forecast Systems, which exists as an outline and a rough draft. The drafting team is led by Fraser Davidson. ETOOFS is aiming to complete the draft of the guide for review by April 2016. ETOOFS also works on observational requirements by leading the updating of the WMO RRR Statement of Guidance document on *Marine Meteorological and Oceanographic Applications* [anticipating revised name]. The Committee **requested** the WMO Secretariat (E. Charpentier) to clarify the timeline for the update of the Statement of Guidance (**Action**, for Charpentier to communicate timeline to G. Liu and G. Brassington).

Upon request of the ETOOFS Chair, the Committee asked the IOC and WMO Secretariats to provide guidance on the procedures and templates for publication as a Joint IOC - WMO Guide with two publication references (**Action** for IOC and WMO secretariats). ETOOFS awaited some additional guidance on how to host the 'live' portions of the Guide with, notably, detailed and regularly updated descriptions of the forecast systems (**Action**, hosting options to be discussed with IOC Secretariat in coordination with WMO secretariat).

ETOOFS is working on Performance monitoring using GODAE OceanView-defined Class IV metrics, with the process documented in the Guide. The Committee **encouraged** the regular posting of these metrics on the JCOMM website as a JCOMM product (**Action**: for IOC Secretariat with the ETOOFS leader on the performance metrics task, Andrew Ryan, UK Met Office). In addition, ETOOFS is working on an ocean extremes monitoring system, establishing a first set of metrics and thresholds to identify extremes. ETOOFS has been asked to coordinate seasonal climate forecast systems - establishing common datasets, formats, variables, and climatologies; and updating forecast service requirements from daily to seasonal time scales, in liaison with CBS/ET-ELRF. ETOOFS has also contributed to some projects of the other SFSPA Expert Teams, focused on ocean emergency response support capability and a oceanic radioactive hazard tracking system.

Discussions continue with GODAE OceanView (the independent ocean forecasting research activity) on clarifying their links and relationship with JCOMM.

The Committee **encouraged** ETOOFS to consider aspects of downscaling to the coast in its Guide, to anticipate the creation of future coastal services. Brassington believed the GODAE OceanView Task Team for coastal modeling could be entrained to help this effort.

The Committee also requested ETOOFS to provide a 1-page outline of the proposed review process for the Guide, to ensure it is widely seen and accepted by the operational ocean forecast community (**Action**, for ETOOFS chair and Guide writing lead, by SFSPA CG meeting early in 2016, to be reviewed electronically by MAN).

3.1.3 Programme Area: Data Management (DMPA)

Overview

This item was introduced by Sissy Iona. She reported on progress under the Data Management Coordination Group (DMCG), the Expert Team on Marine Climatology (ETMC) which has led the development of the Marine Climate Data System (MCDS), and the Expert Team on Data Management Practices (ETDMP) which in practice has largely been led by the IODE members.

The 4th session of the ETDMP (23-26 June 2016) focused on the work of task teams on Metadata, Standards and the IODE Ocean Data Portal, including interoperability arrangements with European data management infrastructures. The 5th session of the ETMC (22-25 June 2015) focused on development of the MCDS, and the rewriting of marine climatology portions of WMO Publications 558 and 471.

The DMPA was on track to fulfill its core tasks defined by JCOMM-4, but could improve its connection with user needs, other JCOMM PAs, and relevant groups from outside the JCOMM umbrella. These outside groups include the Ocean Data Interoperability Platform (ODIP) EU project, undertaken by representatives of European, US, and Australian marine data management infrastructures; and the GEO Data Broker, a service that translates metadata in native format for use in the GEOSS data portal.

The DMPA is cross-cutting. Its core activities are now complemented by work within the OPA on best practices and metadata, the launching of TT-MOWIS, work on marine climatology, and work in the context of the WMO Information System, IODE, and GOOS. Ms Iona believed it was important to update the DMCG work plan to incorporate new requirements, engage more stakeholders in the work of the DMPA, and feed the IODE Clearing House services for ocean data management standards and best practices. More volunteers and engagement were required to achieve this.

The Committee **noted with appreciation** the establishment by WMO and IOC of the first Centre for Marine Meteorological and Oceanographic Climate Data (CMOC) in Tianjin, China at the NMDIS of SOA. The Committee agreed that there should be more than one CMOCs, and that there should be a pro-active approach within JCOMM to have other CMOCs established (2 or 3 more). The Committee noted that the EMODnet, GDSIDB (sea-ice), IMOS and iCOADS/NODC (NOAA), could potentially become CMOCs, and encouraged the DMPA to investigate the feasibility of their submitting proposals (**Action** for DMCG).

The Committee **noted** that the IODE has also developed the concept of GDAC, and recommended achieving better integration between the IODE GDACs and the MCDS (JCOMM) GDACs, at least for these IODE GDACs that are relevant to marine meteorological and oceanographic climate data. The committee therefore requested the DMPA and invited the IODE to discuss the matter in the view to harmonize the GDAC Terms of Reference, establishment process, evaluation, and establishment (**Action** for DMCG).

The Committee **took note** of the evolving role of the Marine Climatology Summary Scheme (MCSS) Responsible Members, and the fact that the MCSS areas of responsibility may change or disappear. RMs will be consulted via the Secretariat in this regard in the view to make recommendations to JCOMM-5 whether some of the RMs will evolve into DACs, GDACs, or CMOCs. The Committee **noted with concurrence** that ETMC was developing a specific proposal for the revision of the MCSS portions of WMO Publications 558 and 471.

The Committee **requested** ETMC and OCG to discuss their approaches to identifying targets for observations based on user requirements (**Action** for ETMC and OCG chairs).

The Committee **requested** the DMPA chair to nominate a new member from JCOMM for the JCOMM-CCI-CLIVAR Expert Team on Climate Change Detection and Indices (ETCCDI) (**Action** for DMPA coordinator)

The Committee **requested** TT-MOWIS, the DMPA and OCG coordinators and the WMO Secretariat to propose a possible way forward for the establishment of a GDAC for waves and marine meteorological moorings, focused on data rescue issues (**Action**) and building on existing structures where appropriate.

The Committee **encouraged** ETSI to work with ETMC to establish a MCDS GDAC or CMOC based on the Global Digital Sea Ice Data Base (GDSIDB) (**Action** for ETSI and ETMC).

The Committee **requested** the DMPA Coordinator to develop a succession plan with vice-chairs with specific areas of responsibility (**Action** for Iona), as well as a suggestion for a new chair for the TT on Table-driven codes (TT-TDC). It **recommended** that representatives of ODIP or its major constituent groups be invited to engage in the DMPA based on mutual interests.

The Committee **requested** TT-MOWIS, the DMCG, and OCG to develop a common proposal for the future structure of the JCOMM Data Management Programme Area.

The Committee **requested** DMCG to meet within the first six months of 2016, and explore the idea of meeting back-to-back with the TT-MOWIS (**Action** for Iona).

[Ocean Data Portal presentation is available on the Meeting Website, but the presentation was not given]

Ocean Data Standards and Best Practices (ODSBP)

This report was provided by WMO Secretariat (Etienne Charpentier). The ODSBP, established in 2013 aims to achieve broad agreement and commitment to adopt a number of standards and best practices related to ocean data management and exchange. It is community driven and is a continuation of the Ocean Data Standards Pilot Project (ODS), established and implemented jointly between JCOMM and IODE. ODSBP Governance is outlined on the OceanDataPractices website. SeaData Net and ODIP have submitted standards but these are still under the review process, and the list may need to be reviewed

to assess integration. This is an evolution of the JCOMM catalogue of standards and best practice. At the moment, WMO Secretariat (Charpentier) is monitoring the content for JCOMM. The Committee **requested** the DMCG to nominate a contact point to take over this monitoring (**Action** for DMCG).

The Committee **encouraged** all JCOMM groups to populate the IODE Clearing House Service with their standards and best practices documents and guides. (**Action** for all JCOMM Expert Teams, with the encouragement to be sent via the PA Coordinators).

WMO Information System (WIS)

The Report for WIS was presented by the WMO Secretariat (Peiliang Shi). The WIS is a cross-cutting programme affecting all Technical Commissions as it is aimed at fulfilling their information system needs. Consequently, it is important that JCOMM participate in activities and decisions relating to the future of WIS. The Manual on WIS (WMO Publication No. 1060) under development will have aspects relevant to JCOMM. A number of DCPS and other WIS Centres relevant to marine meteorology and oceanography are still to complete their WIS certification. Recommendation 9 (CBS Ext(2014) - WMO No 1140) approved by Res 09 (Decides 5) of Cg-17, established the SATCOM and the proposed workplan for a SATCOM meeting to be held in September 2016. The Recommendations of the CBS Ext 2014 session were all approved by Cg-17.

The Committee **asked** TT-MOWIS to take on the registered WIS centres under JCOMM and to assist the completion of those centres still under the certification process, as well as to establish a standard process and guidelines, publicly disseminated, on the certification process for marine meteorology and oceanography related centers in the WIS. It **asked** TT-MOWIS to identify the key marine meteorological and oceanographic centers that should be encouraged to become registered WIS centres (**Action** for TT-MOWIS, already part of their Terms of Reference).

The Committee **agreed** to participate in the WIS data exchange governance, development of PART C of WIS (the data management component of WIS approved by Cg-17), and the future evolution of the WIS.

The Committee **requested** Iona (DMPA Coordinator) to recommend an ETMC marine meteorological representative to the WMO CCI Expert Team on Data Rescue, and to contact IODE to name a second representative from the oceanographic perspective (**Action** for DMPA Coordinator, ASAP).

(see also Agenda Item 3.2.8 on Cross-cutting Data Management activities)

3.2 CROSS-CUTTING ACTIVITIES COORDINATED BY MAN

3.2.1 JCOMM Self-evaluation and stakeholder review

Co-President Nadia Pinardi introduced this item on behalf of Bryan Boase, who was tasked to start a self-evaluation by MAN-11. She presented the results of this JCOMM self-evaluation, which were largely positive with more positive results for the most mature and oldest areas of JCOMM. The self-evaluation was approached using ISO 9001:2008 and ISO 9004: 2009 methodology and carried out via a survey to JCOMM MAN Committee Members. Performance maturity levels were used to rank the performance of JCOMM activities and themes. The overall JCOMM performance against the Terms of Reference (TOR) is Maturity

Level 3 (stable). Long Term Objective 1 was rated as Maturity Level 4. Some Maturity Level 2s were given and need attention. Given the voluntary nature of JCOMM MAN, the outcome of the assessment is very encouraging.

The Committee **extended its strong recognition** to Bryan Boase for the work he had done in preparing and conducting the self-evaluation.

