IOOS Advisory Committee Meeting
Consortium for Ocean Leadership (COL)
Washington, D. C
April 15, 2014

MINUTES

All meeting documents and presentations can be found on the IOOS Advisory Committee (IOOS AC)
website: www.ioos.noaa.gov/advisorycommittee

Committee Attendees: R. Spinrad (Chair)**,** T. Gulbransen (Vice Chair), C. Beegle-Krause (phone),
T. Brown, A. Jochens (phone), V. Klump (phone), L. Leonard, T. MacDonald, J. Manley, E. Pidgeon, L.
Ragster, L. Lillycrop (Ex Officio), Brian Melzian (Ex Officio)

Absent: C. Ostrander**,** E. Terrill, D. Legler (Ex Officio)

Public: Allison Allen (National Oceanic and Atmospheric Administration (NOAA))**,** Holly Bamford
(NOAA)**,** Hannah Dean (COL)**,** Carl Gouldman (NOAA**),** Peter Hill (Woods Hole Oceanographic
Institution), Bob Houtman (Interagency Ocean Observation Committee (IOOC)), Victoria Kromer (IOOS
AC staff)**,** Eric Lindstrom (IOOC)**,** Jerry Miller (Science for Decisions)**,** Josie Quintrell (IOOS Association)**,**
Nick Rome (COL)**,** Jessica Snowden (IOOS AC Alternate Designated Federal Official (DFO)), Sarah Wilkins
(NOAA), Zdenka Willis (IOOS AC DFO), Josh Young (Unidata)

TUESDAY, APRIL 15, 2014
Welcome by Chair
The Chair began the meeting by setting expectations for both days. The agenda is half informational,
half more discussion in nature. Chair noted that this is a good time to look back and see where the AC
has come in almost 2 years since it was established. The AC has delivered one formal recommendation
(new vision for IOOS), and will continue working on two themes: executing the new vision, and
developing elements to consider for the IOOS business model.

Holly Bamford Remarks
Timely, reliable, accurate and state of the art work in NOAA is important, and the IOOS AC
recommendations support this. Dr. Sullivan has been looking at other NOAA Federal Advisory
Committees (FACs), such as the Science Advisory Board, and considering the types of
recommendations received from them. NOAA is looking for FACs to be more strategic and forward
thinking, and feels the AC is already on this track. H. Bamford explained the three National Ocean
Service (NOS) priorities (coastal intelligence, place based management, and community resilience).
Coastal intelligence means using coastal data for best decision making, and aligns with Dr. Sullivan's
NOAA priorities of resilient and healthy coasts and of environmental intelligence. H. Bamford noted

that this is the best aligned NOS, NOAA, and Department of Commerce have ever been. H. Bamford described the Coastal Roundtable, an effort made up of programs within NOS, the IOOS Association, National Estuarine Research Reserve Association, Sea Grant, National Marine Sanctuary Foundation, and the Coastal States Organization. The roundtable was formed to develop more consistent bundling of coastal ocean messaging to Congress. Regarding the AC's vision statement for IOOS, NOAA and NOS fully support it, and are pleased to see it is outcome focused. However, H. Bamford encouraged the AC to rethink how the vision is messaged as well as how the AC communicates about IOOS. For example, consider IOOS as an enabler, versus attempting to be a doer, ie help "make possible" the final products to be created by others. When H. Bamford meets with Louis Uccellini (NOAA Assistant Administrator for Weather Services), they say that 60% of the National Weather Service (NWS) data is from NOS, and that 80% of that NOS data is IOOS data. NWS can't do their forecasts without IOOS data, a message which has been embraced by NWS. While there are cases where IOOS does provide a final product, perhaps it's best to focus where appropriate on the "enabling" message. H. Bamford also reinforced the opportunity to consider new models for public-private partnerships, noting that one example within NOAA is the Physical Oceanographic Real-Time System (PORTS). PORTS provides real-time information by partnering with private entities to aid pilots coming into large ports around the country. The issue now is that PORTS is used by more than just the private entities. Should the PORTS public-private partnership continue, now that the data is available to the public? It's a lessons learned for the AC to consider as they discuss business model elements.

IOOC Co-Chair Remarks
The Co-Chairs noted that it's been almost four years since the IOOC came into existence. E. Lindstrom shared that "ocean observing is horribly spread out across federal agencies, and there is a sense that we are always struggling to put humpty dumpty back together again." Working together allows us to accomplish what we need to do. The IOOC works to coordinate and cooperate across agencies to make a better IOOS. The Co-Chairs noted there have been accomplishments over the last four years, such as the IOOS independent cost estimate, development of certification standards, IOOS Summit, response to the National Ocean Policy (NOP) through the NOP Implementation Plan, Data Management and Communications (DMAC) Steering Team progress, and creation of task teams within the IOOC to work on specific issues. The Co-Chairs are very interested in the vision discussion.

