Terms of Reference
for the
IOOC Data Management and Communications (DMAC) Steering Team
2 December 2010

Context:
Over the past several years the national ocean observing landscape has changed dramatically with the passage of the Integrated Coastal and Ocean Observation System (ICOOS) Act of 2009, the establishment of the Interagency Ocean Observing Council (IOOC), the advancement of the Integrated Ocean Observing System (IOOS) enterprise, the development of NSF’s Ocean Observatories Initiative (OOI), and the design of a National Ocean Policy.
Throughout this progression, the Data Management and Communications (DMAC) subsystem has remained an integral part of the Integrated Ocean Observing System (IOOS). A formal Interagency Working Group on Ocean Observations (IWGOO) DMAC Steering Team has served as a mechanism for guiding the identification and implementation of data management solutions within the ocean observing realm. Furthermore, the IWGOO DMAC-ST has provided a forum for practical interagency collaboration.
Due to the ICOOS Act and related changes, the construct and purpose of the DMAC-ST has been evaluated and revised to better align with the new context. The following Terms of Reference will serve as the foundation for the DMAC-ST in the future. As a lightly-resourced mechanism, the reconstituted DMAC-ST must maintain realistic expectations while maintaining flexibility as the IOOS implementation and National Ocean policies continue to mature.

Purpose, Scope, and Goals:
The purpose of the DMAC-ST is to:

1. Provide the IOOC with strategic guidance on DMAC-related activities and challenges;
2. Maintain focus on DMAC subsystem elements (i.e., discovery, transfer, access, archive);
3. Identify and solve specific data management challenges within the ocean observing realm; and
4. Serve as a forum for collaboration among IOOS agencies and partners on DMAC issues.

In keeping with the IOOS system plan and the ICOOS Act, the scope of the DMAC-ST will be inclusive of federal and non-federal entities. Consistent communication will be maintained with the IOOC, and any other subordinate IOOC sub-committees. The DMAC-ST will address data management issues (including relevant technology integration and implementation activities) of national significance, and in a manner consistent with the ICOOS Act of 2009, the IOOS System Plan, and/or subsequent national ocean policies. The DMAC-ST will report directly to the IOOC, while also informing the overall IOOS community about key decisions and initiatives relating to this subsystem.

The goals of the DMAC-ST are to:

1. Help establish and maintain compliance with the relevant ICOOS Act provisions;
2. Facilitate practical and realistic consistency among the IOOS agencies and partners with respect to DMAC implementation, protocols, and standards; and
3. Maintain strong communication between the IOOS enterprise and other ocean observing initiatives with respect to DMAC.
Functions:

The DMAC-ST will:

1. Assist with meeting the provisions of the ICOOS Act by providing expert guidance on DMAC, including input on certification of and compliance with DMAC components of the System.
2. Steward the adoption of a streamlined IOOS DMAC standards process, and oversee transfer of new (proposed) standards to established standards bodies (e.g., OGC, ISO, IODE).
3. Help identify gaps in DMAC subsystem – including implementations and technologies. Furthermore, the DMAC-ST will document the resources and partners required to execute DMAC activities that are beyond the scope of existing agency means.
4. Evaluate DMAC functional requirements from the IOOS agencies/community and then convert to technical specifications (if determined to be relevant and of demonstrated value).
5. Maintain critical links with the Observations and the Modeling & Analysis subsystems of IOOS.
6. Maintain DMAC progress (and flexibility) within the context provided by the ICOOS Act and the emerging national ocean policy.
7. Identify technology overlaps among the core agencies and focus on promoting and sharing them within the IOOS community. A secondary focus would be to identify DMAC protocols unique to IOOS and document the resources required to execute their adoption and implementation.
8. Oversee, evaluate, and report on the implementation of strategic planning elements for DMAC.
9. Maintain access to records of DMAC progress, projects, and resources via the IOOC web site.
10. Extract and document DMAC requirements from IOOS agencies and partners.
11. Maintain alignment with the IOOS System Design (either in enterprise or organic form).
12. Serve as a demonstrable integration and collaboration forum for IOOS agencies.
13. Serve as a forum for DMAC technology exchange and sharing (e.g., identify shared technologies to adopt).
14. Report progress, challenges, and accomplishments, related to IOOS DMAC, to the IOOC.
15. Serve as an evaluation source for the OOI-CI activities and implementation.

Structure and Operation:

The DMAC-ST will report directly to the IOOC, and also maintain formal communication with the IOOS Program Office with respect to DMAC implementation activities. The DMAC-ST will be chaired by a federal agency resourced designee. The specific responsibilities of the DMAC-ST Chair include:

1. Organizing and executing DMAC-ST meetings and communications;
2. Identifying and inviting non-federal panelist to participate in a Town Hall;
3. Documenting DMAC-ST activities and briefing the IOOC on same;
4. Directing any ad hoc “tiger teams” and report on their progress to the DMAC-ST membership, and
5. Serving as a liaison to the IOOS Regional DMAC Working Group.

