

# **RCN: OceanObsNetwork Annual Report for 2013**

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editors**



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## **1. Overview.**

The goal of the RCN OceanObsNetwork [RCN] is to foster a broad, multi-disciplinary dialogue, enabling more effective use of ocean observing systems, consistent with national and international efforts, to inform societal decisions.

To achieve this goal, the RCN has defined a series of objectives:

- Motivate commitments to sustaining ocean and marine observing systems
- Stimulate inter-disciplinary cooperation for both observations and analyses
- Facilitate open exchange of ocean data
- Promote interoperability
- Improve the flow of critical ocean observation information to key stakeholders
- Stimulate capacity building and retention in ocean and marine observations community

The RCN will also consider related issues such as integration of space-based and in-situ measurements, and innovative concepts in sensors, information systems and user interfaces. The network members may propose additional subjects.

See Appendix I for the complete RCN Terms of Reference.

The RCN consists of senior ocean scientist from the US and other countries from a number of ocean science disciplines. The RCN members are listed in Appendix II.

Detailed information on meetings and reports are provided in the Appendices.

The following paragraphs highlight the RCN activities for 2013.

## **2. Working Environment.**

The RCN operates primarily through electronic information exchange. Its members use websites, discussion forum and other tools for communication and collaboration (see details under “Web Outreach” below).

The RCN meets three times per year, two virtual meetings and an annual in-person meeting. In 2013, there was an additional virtual meeting; the virtual meetings were held in March 13, July 10 and October 14. The face-to-face meeting will be held in San Francisco on December 8, prior to the start of the AGU meeting.

The RCN Plenary reviews and comments on Working Group (WG) reports prior to their public release and forwarding to appropriate parties. Coordination of the RCN activities with existing networks is facilitated by RCN members whose organizations are participating in those networks.

### **3. Working Groups.**

The RCN is primarily a forum to address issues of enhancing ocean observation and information and the challenges of multi-disciplinary research across the ocean sciences. It is not a body chartered to undertake new scientific research. Issues engaged by the RCN are addressed by the body as a whole (Plenary) or through working groups constituted by the RCN. A working group generally focuses on one of the RCN objectives and produces a report clearly identifying the issues, approaches, impacts and recommendations for achieving the objective(s).

Working groups have a defined term of operation, generally nine months (renewable), to assess issues and then submit their recommendations for review by the Plenary. The reviewed recommendations will be provided to international, national and program level organizations for consideration and possible implementations.

Members of the RCN and other invited experts constitute working Groups. They operate under a Working Group Terms of Reference that include objectives, a schedule, an operations modality and a list of deliverables. Network members may serve on multiple working groups. In their deliberations, the working groups may invite external experts to make presentations and provide background on issues being addressed.

Three working groups were active or in initiation phase in 2013 The Open Data Working group was composed of three task teams:

- Open data formats and standards
- Data access models
- Data publication/citation.

Reports from the 3 task teams were briefed at the December Plenary of 2012. The final working group report was issued on May 30 2013 and analyzed the current situation and challenges for open data and then made recommendations for greater expansion and acceptance of the open data paradigm. The working group report is included in this 2013 report.

The Outreach and Education Working Group was started mid-August of 2012 and continued the webinars series, “the Blue Marvel - Ocean Mysteries”. Two webinars were conducted in 2012 and eight were given in 2013 (see section 7 for the schedule). The webinars are available for viewing and access is through the RCN website ([www.oceanrcn.org](http://www.oceanrcn.org)). The series is planned to continue in 2014.

The RSS-In situ Working Group started in early 2013 and is addressing how to integrate future satellite measurements with future measurements from ocean observing systems to study ocean/coastal processes. The timeframe for technology is 2020 and after. The subject addresses both observations and the coupling of data with models for improving the understanding of the complex coastal environment with its combination of ocean, rivers and weather interactions. A draft report is under review and will be issued in 2014.