In extending the self-evaluation to a stakeholder review, as requested by WMO Cg-17 for all TCs, three categories of stakeholders were identified (WMO/IOC Members; Expert Task Teams and science community; and users of JCOMM services).

The Committee **decided** on the following course of action:

1. MAN should give feedback on the questions for the proposed stakeholder survey by the end of November (**Action** for MAN, to feed to Secretariats, end Nov 2015).
2. The Secretariat should set up the survey as an online survey (Google survey or SurveyMonkey) (**Action** for Secretariats by January 2016).
3. The JCOMM MailChimp contact list of about 2000 Members, Member States, JCOMM experts and meeting invitees should be used to request input to the survey, with a cover letter from the Co-Presidents (**Action** for Secretariat and Co-Presidents by January 2016), with a deadline of response by April 2016.
4. The results should be analyzed by September 2016, for inclusion in the revision of the JCOMM Strategy. (**Action** for Secretariat and Co-Presidents).

3.2.2 WMO Integrated Global Observing System (WIGOS)

Etienne Charpentier (WMO Secretariat) reported on the implementation of the WMO Integrated Global Observing System (WIGOS), which has made substantial progress, including the development of the WIGOS Pre-Operational Phase as decided by WMO 17th congress (Cg-17). The WIGOS Implementation Plan has 10 Key activity areas (including ocean related actions). The WIS is providing the infrastructure to generate applications from the observing system and data, with the intent to better comply with end users and be more cost effective through integration. Mr Charpentier reported on progress regarding establishment of Regional Marine Instrument Centres (RMICs), and on the approval of the International Forum of Users of Satellite Data Telecommunication Systems (Satcom).

The Committee **noted** that the priorities for the WIGOS pre-operational phase 2016-2019 are to:

- Develop WIGOS guidance
- Further develop WIGOS Operational Information Resource (WIR) and OSCAR
- Develop & Implement a WIGOS Data Quality Monitoring Service
- Develop concept and establishment of WIGOS regional centres (WRCs)
- Undertake national implementation of WIGOS

JCOMMOPS was contributing by connecting through machine-to-machine interfaces its metadata database on ocean observations with the OSCAR system, although ocean platform metadata was not always fully complete or compliant with WIGOS standards.

The Committee **encouraged** observing networks in the JCOMM Observations Coordination Group to develop and provide the full metadata required by WIGOS, noting that additional resources might be needed for JCOMMOPS to collect the required WIGOS metadata (**Action**, to discuss at OCG-7).

In discussing WIGOS guidance, the Committee **requested** OPA to review the allocation scheme of WMO/WIGOS unique identifiers, and influence WIGOS guidance with a consideration of having a unique, fast, operational scheme where:

1. JCOMMOPS allocates identifiers at platforms registration, on behalf of WMO/IOC,
2. JCOMMOPS controls the uniqueness of these identifiers, and
3. WMO identifiers for marine platforms are disconnected from geographical areas (which are not appropriate for drifting platforms). (**Action**, to review allocation scheme by OCG-7 in April 2016)

This would have the following advantages if a fully machine-to-machine interface and procedure could be implemented:

- national focal points for observing networks will be relieved from this task, and
- WMO HQ staff time will be relieved from this task.

JCOMMOPS would need to set up an operational service on behalf of WMO and IOC in cooperation with the WIGOS task team on metadata (**Action** for JCOMMOPS, once/if scheme is approved by WIGOS).

The Committee **requested** OPA to consider a process to feed the *Vision for WIGOS in 2040* being developed by WMO (**Action**, for OCG, at OCG-7 April 2016). It **requested** the SOT and DBCP to review their WMO regulatory material to see which portions should be transferred/updated for the WIGOS manual and guide (**Action** for SOT and DBCP, by their next sessions). It **requested** OPA to develop better guidance for the RMICs to address needed intercomparison, regional, coastal, and marine meteorological issues, including traceability issues.

The Committee **noted** the importance of consultation with WMO Regional Associations and IOC regional structures (Sub-Commissions, GOOS Regional Alliances) in the creation of its own regional structures such as RMICs and CMOCs. It agreed to develop amended procedures for the naming of RMICs and CMOCs under its purview that would require documented consultation with regional WMO and IOC structures (**Action**, for Secretariats, to propose amendments to procedures, by MAN-13, for consideration at JCOMM-5).

3.2.3 Observing system requirements for services: WMO RRR, GOOS EOVs and related processes

Etienne Charpentier reviewed the status of the JCOMM contribution to and participation in the WMO Rolling Review of Requirements processes (RRR) in the WIGOS Framework with a focus on observing requirements for services. There are fourteen application areas in the WMO RRR. JCOMM has responsibility for "Ocean Applications" and its Statement of Guidance.

The Committee **recommended** that the title be revised to "Marine Meteorology and Ocean Applications" in order to better communicate to WMO audiences that this included the GMDSS (**Action**, for Charpentier to feed this recommendation to CBS/RRR, ASAP). The Committee **recommended** that the next review of the Statement of Guidance receive input from TT-SAT, ETSI, and OCG (**Action**, for G. Liu as SoG focal point in ETOOFS, to engage with these teams in next review process)

An Implementation Plan for the Evolution of Global Observing Systems (EGOS-IP) was the result of the RRR process taking into account gap analyses for all WMO Application Areas, cost-effectiveness of observing systems, and the priorities of the WMO.

The Committee recalled the activities of GOOS in defining a Strategic Mapping, linking three GOOS themes (climate, services, and ocean health) to information products, required Essential Ocean Variables and observing networks. It **recommended** that GOOS's physics and climate panel take full advantage of the RRR and the "Marine Meteorology and Ocean Applications" Statement of Guidance in developing its Strategic Mapping and variable and observing network targets (**Action**, for OOPC and OCG to engage with SoG focal point G. Liu, and for GOOS to incorporate appropriate RRR outputs into its Strategic Mapping portion focused on services).

3.2.4 Task Team on Satellite Data Requirements

This item was introduced on Webex by Joël Dorandeu and Mark Bourassa. The Committee reviewed progress by the JCOMM ad hoc Task Team on Satellite Data Requirements (TT-SAT), based on the Team's adopted Terms of Reference (TOR). They reviewed the outline of the requirements document, focused on Essential Ocean Variables for JCOMM applications, and reviewed the objectives of the document.

The Committee **welcomed** the EOVS approach, and the fact that the document would touch on the complementarity between in situ and satellite observations. The Committee **suggested** that OPA be asked to review the document when ready to reinforce this aspect.

The Committee **noted** that specially the part about satellite observation of sea ice were quite outdated and do not reflect what is being used, especially in ice services, and that ETSI can give support on this topic. A first references could be the information contained in the publication [SPA ETSI general IICWG01](#) or the information given at http://nsidc.org/noaa/iicwg/collaboration.html#sat_obs.

The Committee **requested** TT-SAT to finish their work with a final draft for review by the end of 2016 (**Action** for TT-SAT).

Noting that the Applications Area Observational User Requirements are already documented in OSCAR, the Committee **requested** TT-SAT to include tables of quantitative observational user requirements for satellite calibration and validation in the user requirements document.

3.2.5 Quality management approach and Marine weather competence standards framework

Johan Stander and Edgard Cabrera introduced this item on behalf of the outgoing chair of the Team for Marine Weather Competence Requirements (TT-MCR, Bryan Boase). The Committee was **pleased** with the approval of the MWF Competence Standard by the WMO Congress. The Committee **extended its profound gratitude** to Mr Boase for the work he had done in this success, and wished him well for his retirement. The Committee noted the additional work required of the TT-MCR in order to implement the Cg-17 resolution.

The Committee **approved** Michelle Hollister (Australia) as the new Team Leader for the TT-MCR. It **named** Mohammed Ngwali (Tanzania) as a member of the TT-MCR.

The Committee **requested** Nick Ashton to provide one additional nomination for TT-MCR (**Action** for N. Ashton)

The Committee **asked** TT-MCR to liaise with the Aeronautical Competence Task Team to assist in the development of an assessment tool for the Marine Weather Forecaster Competence Framework to ensure a harmonized approach (**Action** for TT-MCR). It **requested** the SFSPA to set deadlines for the production of TT-MCR outputs, aiming for mid-2016 for review drafts, end 2016 to finalize (**Action** for N. Ashton to communicate to TT-MCR). The Committee **agreed to encourage** Members/Member States at JCOMM-5 to aim to build full competence according to the framework by JCOMM-6 (2021). The Committee **requested** Co-President Pinardi to present the Framework to the IOC governing bodies, for possible input or creation of a parallel harmonized competence framework for ocean forecasting (**Action** for Pinardi, June 2016). The Committee **encouraged** TT-MCR to develop a JCOMM Competence Framework for Met-Ocean Forecasters after the initial framework is complete.

3.2.6 Operational Marine Data Processing and Forecasting System

Edgard Cabrera presented the WMO Global Data Processing and Forecasting System (GDPFS) organised under the WMO Commission for Basic Systems (CBS). Congress-17 (Resolution 11) considered the future of the GDPFS towards a future enhanced integrated and seamless data processing and forecasting system. The GDPFS is based on global, regional, and national centers, and could incorporate regional or global marine centers. CBS is planning a team of experts to discuss this evolution (Feb 2016) and JCOMM representation is solicited.

The Committee **agreed** that it was important to enter this discussion early. It requested Nick Ashton to identify two nominations, drawing from the coastal inundation and operational ocean forecasting elements of SFSPA (**Action** for Ashton, by December 15, to provide nominations to Co-Presidents). The Committee also **emphasized** that it would be important in this regard to maintain a dialogue with the ocean forecasting components/capabilities of GOOS Regional Alliances (**Action** for WMO Secretariat, to keep Erik Buch as vice-chair of GRAs informed of the evolution of this discussion).

[Agenda item 3.2.6 was eliminated, but the numbering is retained so that preparatory documents for the MAN-12 meeting maintain consistent numbering with agenda items in this report.]

3.2.8 Cross-cutting data management activities

TT-MOWIS

Rabia Marrouchi and Erik Buch presented [Terms of Reference](#) of the Cross-cutting Task Team for Integrated Marine Meteorological and Oceanographic Services within WIS (TT-MOWIS). The general context and strategic goals include a better integration of real time, delayed mode, and forecast model met ocean data streams in the WIS in an interoperable way with meteorological data streams and systems. The team has identified the need to:

- identify the GOOS Regional Alliances contribution to WIGOS and WIS,
- to *design* and *promote* oceanographic components of Data Collection and Production Centres (DCPCs) of WIS for both observation and forecast services,

- to submit a draft system requirements to MAN for approval,
- to provide inputs for needed capacity development activities, and
- to develop proposals for pilot projects.