DMAC-ST Meetings will meet the following guidelines:

1. Town Hall Meetings
2. Held at more than one location throughout the U.S.
3. Open to the general public
4. Advertised in the Federal Register Notice at least two weeks prior to the meeting
5. Wide array of non-Federal panel participants
6. Repeated use of one group of individuals, as the non-Federal panel participants, must be avoided
7. Non-Federal participants must provide their individual opinion and not a group consensus
8. Any reports drafted must be written by the DMAC-ST Chair, a federal employee, or the IOOC Support Office

As directed by the IOOC Co-Chairs, the IOOC Support Office will provide additional support to the DMAC-ST.

Other tenants of DMAC-ST operations will include:

- Adherence to a "results-oriented" approach to maximize achievements within a constricted resource environment. Meetings will focus on solving specific challenges.
- Employing focused short-term solutions groups (i.e., tiger teams*) to address specific technical issues. This will also expand the effective working knowledge of the group without unduly burdening any one member.
- Defining time commitments for members to 60-80 hours/year.
- Extending the network of DMAC knowledge and expertise into IOOS agencies, using the DMAC-ST members as liaisons in their respective agencies.
- A minimum of two annual, face-to-face meetings. These meetings may occasionally be augmented by remote teleconference sessions, workshops, or other formats to resolve specific issues and implementations strategies at the discretion of the Chair, ST members and the IOOC.
- All DMAC-ST members are expected to read and understand these Terms of Reference.
- Maintaining a current web-based presence which provides easy access to IOOS DMAC activities, news, and resources. In addition, working closely with the IOOC, IOOS Program Office, and COL to promote and broadcast IOOS DMAC accomplishments.
- Establishing and maintaining communication with other relevant IOOS DMAC entities (Regional, GEOSS, etc.), and any IOOC sub-committees related to the other IOOS subsystems (Observations, Modeling & Analysis, and Governance).

**Composition and Membership:**

The DMAC-ST Town Halls will be inclusive, comprising representation from the federal government and non-federal sectors (e.g., regional associations, private industry, non-profit organizations, and academia). Participation needs to be comprehensive enough to adequately address core DMAC challenges and responsibilities without creating a logistical burden that would hinder performance and progress. The DMAC-ST is envisioned to maintain a membership of approximately 25 participants.

Federal agencies will have the opportunity to appoint members (and alternates) to the DMAC-ST. IOOC Members will be responsible for identifying and appointing a DMAC-ST representative from their respective agencies. To maintain continuity, DMAC-ST members will serve two-year terms with a maximum of two consecutive terms. Pending the approval of the IOOC Co-Chairs, the DMAC-ST Chair may seek multiple members from a single agency. Non-federal panel participants will be identified and solicited based on required expertise and availability for Town Halls. Non-federal panel participants will be approached by the DMAC-ST Chair in consultation with the IOOC Co-Chairs.

**Federal Membership:**

Core federal membership will include representation from those agencies with explicit data management expertise and mandates, including:

- BOEMRE (Dept. of Interior)
- NASA (National Aeronautics and Space Administration)
- NOAA (Dept. of Commerce)
- USCG (Dept. of Homeland Security)
- EPA (Environmental Protection Agency)
- Navy (Dept. of Defense)
- USACE (Dept. of Defense)
- USGS (Dept. of Interior)
All other IOOC-level agencies will maintain a reserved seat on the DMAC-ST, if desired.

Non-Federal Participants:

In order to effectively understand and resolve DMAC challenges, the DMAC-ST will also maintain comprehensive representation from non-federal entities. A primary goal of maintaining non-federal participation on the DMAC-ST is to align DMAC guidance and standards with realistic implementation which non-federal entities are often responsible for executing. Meetings will be open to the public and the IOOC may support attendance by non-Federal participants with necessary expertise as a DMAC ST Panel participant. Non-Federal Panel participants will be identified and approached by the DMAC-ST Chair in consultation with the IOOC Co-Chairs. Non-federal participants in the DMAC-ST will represent the academic, private, non-profit, regional, and state sectors. In addition, several ex-officio advisors from the international oceanographic DMAC community will participate. Repeated use of one group of individuals from the non-Federal community must be avoided. Non-Federal panel participants will be invited by the DMAC-ST Chair based on the DMAC-ST agenda in consultation with the IOOC Co-Chairs.

Ad-hoc Solutions Teams ("Tiger Teams"):

To augment the core members, temporary, ad hoc teams may be created to address and resolve specific challenges. These small (3-7 member) "tiger teams" are envisioned to serve short periods of time under the direction of the DMAC-ST Chair, and deliver clear, actionable results to the DMAC-ST. Tiger teams may be established under three different circumstances:

1. If explicit expertise is required beyond that found on the core DMAC-ST; or
2. If parallel or dependent activities would exhaust the core DMAC-ST resources; or
3. If emerging issues are identified that would distract the primary focus of the DMAC-ST.

If one of these scenarios demands the establishment of a "tiger team", the composition will be selected by the DMAC-ST members. Beyond augmenting the core DMAC-ST, another benefit of employing "tiger teams" is the extension of DMAC principles to other personnel within IOOS agencies.

(IOOC Co-Chairs' Signature Block)

[Signature]

NASA IOOC Co-Chair, Eric Lindstrom

12/2/10

[Signature]

NOAA IOOC Co-Chair, David Kennedy

12/6/10

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NSF IOOC Co-Chair, Bob Houtman

12/7/10