A sensor working group is being formed and will operate in 2014. Two areas have been identified: improved harmonization of observations and data through standards; and approaches for the development of ubiquitous, long-lived sensors. The charter is under discussion and the objectives are still subject to change.

#### **4. Outreach and Dissemination.**

In addition to the webinars mentioned above, RCN members attended a variety of national and international meetings such as the OES Oceans 2013 Bergen and San Diego conferences, the 2013 EGU meeting, the 2013 AGU fall meeting and the Ocean Data Interoperability Platform (ODIP) program meeting in San Diego. Presentations were given, and papers released as part of the proceedings.

#### **5. Web Outreach.**

The following websites provide information regarding RCN activities:

- Oceanmysteries.net (webinar advertising and registration).
- Oceanobsnetwork.org (IODE)
- Oceanrcn.net (European Commission)
- Oceanrcn.org (RCN overview – under development)
- <https://sites.google.com/site/oceanobservingrcn/> (CSIRO)

#### **6. Plan for Next Year.**

In 2014, the RCN will continue its emphasis on the objectives enumerated above.

- The Insitu-RSS WG will finalize its draft report and issue a document;
- The education and outreach will continue the monthly Ocean Mysteries webinar to extend interest in the oceans, with an emphasis on outreach to non-specialists. The program will create a compendium of on-line education courses for ocean studies. Outreach through articles on the web will be continued through Earthzine. Where it would benefit the community, the Program will work with international organizations such as GEO as part of its outreach efforts.
- There is potential interest to expand interdisciplinary work to include social sciences. This needs to be better defined before it can be initiated, perhaps with an identified use case as a means of focusing the work. This will be raised with the Plenary during 2014.
- Further progress is anticipated on standards. In 2014, a working group on sensors could address this as part of its charter and activities.
- Coordination with other international activities will be continued. There will be a coastal zone community of practice meeting and also a Blue Planet SBA meeting at the GEO Plenary in Geneva in January 2014. Participation in the AGU Ocean Science Meeting in February and the EGU are planned for 2014. At the EGU, there will be a coordination meeting with European ocean projects.

**7. Events and activities references.**

Date 2013	Activity	Reference
January 8	Webinar Series	Don Walsh presentation
January 29	Insitu-RSS WG	Invitations to form and participate in WG
February 7	Coordination	Discussion with Medina Project on Mediterranean coastal monitoring
February 18	Webinar Series	Margaret Leinen presentation
March 12	Webinar Series	Dan Yoerger presentation
March 13	OceanObs RCN meeting	Via webex
March 28	Review of Open Data WG report	
April 2	Webinar Series	Robert Bindschadler presentation
April 11	EGU Presentation	Coordination with European projects COOPEUS, ODIP
May 21	Webinar Series	Levant Bodrossy presentation
May 30	Open Data Working Group report issued	
June 13	Sensor WG meeting with industry	Approach for sensor data harmonization
June 13	Oceans 2013 Presentation	
June 25	Webinar Series	Simon Allen presentation
July 10	OceanObs RCN meeting	
July 16	Webinar Series	Mark Serrez presentation
September 10	Webinar Series	Gwyn Griffiths presentation
September 23	Oceans Conf San Diego	Coordination - IEEE OES management
October 14	OceanObs RCN meeting	
Nov 8	Draft Insitu-RSS WG paper initiated review	
December 8	RCN Meeting – in person – at San Francisco	

## **Appendix I –**

### **I - a RCN Terms of Reference.**

#### **Background**

The oceans provide many important functions within the Earth system including strong coupling with weather and climate dynamics, providing food and energy resources, supporting trade and commerce, offering extensive stabilization for variations in our environment and being a resource for biodiversity. The need for improved coordination in ocean observations is more urgent now given the issues of climate change, sustainable food sources and increased need for energy. Ocean researchers must work across disciplines to provide policy makers with clear and understandable assessments of the state of the ocean.