The team had already identified some inconsistencies in the potential DCPCs that were proposed through JCOMM, and will examine how to design a system that might include Virtual DCPCs that aggregate the activities of multiple centers (for example the French and US GDACs - Coriolis and the US GODAE server, with JCOMMOPS for metadata).

The team would also further the goal of integrating data from the GOOS Regional Alliances, easily accessible, and with the right metadata for analysis of the observing network itself.

The short-term goals of the Task Team are to analyze and communicate the full picture of the WMO WIS system with marine organizations involved in the work, to clarify the procedures to become a WIS centre through JCOMM, to highlight success stories, to develop the value proposition for marine centres to become WIS centres (DCPCs), and to prepare a work plan for 2016 and agree to working mechanisms.

The Committee **welcomed** the energy and approach of the TT-MOWIS chairs, and suggested **adding representatives** from GODAE OceanView (for the integration of model output to the WIS: Vassiliki Kourafalou) and ETMC (to ensure harmonization with the MCDS: Lydia Gates).

OPA data system interoperability (ERDDAP)

Kevin O'Brien (NOAA) presented this item via Webex. He presented an evolution of the Observing System Monitoring Center (OSMC) which is providing access to archived real-time GTS data from all possible in situ oceanographic platforms (including marine meteorological and oceanographic data) through the ERDDAP protocol. Data is updated every hour, and is very easily interoperable from any ERDDAP source. Over 50 organisations are already using the ERDDAP software. OSMC is exploring the ideas for leveraging this framework to access Ocean Acidification data, and is also considering a pilot project for access to data in the TPOS 2020 project.

ERDDAP is viewed as a complementary tool to the WIS, noting that any server with ERDAPP software can integrate data and provide consistent service access to make it easier for different data sets to be interoperable. There are no restrictions to access the data, being open and without need for registration, logon etc. Should the server become popular, some performance tuning would likely be required to build an efficient system allowing access to a rolling 30 days of data, making it more scalable to a wider variety of users.

The Committee **congratulated** Mr O'Brien for his work and approach, and **approved** the plan to constitute a short-lived Task Team focused on identifying, piloting, testing, and implementation of a data integration strategy across current OCG observing networks. It **encouraged** coordination through TT-MOWIS to avoid overlap and maximize synergies with the MCDS, WIS, DMPA, and GRA activities in data integration.

Open-access GTS node

David Legler presented this item. The basic issues faced by non-met service users of the GTS, both for data insertion and for data discovery and extraction, were documented in previous reports to MAN. The concept for an open-access GTS node was developed in

response, and will build on the work on OPA data system interoperability (ERDDAP) reported on above.

Legler suggested that OPA will develop a pilot project trying to match those with a need to insert/access GTS data with those with resources to help. JCOMMOPS would be asked to play a role in communications in the project. Resources from NOAA and INGV will be devoted to the pilot.

The Committee **welcomed and approved** the Open-access GTS node pilot project, and **requested** a report on progress, results, and lessons learned at MAN-13 (**Action**: for NOAA and INGV to implement the pilot project and report to MAN-13).

The Committee **noted** that Cg-17 further recognized that the potential benefits offered by voluntary observations depend on them being exchanged together with the necessary information to enable use. Congress suggested that WMO should act at the forefront of this issue, promoting the development of a worldwide framework to ensure that products and services are safe, reliable and of good quality and recognized the need to exchange third party observations according to the WMO Integrated Global Observing System (WIGOS) principles on Observing System Network Design.

ETMC

Etienne Charpentier introduced this item, noting the active engagement of the WMO Commission for Climatology (CCI) in international efforts to monitor the climate system, receiving external recognition for its efforts. CCL had started a High Quality Global Data Management Framework for Climate (HQGDMC), and ETMC viewed the Marine Climate Data System (MCDS) as a contribution to both GFCS and the HQGDMC.

While **agreeing** on the need to establish better interaction with the CCI, the Committee did not see practical advantage in eventually merging the ETMC with the CCI Expert Team on Data Rescue (ET-DARE). It **requested** the ETMC to explore possible joint actions or the establishment of a joint Task Team or group to work on marine climatology issues with ET-DARE and CCI more broadly, and to report back to MAN-13 with their proposal (**Action** for ETMC, by MAN-13).

3.2.9 Capacity Development

Overview

This item was introduced by John Mungai. He reviewed achievements, plans and expected deliverables for JCOMM capacity development activities during the intersessional period, building on a report of activities within Programme Areas since MAN-11. He noted the need to consider using existing capacity development infrastructure, ongoing initiatives such as the IIOE-2 with a CD component, and to develop and implement monitoring and auditing of CD activities to help shape future activities.

The Committee **recommended** that the IOC Capacity Development Strategy be examined to potentially identify strategic actions that could be taken under JCOMM (**Action** for John Mungai, by MAN-13). It **requested** the CD activity coordinator to use the experience of IODE and identify a standard form of evaluation of immediate satisfaction and later impact of training activities (**Action** for John Mungai, by MAN-13). It **requested** the Secretariat to

update the JCOMM CD page, eliminating the outdated list of CD activities (dating to 2013) (**Action** for Secretariats, ASAP).

The Committee **agreed** that the Co-Presidents should **appoint** Glenn Nolan (EuroGOOS) and Lucy Scott (OTGA) as Capacity Development vice-chairs to support the CD coordinator.

GOOS Regional Alliance / JCOMM capacity development initiative

Glenn Nolan reported on the results of the GOOS Regional Alliances Forum (Crete, September 2015) including those GRAs associated with the three IOC Sub-Commissions. Of note, the GRAs wish to target Capacity Development as a priority activity. They have envisioned an initiative that would be undertaken on a phased basis:

1. A dedicated workshop (and possibly Webinar) on the ocean observing value chain; from ocean observations, through forecasts to oceanographic services, of 1 week duration (building on GOOS office previous experience and lessons learned), and
2. Bespoke Masters and PhD fellows in ocean observing in each GRA focused on societal benefit area(s) identified in a template to be circulated to GRA Chairs. This provides a 2-4 year time horizon to develop capabilities and networks within the GRA and externally to other GRAs.

Some principles of this concept would include co-supervision from “developed” GRA scientist or engineer; partnership with sponsors/key entities within the GRA; tailoring to specific local requirements; and avoiding duplication with similar initiatives e.g. JCOMM capacity building, POGO.

Mr Nolan requested JCOMM assistance in designing course and ensuring compatibility with JCOMM Capacity Development goals, and identified potential funding from the European Commission through the Marie Curie scholarship or GEO funding in Horizon 2020.

The Committee **welcomed** the idea and proposed way forward. The Committee **requested** the WMO Secretariat to bring the idea to the WMO Education and Training department for consideration for funding (**Action** for WMO Secretariat, at their biannual meeting in March 2016)

Ocean Teacher Global Academy

Lucy Scott (South Africa), chair of the IODE OceanTeacher Global Academy Steering Group, introduced the OceanTeacher Global Academy with a focus on the activities that could benefit from cooperation with JCOMM Expert Teams.

Originally a project of IODE, established 1961, the OTGA was launched in 2015 (funded until 2018) and is a community of practice that specializes in better management of data in the marine environment. It has key input to CD activities, particularly through the IOC Office in Oostende. The OTGA already has an online learning platform that training activities for IOC programmes. It is designed for at least one training centre for each region, and to be complementary to OTGA Regional Training Centres (RTC). The OTGA has the potential to become a resource portal for training and capacity development, especially supporting all IOC-UNESCO programmes, IIOE-2 Capacity Development programme, and JCOMM. The online learning portal will be supported on an ongoing basis by IOC.

The Committee **welcomed** this important infrastructure extending the reach of capacity development activities. It **requested** MAN members to feed Co-President Pinardi with any suggestions for capacity development training courses in order to bring these to the OTGA

Steering Group meeting in March 2016 (**Action** for MAN members by February 2016). It **recommended** discussion between the WMO COMET program and OTGA to find potential points for collaboration.

The Committee **noted** that WMO Seventeenth Congress (Cg-17) adopted Resolution 53 (Cg-17) on the WMO Global Campus Feasibility Study. The WMO Global Campus proposal is about improving the coordination, communication and collaboration between WMO Regional Training Centres (RTCs) and other partners so they act as a more cohesive community to better meet the needs of Members in 2016–2019 and beyond. Through that Resolution, Cg-17 requested the Executive Council to monitor and review progress of the feasibility study, including the role of RTCs and WMO-affiliated training institutes, guiding the development of a formal proposal to be considered at the Eighteenth World Meteorological Congress. Meanwhile, WMO Members were requested to support the feasibility study activities and provide comments and feedback to the Secretary-General and to the Executive Council to assist in the development and monitoring of the proposal.

3.2.10 Joint activities with other groups and programmes

ETCCDI

The Committee considered a report prepared by the members of the Joint CCI/CLIVAR/JCOMM Expert Team on Climate Change Detection and Indices (ETCCDI), on the ongoing JCOMM contribution to climate research and related activities, jointly with the WMO Commission for Climatology (CCI) and the Variability and predictability of the ocean-atmosphere system (CLIVAR), through the ETCCDI.

Coastal Inundation Forecasting Demonstration Project (CIFDP)

WMO Secretariat provided an update on these Demonstration Projects, which are being carried out in regions vulnerable to coastal flooding. The Projects also contribute to the Disaster Risk Reduction role at WMO. CIFDP Steering Committee Group met in November 2015. Currently, there is a process underway to locate donors to support phases of these various CIFDPs. Results of the CIFDPs should be ready for presentation to JCOMM-5, and their visibility in WMO has already raised the profile of marine DRR issues.

The CIFDP Steering Committee **asked** the MAN Committee about the future of these projects? Will there be more exercises continued or will it remain only as a demonstration project? The MAN Committee **suggests** that an evaluation of the projects and user acceptance should be conducted to understand their value and use before any commitment is made to continue the projects beyond JCOMM-5. The Committee **commits** to support this idea.

The Committee also **recommended** the new strategy for CIFDP under development should consider new developments under ETOOFS in ocean reanalysis.

Climate and Fisheries Task Team (Ag Commission)

A report on the Joint CAgM-JCOMM Task Team on Weather, Climate and Fisheries (TT-WCF) was given. JCOMM has already accepted to be part of this Task Team (in collaboration with the WMO Commission for Agricultural Meteorology (CAgM)) during its first meeting in New Caledonia (2011). The second meeting was held in San Sebastian

(September 2015) where it was decided to develop a report on how to use climate information for fisheries services. This is ongoing work and will be presented to JCOMM-5.

