



**World Meteorological
Organization**



United Nations
Educational, Scientific and
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Intergovernmental
Oceanographic
Commission

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION (OF UNESCO)

REGIONAL MARINE INSTRUMENT CENTRE (RMIC) COORDINATION MEETING

Gulfport, Mississippi, USA
3 March 2016

FINAL REPORT

2016

JCOMM Meeting Report No. 127

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NOTES

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GENERAL SUMMARY OF THE WORK OF THE MEETING

1. Opening

1.1 The meeting started at 08:30 on Thursday 3 March 2016 in the Board Room 3rd Level of Beach Tower Island View Hotel, 3300 W Beach Blvd Gulfport, MS 39501.

1.2 The participants (Annex 2) included representatives of existing RMICs, representatives of candidate and potential RMICs, invited experts, and the representative of the WMO Secretariat.

1.3 The Director of the NOAA National Weather Service (NWS) Office of Observations, Mr. Joseph Pica opened the meeting. He suggested developing a Vision for the next 10 to 15 years about the activities of the RMICs. A strategy of how to realize this Vision should then be developed. Noting the disparities of capacities of the countries in marine observations globally, he also proposed the meeting discuss how to help developing these countries' capacities and eventually assure sustainability of the marine meteorological and oceanographic observing systems in the region and around the world.

1.4 The meeting invited all participants to introduce themselves and explain the role they could play in the framework of the RMIC activities:

1.5 The representative of Brazil, Tobias Ferreira explained that his country could assist by providing training. Currently they are maintaining the PIRATA buoy array and beginning to build a network of moored buoys that could be opportunities for other countries to participate in deployments and training aboard their vessels.

1.6 The representative of China, Mr Mingqiu Bian reminded the participants about the activities of the RMIC for Asia Pacific, which has organized four workshops since its establishment in 2011, and one Pilot Project on Seawater Salinity measurements. China is willing to strengthen collaboration with existing RMICs, and to assist candidate RMICs to develop their capacities.

1.7 The representative of Canada, Ms Laura Medeiros explained that Canada will be willing to assist the RMIC/RA-IV, but that they are in a planning phase for the redesign of their buoy networks and would like to engage in further discussions about where their capabilities can add to the region.

1.8 The representative of Morocco, Mr Ahmed Cherifi reported on the status of their RMIC development. Morocco has undertaken Capacity Development activities in the framework of their existing Regional Instrument Centre (RIC). The candidate RMIC has now the capability to calibrate water temperature and pressure and substantial progress was made with regard to ISO 9001 and ISO 17025 certification. Morocco would like to further develop and strengthen the collaboration with other agencies in Morocco before submitting their letter of compliance and commitment. He anticipates formal RMIC status to be requested at the JCOMM in 2017. The representative of Morocco considers that the results of this workshop will be helpful for them to move faster on the RMIC development.

1.9 The representative of South Africa, Mr Buhle Goodman Shandu reported that his country is interested to develop an RMIC for RA-I (Africa). Cooperation with other agencies within the country is being sought, as well as with other countries in RA-I willing to develop RMICs such as Morocco, and possibly Kenya (if candidate). The existing WMO Training Centre in South Africa could also be used to support the RMIC functions. Guidance will be required in order for the Country to make progress with regard to its RMIC application. Mr Shandu was pleased with the outcome of the RMIC/RA-IV workshop, which helped to understand the RMIC mandate and requirements, and should help to go faster with regard to developing the RMIC. SAWS has a strong marine observing program now and already is contributing to the health of the marine observing system in RA-I.

1.10 The representative of the RMIC/RA-IV, Helmut Portmann reported that his centre is committed to assist countries in the region to develop their capacities by sharing expertise, and having foreign scientists to visit the National Data Buoy Center when possible. He explained that such visits also enable the scientists and technicians to learn from each other. He also stressed that the interaction between RMICs is important to build on one another's strengths and capabilities. As workshops and trainings are developed at each of the RMICs, it should be an aim to have other RMIC staff participate to share their recent developments and expertise.