New technologies and approaches are emerging to vastly improve ocean observations. Cabled observatories are an example of a paradigm shift, providing a relative abundance of power and bandwidth for observations covering scales from cm to km and times from seconds to decades. Sensors traditionally only available in laboratories can now be adapted for in-situ observations. The potential for interdisciplinary collaboration is significant. The Oceans RCN is a forum to address these issues and develop recommendations on key topics of ocean observation and information.

#### **Goal**

The goal of the RCN is to foster a broad, multi-disciplinary dialogue, enabling more effective use of ocean observing systems, consistent with national and international efforts, to inform societal decisions.

#### **Objectives**

To achieve this goal, the RCN has defined a series of objectives:

- Motivate commitments to sustaining ocean and marine observing systems
- Stimulate inter-disciplinary cooperation for both observations and analyses
- Facilitate open exchange of ocean data
- Promote interoperability
- Improve the flow of critical ocean observation information to key stakeholders
- Stimulate capacity building and retention in ocean and marine observations community

The RCN will also consider related issues such as integration of space-based and in-situ measurements, and innovative concepts in sensors, information systems and user interfaces. Additional subjects may be proposed by the network members.

In achieving these objectives, the RCN will motivate new research outcomes, provide wider visibility for the value and impacts of ocean observations and encourage a new generation of scientists to focus on the oceans and their challenges.

### **Operations and Working Methods**

The RCN is primarily a forum to address issues of enhancing ocean observation and information. It is not a body chartered to undertake new scientific research. Issues engaged by the RCN will be addressed by the body as a whole (Plenary) or through working groups (WG) constituted by the RCN. A working group will generally focus on one of the objectives cited above and will produce a report clearly identifying the issues, approaches, impacts and recommendations for achieving the objective(s). Working groups will have a defined term of operation, generally six months (renewable), to assess issues and then submit their recommendations for review by the Plenary. The reviewed recommendations will be provided to international, national and program level organizations for consideration and possible implementations. Working Groups will be constituted by members of the network and other invited experts. They will create Terms of Reference including objectives, a schedule, an operations modality and a list of deliverables. Network members may serve on multiple working groups. In their deliberations, the working groups may invite external experts to make presentations and provide background on issues being addressed.

The RCN working environment will be as follows:

1. The RCN will operate primarily through electronic information exchange. The RCN will have websites, discussion forum and other tools for communication and collaboration.
2. The RCN will meet three times per year, two virtual meetings and an annual in-person meeting.
3. The RCN Plenary will review and comment on the WG reports prior to their forwarding to appropriate parties.
4. The RCN will work closely with existing coordination bodies and mechanisms for ocean and marine observations. Coordination with existing networks will be facilitated by members of the Steering Committee and senior network members whose organizations are participating in existing networks such as those under UNESCO IOC and GEO.

### **Outputs**

The RCN will develop and deliver reports covering subjects that support achieving the objectives above. The reports will identify issues, approaches and recommendations for achieving the objectives.

### **Participation**

The RCN will be a long-term international forum on observatories, data, modeling and information for scientists and users of ocean information. Broad participation of physical and biological/biogeochemical oceanographers in the RCN is essential. Inclusion of nonscientist end users and decision makers in the RCN will be strongly encouraged.

The RCN is initially constituted by Steering Committee and senior network members. A list of current participants will be maintained on the RCN electronic repository (e.g.



the website or wiki). Additional network membership is expected to include scientists from current observing systems and also data and information users from government, industry and education and research institutions. These will initially be solicited through contacts by the Steering Committee and the senior network members.

## **I - b RCN Open Data Working Group Terms of Reference v3 June 6 2012**

### Introduction

The oceans provide many important functions within the Earth system including strong coupling with weather and climate dynamics, providing food and energy resources, supporting trade and commerce, offering extensive stabilization for variations in our environment and being a resource for biodiversity. The need for improved coordination in ocean observations is more urgent now given the issues of climate change, sustainable food sources, increased need for energy and the occurrence of disasters (e.g. tsunamis and oil spills). Ocean researchers must work across disciplines to provide policy makers and first responders with clear and understandable assessments of the state of the ocean.

