

Task Team on Data Management Report

Chair: Mayra Pazos (GDP Representative)

Members:

Pierre Blouch (Meteo-France), Co-chair

Bruce Bradshaw (ISDM)/Mathieu Ouellet (ISDM)

Yann Bernard (CLS)

Jean Rolland (Meteo-France)

Jeff Wingenroth (Dbi Instrumentations)

Tony Chedrawy (Metocean)

Jon Turton (UK Metoffice)

Johan Stander (SA Weather Service)

B. K. Jena (NIOT, India)

Champika Gallage (DBCP –TC)

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Receive and Review Reports from the Data Management Centers

- The JCOMM Global Data Assembly Centres (GDACs) of Météo-France (former SOC/DB) and ISDM (former RNODC/DB), had begun to work towards the implementation of a routine procedure to be done on a monthly basis to compare GTS bulletin headers and overall message counts between the two centres.
- During the September and October comparison exercises between the two centers, several problems were found:
 - BUFR data was being received, but decoders had to be updated to use newer templates to process data correctly
 - Some bulletin headers were missing from the GTS stream, therefore GTS providers had to be contacted to request them to include the missing bulletin headers.

Table Driven coding requirements for data buoy observations

- The proposed BUFR templates for drifters (TM 3 15 009) and moored buoys (TM 3 15 008) were validated by WMO and declared operational from May 2014.
- The new templates were distributed to Members and should now be implemented to replace the existing templates.
- Meteo-France reported that as of the end of August 2014, no BUFR messages have been exchanged on the GTS using the new templates. These templates should be implemented before the distribution of TAC messages are stopped, originally planned for November 2014, but it could be delayed.

Table Driven coding requirements for data buoy observations (Cont.)

- CLS reported they have developed and tested the new BUFR template for DB and they are waiting for the official launching date to start implementing it.
- ISDM is working to start reporting data using BUFR template.
- A new BUFR template for fixed platforms was also submitted to the WMO IPET-DRMM in April 2014. This new template is needed because neither the templates for moored buoys or ships (VOS) are well suited for fixed platforms.
- CLS will start using the new BUFR template for moored buoys (TM 315008) in early 2015.

Table Driven coding requirements for data buoy observations (Cont.)

- E-SURFMAR and Meteo-France are maintaining a webpage on ECMWF wikisite with information about observation data sent onto the GTS in BUFR for surface marine and oceanographic platforms.

<https://software.ecmwf.int/wiki/display/TCBUF/E-SURFMAR>

Real Time Distribution of Data

- The DAC would like to report a much improved situation encountered in previous years:
 - ✓ Manufacturers are transferring data in their Argos testing programs to the owner's program before drifters are deployed, minimizing the delayed of getting initial data after deployment.
- The AOML Drifter Data Assembly Centre (DAC) activities regarding real time data is as follows:
 - assigns WMO numbers to all Global Drifter Program drifters
 - monitors data going on the GTS, and advises to stop the distribution of any sensor data after detecting faulty readings or following recommendations received from the QC centres.
 - Data is asked to be distributed on the GTS as soon as instruments are deployed.

Real Time Distribution of Data (Cont.)

- All GDP drifters that use the Argos system are released to the GTS by CLS America.
- GDP drifters that use Iridium are posted to the GTS as follows:

VAR

Pacific Gyre

Pacific Gyre

Joubeh

CLS

GTS

Meteo-France

(For barometer upgrades only)

