Task Team on Data Management Report

Chair: Mayra Pazos (GDP Representative)

Members:

Bruce Bradshaw (ISDM)
Yann Bernard (CLS)
Pierre Blouch (Meteo-France)
Jean Rolland (Meteo-France)
Jeff Wingenroth (Dbi Instrumentations)
Tony Chedrawy (Metocean)
Jon Turton (UK Metoffice)
Richard Crout (NDBC)
Johan Stander (SA Weather Service)
B. K. Jena (NIOT, India)
Kelly Stroker (DBCP –TC)

Receive and Review Reports from the Data Management Centers

- Regarding the coordination between SOC (France) and ISDM (Canada), the Ad Hoc Task Team on Responsible National Ocean Data Centers (RNODCs) and Specialized Oceanographic Data Centers (SOCs) met together with the RNODC and SOC for drifting buoys on the First Marine Climate Data System Workshop (MCDS) on 28-Nov – 2 December 2011, Hamburg, Germany, and it was determined that both become Global Data Assembly Centers for all drifting buoys.

A teleconference was hosted by ISDM to discuss:

- Differences between the AOML SVP data products and the ISDM GTS archive
- Ideas to improve overall data circulation and archival of GTS data between the DAC's and GDAC's
- Sharing and integration of quality control tools and flags between DAC's and GDAC's
- Following DBCP-26 Action Item 50, ISDM and Meteo-France proposed and tested a methodology and exchanged formats to compare GTS bulletin headers received by both centers . They are working to resolve differences resulting from the way some aspects of data processing, duplicates and the reporting of messages received in BUFR and/or Buoy Code are handled. Same will be done with VOS, SHIP, BATHY, TESAC, and WAVEOB data
- The results after the cross checks of the GTS bulletin headers are performed will be published in the JCOMMOPS website

Real Time Distribution of Data

- The Drifter Data Assembly Center at AOML (DAC) continues to distribute and monitor all data from AOML's drifters on the GTS, and takes immediate action after recommendations from the QC centers are received regarding suspicious data on the GTS, providing good data from ~ 1000 drifters with an average of one position fix every 1.2 hours.

Real Time Distribution of Data

- NDBC continues to provide 24x7x365 data analysis and quality control support for moored buoy platforms, coastal marine stations, water level met stations, deep-ocean tsunameters and Tropical Ocean Atmospheric moored buoys in the equatorial Pacific, oil and gas platforms in the Gulf of Mexico and integrated Ocean Observing Systems (IOOS) partner platforms (moored and coastal stations), all distributed on the GTS in real time.
- NDBC implemented new techniques to support the archive of climate observations and continues to use Open Geospatial Consortium standards and Sensor Observations Services to provide all their archived weather buoy and TAO observations in netCDF format.

Meteo-France reports:

- There are 76 moored buoys and 30 drifting buoys reporting Sea Surface Salinity on the GTS.
- Four salinity drifters fitted with a digital temperature probe instead of the usual analog were deployed during the intersessional period.
- The first six HRSST-2 SVP-B drifters were deployed in July 2012 and about 20 others have been ordered.
- They continue to provide the Coriolis center on a weekly basis with drifter observation data (SST and SSS), current deduced from the move of the buoys and collocated winds and wind stress.

- A new test has been implemented this year to determine drogue presence, this flag is derived from the result of the analysis of the cross-spectrum estimation of the co-located wind stress and the calculated buoy current for the most recent data, and as before, the data from the drifters supposed to have lost their drogues are not distributed.
- Buoy data received through Iridium SBD continues to be processed in real-time for GTS. All data are transmitted in both BUOY and BUFR formats.
- During the intersessional period about 100 Iridium buoys have been processed in average each month on the GTS (SVP-B, SVP-BS). Starting at the end of September 2012, they will manage the transmission of many SVP-BTC drifters, fitted with a thermistor chain, to allow to get sea temperature down to 80 meters on 16 levels, built by Marlin-Yug.

GTS Processing enhancements at CLS

•Display bulletins for 7-digit WMO buoy numbers in FM-94 BUFR format only.

•For 5-digits WMO numbers, FM-18 and FM-94 BUFR reports are displayed on the GTS

•Setup a subcategory value equal to 25 under category 1 for all buoy BUFR report observations displayed by CLS and CLS America GTS processing centers. This new category value replaces the previous one (255 “missing value”) since September 11, 2012 at 12:00 UTC.

•According to WMO recommendations:

- The Master Table 0 Version has been upgraded to 15 on February 28, 2012
- The GTS BUFR version was upgraded to V4 on September 18, 2012

  These upgrades were successfully tested by Meteo-France and the National Weather Service.

•CLS/CLS America transmit all drifter data on GTS in both BUOY and BUFR formats

Delayed Mode Distribution and Archiving of Data

- On May 2012, the DAC at AOML, submitted to ISDM an updated version of the SVP dataset for all drifters alive during 2011, for archival and distribution. Datasets can be downloaded by year and by ocean basin, for all levels of processing:

  www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/index-eng.html
- AOML is working on a new server where interpolated drifter data can also be download. The entire delayed mode drifter dataset is available now as one zip file updated through June 2012 at:

  www.aoml.noaa.gov/phod/dac/dacdata.php
- AOML continues to acquire Iridium drifter data from Joubeh's website for AOML, New Zealand, Australia and Environment Canada drifters (with prior authorization given to Joubeh). These have been quality controlled, interpolated and inserted in the DAC database.
- Iridium GTS drifter data processed at Meteo-France is received at AOML once a week, and will soon be processed and added to the AOML database.
- AOML/DAC received more recent Iridium drifter data from Prooceano, Brazil, that will also be processed and included in the database.