A key element for advancing ocean research and applications is improving access to data. Yet an open data philosophy has not been widespread during the last decades. Various factors have restricted or impacted open data practices. These range from sequestration of data, the use of non-standard conventions for data and metadata formats and national and regional policies.

There has been a significant trend toward free and open access to data in the last few years. At the GEO Summit in Cape Town, South Africa 2007, the US announced that Landsat data would be available at no charge. The Chinese and Brazilians offered CBERS (satellite) data to Africa at no cost. The GMES Sentinel system subsequently offered similar opportunities. Float and HF radar (current) data from the US (NDBC), JCOMM and OceanSites offer web-based access. However, this global trend is less robust when the observations occur in national waters. Restrictions on data are at the discretion of the national government and vary significantly from country to country.

While there are many technical issues for open access (see next sections), the policy and cultural issues, even within the ocean/academic community will dominate discussions. For example, SCOR and IODE are looking at the challenges of career advancement for publishing quality data without interpretive analyses. Historically, data are sequestered, sometime for years, while preparing analyses and publication. Such items will be points of dialogue for the RCN in conjunction with other organizations. Other areas of intellectual property rights and national security are less tractable for the science community although positive examples do exist. Policy aspects of the free and open access issue have been taken up by GEO at the

ministerial level. The RCN contribution will be to address issues within the context of globalizing ocean observations and input to discussions that take place through GEO, IOC, WMO, etc. The RCN will thus encourage the formation of a team to address these areas with a focus on observatories and coastal observations.

#### Focus Areas

The key question to be addressed is how we can maximize open access to data (in volume as well as timeliness) by a wide variety of users and with the most advanced and appropriate technologies, while respecting intellectual property rights and data policies. The answers should respect the large variation in technical capabilities existing across the globe.

So the main topics to be discussed by the group could be:

- open exchange of data and intellectual property
- open exchange and institutional/national/regional/international data policies
- open exchange and science publishing
- open exchange and real-time data access
- open exchange and key technologies
- data and metadata standards

#### Terms of reference for the Open Data Working Group

New technologies and approaches are emerging to vastly improve ocean observations. Cabled observatories are an example of a paradigm shift, providing a relative abundance of power and bandwidth for observations covering scales from mm to km and times from microseconds to decades while at the same time reducing the life cycles costs for ocean observations. Sensors traditionally only available in laboratories can now be adapted for in-situ observations. The potential for interdisciplinary collaboration is significant. To leverage this, an ocean observation Research Coordination Network (RCN:OceanObsNetwork) is proposed.

Observations collected need to be managed and made available to the research community. A balance needs to be found between the interests of the individuals or groups responsible for the collection of the data (and who may wish to use these observations for intellectual work that will contribute to science as well as to his/her career) and those of the global ocean observation and science community desiring broad access to data.

The working group dealing with "Facilitating Open Exchange of Data and Information" will need to address the above-mentioned balance by considering the following elements:

1. Data and Information formats and standards
2. Data access models (incl IPR, business models for open data, data policies, real-time assured access)
3. Data publishing, data citation

For each of the three elements, a task team was created. Each task team was asked

to start their work with a literature search on existing practices using this as a part of an assessment of common practices, issues and gaps. In order to facilitate their work an online work space was created for each task team. (accessible through <http://iode.grouphub.com>). These sites are accessible only by members of the task teams.

Potential steps for each of the task teams could include:

1. Define the meaning of open data from a science and policy perspective;
2. Identify key factors impacting data exchange, data use and data sustainability;
3. Identify trends in data technology, use and policy, understanding their drivers - assess the impact of these trends on a broad, open data policy
4. Address the business models for sustainability of open data
5. With such factors in mind, recommend options on key issues to the RCN for consideration by scientific organizations and policy makers.