Scripts Institution of
Oceanography

Joubeh

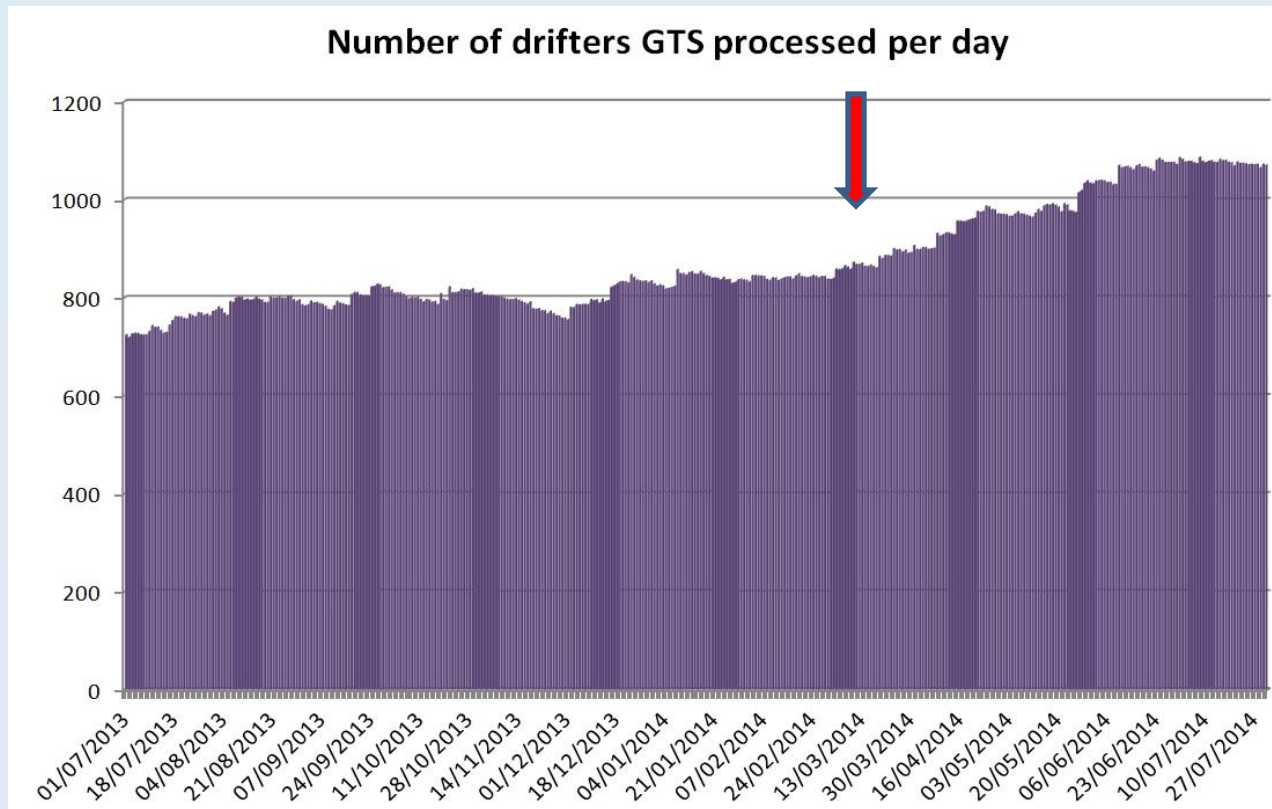
CLS

Real Time Distribution of Data (Cont.)

- Meteo-France distributes Iridium drifter data on the GTS in FM18-BUOY and FM-94 BUFR (invalidated template) formats for E-SURFMAR and Meteo-France partners under condition their formats is one of those recommended by the DBCP.
- CLS produces both Alphanumeric (BUOY, TESAC, SYNOP, SHIP) and BUFR bulletins for each observation reported by all platforms.
- CLS reports that the average delivery time of observation from Argos platforms on the GTS is around 60 minutes.
- The Technical Coordinator (TC) reported NDBC updated the TAO buoys' headers to be compliant with the WMO rules and the data are now being seen via all the GTS nodes.
- ISDM have recently added two new GTS bulletin headers to their incoming BUFR data stream.

Real Time Distribution of Data (Cont.)

- The efforts of the GDP to increase the number of drifters in the global array to bring the target number back to its goal of 1250 (which had decreased due to too many early deaths), and the fact that they are lasting longer now, have increased the number of BUOY and BUFR bulletins reporting on the GTS after March 2014.



(Figure courtesy of CLS)

Real Time Distribution of Data (Cont.)

- Some problems have emerged regarding GTS data using the new BUFR template:

In the peri -Antarctic region, when using FM-18 BUOY code, WMO numbers start with (71,72,73,74).