1.11 The meeting, noted the different nature and scope of the two existing RMICs in China and USA, and agreed that this was acceptable and consistent with their Terms of Reference. The meeting further agreed that the expertise of the different RMICs can and should complement each other. The RMIC/China has excellent capabilities in calibration and standards of measurements while the USA is focused more on whole systems development for end to end operations of oceans observing systems and data management.

1.12 The meeting agreed that we ought to promote establishment of RMICs in all regions. Besides the existing RMICs in RA-II (China) and RA-IV (USA), the meeting noted the following candidates or potential candidates in the 6 WMO Regional Associations:

- RA-I : Morocco, South Africa, Kenya
- RA-II : India, Saudi Arabia
- RA-III : Brazil
- RA-IV : Canada
- RA-V : Indonesia
- RA-VI : None yet identified

1.13 Agenda of the meeting is provided in Annex 1.

2. Establishment of a RMIC Coordination Steering Committee (RCSC)

2.1 Terms of Reference and membership

2.1.1 The meeting agreed that there was a need to establish an RMIC Coordination Steering Committee (RCSC) with formal Terms of Reference (ToR), approved membership, and working mechanism for the committee.

2.1.2 After discussion, the meeting agreed with the RCSC ToR as detailed in Annex 3. The proposed membership and details about nomination of the committee members is also described in Annex 3. The meeting recommended to submit the ToR, proposed membership, and governance to the JCOMM Observations Coordination Group (OCG-7, 4-6 April 2016, Majorca, Spain) for its consideration in the aim to then formalize them through the fifth Session of JCOMM (Indonesia, October 2017).

Action (Secretariat): Secretariat to submit the proposed RCSC ToR to the JCOMM OCG and JCOMM-5.

2.1.3 The meeting agreed that there should in principle be no need to update the existing RMIC Terms of Reference for consistency with the proposed RMIC Coordination Steering Committee Terms of Reference.

2.2 Regular meetings

2.2.1 The meeting agreed that the RMIC Coordination Steering Committee should in principle meet on a yearly basis. Meetings could be organized on an opportunistic basis in conjunction with existing activities (RMIC workshops) or alongside JCOMM supported meetings like Data Buoy Cooperation Panel if RMIC representatives will be participating.

2.2.2 The meeting further agreed that decisions of the Committee could only be possible if all existing and candidate RMICs are represented at the meeting of the committee. If necessary, teleconferences or formal email exchanges could be organized on an *ad hoc* basis for decision making.

3. Cooperation between RMICs

3.1.0 The meeting participants discussed how the RMICs could develop cooperation between themselves, including on harmonizing capacity development activities in their areas of interest, the frequency and format of regional marine instrument workshops, and the undertaking of marine instrument inter-comparison activities.

3.1 Capacity development activities of RMICs

3.1.1 The meeting recalled that per their ToR, the RMICs should play a key role for assisting countries in their area of interest to develop their capabilities.

3.1.2 This can be realized through a number of activities including:

- Exchange of personnel
- Sharing calibration methods and observation standards
- Development of partnerships between countries in the region, especially for addressing the gaps
- Identifying areas of mutual benefit and sharing experience and lessons learned allowing fast tracking and development of best practices (e.g. on new sensor developments, and new calibration methods for new generation instruments)
- Development of informal e-learning modules- even as simple as setting up a Youtube video on a particular topic
- Outreach

Action (RMICs): The meeting invited the RMICs (China, USA) to provide a list of topics for which e-learning modules could be developed.

Action (RCSC): The meeting proposed to prioritize the list of e-learning modules, and propose a workplan for developing these modules gradually.

Action (NCOSM): The meeting invited China to consider recording all presentations to be made at the next RMIC workshop they'll organize in the view to prepare e-learning modules.

