

WORLD METEOROLOGICAL ORGANIZATION

**INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION (OF UNESCO)**

DATA BUOY COOPERATION PANEL

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TWENTY-SEVENTH SESSION

ITEM: 9.5

GENEVA, SWITZERLAND
26-30 SEPTEMBER 2011

ENGLISH ONLY

METADATA

(Submitted by Bill Burnett, NDBC, USA)

Summary and purpose of the document

This document provides information on progress regarding the collection of buoy metadata, including recommendations from JCOMM-III, and use of the JCOMMOPS metadata collection scheme.

ACTION PROPOSED

The Panel will review the information contained in this report and comment and make decisions or recommendations as appropriate. See part A for the details of recommended actions.

-A- DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT

9.5.1 Mr Bill Burnett (USA) reported on various activities dealing with metadata occurred throughout the period. The Panel acknowledged that this report could not be delivered by the Technical Coordinator as the position has been vacant during most of the intersessional period. Mr Burnett reported that in terms of the JCOMMOPS database, inputs are taken from platform operators and telecommunications providers either upon deployment or as a regular (monthly) status reports, from those responsible for Buoy operations. The Panel thanked those Moored Buoy operators who report metadata in a timely fashion, and encouraged others to use similar methods as well.

9.5.2 The Panel recognized that one of the primary challenges facing the community is the fast and accurate assessment of the quality of data streaming from marine and oceanographic platforms. Operational data aggregation and assembly from distributed data sources is essential to the ability to adequately describe and predict the physical, chemical and biological state of the deep water and coastal ocean. These activities demand trustworthy and consistent metadata for every observation distributed. Significant progress has been accomplished in previous years towards the definition of requirements both for metadata and relevant data flags for real-time quality control. The intent in the future is to report on the recommended quality control descriptions for parameters such as waves and currents, expand the work with additional parameters and evolving sensor systems, and develop guides for best practices to assure data quality.

9.5.3 The Panel noted that within the larger framework of Global Earth Observing System of Systems (GEOSS), the architecture for collecting and disseminating metadata has been defined. One of the more important elements within GEOSS involves participants following common standards and procedures with regard to the data collection and dissemination process. For example, it is stated¹ that *for those observations and products contributed and shared, GEOSS implementation will facilitate their recording and storage in clearly defined formats, with metadata and quality indications to enable search, retrieval, and archiving as accessible data sets.* Common standards and procedures also have to be reflected in the metadata description. For instance, quality management standards applicable to instrument qualification and performance assessment have to be included as well. Implementing these standards will allow transformation of current ocean and coastal observations into operational activities and the use of common data quality standards and indicators will ease the integration of the observations into GEOSS.

9.5.4 Operators of Iridium platforms have continued to actively report metadata to each other and JCOMMOPS upon deployment, which was valuable and should continue beyond the life of the Iridium Pilot Project.

9.5.5 BUFR templates, and related metadata issues are discussed under item 11.2.

9.5.7 The Panel noted with appreciation that OceanSITES Data Management Team (DMT) has made significant progress during the year. Both the U.S. National Data Buoy Center (NDBC) and France's IFREMER/Coriolis serve as Global Data Assembly Centers (GDACs) with responsibility to provide a virtual or centralized access to data that are served to OceanSITES, check all files daily and synchronize catalogues. The OceanSITES DMT:

- Completed and published the OceanSITES Users Manual 1.2 document – this document serves as the critical basis for formatting all OceanSITES observations in an approved CF convention metadata format.
- Completed the synchronization software for all OceanSITES catalogues. NDBC and IFREMER are now successfully synchronizing OceanSITES observations on a daily basis. This was an enormous accomplishment which took five years to formally complete.

1 The Global Earth Observation System of Systems(GEOSS) 10-Year Implementation Plan, 16 February 2005

- Redesigned the GDAC FTP distribution and developed an OceanSITES Top Level Directory (<ftp://data.ndbc.noaa.gov/data/oceansites>).
- Implemented standard designated site codes and platform codes for each of the DACs.
- Developed NetCDF Requirements for all data follows using the CF1.x standards and OceanSITES User Manual 1.2 requirements. Developed requirements for over 30 variables including standard names, unites, valid_min, valid_max, sensor names and serial numbers.
- Developed NODC data archive convention to place the GDAC's best copy of the OceanSITES observations in the GDACs, with backup observations placed at NODC.
- Developed Google Ocean/OPeNDAP/SensorML interfaces for all OceanSITES observations. Utilize existing THREDDS Data Server at NDBC to deliver NetCDF files via OPeNDAP. Integrated OceanSITES artifacts by advanced user interfaces like Google Ocean.

9.5.8 OceanSITES formats are now formally used, outside of the normal OceanSITES DMT, by NOAA's Water Level Stations, MyOcean In Situ Portal for Operational Oceanography, Emodnet Physics Portal and (potentially) the Arctic Mooring Data Integration Project.

9.5.9 The Rigs and Platform metadata issued is discussed under item 11.2.

9.5.10 **The Panel agreed on the following:**

- (i.) The Panel concurred with JCOMMOPS recommendation that all buoy operators provide a website of deployment information (as provided to the Iridium PP team) for all buoys similar to AOML, NDBC and Canada as well as continuing e-mail notifications as necessary (**action; Panel members; ongoing**).
 - (ii.) The Panel recognized that the operators of Iridium platforms have continued to actively report metadata to each other upon deployment. This is valuable. The Panel recommended that they continue to do so beyond the life of the Iridium Pilot Project (**action; Panel members; ongoing**).
 - (iii.) Panel members are encouraged to continue to test and employ operationally the new BUFR templates for drifting and moored buoy data – and inform the TT-TDC about any problems or confusion with the metadata (**action; Panel members; DBCP-28**).
 - (iv.) Panel members are encouraged to continue close cooperation with OceanSITES when considering future metadata content and standards. The Panel requested the Task Team on Data Management and the Task Team on Moored Buoys to follow up on these aspects (**action; TT-MB & TT-DM; DBCP-28**).
 - (v.) Panel members are invited to review the categories defined by OceanSITES and to forward comments to the OceanSITES Data Management Team co-lead (Bill Burnett) (**action; Panel members; March 2012**).
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