The RCN Open Data Working Group (OD WG) environment will be as follows:

1. The RCN WG will operate primarily through electronic information exchange. The WG will have websites, discussion fora and other tools for communication and collaboration.
2. An important element in the work of the groups will be not to re-invent the wheel, but rather identify and possibly compare ongoing initiatives that deal with the selected issues. These will be researched by members of the group and then documented in this web site. Group members can be given permissions to submit content to the web site.
3. Task Teams will establish their own steps and schedules to address subjects within their purview consistent with reporting the results of their investigations and recommendations to the Open Data Working Group at the end of September 2012.
4. The Open Data Working Group will review and comment on the Task Team reports. The Task Teams will address these comments and update their findings and options for a final report to the Working Group, in mid October 2012, which will forward the report to the RCN Plenary.
5. The RCN Plenary will review and comment on the WG reports prior to their forwarding to appropriate parties.

#### Outputs

The RCN Open Data will develop and deliver reports covering subjects that support achieving the objectives above. The reports will identify issues, approaches and recommendations for achieving the objectives.

**Appendix II – OceanObsNetwork Members/Volunteers.**

First Name	Last Name	Organization	E-mail address
Simon	Allen	CSIRO	simon.allen@csiro.au
Pierre	Bahurel	MyOcean	Pierre.Bahurel@mercator-ocean.fr
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Paul	DiGiacomo	NOAA	Paul.digiacom@noaa.gov
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Albert	Fischer	GOOS	a.fischer@unesco.org
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James	Gallagher	Opendap	jgallagher@opendap.org
Eileen	Hofmann	ODU	hofmann@ccpo.odu.edu
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Milton	Kampel	INPE	Milton@dsr.inpe.br
Takeshi	Kawano	JAMSTEC	kawanot@jamstec.go.jp
Fred	Maltz	IEEE	f.maltz@ieee.org
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Jim	Yoder	WHOI	jyoder@whoi.edu

### **Appendix III – Meeting Minutes.**

#### **III - a Agenda for the RCN March 13 meeting**

---Presentation by Paolo Favali, Lead of the [MSO: European multidisciplinary seafloor observatory](#).

Paolo will describe the objectives and status of the observatory.

Plans for 2013:

---Jim Yoder will update the status of the remote sensing-insitu working group formation.

---Eileen Hofmann will describe initiation of a working group on multi-disciplinary collaboration. This arose from a discussion at the December RCN meeting in SF and looks to engage social and economic sciences with oceanographers in use cases. This will be the first discussion on the topic.

---Helen Glaves will discuss the ODIP project, the Research Data Alliance and the need for improved coordination among the ocean data repositories.

Jay Pearlman requested review of the open data report and the ongoing lecture series.

#### **III - b Minutes of RCN Meeting July 10 2013**

10:00 EDT Attending Paul Bunje, Paul Digiacomio, James Gallagher, Helen Glaves, Bob Houtman, Mike McCann, Kate Moran, John Orcutt, Jay Pearlman, Christoph Waldmann, Sandy Williams, Dawn Wright, Jim Yoder,  
10:05 Agenda: Introductions, X-Prize update – Paul Bunje, RCN activities / Working groups, Next Seminar – July 16, Meetings on the horizon  
10:10 Paul Bunje presented a report on the X-Prize. September 9, 2013 is the launch of the X-Prize when teams will be addressed. The total prize increased from \$1.5M to \$2M and the number of sensors increased to two; the two types will both be pH sensors with a goal of being accurate & robust at depth and cold to allow acidification scientists to track pH. Also a goal is to have sensors that are inexpensive for anyone to use. Testing will begin in 2014 and will include laboratory, near shore (Puget Sound) and ship testing (to depths of 2000m). Development is to incentivize the community for science and oceanography. The general public needs to appreciate the acidification issue and the purpose of the X-Prize is to bring them aboard. Paul asked our RCN community to become actively involved Teams may engage scientists in the assessments. NOAA PMEL and SIO will be involved in the assessments.