3.1.3 The meeting agreed that outreach was important in capacity development, and proposed establishing a dedicated RMIC website hosted under the JCOMM website. The website should include the following information:

- List of past training events (with links to presentations and materials)
- Calendar of forthcoming events
- Links to existing RMIC websites
- Points of contact
- Information on existing activities and projects
- Information on relevant standards and best practices
- Terms of Reference of the RMICs and of the RMIC Coordination Steering Committee, and related governance
- Reports of workshops and projects
- Reports of the RMIC Coordination Steering Committee meeting report.

Action (Secretariat): Secretariat to set up the website.

Action (RMICs): RMICs to set up their own websites.

3.1.4 The meeting agreed that sensor evaluation results could be made available through the website or published within the JCOMM Technical Reports series.

3.1.5 For the longer term, the meeting agreed that the committee should consider establishing partnership projects along the lines recommended by the Second RMIC workshop for RA-IV:

Partnership are encouraged for developed countries to assist developing countries to develop, implement, and operate marine meteorological and ocean observing systems in their areas of interest to address socio-economic benefits. Partnerships can include for example wave buoy donation, training on buoy programme implementation and operations, training on data use and quality management, training on available technologies. Training can be provided by RMICs on a regular but also ad hoc basis

Action (NDBC): As a first effort, the NDBC agreed to compile the list of gaps from the national reports presentations given at the workshop, to be shared with the participants for their further feedback and input, and to report on its findings (i.e. summary of gaps).

3.1.6 The meeting also agreed that the report on gaps could also promote the use of existing products from developed countries to be used by developing countries. This approach recognises that it may not be necessary to deploy new observing platforms in the region, but better access to existing products through enhanced telecommunication and related IT infrastructure could improve capabilities in many countries to help with forecasts that could better serve the needs of their citizen. Once the requirements and gaps are better documented, one could develop proposals for funding the necessary developments through broader international funding mechanisms like the UN GEF or the World Bank.

3.2 Marine instrument workshops

3.2.1 The meeting, recalling the different nature and scope of the two existing RMICs in China and USA, agreed that there would be benefits in cross fertilizing the programmes of the workshops organized by the respective RMICs with topics covering their full ranges of expertise. For example, US experts could be invited to make presentations on operational implementation aspects of ocean observing systems at the workshops organized by China, and Chinese experts could be invited to make presentations on calibration and certification procedures and related standards at the workshops organized by the USA.

3.2.2 The meeting agreed that the following ought to be considered when organizing workshops:

- (i) themes of the workshops taking regional interests into account;
- (ii) consideration of inter-regional needs;
- (iii) new technologies and associated calibration methods and evaluation of the instrument performances (e.g. ADCPs);
- (iv) Collaboration with the WMO Regional Training Centres (e.g. for example by adopting a train the trainers approach);
- (v) Better interaction with the Regional Associations and the Technical Conferences of Technical Commissions (TECOs), e.g. by providing presentations to be made at their sessions.

3.2.3 Canada offered to contribute to workshops in terms of training.

Action (RMICs): RMICs to consider making presentations at RAs and TECOs, or provide materials to be presented to help build more understanding of the importance, services, and capabilities of RMICs.

3.3. Instrument inter-comparisons

3.3.1 The meeting recalled that intercomparison activities are part of the mandate of the RMICs. For example, China has proposed, developed, and led in 2014 a pilot project for intercomparison of seawater measurements. The results have been published in JCOMM Technical Report No. 841.

Action (RMICs): RMICs to consider proposing new intercomparison activities (e.g. cross calibration of wave measuring devices).

4. MoUs between RMICs

4.1 The meeting agreed that the establishment of MoUs between RMICs was a national matter to be discussed on a bi-lateral basis. It did not further discuss the matter.