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

4.1 **Global Framework for Climate Services (GFCS)**

The WMO Secretariat reported on the evolution of the Global Framework for Climate Services (GFCS), and reviewed the identified JCOMM contribution to the GFCS, including from the OPA through the Global Climate Observing System, through the SFSPA, and through the DMPA. GFCS is now in the process of identifying how to link to the WMO Technical Commissions, including JCOMM. The five GFCS priority areas are agriculture and food security, disaster risk reduction, energy, health, and water. Clear JCOMM links can be made to food security, Disaster risk reduction, and water; although ocean observations are a cross-cutting requirement for the provision of climate information. Co-president Stander suggested the following highlighted JCOMM contributions to GFCS:

- ocean observation requirements
- ocean extremes monitoring
- coordination in seasonal climate forecasting system
- wave and surge climate services
- coastal inundation forecasting project (already included by GFCS)
- an enhanced polar component of GMDSS (DRR) as well as support to sea ice climatology and ice information systems
- ocean reanalysis to support climate services

The Committee **agreed** to provide Co-President Stander with input on the JCOMM contributions to GFCS (**Action** for MAN members by December 15, for presentation at PTC meeting in January), and **requested** the GFCS provide some additional clarity on guidelines for GFCS projects before revising the JCOMM proposed list of GFCS projects (**Action**, for Stander to request these guidelines on projects in January).

The Committee also **recalled** the importance of ocean reanalysis products for climate services delivery.

4.2 **Interagency collaboration for Metocean information services**

Nick Ashton reviewed the status of implementation of the IMO/WMO Worldwide Metocean Information and Warning Service (WWMIWS) in collaboration with the International Maritime Organization (IMO), the International Hydrographic Organization (IHO) and their relevant programmes/groups (e.g. the IHO-IOC General Bathymetric Chart of the Oceans GEBCO), to meet requirements for marine meteorological warnings and relevant information. The different cultures, working processes, and reactivity of WMO and IMO meant that a long-term and ongoing dialogue was critical to maintain.

The Committee recalled that IMO and WMO held occasional high-level meetings, and that the two Secretary-Generals of the respective organizations would likely meet in early 2016. It requested Nick Ashton to collect the relevant briefing information on: 1. observations concerns related to ship call sign broadcasting, piracy, and buoy vandalism and 2. warning

services including sea ice; and to prepare these for the WMO Secretariat for the briefing of the new SG (**Action** for Ashton, by January 2016).

The Committee **requested** that WMO Secretariat consider inviting IOC to the regular IMO-IHO-WMO coordination meetings (**Action** for WMO Secretariat before next regular IMO-IHO-WMO coordination meeting).

4.3 Polar Initiative Activities

Jürgen Holfort (ETSI) presented activities under the WMO EC-PHORS, the key panel on Polar and High Mountain initiatives (including observations, monitoring and services) for WMO Members. The Panel facilitates advances in observations, understanding and prediction in pursuit of better and new services. Its activities focus upon improved situational awareness of the state of the cryosphere through, inter alia, the Global Cryosphere Watch and seek to improve weather prediction and climate projection at the regional and global scales through the Global Integrated Polar Prediction System (GIPPS).

Most polar projects have been strongly supported by the research community, reinforced by the upcoming Year of Polar Prediction (2017). In the Arctic, many activities are from the operational side, backed by national authorities, to service the Arctic rim populations and heavy shipping activities. The Antarctic side is different – less operational and mostly research-oriented. There is a need to improve the operational view in the Antarctic, to improve understanding of ice, ocean and weather, and to improve services. There is almost no information in the Southern Hemisphere Meteorological Areas related to Antarctic. The Committee **emphasized** the importance of ensuring Southern Hemisphere representatives in the activities and workshops of ETSI, including the ice analyst workshop planned for 2016 (**Action** for Secretariat when considering invitations and funding).

The Committee also recalled that WMO was considering the establishment of Polar Regional Climate Centres. JCOMM **should** provide advice on defining the mission of Polar Regional Climate Centres, given the experience of the Expert Team on Sea Ice and safety, considering new research areas and new data available.

The Committee **recalled** a number of JCOMM activities were contributing to the polar priorities of WMO and IOC, including through the work of ETMSS, ETSI, the OPA (particularly DBCP), and ETOOFS, and **requested** the Co-Presidents to highlight these in the appropriate fora.

4.4 *COLLABORATION WITH WMO REGIONAL ASSOCIATIONS AND GOOS REGIONAL ALLIANCES*

WMO Regional Associations

The WMO Regional Associations in many cases have identified marine meteorology and/or oceanography amongst their priorities. The Committee **endorsed** having this priority fostered, particularly through the joint PTC/PRA meetings in January, as a path towards higher visibility (and budget) in WMO for marine activities.

GRAs

GRAs are implementing bodies of GOOS at the regional level, and are developing their coordinating and capacity development activities. A number are already in close contact with NMHSs within their region, and all were interested in fostering this relationship further. In general, the Committee **agreed** that having a closer interaction with GRAs could be mutually beneficial. The GRA Forum (September 2015) agreed with a proposal that a GRA representative enter the JCOMM Management Committee (if invited). The Committee **agreed** having a GRA representative on MAN.

5. STRATEGIC AND STRUCTURAL ISSUES

5.1 JCOMM-5

The Co-Presidents reviewed the intersessional work since JCOMM-4 (2012) that could be highlighted as achievements of the Commission at JCOMM-5. After revision by the Committee these were (or were expected to be by 2017):

- The revised JCOMM strategy
- A completed JCOMM review (internal and with JCOMM members)
- Succession planning principles (implemented)
- new technology incorporated into OPA and new communities
- contribution to WIGOS pre-operational phase including the JCOMMOPS contribution to OSCAR
- new JCOMMOPS promise and working agreements
- DMPA strategy revised (planned)
- Development of the MCDS / including CMOC
- Substantial update of regulatory materials
- Guide to Operational Ocean Forecast Systems
- TT-SAT group restarted and satellite data requirements identified
- TT-MOWIS work to link ocean systems with WIS
- Consistent contribution to DRR from SFSPA (and all PAs)
- Sea ice standardization with IMO, IHO - partnerships
- Open access GTS pilot
- CD strategy and OTGA cooperation
- Ocean data standards activities

The Committee held a discussion on the major highlights of the intersessional work plan to be brought to JCOMM-5, and the major issues and decisions that could be requested of JCOMM-5, building on the previous agenda items. Commission meetings are also an opportunity for renewed engagement from the Member/Member State agencies represented, and the Committee considered how to best use the opportunity leading up to and including JCOMM-5 to expand Member/Member State participation in JCOMM activity.

Key expected milestones between now and 2017 were presented by the WMO Secretariat. The JCOMM-5 will be held on 23 October 2017, in Indonesia (RA5). Formal invitations to IOC Member States and WMO Members will be issued in late 2016, and in early 2017 requests for nominations to Expert Teams will be solicited. This call for nominations should include the succession planning principles, urging nominations from regions and requesting gender sensitivity. All documents for JCOMM-5 need to be available in mid-2017 (for

translation into 6 languages). The Committee **agreed** that the Succession planning principles should be annexed to the letter requesting nominations for Expert Teams (**Action** for WMO Secretariat in preparing this circular letter to WMO Members and IOC Member States).

The Committee held a wide-ranging brainstorming discussion on what to bring to the JCOMM-5 session as issues and how to engage the Members / Member States more in the work of the Commission. Issues raised included:

- In Observations, taking a more integrated variable-oriented approach in coordination and requirements-setting that brings the observing system closer to its outputs and users, while remaining rooted in the platform-based communities and observing networks,
- Highlighting the emerging important areas of ocean and marine observations, forecasts and services, including for climate services, ocean acidification, and outputs close to users,
- Orienting the services strategy around two arms: science-based and service-driven,
- Improving the service interfaces from observations, data and information, and forecasts to users,
- Analyzing the met ocean contribution to global strategies such as DRR and regional strategies such as the European Marine Strategy Framework Directive (MSFD),
- Focusing (perhaps in the Technical Conference) on showcases / exemplary cases that link end-to-end from observations through data systems to services and users,
- Changing the vocabulary of “services” to include “*information* products and services”

The Committee **agreed** that this discussion needed to continue, and should be the part of a specific **Webex** of the core Management Committee and relevant invited experts to be selected (**Action** for Secretariat to organize with Co-Presidents, including selection of the invited experts for their strategic thinking ability). The Committee **further agreed** that the outputs of this discussion should be captured in the revised JCOMM Strategy (see next agenda item), analyzing what is missing from the present Strategy and identifying potential changes to the Programme Areas and Work Plan of JCOMM, in the context of the work of other WMO, IOC, and external bodies. **Action** for MAN: make proposals with regards to JCOMM Structure by next MAN meeting, for submission to JCOMM-5.

The Committee discussed and **agreed** that at the JCOMM-5 Session, certificates of appreciation signed by the WMO SG and IOC Executive Secretary should be issued for all experts that had participated in JCOMM teams during the intersessional period; in addition to the traditional special certificates that recognize extraordinary contributions to JCOMM over a long period of time. (**Action** for Secretariat to organize).

5.2 Review of JCOMM Strategy and Organogram

The Co-presidents recalled the JCOMM Strategy was written for the present period 2012-2017. The Committee **requested** the Co-Presidents to update the strategy to be:

- forward looking, covering the period 2017-2025 (8 years, intersessional periods),
- taking into account the new WMO priority areas and expected results based on the decisions of Cg-17, including in particular the services delivery strategy and the seamless data processing and forecasting concept,

- retaining the IOC high-level objectives and functions defined in its Medium Term Strategy 2014-2021, and
- building on the outcomes of the review process (see item 3.2.1).

(**Action**, for Co-Presidents, in stages: WMO priorities/ERs to be incorporated now, review results to be incorporated when available). The Committee reviewed the bubble Organogram for JCOMM, and made the following suggestions:

- JCOMMOPS should be represented as a bubble largely within the OPA, extending towards the DMPA,
- The legibility of the organogram should be dramatically increased so that the component expert teams and networks can be read easily on a Powerpoint,
- The organogram should be made editable in an easy format such as Powerpoint.

5.3 Review of the draft JCOMM Communications Strategy

The WMO Secretariat introduced the draft JCOMM Communications Strategy as requested by MAN-11. The Strategy proposes a communication and partnership pathway to refine communications and promotion of JCOMM activities and accelerated involvement and awareness of members and oceanographic and met institutions together in JCOMM activities, especially when few resources are available to implement it. Proposed objectives were discussed, and key messages outlined. Discussions were held regarding the audience of the JCOMM Communication Strategy - who are the prime targets, and in particular is this only WMO/IOC and Task Teams, or should it be broadened to IMO, IHO etc? The Committee **agreed** that the **primary initial target audiences** were WMO Member and IOC Member State delegations and the experts involved in the work of JCOMM.