Jay asked about extending the contest from 1 sensor going to 2 sensors. Paul said the customers have different needs and this encourages innovation. Who are the technical advisors for the competition? Andrew Dickson is advising on “QA procedures and Competitors Marketplace”. There is strong encouragement that teams share information and maybe work together. Paul described X-Medals, which are non-monetary awards for special features. They provide opportunities for testing and deployments as a way to get exposure for sensor developments. They are recognition awards.

10:23 RCN Working Groups: Jay’s Bergen talk was then given as a framework for the working group reports addressing both the RCN Motivation; New Technologies and the RCN Objectives; the following are the working group reports given at the meeting.

**John Orcutt** noted that the **open data working group** report has been completed and issued in May. A shorter peer-reviewed paper will be submitted for publication highlighting recommendations of the Open Data Report. The outline has been done by James Gallagher and additional authors are John Orcutt and Pauline Simpson. The Open Data Report will be on the Website.

**Christoph Waldman** reported about his work with Eric Delory on the **sensor working group**. The initial work will focus on standards and interoperability of sensor outputs. This has been a topic of long-term interest and the working group will leverage earlier work such as PUCK at MBARI. The initial focus is to get manufacturers inputs and perspectives. Christoph took a survey of manufacturers at the Oceans Conference 2013 in June in Bergen, Norway and then held a meeting during the conference with sensor providers. The manufacturers generally are focused on customer’s needs and requirements and tend not to address standards unless requested by customers. Christoph said the next step is to approach offshore oil companies at the Off Shore Technology Conference in Houston and the manufacturers that support them. Standards. There is also a near term opportunity for a survey at the San Diego Oceans Conference in September. One idea is the creation of an Industry Forum. This will be discussed with vendors at the meeting.

**Helen Glaves** of the British Geological Survey spoke about the **Marine Data Management** Special Interest Group for the Research Data Alliance (RDA) (<https://rd-alliance.org/node>) and her Open Data and Interoperability Platform (<http://www.odip.org>). Many different organizations are approaching the issues of data interoperability and harmonization and, as a result, there is overlap and a significant redundancy. There are also gaps – areas that are not covered. We are at a time when a common framework is needed. RDA has a marine data management interest group in early stages of development. Certain of the RDA work will be relevant to the marine environment, like preservation of data for the long term. It is also expected that the special interest group will be a forum for discussion of standards, paralleling some of the work of the RCN. A first step is to identify key issues. A user survey is being compiled in collaboration with other groups to determine priorities for regional interests; the survey has to be high level and short. When the survey is refined it will be sent to us. RDA forum registration is encouraged. The RCN people need to sign up. Projects will be survey including COOPEUS and others. The RDA focus group will broaden the survey.

Dawn asked if Helen had reviewed the extensive Earth Cube survey. Dawn found out about the survey from an AGU presentation but has been unable to download it. Can it be gotten? Answer: It will be put on the RCN Website.

**Eileen Hoffman**, as reported by Jay Pearlman, is putting together an interdisciplinary team for that **working group on Stimulating Interdisciplinary Cooperation**. She is on vacation and will report on progress in September.