- The AOML GDP/DAC is conducting a reevaluation of drogue presence in drifters from 1992 to the present. Recent findings have shown that a significant number of drifters lost their drogues sooner than originally diagnosed. A new methodology based on anomalous downwind ageostrophic motion has been applied to the data to reanalyze drogue presence that, together with information from submergence or tether strain and transmission frequency variations, will lead to a more accurate determination of when drifters lost their drogues. More information on the drogue reanalysis can be found in a paper submitted to the Journal of Atmospheric and Oceanic Technology by Lumpkin et al, available at:

  http://www.aoml.noaa.gov/phod/dac/drogue_reassess.pdf

- ISDM reports that following last years request, item 4.6, they have made significant progress developing an online mapping, reporting, discovery and data download capability using ArcGIS and a web-warehouse database but beta release is not available yet. Requests for data and reports continue to be handled through the ISDM online request system.
- ISDM installed an OPeNDAP and THREDDS server system to provide web access to ocean data products in NetCDF format.
- ISDM is considering expanding the use of Matlab with netCDF in future data processing, quality control and generation of data products.

Data Format Issues

- Manufacturers are reminded the ***accuracy*** of the information included in the specification sheets (i.e. coefficients for each calibration, bits breakdowns, etc.) is very important. While copy and paste saves time, information must be reviewed to avoid errors and confusion at the time the data are processed (both on GTS and in delayed mode).
- The TT-DM continues to encourage manufacturers to adopt the existing data formats and to have any additional sensor data transmissions at the end of the message.

Data Format Issues

- Meteo-France maintains a list and description of Iridium drifters recommended data formats, available at:

  http://esurfmar.meteo.fr/doc/o/db/others/DB_Iridium_formats_v010.pdf

- It was discovered that air pressure tendency on all Pacific Gyre SVP-B drifters was not going out on GTS correctly, because APT on these drifters does not conform to the standard DBCP-M2-56 format. CLS-America created a new GTS template with a correction to all Pacific Gyre SVP-B drifters and now they are all reporting air pressure tendency correctly on the GTS.

Comparison to Models for non-GTS data

- DBCP-25 agenda item 8.8.2 requests to make NWP/Ocean model outputs available to buoy operators to
  - i) check data quality before transmitting to the GTS and
  - ii) to check data that had been removed from the GTS to assess if it there have been improvement over time and can be inserted back on the GTS.

  Meteo-France reported there are internal tools that provide these checks, but for technical reasons they can not make them available on the GTS. Meteo-France can send the results of occasional requests by e-mail.

  For this reason this action should be removed from the action item list.

Review all relevant JCOMM Publications

- Task Team on Data Management (TTDM) circulated the document “An Oceanographer’s and Marine Meteorologist’s Cookbook for Submitting Data in Real Time and in Delayed Mode”. Some Reviews and feedback were received and forwarded to the TC for editing and merging into the document. Specific topics will be sent to experts so this document can be completed and published.

Action Items Completed

- ✓ The GDP/DAC changed from five-digits to 7-digits WMO numbers all listings in the web pages:

  www.aoml.noaa.gov/phod/dac/dirall.html

  www.aoml.noaa.gov/phod/dac/deployed.html

- ✓ The cross reference list of WMO IDS vs. Transmitter ID provided by JCOMMOPS on the web is now being updated regularly by the TC.

  ftp://ftp.JCOMMOPS.org/JCOMMOPS/GTS/wmo/wmo_lis.txt

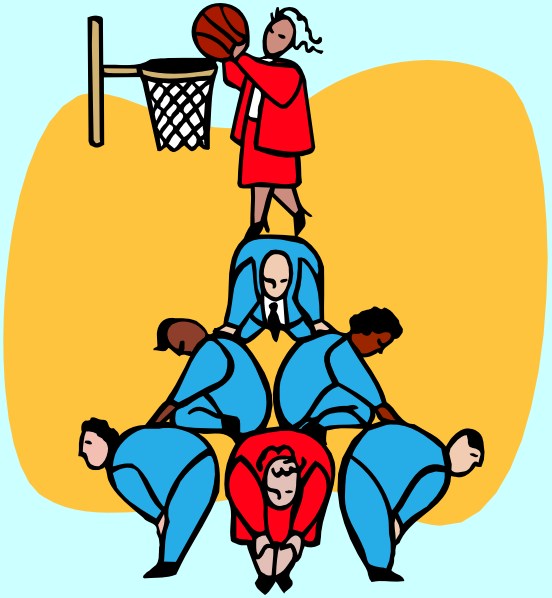
- ✓ The Drifter Data Operations Center (DOC) and the DAC have made available on the web, three new information pages regarding drifter metadata, as requested at the last DBCP-27. Drifter Specifications, Drogue Specifications and Barometer Metadata. Information is being populated as it becomes available:

  www.aoml.noaa.gov/phod/dac/gdp_doc.php

New Action Items

- The conversion to use 7-digits WMO numbers instead of the 5-digit numbers must continue until all cross-reference lists are changed.
- Eliminate from the action item's list the request to have a methodology to compare non-GTS buoy data with Ocean models, open to anyone via the web.
- Add a new column to the GDP/DAC: List and Details of all Buoys in Database on the web, to show latitude and longitude of where drifters lost their drogues.
- Identify experts for each different sections that need to be completed of the" Oceanographer's and Marine Meteorologists Cookbook for submitting data in Real Time and Delayed Mode" so it can be finalized and published.
- It was proposed that the BUFR template for drifting buoys and moored buoys should be different. A draft of both templates will be sent to the Task Team on Table Driven Codes for comments and approval.

Many ***thanks*** to all who provided input to this report and for taking the time to prepare and review the documents



Working as a team, we can score!