It is proposed that the Communication Strategy be focused on web-based product. The Communication Strategy outputs could then be fed to IOC and WMO channels in the lead-up to JCOMM-5. Resources (financial and human) need to be identified and raised to implement the Strategy. (**Action** for Secretariats). The Committee **requested** to review the outputs of the strategy once implemented.

Having reviewed the short public video clip about coastal flooding developed in the framework of the Dominican Republic / Haiti CIFDP, the Committee **encouraged** the Secretariat to make these types of outreach material available on the JCOMM website, and to seek them out from the JCOMM community (**Action** for Secretariats).

5.4 JCOMM Operating Plan and Secretariat Resources

The JCOMM programme is supported by the Ocean Observations and Services (OOS) Section, led by Albert Fischer with the support of one General Staff (Simonetta Secco-Haond) and one full time professional staff (Tom Gross) who will be retiring in mid-2016. The position will be advertised for replacement. A new staff (0.5 time for JCOMM) Denis Chang Seng commenced at the IOC in late 2015. In 2016, the IOC expects one full time secondee from the People's Republic of China to support JCOMM activities.

The IOC Secretariat budget was reduced after the funding crisis at UNESCO in 2012 and remains reduced. IOC/OOS funds support all programme areas of JCOMM. In the past, the IODE has co-sponsored parts of JCOMM activities. This may be continued but needs to be negotiated with the IOC/IODE Programme Office.

For the WMO Secretariat, staffing in the MMOP remains at two Professional (Section Head, Edgard Cabrera plus one professional which has been vacant in 2015) and one General staff (Adriana Oskarsson). The MMOP will have a full complement in January 2016 with the commencement of Sarah Grimes. Throughout 2015, two temporary professional staff (Tim Goos and Long Jiang) have supported the MMOP in 2015. Katherine Hill (GCOS, WMO) also provides support. There has been a reduction of staff resources supporting JCOMM in the WMO data area with reduced time allocation from one professional officer (Etienne Charpentier).

The WMO Secretariat budget was allocated and approved by the Congress (Cg-17) for the four year period 2016 to 2019. The WMO is in the process of receiving the biennium funds for 2016-2017. This allocation is constant. Included in the approved budget is support for the JCOMM-5 in 2017. The normal budget allocation for the MMOP supports Co-President Stander, MAN Committee activities, and service programme areas in the existing framework. It was noted that any new Task Teams or additional groups would have no budget to accommodate their co-ordination activities. Extra budgetary funds are possible for funding non-coordination activities.

The JCOMMOPS team also provides staffing support to both IOC and WMO Secretariats. Funding for the JCOMMOPS office continues with extra-budgetary funding.

5.5 Resource identification

When new Task Teams or activities are set up, the Committee **encourages** them to be *virtual* in their meetings, to address the issue of lack of finances for new activities.

(see also item 3.2.9 Capacity Development)

6. ANY OTHER BUSINESS

MAN meeting schedule

The Committee **agreed** that its next session would take place in January 2017, adjacent to the WMO PTC/PRA meeting and avoiding conflict with the WMO Bureau - IOC Officers meeting, and for a minimum of 4 days, hosted by the WMO Secretariat in Geneva.

The suggestion was made that the next meeting for the core MAN Committee (Co-Presidents plus PA coordinators) be held in March 2016 during the SFSPA CG.

Opportunity for WMO RA II Meeting September 2016

The Committee **requested** RA II to consider a JCOMM Technical Conference, preceding the WMO Regional Association II (Asia) Session planned for Abu Dhabi in September 2016 (**Action** for Co-President and Secretariat, to request in writing to RA II President). It **agreed** on the topic of "Met OceanData Management in Support of Services", and highlighted that the Technical Conference should only be organized if there were available extrabudgetary funds, and with no impact on regular programme funding. The Technical Conference would provide an opportunity to encourage and guide the development of regional marine DCPCs (Qatar has submitted an application).

Educational opportunity

A new one year course in oceanography, starting in January 2016, has been established jointly between University of Bologna and Naples. Co-President Pinardi notes that she will encourage students in this program to contact relevant MAN Committee members for advice and assistance to their research. The JCOMM Secretariat were **asked** to promote it via the GOOS Newsletter and JCOMM website, and to contact POGO who may have an interest in promoting the course.

7. CLOSURE OF THE SESSION

7.1 Adoption of the report

The Committee reviewed the draft report of this meeting and made necessary changes at the end of its session.

7.2 Closure

The Committee **thanked** Nadia Pinardi and her team for their hospitality in Bologna. The Twelfth Session of the JCOMM Management Committee closed at 16:00 on Friday 20 November 2015.

ANNEX I:

STATEMENT OF THE WMO REPRESENTATIVE

Given by Xu Tang, Director of the Weather and Disaster Risk Reduction Services Department, WMO

Dear Co-Presidents, Colleagues and Experts of MAN/JCOMM,

Good morning! On behalf of WMO secretariat, I would like first to thank Professor Pinardi and her team for the dedicated contribution and efforts to make this happen in beautiful Bologna. And also extend my sincerely thanks to all colleagues' coming for the session, and your upcoming contributions and insights to the work of JCOMM.

Dear Colleagues, this Management Committee (MAN) meeting comes at a very opportune time -- following the WMO Congress and IOC assembly and one year ahead of the next session of the full JCOMM. For this session of JCOMM MAN-12, we will look into progress and challenges in the past year, and elaborate how to best implement decisions and resolutions by governing bodies of WMO and IOC, and details will be discussed later on. We will also talk about how to best move JCOMM forward through respective Programme Areas and cross-cutting activities in the inter-sessional period for improved observations, data management, and forecasting and services development and delivery to the MetOcean community. We hope all of these will pay the way for preparation of Fifth Session of JCOMM to be held in 2017, Jakarta.

Dear Colleagues, on this occasion I shall draw your attention of some highlights Cg-17, associated opportunities and challenges and thoughts for the directions:

1. Congress-17 adopted new WMO Strategic Plan for 2016-2019, with 7 priority areas of DRR and associated application and service delivery, WIS/WIGOS, Aviation, GFCS, and Polar and High Mountain regions, Capacity Development, WMO Governance. The importance of MMO has been paid much attention by Members during Cg-17 and has been requested to play much more important role in the implementation of WMO SOP. Therefore, the implementation of the Integrated Application of relevant programmes for Marine Service to further develop system of systems, programme of programmes, guidance of guidances and integrated service of services for Marine safety and wellbeing of the global society.

2. In addition, Cg-17 endorsed the continuing implementation of JCOMM Strategic Plan developed by JCOMM-4 and WMO Strategy for Service Delivery which was adopted by Cg-16. Cg-17 also endorsed to continue implementing the Manual on Marine Meteorological Services (WMO-No.558) and the implementation of Competency for Marine Weather Forecasters. These will guide the MAN-12/JCOMM to make better implementation in 2016 and better preparation for the coming JCOMM-5 in 2017.

3. Cg-17 has also requested the ECWG-SOP to set up a reviewing process for all WMO TCs and TPs for the further improvement of effectiveness to assist Members. Some of TCs and TPs have already started to conduct their reviewing processes such as CBS and GDPFS, PWS and MMOP (as a technical assessment) etc. I am glad to know that JCOMM is conducting its self-assessment process right now. With WMO now focusing attention on Forecasting and Services through the development of the Services Strategy, developments

related to DRR and developments on the GDPFS, we also now have greater clarity on WMO directions and priorities. With the WMO developments on WIGOS and WIS etc., I think we can see the future path for our Observations and Data Management Programme areas -- we have had significant developments at WMO to bring greater integration of these program areas and a clear future orientation. Therefore, I'd like to ask you to take this opportunity of MAN-12 to share your perspectives and recommendation in this respect for the better provisions of not only Marine Observation and data management, but also the Marine Forecasting, Prediction with the seamless integration with other related programmes and integrated service delivery with the holistic approach of partnership and collaboration within and outside of the community of Marine and Oceanography.

4. Dear colleagues, there are the increasing demand of service needs for ocean economy, integrated transportation, maritime safety, costal sustainable development, and climate change adaptation. It is necessary to establish an integrated service delivery framework for Maritime Safety, Costal Resilience and integrated transportation. In doing so, an Integrated System on Marine Forecasting, Prediction should be considered and developed based on the related technical regulations and infrastructure for operation at global, regional and national levels. Otherwise, we will lose the battles and opportunity. In this week, CLW/WMO will organize a meeting to discuss the possibility to strengthen the Climate Services for Polar Regions by establishing Polar Regional Climate Centres while the Cg-17 has already endorsed and reaffirmed to continue implementing the Manual on Marine Meteorological Services (WMO-No.558), including the designation of issuing services and respective areas of responsibility, and to develop a Seamless GDPFS strategic approach which including Marine GDPFS as one of the most important component of it. As a follow up action, the new Manual on the Global Data-processing and Forecasting System (GDPFS) (WMO-No. 485) will start to update in 2016 and these issuing services will be branded as Regional Specialized Meteorological Centres (RSMCs). Therefore, Marine GDPFS, Risk Informed MHEWS Service for both METAREAs and NAVAREAs and Informative and beneficial Service for Marine related community should be strengthened in the coming period of strategic plan of JCOMM and have better preparation for MMO become a next priority area of WMO SOP-2020-2023 and associated the priority area of the strategic plan of IOC/UNESCO.

5. While we continue to improve services for the traditional marine clients, we need to use opportunities like the CIFDP to consider the broadest implications of our marine offerings. With the increasing human infrastructure and population beside the world's oceans, we should expect the marine/land interface to become increasingly significant -- we have a large opportunity to contribute to Disaster Risk Reduction and, by its very nature; we will have to deal with this as a multi-hazard.

Finally, we will work closely with you in the coming days. We should consider the WMO and IOC priorities carefully in our conversations these days. We need to set our program for work for the coming year such that we are well prepared for JCOMM -- well prepared to enable JCOMM to set the future course for the marine program. I wish we have a successful meeting.

Thanks very much.