**Jim Yoder** said that for the **Insitu-RS Interface Working Group**, an email exchange with Erik Lindstrom suggested that rather than rehash what we already know, it would be good to identify issues for the next generation systems. A decision was made, for a study topic, to address coastal waters with satellite measurements in the 2020+ timeframe. The new satellites will not be online until about 2020: SWOT (Surface Water Ocean Topography) (<http://decadal.gsfc.nasa.gov/SWOT.html>),

PACE (Pre-Aerosol, Clouds, and ocean Ecosystem) (<http://decadal.gsfc.nasa.gov/pace.html>), and GEO-CAPE (GEOstationary Coastal and Air Pollution Events) (<http://geo-cape.larc.nasa.gov>). The driver for observations on the coastal shelf is water events (water flows and storms, for example), both moving offshore and along shore. The traditional methods for these measurements are moorings and cruises. These tend to do point or linear measurements and do not provide the synoptic view that more advanced systems such as satellite or large numbers of mobile buoys (e.g. a coastal ARGO) could provide. One question for the Working Group is what is needed on the in situ side to go with the satellite observations. Fixed platforms are now being supplemented with Gliders and ships of opportunity. When things wash ashore, they are picked up and put back in service. The draft report of this working group is still several weeks away. It will address sensors but more what can be accomplished with sensors. Types of data will be covered – models, imagery, time series. There will be no new developments but highlighting existing ones in the report. It will be forward looking, not retrospective. The working group consists of Stewart Bernard, Dave Siegel, Paul DiGiacomo, Frank Muller-Karger, Ammlo Mahadevan, Heidi Sosik, Heidi Dierssen, Curt Davis, and Eric Delory

The next webinar in the **Seminar series** organized by **Simon Allen and Sandy Williams** will be on July 16 at 7:00 PDT (14:00 UTC) by Mark Serrez. He will discuss Impacts of Arctic Shrinking Ice. Other RCN events coming up are the Face to Face meeting the Sunday before AGU in San Francisco December 8 2013. The AGU meeting in February will be in Hawaii where there will be a session on RCN. The Call for Papers is out now so please sign up. There will be an ODIP meeting December 3-5, 2013 the week before AGU in San Francisco organized by Helen Glaves. There is an RDA meeting 16-18 September in Washington.

Other business. Kate Moran said that the Ocean Canada 5 Year Strategic Plan has been released on Neptune and Venus. There is an effort to figure out how observatories can work across the Pacific. It will be discussed in April 2014 at The PICES Open Science Meeting in Hawaii (<http://www.pices.int/meetings/event-description-details/FUTURE%20OSM%20announcement.pdf>). Jay pointed out that a similar initiative for observatories across the Atlantic was announced in Galway, Ireland in May. Kate will give a presentation on the strategic plan at the next RCN telecon in September.



11:00 Meeting adjourned.

### **III - c RCN Meeting October 14 2013**

The RCN meeting convened at 7AM PDT via webex and telephone. Attending the meeting were:

Simon Allen, Laura Beranzoli, Paolo Favali, Helen Glaves, Kate Moran, John Orcutt, Jay Pearlman, Hans-Peter Plag, Iain Shepherd, Heidi Sosik, Herman Stehouwer, Martin Taylor, Jim Yoder

#### Introductions

Jay Pearlman reviewed the agenda for the meeting and asked for any other business. Simon Allen asked to speak about his new website for the RCN.

Presentation materials for the meeting will be available on the RCN web site in the folder "Meetings"/"October 14 2013".

#### EU perspectives - Iain Shepherd

Iain Shepherd gave an overview of the 2020 initiatives of the European Union. His initial discussion was on "Marine Knowledge 2020" The program is focused on access to marine data and data products. It includes portals for a wide range of marine data such as bathymetry and habitats for European basins (Baltic, Black Sea, Mediterranean, etc). The ongoing initiative is in three phases. The first phase is complete and the second phase participants have been selected. The third phase is being initiated with a community survey to understand needs in marine applications. A summary of the survey was provided and is part of the presentation material. A new focus is on more involvement of the private sector and on innovation, particularly the development of novel sensors. The research projects under "Horizon 2020" are under discussion and are envisioned to have five elements: (1) extracting value from the sea; (2) transatlantic cooperation; (3) new sensors; (4) ocean acidification; and (5) observation of the Atlantic Ocean.