5. Closure

5.1 The list of action items arising from the meeting is provided in Annex 4.

5.2 The meeting closed at 12:00 (noon) on 3 March 2016.

ANNEX I

AGENDA

1. Establishment of a RMIC Coordination Steering Committee

1.1 Terms of Reference and membership

1.2 Regular meetings

2. Cooperation between RMICs

2.1 Capacity development activities of RMICs

(Examples could be: personnel exchange, sharing the calibration methods and observation standards, study on new calibration methods for new generation instruments)

2.2 Marine instrument workshops

2.3. Instrument inter-comparisons

3. MoUs between RMICs

Multilateral cooperation Co-formulate the standards or best practice for instruments utilize/maintenance/Quality Control

Marine instrument inter-comparison in laboratory and in situ such as buoys, CTD and tide gauges.

ANNEX II
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ANNEX III

PROPOSED DRAFT TERMS OF REFERENCE AND MEMBERSHIP OF THE RMIC COORDINATION STEERING COMMITTEE

Terms of Reference

The Regional Marine Instrument Centre (RMIC) Coordination Steering Committee (RCSC) shall within the scope of the RMIC Terms of Reference:

- (i) Make recommendations to assure better coordination, joint activities, and synergies between the activities of the existing RMICs (e.g. timing and frequency of workshops, e-learning, calibration service, visits of experts, intercomparisons, capacity development, pilot and regional projects);
- (ii) Propose strategy for harmonizing relevant standards and best practices worldwide and assure better traceability of marine meteorological and oceanographic observations;
- (iii) Provide guidance and promote a Vision for the RMICs in the next 10 to 15 years;
- (iv) Develop a strategy for addressing the Vision;
- (v) Assist candidates and potential candidate RMICs in setting up their capabilities;
- (vi) Propose standard programme for the exchange of technological information, including on relevant standards best practices;
- (vii) Propose sets of common standards, and document the standards that are used nationally and regionally;
- (viii) Propose strategies to foster the sharing of data and metadata;
- (ix) Propose and promote projects at the regional level to address observational gaps for marine services;
- (x) Promote outreach activities and information exchange mechanisms in the view to assist Members/Member states in the region to fully understand the role of the RMICs and the benefits they can gain from their activities.

Membership:

The membership of the RCSC shall include:

- Representatives of all RMICs
- Representatives of candidate or potential candidate RMICs (1 or 2 per region)

The RCSC shall elect its Chair on a rotating basis (1 year per term)

The Presidents of Regional Associations (RAs) or GOOS Regional Alliance (GRAs) shall be invited to nominate one or two representatives in their region. The Permanent Representatives with WMO or IOC Action Addressees of the concerned Members/Member States shall indicate their concurrence of the nominated members.

ANNEX IV**ACTION ITEMS ARISING FROM THE MEETING**

No.	Action Item	By whom	Deadline
1	to submit the proposed RCSC ToR to the JCOMM OCG and JCOMM-5.	<i>Secretariat</i>	<i>asap</i>
2	to provide a list of topics for which e-learning modules could be developed.	<i>USA, China</i>	<i>End 2016</i>
3	to prioritize the list of e-learning modules, and propose a workplan for developing these modules gradually.	<i>RCSC</i>	<i>Next RCSC meeting</i>
4	to consider recording all presentations to be made at the next RMIC workshop they'll organize in the view to prepare e-learning modules.	<i>China</i>	<i>Next RMIC/AP workshop</i>
5	to set up the website.	<i>Secretariat</i>	<i>asap</i>
6	to set up their own websites.	<i>USA, China</i>	<i>asap</i>
7	to compile the list of gaps from the national reports presentations given at the workshop, to be shared with the participants for their further feedback and input, and to report on its findings (i.e. summary of gaps).	<i>USA</i>	<i>End 2016</i>
8	to consider making presentations at RAs and TECOs, or provide materials to be presented to help build more understanding of the importance, services, and capabilities of RMICs..	<i>USA, China</i>	<i>Ongoing</i>
9	to consider proposing new intercomparison activities (e.g. cross calibration of wave measuring devices).	<i>USA, China</i>	<i>End 2016</i>