HIGHLIGHTS from Discussion: Implementing the New Vision for IOOS
- While some agencies, such as the National Science Foundation, can see themselves reflected in the new vision, the National Aeronautics and Space Administration for example, does not, noting that the vision lacks a long term research perspective.
- NOAA can and will promote the new vision, and feels it's the direction the agency is already taking.
- There was significant discussion around the concept of IOOS as an enabler, first put forward by H. Bamford, and what role the FAC can/should serve to promote the enabler message

- H. Bamford described the Coastal Roundtable, an effort to more consistently message coastal programs to Congress, and noted that the IOOS AC can help by also reinforcing the same coordinated messaging processes, including the message of IOOS as an enabler. The AC agreed this is an important role they can serve.
- Both the AC and speakers agreed that building trust between federal agencies is key for long term success, particularly with respect to coordination of budgets.
- Chair noted that in addition to long-term engagement being key to IOOS' enabling role, we also need to identify parties of interest who are not yet engaged, such as ocean investors who attended Oceanology International 2013 and the Schmidt Foundation which invests millions in ocean exploration. How can we develop a standing community engagement mechanism?
- Vice-chair noted that, concomitant with broadened engagements, AC may want to consider recommendations that enhance leadership and or co-leadership of these new IOOS engagements/initiatives. B. Houtman noted that leadership may warrant attention because issues have occurred due to shifts in leadership. E. Pidgeon emphasized the need to lead or enable groups to "date" around topics without inadvertently creating bottlenecks.
- E. Lindstrom raised the issue of tension between research and operations ends of the observing spectrum, noting that for the Tropical Atmosphere Ocean project, transitioning from research to operations was not successful. C. Beegle-Krause and J. Manley recognized the inherent tension between inquiry-based efforts and efforts to serve particular social goods.
- Both H. Bamford and E. Lindstrom noted the utility of messaging IOOS around a specific societal problem which needs solving. People may not carry the "IOOS banner," but they will carry the "societal problem" banner. L. Lillycrop noted the need to also highlight where IOOS helps fulfill agency missions.
- H. Bamford gave the example of the reinsurance industry. Without additional money, we could provide them more data which they need. Once they come to rely on certain information, they become strong advocates for IOOS to Congress, and new relationships emerge.

U.S. IOOS DMAC – D. Snowden (slides)
D. Snowden provided an overview of DMAC, focusing on three areas: technological solutions, implementation across the enterprise, and building community. His slides showed the DMAC layered architecture, including next steps for DMAC development and evolution. In short, those on the AC familiar with the history of IOOS DMAC felt we have made significant progress, and those new to the details of DMAC were impressed with the work and coordination necessary to implement this capability for the nation. The AC formally congratulates IOOS DMAC on the great work that has been done to design, broadly discuss, and implement DMAC, especially given the nature and extent of consensus that DMAC needed to achieve amongst grantees and voluntary participants who have invested in this common approach. The Chair noted that this presentation brought an eye-opening awareness now of progress made in IOOS DMAC. The Chair thanked D. Snowden for packaging the DMAC material appropriately for this committee.

- D. Snowden noted that the AC can assist DMAC efforts by communicating to all levels of federal agency program management the need for DMAC, so that there is stronger support from each agency's leadership.
- D. Snowden also noted that increased private sector engagement at the intermediate product level is one DMAC goal which the AC may able be to assist.
- The DMAC system design is flexible, so that while software implementations will change over time, the underlying models will persist, and hopefully open data publishing will continue to grow.
- With the addition of another layer in the architecture, DMAC could support transactional exchanges.
- While there is currently not written agreement on intellectual property (IP) for data rights, we may need to consider creative commons licenses for data in the future.
- D. Snowden distinguished IOOS DMAC from data.gov (and similar) efforts, stating that data.gov is a discovery service, not a data publishing service. Data.gov and the like should be directing users back to publishing services like IOOS DMAC.

Intellectual Property Discussion – T. Gulbransen (slides)

R. Spinrad introduced the topic stating that people are beginning to recognize the importance of IP, including potential dollar value. In order to continue the AC's forward-looking and strategic thinking, we want to consider how to address IP as a committee and what recommendations we might want to put forward.   T. Gulbransen used slides to provide context with respect to what types of IP, noting that while IOOS at the program level may not have a signatory role to play in IP, IOOS principle investigators and RAs may. The AC discussed in depth what if any IP IOOS has, and what should be done to address this area for the enterprise. Some outcomes of this discussion factor in to the following day's conversation on business model elements and guiding principles.