Recall: WMO numbers are assigned as follows:

$A_1 B_w nnn$ or $A_1 B_w nnnnn$

A_1 : represents the regional area

B_w : is the subarea where platform is deployed ([shown](#))

in the peri-Antarctic regions, A_1 is coded '7' in FM-18 BUOY code but it is coded '0' in FM-94 BUFR reports (BUFR code table 0 01 003)

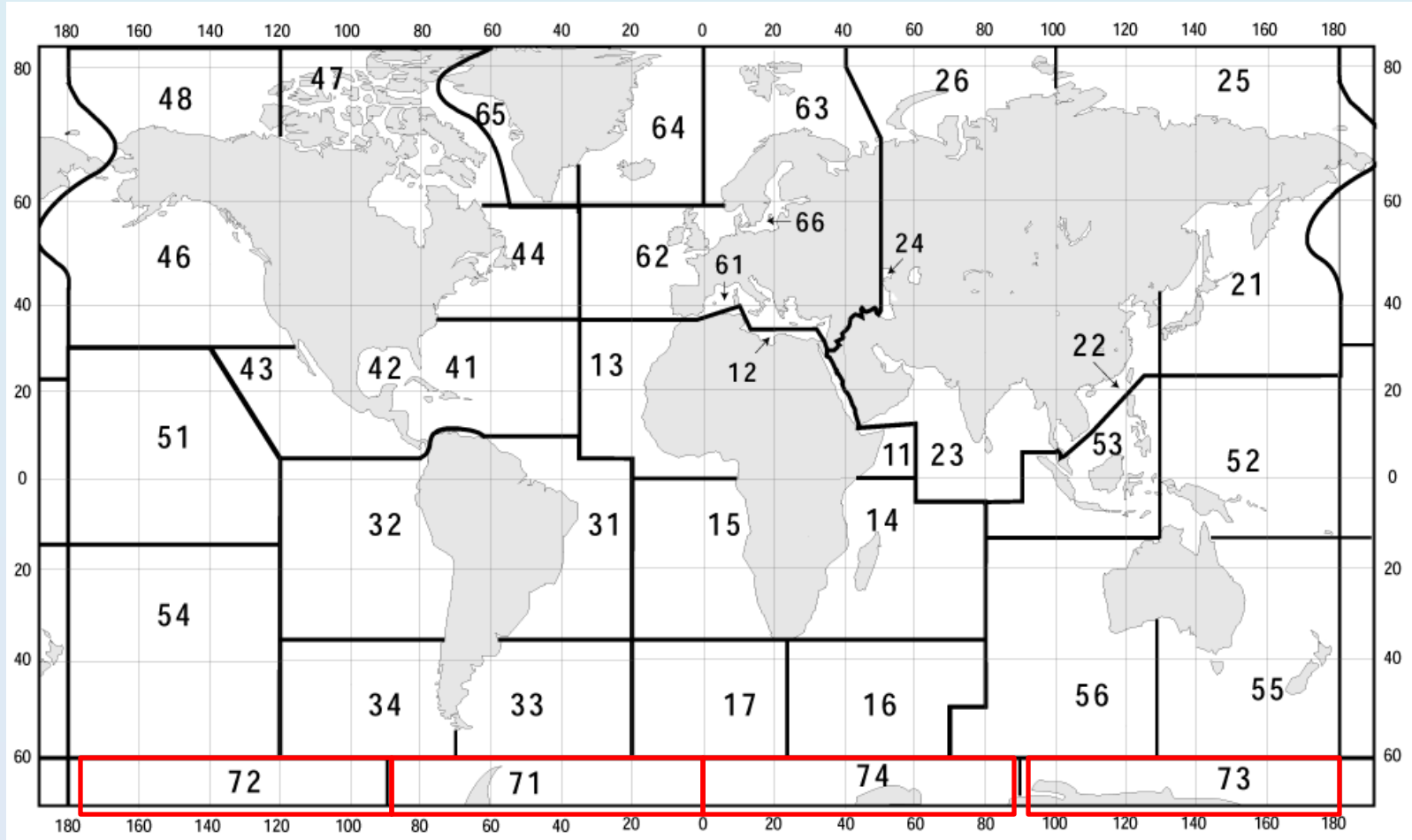
Example: drifter 114669 (WMO # 71608) will report on GTS in

FM-18 BUOY code as 71608

FM-94 BUFR reports 0100608 (note 7 digits in BUFR)

NOTE: Operators must use the “0100608” 7 digit number when using Meteo-France QCtools to check GTS data transmissions.