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 THE JCOMM INTERSESSIONAL WORKPLAN AND PREPARATIONS FOR JCOMM-5 (2017)

3.1. Programme Areas

- 3.1.1. Observations Programme Area (OPA)
 - 3.1.1.1. Effective and efficient engagement with other observing networks (Super-OCG concept)
- 3.1.2. Services and Forecast Systems Programme Area (SFSPA)
- 3.1.3. Data Management Programme Area (DMPA)

3.2. Cross-cutting activities coordinated by MAN

- 3.2.1. JCOMM self-evaluation and review
- 3.2.2. WMO Integrated Global Observing System (WIGOS)
- 3.2.3. Observing System Requirements for Services: WMO RRR, GOOS EOVs and related processes
- 3.2.4. Task Team on Satellite Data Requirements
- 3.2.5. Quality Management Approach and Marine Weather Competence Standard Framework
- 3.2.6. Operational Marine Data Processing and Forecasting System
- 3.2.7. JCOMM contribution to Disaster Risk Reduction
- 3.2.8. Cross-cutting Data Management activities (ODP, TT-MOWIS, open-access GTS node)
- 3.2.9. Capacity Development, including collaborative programmes, projects and activities
- 3.2.10. Joint activities with other Groups and Programmes

4. COLLABORATIVE PROGRAMMES, PROJECTS AND ACTIVITIES

- 4.1. GFCS
- 4.2. Interagency Collaboration for Metocean Information Services
- 4.3. Polar Initiative / activities
- 4.4. Cooperation with WMO Regional Associations and GOOS Regional Alliances

5. STRATEGIC AND STRUCTURAL ISSUES

- 5.1. JCOMM-5
- 5.2. Review of JCOMM Strategy and Organogram
- 5.3. Review of draft JCOMM Communications Strategy
- 5.4. JCOMM Operating Plan and Secretariat Resources
- 5.5. Resource Identification

6. ANY OTHER BUSINESS

7. CLOSURE OF THE SESSION

- 7.1. Adoption of the report
 - 7.2. Closure
-

ANNEX III:

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ANNEX IV:
PRINCIPLES FOR SUCCESSION PLANNING

Adopted by MAN-12

Regarding the appointment of the leadership for Programme Areas, it is agreed that:

- Each Programme area should appointed at least a Chair and Vice-Chair, and that their term be for the intersessional period with the possibility of two terms,
- Multiple Vice-Chairs with specific areas of responsibility may be appointed as appropriate to manage the work and engage the appropriate skills/expertise for the large programme areas,
- Appointments to these roles are done by the Co-Presidents based on consultation with the Management Committee (through electronic means),
- A Vice-Chair should typically be appointed to take the place of the Chair at the end of the Chair's term,
- The Co-Presidents will consult with JCOMM members, existing Chairs and vice-chairs, the Secretariat and others as appropriate in recommending candidates for the Chair and Vice-Chair roles,
- Each Expert Team of the Programme Areas should be involved in the selection of the vice-chair through an internal survey for candidates, and
- When a Programme Area is unable to recommend a vice-chair, the co-presidents will undertake a survey/consultation.

In considering candidates for these positions, all involved will consider:

- *Expertise*: In addition to having expertise appropriate to the team, an appropriate balance of meteorological and oceanographic expertise should be maintained within and across the programme areas,
- *Geographic representation*: An appropriate balance of regional representation reflecting the work of JCOMM across the globe,
- *Gender balance*: Appointments should strive to achieve the overall directions of WMO and IOC with respect to gender balance,
- *Continuity*: Appointments should strive to achieve continuity between JCOMM sessions and within Programme areas by considering the potential service time of candidates,
- *Leadership*, willingness to volunteer, and
- *Explicit support* from their national agencies.

ANNEX V:

OUTSTANDING ACTION ITEMS FROM MAN-11 (2014)

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
2.2 Reports by Secretariats	To write a letter of thanks to SOA and request continuing support on staff or financial contributions to JCOMM SOA: State Oceanic Administration, China	Co-Presidents and Secretariat	
	Status: Unknown.	Next step:	
3.1.2 Data Management Programme Area (DMPA)	To maintain enhanced links with ongoing European Data Management projects	DMPA chair and Co-President Pinardi	By MAN-12 (Oct 2015)
	Status: Unknown.		
3.1.2 Data Management Programme Area (DMPA)	To follow up on the Actions and Recommendations in the MAN-11 report.	DMPA groups and teams	By MAN-12 (Oct 2015)
	Status: Unknown.		
3.1.2 Data Management Programme Area (DMPA)	To name a DMPA co-chair.	The Co-Presidents, in consultation with Sissy Iona and MAN	March 2015
	Status: Unknown.	Next Step:	
3.1.3 Observations Programme Area (OPA)	To define a succession planning within JCOMM for Candyce Clark.	Co-Presidents and Secretariat	March 2015
	Status: Legler/Meldrum are new OCG Co-Chairs. D Meldrum is stepping down and we are in the process of selecting a replacement. See action item under 5.3 for broader action on succession planning across key positions in JCOMM structure.	Next Step: Find replacement fro D. Meldrum (action by OCG) as technology leader.	

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
3.1.3 Observations Programme Area (OPA)	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	by MAN-12 (March 2015)
	Status: Unknown.	Next Step:	
3.1.4 JCOMMOPS	To review the draft JCOMM Strategy and bring a revised version for approval, see also section above).	OCG and JCOMMOPS	April 2015 (OCG-6)
	Status: Unknown.	Next Step:	
3.1.4 JCOMMOPS	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	March 2015
	Status: Unknown.	Next Step:	
3.2.4 Capacity Development	To identify and classify the various Capacity Development activities of JCOMM	John Mungai and PA coordinators	March 2015
	Status: Unknown.	Next Step:	
3.2.4 Capacity Development	To develop common approach/framework for evaluation, for application by all Capacity Development activities	John Mungai	March 2015
	Status: Unknown.	Next Step:	
3.2.4 Capacity Development	To develop short project proposals and find opportunities to spark dialogue with potential donors	MAN and Secretariat	March 2015

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
	Status: Unknown.	Next Step:	
3.2.6 Ocean Data Portal - WIGOS/WIS	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	March 2015
	Status: Unknown.	Next Step:	
3.2.6 Ocean Data Portal - WIGOS/WIS	To set up procedures to manage how entries are proposed, assessed, tested and endorsed.	DMPA in collaboration with TT-MOWIS	March 2015
	Status: Unknown.	Next Step:	
3.2.6 Ocean Data Portal - WIGOS/WIS	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	March 2015
	Status: Unknown.	Next Step:	
3.2.6 Ocean Data Portal - WIGOS/WIS	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	April 2015
	Status: Unknown		

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
3.2.6 Ocean Data Portal - WIGOS/WIS	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	October 2015
	Status: Unknown.	Next Step:	
3.2.7 JCOMM Contribution to Disaster Risk Reduction	To clarify the definition and scope of the CIF service products.	PSG	March 2015
	Status: Unknown.	Next Step:	
3.2.8 Joint Activities with Other Groups and Programmes	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	March 2015
	Status: Unknown.	Next Step:	
3.2.9 Joint Activities with GODAE OceanView	To define how to report to OOPC and JCOMM, including the ability for both bodies to seek advice.	GOV	March 2015
	Status: Unknown.	Next Step:	
3.2.9 Joint Activities with GODAE OceanView	To request feedback from the other SFSPA ETs on 'Option B' of closer communication and adjustment of activities	SFSPA	January 2015 by for next MAN Webex
	Status: Unknown.	Next Step:	

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
3.2.9 <i>Joint Activities with GODAE OceanView</i>	To develop the concept further for adoption at MAN-12	ETOOFS and SFSPA in collaboration with GOVST	October 2015
	Status: Unknown.	Next Step:	
3.2.9 <i>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	October 2015
	Status: Unknown.	Next Step:	
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	March 2015
	Status: Unknown.	Next Step:	
4.1 <i>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	October 2015
	Status: Unknown.	Next Step:	
4.1 <i>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	October 2015
	Status: Unknown. Need to establish a rationale/requirement so a discussion can be held to facilitate such an invitation. Likely start with contact with the Development and Regional Activities Department at WMO.	Next Step:	

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
4.3 Interagency Collaboration for Metocean Information Services	To develop a draft strategy for support to Marine Environmental Response	TT	Jan 2015 for Cg-17 documents
	Status: Unknown.	Next Step:	
4.3 Interagency Collaboration for Metocean Information Services	To identify the points of collaboration with IMO & IHO where they need input from JCOMM.	ETMSS members, WMO Secretariat	March 2015
	Status: Unknown. Perhaps ETMSS members should scope-clarify first?	Next Step:	
4.4 Polar Initiative Activities	To reinvigorate polar Action Groups with a view to being much more inclusive as regards data ingestion from all parties to the GTS.	DBCP	March 2015
	Status: Unknown.	Next Step:	
4.4 Polar Initiative Activities	To take leadership in Polar activities relevant to JCOMM	OPA	March 2015
	Status: Unknown.	Next Step:	
4.5 Submarine Cables Network for Climate Monitoring and Disaster Warning	To link previous with IIOE-2	David Meldrum and Peter Dexter	October 2015
	Status: Unknown.	Next Step:	

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
4.6 <i>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	February 2015
	Status: Unknown.	Next Step:	
4.6 <i>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	March 2015
	Status: Peter Dexter sent details in mid-February requesting consideration by JCOMM management committee members. Plans-proposals to be submitted to co-Presidents and Secretariat.	Next Step: Secretariat assist to assemble submissions to create a consolidated JCOMM submission.	
5.3 <i>Management of Teams/Groups and their Intersessional Activities</i>	To prospect those JCOMM teams and groups regarding potential vacancies that might occur 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.	Co-President and Secretariat	October 2015
	Status: Unknown.	Next Step:	
5.3 <i>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	October 2015

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
	<p>Status: Succession planning is never (or at least very rarely) formally done in pure WMO commissions. The requirement for approval by the home organization plus the varied interests in such appointments makes a planned approach very difficult.</p> <p>Typically, the approach is to nominate a deputy or associate chair as someone who could, if all things work out, provide continuity either by moving to chair or by continuing as associate while a new chair is brought up to speed. Typically, a departing chair is asked for advice regarding potential people for the position and may be engaged to participate in encouragement/recruitment.</p>	Next Step:	
5.3 Management of Teams/Groups and their Intersessional Activities	To look at potential co-CD coordinator appointment.	Co-Presidents	October 2015
	<p>Status: Unknown</p>	Next Step:	
5.3 Management of Teams/Groups and their Intersessional Activities	To ensure that the ETs in each PA have succession plans in place	PA coordinators	October 2015
	<p>Status: Unknown.</p>	Next Step:	
6. Final discussion on challenges	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	October 2015