HIGHLIGHTS from Discussion: **IP**

- IP = Different types of property rights that are protected by U.S. laws or granted by the government to protect new ideas or works. IP can be documented as a utility patent, trade secret, copyright or trademark.
- US Patent Act, Section 1: statutory, novel, inventive/non-obvious, and industrially applicable.
- A. Jochens provided one example of the oil industry sharing IP with the federal government (the Bureau of Ocean Energy Management) through a notice to lessees.
- AC agreed the issue of IP should remain separate from developing recommendations on sustainable financing, as well as separate from this issue of data access.
- AC noted that when making recommendations to NOAA and IOOC, there will be varying levels of understanding and awareness of the issue. For example, the IOOC has never discussed IP as a full committee.

- Top 9 principles of effective IP promotion, as drafted by Amer. Assoc. Med. Colleges & Assoc. Univ. Tech. Mgrs, were discussed in light of IOOC, IOOS, and AC potential actions.
- AC agreed that IP is a relevant issue for consideration as IOOS partners (regional associations) are already using IOOS data to create public products.
- The AC will develop guiding principles to recommend NOAA and IOOC handling of IOOS IP, including metrics for success.

Presentation from IOOS Association – J. Quintrell (slides)
As part of the standing agenda for IOOS AC meetings, the IOOS Association is invited to speak on a topic of their choosing. J. Quintrell provided a brief history of the regional associations, as well as some of their successes and lessons learned. While IOOS has been successful in working among federal and non-federal partners on multiple topics, recent studies identify the need for IOOS to grow. Diversifying funding is a large part of each RA's strategic plans, and they would appreciate advice from the AC on this topic. For example, operation and maintenance is particularly challenging to fund on a sustainable basis. The RAs would also welcome input from the AC on the IOOS business model. J. Quintrell noted that the RAs are an incubator for ideas, but it's unclear at what point the RA work encroaches on private industry. The presentation also provided suggestions for support from the AC, such as building high level interagency leadership support at the National Ocean Council Deputies level (also a U.S. IOOS Summit recommendation).

HIGHLIGHTS from Discussion: IOOS Association
- The issue of a permitting agencies' ability to include support for increased regional observations was raised again (New England liquid natural gas industry provided start-up funding to support a buoy). In summary, these types of successes happen at the agency level and within regional permitting discussions; this isn't something that has to be worked through Congress. The AC should consider advising along these lines.

Public Comment
None.

Chair adjourned the meeting at 5:00pm EDT.

IOOS Advisory Committee Meeting
Consortium for Ocean Leadership (COL)
Washington, D. C
April 16, 2014

MINUTES

Committee Attendees: R. Spinrad (Chair)**,** T. Gulbransen (Vice Chair), C. Beegle-Krause (phone), T. Brown, A. Jochens (phone), L. Leonard, T. MacDonald, J. Manley, E. Pidgeon, L. Ragster, Brian Melzian (Ex Officio)

Absent: V. Klump, C. Ostrander**,** E. Terrill, D. Legler (Ex Officio), L. Lillycrop (Ex Officio)

Public: Hannah Dean (COL)**,** Carl Gouldman (NOAA**)**, Victoria Kromer (IOOS AC staff), Jerry Miller (Science for Decisions)**,** Josie Quintrell (IOOS Association)**,** Ralph Rayner (IOOS Industry Liaison), Nick Rome (COL)**,** Jessica Snowden (IOOS AC Alternate DFO), Zdenka Willis (IOOS AC DFO)

Welcome and Expectations for the Day
R. Spinrad ceded his time to Z. Willis for a Coastal Roundtable overview.

Coastal Roundtable Overview – Z. Willis (slides)
The Rountable's focus is to create a meaningful, coordinated message around existing projects. Each member of the group has its own stakeholder, and plays a meaningful role in support of our oceans and coasts. The goal is to make our coastal messaging to Congress more consistent and seamless. To this end, H. Bamford meets monthly with the Roundtable, and to date the group has produced a messaging document used with positive feedback from Congressional staff in March 2014.

HIGHLIGHTS from Discussion: Coastal Roundtable
- AC discussed the benefits of expanding the Roundtable to be more encompassing of coastal groups beyond NOS, such as to the IOOC.
- AC and Z. Willis noted that while the group is named Coastal Roundtable, all acknowledge that IOOS has an open ocean, global component as well, which we don't want to be lost in the messaging.
- The Roundtable is one more "tool in the toolbox" for ways to message IOOS.
- R. Spinrad noted that there could be value in increased professional society engagement.