#### Canada's Ocean observation strategy - Kate Moran

Kate Moran presented an overview of the Oceans Network Canada operations including Neptune, Venus (both cable observatories near Vancouver Island) and mini observatories in the North such as Cambridge Bay. Neptune is an open ocean and coastal array in the Pacific; Venus is a dense array in the heavily trafficked area on the eastern side of Vancouver Island. Venus is being expanded with the addition of coastal radars and sensors on ships of opportunity. Information from these

systems is available in “Oceans 2.0” archive and is available to the public.

Looking to the future, Canada will be focusing on ocean-atmosphere exchange for better understanding of dynamics and climate change. Two other areas are monitoring of tectonic activities and discovering/observing undersea methane. Canada has started an innovation center “Smart Ocean Systems” to engage the research and the private sectors. The goal is to transition technology from research to operations in providing new classes of sensors. Kate mentioned pH sensors and advances in hydrophones. For analyses, a focus on “ocean analytics” is addressing ground shaking with University of British Columbia and IBM Canada, Tsunami prediction and AIIM, expanding information from the ship identification system.

A question was asked on the collaboration of ONC with OOI. Kate indicated that there is a close relation with the University of Washington. In addition, Canada is advising Brazil and Korea on ocean arrays and motivating exchange across the Pacific on observing systems. For the last, a meeting is being scheduled in six months.

#### RDA meeting in Washington DC - Herman Stehouwer and Helen Glaves

Herman provided background on the Research Data Alliance with an emphasis on community building and a means for addressing issues. Interest groups and working groups form the core avenues for participation. The RDA meeting in Washington drew about 400 people, 50% from the US and a broad geographic distribution for the rest. There is an interest group on Marine data harmonization, which met at Washington. Helen Glaves discussed the objectives for this group of improved data coordination and invited members of the RCN to join. A question was asked if there was coordination between RDA and GEO. Herman said that there are activities in that direction.

#### The GEO Coastal Zone Community of Practice - Hans-Peter Plag

Hans-Peter Plag discussed the activities of the GEO Coastal Zone community of practice with a shift in focus from user workshops to creating and motivating observation capabilities for coral reefs, mangrove swamps and other coastal environments.

#### Ocean information for the broad community – Simon Allen

Simon Allen introduced a new web page and effort to engage the broader community to understand the ocean environment – temperature, ocean color, etc. It is based on visualization in Google Earth showing patterns in the ocean of physical and biological parameters. The link is

<https://sites.google.com/site/oceanobservingrcn/>. It would be good if others would like to make contributions.

December 8 Face-to-Face meeting.

Jay reminded participants of the December 8 face-to-face meeting of the RCN in San Francisco. He said an agenda would be available in the next few weeks.

Any other business – None

The meeting was adjourned at 8 AM PDT.

#### **IV Product/Reports**

##### **Open Data Working Group Report**

See document at

[https://drive.google.com/?authuser=0#folders/0BwH\\_5Stec3aMGg0YWVrRFdTd0k](https://drive.google.com/?authuser=0#folders/0BwH_5Stec3aMGg0YWVrRFdTd0k)

## Appendix V Outreach Material

### RCN Flyer



**RCN: OceanObsNetwork**

The OCEAN Research Coordination Network (RCN) fosters a broad, multi-disciplinary dialogue for more effective use of ocean observing systems and data/modeling infrastructure to inform societal decisions.

**Ocean Mysteries**  
A web seminar series

 Rita Colwell

 Tony Haymet

 Don Walsh

[www.oceanmysteries.net](http://www.oceanmysteries.net)

**Working Groups**

- Open Data
- Outreach/education
- In situ-RS interfaces
- Sustainability
- Interdisciplinary collaboration



Observatories and Observations



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For the PowerPoint version of this flyer, go to  
<https://docs.google.com/open?id=0B6ovZrDPKFGuOUZ6azVmT2VHaTA>