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
	<p>Status: Unknown</p> <p>Considerations:</p> <ul style="list-style-type: none"> - Arises from the need to “do more with less” – to ensure a composite, multi-platform observing system responds to multiple demands. Need to be strategic about networks (including deployments) and work collectively. 	<p>Next Step:</p>	
6. Final discussion on challenges	To pull issues from this discussion for agenda/documents more detailed discussion at MAN Webexes and MAN-12.	Co-Presidents and Secretariat	March 2015
	<p>Status: Unknown</p>	<p>Next Step: Unknown</p>	
7. Any other business	To communicate with government of Indonesia to develop firm offer / draft JCOMM-V conference agreement	WMO Secretariat	October 2015
	<p>Status:</p>	<p>Next Step:</p>	
7. Any other business	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	October 2015
	<p>Status: AGU</p> <p>There are two possible meetings of the AGU that could be considered:</p> <p>2016 FALL MEETING: 12 December 2016 - 16 December 2016, San Francisco. Typical program. Details on session and abstract proposals typically available about 9 months ahead.</p> <p>OCEAN SCIENCES MEETING: 21-26 February 2016, New Orleans. The Program Committee will develop a scientific program covering all topics in the area of ocean sciences.</p>	<p>Next Step:</p> <ul style="list-style-type: none"> - A topic and draft proposal needs to be prepared including the ident - ification of the four co-convenors – the four individuals responsible for the submission of the proposal and ultimate delivery of the 	

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
	<p>Details, including how to submit a session proposal and abstract, will be posted in early 2015.</p> <p>The AGU has a standardized, on-line session proposal system; each proposal requires 4 co-convenors and the primary convenor must be a member. Session proposals are short (150 words) and must focus on the science results and/or their application and why they are topical.</p> <p><i>EGU</i> General Assembly 2016: 17 – 22 April 2016, Vienna, Austria. The EGU aims to bring together geoscientists from all over the world to one meeting covering all disciplines of the Earth, planetary and space sciences and to provide a forum where scientists, especially early career researchers, can present their work and discuss their ideas with experts in all fields of geoscience.</p> <p>Similar to the AGU, an on-line session proposal system is used with the deadline for submission about 9 months in advance.</p> <p>Considerations:</p> <ul style="list-style-type: none"> - The Ocean Sciences Meeting will be smaller and a more traditional community – likely an easier fit but without the broad exposure. - These three sessions are all relatively close in time so to organize a session at more than one likely requires unique proposals on unique topics with corresponding level of effort. - A proposal needs to be science or application of science focused and should be topical – presumably something that is current in the research/science 	<p>session.</p> <ul style="list-style-type: none"> - Identification of the four co-convenors is most urgent; likely makes most sense for them to develop the session proposal. 	

<u>Item</u>	<u>Action</u>	<u>Responsible</u>	<u>End Date</u>
	community. - The organizers choose if the session will be oral or poster but the convenor may state a preference. - To meet the first AGU meeting, a proposal will need to be available no later than May 2015; for the second meeting, it will be needed by perhaps July 2015.		
7. Any other business	To approach George Wiafe as JCOMM/ocean representative on RA-I IDEG	Co-President Stander	Dec 2014
	Status:	Next Step:	

ANNEX VI:

SUMMARY LIST OF ACTION ITEMS FROM MAN-12

Note:

At working level, responsible persons are C/OSD (Etienne Charpentier=ECh), SO/MAR (Long Jiang=LJ, short term), C/MMO (Edgard Cabrera=EC), and SO/MMO (Sarah Grimes= SG). D/OBS (Wenjian Zhang=WZ) and D/WDS (Xu Tang=XT) oversee. At IOC, Albert Fischer (=AF), Tom Gross (=TG), Denis Chang-Seng (=DC), and/or more as appropriate.

Item	Action	Responsible	Deadline
<i>2.1 Reports by Co-Presidents</i>	Co-President Stander will present revised succession planning principles these principles to the Presidents of Technical Commissions (PTC) meeting in May 2016 as the JCOMM response to the concern over the decrease in volunteers	Co-President Stander	May 2016
<i>2.2 Reports by Secretariats</i>	Prepare a visualization and/or short document that highlighted the JCOMM contribution to other IOC programmes (including GOOS and IODE in particular), and the JCOMM contribution to other WMO programmes (including WIGOS, WIS, services provision, GFCS, and others), as well as other joint programmes with WMO and IOC co-sponsorship such as WCRP and GCOS for inclusion in WMO and IOC EC reports from JCOMM	Secretariats for review by MAN (ECh, LJ)	April 2016
<i>3.1.1 Observations Programme Area</i>	Complete Risk Information in the OPA's work: taking a simple approach to highlight low and high risks (perhaps through colour coding), identifying the impact and likelihood of each risk	for OPA (ECh, LJ)	For discussion at OCG meeting in April 2016, completion afterwards.
<i>3.1.1 Observations Programme Area</i>	Develop a similar approach to enumerating risk for SFSPA activities	for SFSPA meeting in March 2016, in consultation with OPA and its approach	SFSPA March 2016, and completed by MAN-13
<i>3.1.1 Observations Programme Area (JCOMMOPS)</i>	To push monthly standardized reports of status of observing system out to an e-mail list, starting with the full list of JCOMM e-mails (IOC Secretariat MailChimp opt-in list), once these reports are ready	for JCOMMOPS	ASAP – for a monthly distribution

Item	Action	Responsible	Deadline
3.1.1 <i>Observations Programme Area (JCOMMOPS)</i>	Explore appropriate ways of pushing these Reports (in the action above) to interested WMO program audiences	WMO Secretariat (ECh, LJ)	MAN-13
3.1.2 Programme Area: Services and Forecast Systems (SFSPA)	Define draft Terms of Reference for a new Task Team on seasonal predictions to identify the needed links between WMO programmes (CBS teams, WCRP, GFCS), ETOOFS, GODAE Ocean View, CLIVAR GSOP, TPOS 2020 modeling TT, and relevant observing teams with the goal of improving coupled seasonal predictions	for SFSPA, led by N. Ashton or G. Brassington, for review by MAN and all the relevant stakeholders mentioned above(ALL)	SPFA Meeting, mid March 2016
3.1.2 Programme Area: Services and Forecast Systems (SFSPA)	Clarify the timeline for the update of the Statement of Guidance	WMO Secretariat (for ECh to communicate timeline to G. Liu and G. Brassington)	March 2016 ?
3.1.2 Programme Area: Services and Forecast Systems (SFSPA)	Provide guidance on the procedures and templates for publication as a Joint IOC - WMO Guide with two publication references	for IOC and WMO secretariats (ALL)	March 2016
3.1.2 Programme Area: Services and Forecast Systems (SFSPA)	Explore hosting options for portions of the Guide with, notably, detailed and regularly updated descriptions of the forecast systems 'live' for the (above mentioned) procedures and templates to be discussed with IOC Secretariat in coordination with WMO secretariat)	for IOC and WMO secretariats (ALL)	April 2016
3.1.2 Programme Area: Services and Forecast Systems (SFSPA)	Regular posting of Performance monitoring using GODAE OceanView-defined Class IV metrics on the JCOMM website as a JCOMM product	for IOC Secretariat with ETOOFS lead on performance metrics: Andrew Ryan, and Nick Ashton	Long term action (For discussion at SFSPA by Nick)
3.1.2 Programme Area: Services and Forecast Systems (SFSPA)	Provide a 1-page outline of the proposed review process for the ETOOFS Guide, to ensure it is widely seen and accepted by the operational ocean forecast community	for ETOOFS chair and Guide writing lead, to be reviewed electronically by MAN and IOC?	SFSPA CG meeting in March 2016

Item	Action	Responsible	Deadline
<i>3.1.3 Programme Area: Data Management</i>	The Committee noted that the EMODnet, GDSIDB (sea-ice), IMOS and iCOADS/NODC (NOAA), could potentially become CMOCs, and encouraged the DMPA to investigate the feasibility of their submitting proposals	for DMCG (ECh, LJ)	June 2016
<i>3.1.3 Programme Area: Data Management</i>	Harmonize the GDAC Terms of Reference, establishment process, evaluation, and establishment	for DMCG (ECh, LJ)	June 2016
<i>3.1.3 Programme Area: Data Management</i>	Develop a specific proposal for the revision of the MCSS portions of WMO Publications 558 and 471	for ETMC (ECh, LJ)	Q1 2017
<i>3.1.3 Programme Area: Data Management</i>	Discuss approaches to identifying targets for observations based on user requirements	for ETMC and OCG chairs (David Legler, Chair ETMC, ECh, LJ)	April 2016
<i>3.1.3 Programme Area: Data Management</i>	Nominate a new member from JCOMM for the ETCCDI	for DMPA coordinator (ECh, LJ)	mid 2016
<i>3.1.3 Programme Area: Data Management</i>	Propose a possible way forward for the establishment of a GDAC for waves and marine meteorological moorings, focused on data rescue issues and building on existing structures where appropriate	TT-MOWIS, the DMPA and OCG coordinators and the WMO Secretariat (ALL)	For April 2016 (when TT-MOWIS meet)
<i>3.1.3 Programme Area: Data Management</i>	Establish a MCDS GDAC or CMOD based on the Global Digital Sea Ice Data Base (GDSIDB)	for ETSI and ETMC.(ECh, LJ, EC, SG)	Mid 2016
<i>3.1.3 Programme Area: Data Management</i>	Develop a succession plan with vice-chairs with specific areas of responsibility as well as a suggestion for a new chair for the TT on Table-driven codes (TT-TDC)	DMPA Coordinator, for Iona (ECh, LJ)	Mid 2016
<i>3.1.3 Programme Area: Data Management</i>	TT-MOWIS, the DMCG, and OCG to develop a common proposal for the future structure of the JCOMM Data Management Programme Area, and the DMCG to meet within the first six months of 2016 (explore the idea of meeting back-to-back with the TT-MOWIS)	for Iona (ALL)	Before Mid 2016