Featured Speaker: Business/Venture Models – R. Rayner (slides)
- R. Rayner acts as the IOOS Industry Liaison, and has years of professional ocean industry experience. His presentation highlighted differences in national data rights policies between the U.S. and the European Union, noting that the U.S. has developed much a much stronger and

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more diverse secondary commercial use market (such as meteorology). He spent time discussing public-private partnerships (PPPs), and the pros and cons related to them. R. Rayner referenced the upcoming results from the U.S. IOOS industry study as helping the enterprise understand the value end users derive from IOOS data, which to date has been a challenge. Looking toward the future, ocean observations will be key to a breakthrough in seasonal forecasting. IOOS should remain poised to support and enable developments in emerging markets such as shipping (fuel efficiency), aquaculture, ocean mining, and public health. R. Rayner suggested we not refer to this level of planning as a Business Model; instead perhaps refer to it as operating concepts.

HIGHLIGHTS from Discussion: **Business/Venture Models**
- Significant discussion focused on the value proposition of IOOS. R. Spinrad noted that for significant return on investment (ROI), there needs to be a stronger, more disciplined story to tell to investors.
- At the core of the debate about how to portray the value of IOOS to those who fund it, there are fundamental choices. One would be to attempt to recruit funds or fees from "users" based on particular value-added data products and services consumed. A second choice would be to justify top-down funding based on the broader, cumulative impacts of IOOS activities quantified according to wealth creation and employment. The toll-free ecosystem of IOOS which enable capitalism was particularly appealing to stakeholders who do not have sufficient funds to pay. Dialog did not resolve the feasibility or timeliness of each approach.
- General discussion of marketing, promotion and sales regarding IOOS services reinforced the diverse perspectives evaluating these potential recommendations. Additional clarity and definitions would be required for AC to develop guidance to IOOC and NOAA.
- The RAs might be a place where progress could be made growing the intermediate products sector.
- The ultimate goal would be to communicate convincing message that IOOS serves the public good, and creates jobs and wealth, ultimately resulting in changes to appropriations.

Business Model Discussion – R. Spinrad
R. Spinrad led a discussion which built from work done during the September 2013 IOOS AC meeting. The AC first reviewed an "operational concepts" document they generated over the past several months following the September meeting, and then focused on the desired outcome for the afternoon. R. Spinrad complimented the AC for accomplishing their vision statement within their first year, and noted that now is the time to make our next statement. R. Spinrad offered that the next set of recommendations should pertain to characteristics of the IOOS business model. The AC should continue to build on the terms and themes existing in their successful vision statement, along with themes of "enabling, engagement, and leadership."

MOTION made by T. Browne: Name this document "Enabling the Mission."
Motion second by E. Pidgeon.
R. Spinrad requested we defer a vote until document content discussion was complete. So tabled until the end of the meeting.

HIGHLIGHTS from Discussion: Business Model
- The AC agreed to develop guiding principles for NOAA and IOOC to consider with respect to the existing IOOS business model.
- The AC agreed to develop a list of elements they felt are relevant for consideration of the business model, which was one outcome of this discussion (initial draft titled "Principles for the Business Model").
- The AC continued to develop initial draft guiding principles in support of the elements.
- Consensus from this discussion was captured in the draft document and shared with the full AC on April 18, 2014.
- AC was assigned to work groups:
  - Leadership: J. Manley (L), L. Ragster, T. MacDonald, V. Klump
  - Marketing: T. Browne (L), C. Ostrander, L. Leonard
  - Planning: C. Beegle-Krause (L), E. Pidgeon, E. Terrill, A. Jochens
  - R. Spinrad, T. Gulbransen (overarching)
- Action for the groups is to develop a narrative for their section of the principles, and flesh out business model elements and guiding principle details by May 16.
- Group leaders will gather, clean up, and submit products to DFO for online discussion. AC will aim for summer telecom to bring the resulting draft to a penultimate version. Per R. Spinrad, the working title for this document is "Principles for the Business Model."
- T. Browne's motion was taken off the table with consent of motioner and second

Public Comments
None.

Final Comments
- Terry felts his action was addressed (020614.7).
- Z. Willis and B. Melzian noted that a "primer" to the principles would be helpful for NOAA and likely the IOOC agencies.
- J. Manley and J. Quintrell voiced concern over extracting accountability from those we advise.
- B. Melzian stated that diversity of the AC adds strength.

Chair adjourned the meeting at 3:05 pm EDT.

#	Action	**R**esponsible **A**ccountable **C**onsultative **I**nform	Due Date
041514.1	Provide all slides to all AC members and post on website.	R: Exec Sec I: AC	05/01/2014
041514.2	Each work group completes first draft of narrative and guiding principles.	R: AC A: Chair	05/16/2014
041514.3	Hold administrative telecom to finalize next version of "Principles for the Business Model."	R: DFO A: AC	08/15/2014