Item	Action	Responsible	Deadline
3.1.3 Programme Area: Data Management	DMCG to nominate a contact point to take over this monitoring	for DMCG (ECh, LJ)	Mid 2016
3.1.3 Programme Area: Data Management	JCOMM groups to populate the IODE Clearing House Service with their standards and best practices documents and guides	for all JCOMM Expert Teams, with the encouragement to be sent via the PA Coordinators). (ECh, LJ)	Mid 2016
3.1.3 Programme Area: Data Management	Identify the key marine meteorological and oceanographic centers that should be encouraged to become registered WIS centres	for TT-MOWIS, already part of their Terms of Reference).(ALL)	Mid 2016
3.1.3 Programme Area: Data Management	Recommend an ETMC marine meteorological representative to the WMO CCI Expert Team on Data Rescue, and contact IODE to name a second representative from the oceanographic perspective	for DMPA Coordinator	ASAP
3.2.1 JCOMM Self Evaluation and Review	MAN should give feedback on the questions for the proposed stakeholder survey by the end of November. Survey to be distributed again to MAN Group, requesting suggestions for questions.	for MAN. IOC to distribute to MAN and co-ord responses.	All response back by late February 2016
3.2.1 JCOMM Self Evaluation and Review	The Secretariat should set up the survey as an online survey (Google survey or SurveyMonkey)	Secretariat	February to April 2016
3.2.1 JCOMM Self Evaluation and Review	The JCOMM MailChimp contact list of about 2000 Members, Member States, JCOMM experts and meeting invitees should be used to request input to the survey, with a cover letter from the Co-Presidents with a deadline of response by April 2016	Secretariat and Co-Presidents	February to April 2016
3.2.1 JCOMM Self Evaluation and Review	The results should be analyzed by September 2016, for inclusion in the revision of the JCOMM Strategy	for Secretariat and Co-Presidents	September 2016
3.2.2 WIGOS	Observing networks in the JCOMM Observations Coordination Group to develop and provide the full metadata required by WIGOS, noting that additional resources might be needed for JCOMMOPS to collect the required WIGOS metadata	to discuss at OCG-7 (ECh, LJ)	April 2016

Item	Action	Responsible	Deadline
3.2.2 WIGOS	Review allocation scheme of the WMO/WIGOS unique identifiers, and influence WIGOS guidance with a consideration of having a unique, fast, operational scheme, where: <ol style="list-style-type: none"> 1. JCOMMOPS allocates identifiers at platforms registration, on behalf of WMO/IOC, 2. JCOMMOPS controls the uniqueness of these identifiers, and 3. WMO identifiers for marine platforms are disconnected from geographical areas (which are not appropriate for drifting platforms). 	OPA	OCG-7 in April 2016
3.2.2 WIGOS	Set up an operational service on behalf of WMO and IOC in cooperation with the WIGOS task team on metadata	for JCOMMOPS, once/if scheme is approved by WIGOS (ECh, LJ)	Mid 2016
3.2.2 WIGOS	OPA to consider a process to feed the <i>Vision for WIGOS in 2040</i> being developed by WMO	for OCG (ECh, LJ)	OCG-7 in April 2016
3.2.2 WIGOS	SOT and DBCP to review their WMO regulatory material to see which portions should be transferred/updated for the WIGOS manual and guide	for SOT and DBCP (ECh, LJ)	by their next sessions (for OCG Chair to communicate to these Chairs)
3.2.2 WIGOS	Propose amendments to procedures for the naming of RMICs and CMOCs under its purview that would require documented consultation with regional WMO and IOC structures	for Secretariats	MAN-13, for consideration at JCOMM-5
3.2.3 Observing system requirements for services: WMO RRR, GOOS EOVs and related processes	Revise the title of the 'Ocean Applications' Guidance (under the RRR) to "Marine Meteorology and Ocean Applications" in order to better communicate to WMO audiences that this included the GMDSS	for ECh to feed this recommendation to CBS/RRR	ASAP

Item	Action	Responsible	Deadline
<i>3.2.3 Observing system requirements for services: WMO RRR, GOOS EOVs and related processes</i>	The next review of the Statement of Guidance receive input from TT-SAT, ETSI, and OCG	for G. Liu as SoG focal point in ETOOFS, to engage with these teams in next review process	Next review process
<i>3.2.3 Observing system requirements for services: WMO RRR, GOOS EOVs and related processes</i>	GOOS's physics and climate panel to take full advantage of the RRR and the "Marine Meteorology and Ocean Applications" Statement of Guidance in developing its Strategic Mapping and variable and observing network targets	for OOPC and OCG to engage with SoG focal point G. Liu, and for GOOS to incorporate appropriate RRR outputs into its Strategic Mapping portion focused on services	Katy or David to provide a date
<i>3.2.4 TT SAT</i>	TT-SAT to finish their work with a final draft for review by the end of 2016	for TT-SAT (ECh, LJ)	End 2016
<i>3.2.5 TT MCR</i>	Provide one additional nomination for TT-MCR	for N. Ashton	
<i>3.2.5 TT MCR</i>	TT-MCR to liaise with the Aeronautical Competence Task Team to assist in the development of an assessment tool for the Marine Weather Forecaster Competence Framework to ensure a harmonized approach	for TT-MCR	
<i>3.2.5 TT MCR</i>	The SFSPA to set deadlines for the production of TT-MCR outputs, aiming for mid-2016 for review drafts, end 2016 to finalize.	for N. Ashton to communicate to TT-MCR	End 2016
<i>3.2.5 TT MCR</i>	Present the Framework to the IOC governing bodies, for possible input or creation of a parallel harmonized competence framework for ocean forecasting	Co-President Pinardi	June 2016
<i>3.2.6 Operational Marine Data Processing and Forecasting System</i>	Provide to Co-Presidents two nominations, drawing from the coastal inundation and operational ocean forecasting elements of SFSPA, for contribution to the CBS team of experts (who will discuss the evolution of the GDPFS in Feb 2016)	for N. Ashton	December 15 (Done, Gary and Kevin nominated)

Item	Action	Responsible	Deadline
<i>3.2.6 Operational Marine Data Processing and Forecasting System</i>	Maintain a dialogue with the ocean forecasting components/capabilities of GOOS Regional Alliances on the progress of the GDPFS discussion (mentioned above).	for WMO Secretariat, to keep Erik Buch as vice-chair of GRAs informed of the evolution of this discussion, and TT-MOWIS	
<i>3.2.8 Cross Cutting data management activities</i>	Add representatives from GODAE OceanView to the TT-MOWIS (for the integration of model output to the WIS) and ETMC (to ensure harmonization with the MCDS).	For Co-President Pinardi for GODAE Ocean View and for Iona for ETMC: to name representatives (ECh, LJ, EC, SG)	ASAP
<i>3.2.8 Cross Cutting data management activities</i>	Report on progress, results, and lessons learned of the Open-access GTS node pilot project at MAN-13	for OPA and INGV to implement the pilot project and report to MAN-13 (ECh, LJ)	MAN 13
<i>3.2.8 Cross Cutting data management activities</i>	ETMC to explore possible joint actions or the establishment of a joint Task Team or group to work on marine climatology issues with ET-DARE and CCI more broadly, and to report back to MAN-13 with their proposal	for ETMC (ECh, LJ)	MAN 13
<i>3.2.9 Capacity Development</i>	Examine IOC Capacity Development Strategy to potentially identify strategic actions that could be taken under JCOMM	for J. Mungai	MAN 13
<i>3.2.9 Capacity Development</i>	Use the experience of IODE and identify a standard form of evaluation of immediate satisfaction and later impact of training activities	for J. Mungai	MAN 13
<i>3.2.9 Capacity Development</i>	Update the JCOMM CD page, eliminating the outdated list of CD activities (dating to 2013)	Secretariat	ASAP
<i>3.2.9 Capacity Development</i>	Support Glen Nolan's idea to implement GRAs Capacity Development to the WMO Education and Training department for consideration for funding	WMO Secretariat (ALL)	WMO Biannual Meeting in March 2016
<i>3.2.9 Capacity Development</i>	Feed Co-President Pinardi with any suggestions for capacity development training courses in order to bring these to the OTGA Steering Group meeting in March 2016	MAN members	February 2016

Item	Action	Responsible	Deadline
4.1 <i>Global Framework for Climate Services (GFCS)</i>	Provide Co-President Stander with input on the JCOMM contributions to GFCS	MAN members	Dec 15 for presentation at PTC meeting in January 2016
4.1 <i>Global Framework for Climate Services (GFCS)</i>	Provide some additional clarity on guidelines for GFCS projects before revising the JCOMM proposed list of GFCS projects	for Co-President Stander to request these guidelines on projects	January 2016
4.2 <i>Interagency collaboration for Metocean information services</i>	Collect the relevant briefing information on: 1. observations concerns related to ship call sign broadcasting, piracy, and buoy vandalism and 2. warning services including sea ice; and to prepare these for the WMO Secretariat for the briefing of the new SG	N. Ashton	January 2016
4.2 <i>Interagency collaboration for Metocean information services</i>	Consider inviting IOC to the regular IMO-IHO-WMO coordination meetings	WMO Secretariat	before next regular IMO-IHO-WMO coordination meeting
4.3 <i>Polar Initiative Activities</i>	Ensure Southern Hemisphere representatives in the activities and workshops of ETSI, including the ice analyst workshop planned for 2016	Secretariat (and Vasily)	April 2016
5.1 <i>JCOMM-5</i>	Prepare a circular letter to WMO Members and IOC Member States requesting nominations for Expert Teams with succession planning principles annexed	WMO Secretariat	December 2016
5.1 <i>JCOMM-5</i>	Organize a Webex of the core Management Committee and relevant invited experts to be selected	Secretariat (alternate secretariats)	Quarterly basis
5.1 <i>JCOMM-5</i>	Make proposals with regards to JCOMM Structure by next MAN meeting, for submission to JCOMM-5	MAN members	JCOMM 5
5.1 <i>JCOMM-5</i>	Issue certificates of appreciation signed by the WMO SG and IOC Executive Secretary for all experts that had participated in JCOMM teams during the intersessional period; in addition to the traditional special certificates that recognize extraordinary contributions to JCOMM over a long period of time	Secretariat	JCOMM 5

Item	Action	Responsible	Deadline
<p><i>5.2 Review of JCOMM Strategy and Organogram</i></p>	<p>Update the strategy to be: - forward looking, covering the period 2017-2025 (8 years, intersessional periods), - taking into account the new WMO priority areas and expected results based on the decisions of Cg-17, including in particular the services delivery strategy and the seamless data processing and forecasting concept, - retaining the IOC high-level objectives and functions defined in its Medium Term Strategy 2014-2021, and - building on the outcomes of the review process (see item 3.2.1)</p>	<p>Co-Presidents</p>	<p>WMO priorities/ERs to be incorporated now, review results to be incorporated when available</p>
<p><i>5.3 Review of the draft JCOMM Communications Strategy</i></p>	<p>Review the outputs of the strategy once implemented</p>	<p>Secretariat</p>	<p>MAN 13 ?</p>
<p><i>5.3 Review of the draft JCOMM Communications Strategy</i></p>	<p>Make outreach material (the short public video clip about coastal flooding developed in the framework of the Dominican Republic / Haiti CIFDP) available on the JCOMM website, and to seek them out from the JCOMM community</p>	<p>Secretariat</p>	<p>MAN 13 ?</p>