WMO regional association area (A_1 , 1st digit) and sub-area (b_w , 2nd digit) for allocation of WMO numbers based upon buoy deployment area



Real Time Distribution of Data (Cont.)

- The text on the WMO webpage regarding the use of WMO numbers has been updated to reflect the change in the peri-Antarctic region

<http://www.wmo.int/pages/prog/amp/mmop/wmo-number-rules.html>

- **BUFR** messages are received at some centres but they are not being decoded properly. Centres are actively making changes to their decoders to ingest BUFR data using newer templates.

Recommendations to GTS data processing centres:

- WMO numbers in BUFR messages should be 7-digits long
- When moving from one template to another, change the GTS headers of observation data.

Delayed Mode Distribution and Archiving of Data (Cont.)

- The QC interpolated drifter dataset is updated through March 2014, available to download from the AOML web page.

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

- Next update will cover through June 2014 and it will be ready by the beginning of November 2014.
- AOML latest data submission to ISDM covers through December 2011.

There was a major system crash at AOML while working on the data submission to ISDM through December 2012. All attention and efforts were concentrated on transferring all the data and operations to a new system. AOML will prepare a new dataset to submit to ISDM with data through December 2013 in the next few months.

Delayed Mode Distribution and Archiving of Data (Cont.)

- AOML receives Iridium ASCII data from Meteo-France and Scripts on the FTP server. These data will be processed, quality controlled and added to the DAC database in the next few months. Joubeh's and CLS/America Iridium drifters are already being processed.
- Meteo-France continues to archive raw Iridium drifter data as well as GTS data for all surface marine platforms: moored and drifting buoys, VOS ships and ship borne AWS.
- ISDM will work during the inter-sessional period in the integration of existing inventories of GTS BUFR with GTS BUOY data to submit on a yearly basis to US NODC.

Format Issues

- The Task Team on Data Management continues to recommend to all buoy manufacturers to adhere to the standard message formats approved by DBCP, including offset/slope coefficientss (as much as possible).
- Meteo-France maintains the list and description of Iridium recommended formats that are suitable for conversion in BUFR.
http://esurfmar.meteo.fr/doc/o/db/others/DB_Iridium_formats.pdf
- Manufacturers and operators are encouraged to approach Meteo-France in case they would like to propose new formats.
- Meteo-France reports that a manufacturer is presently working to compress Iridium wave spectra buoy data. It would be wise if the data format follows any of the existing formats, for example:
format identifier given in the first byte, followed by
timestamp, etc...

Format Issues (Cont.)

- During this inter-sessional period, one manufacturer delivered tens of drifting buoys having a non-validated data format. Fortunately, the buoys could be re-programmed thanks to the Iridium SBD downlink.
- The DAC reported the accuracy of specification sheets received during this period has **dramatically improved** and would like to thank the manufacturers for this effort.

Format Issues (Cont.)

- Regarding the conversion to 7 digit WMO numbers, the technical coordinator reports that JCOMMOPS is not finished doing it. The reason being that the data on the GTS comes in 2 forms now (for many buoys)., FM-18 and BUFR. When the format is BUFR, it has the 7 digit WMO number. When the format is BUOY it is still the 5 digit ID. Some drifters (and wave buoys) are only sending data in BUFR using 7 digits WMO numbers. It is very difficult to try to sort out through all the different formats at the moment. When the switch over to BUFR happens, all data (metadata) will hold the 7 digit WMO ID.

Review all Relevant JCOMM Publications

- The TC reported the document “An Oceanographer's Marine Meteorologists Cookbook for submitting Data in Real Time and in Delayed Mode” cookbook was dropped from her list temporarily. It will be up to the DBCP Executive Board and the JCOMM Observations Coordination Group (OCG) to decide if it will be picked up to be finished or not. Many members agreed that such a resource is:
 - very valuable
 - it should exist **BUT...**
 - it needs to be a living document on the website and not a hard document
 - there will need to be revisions.

It needs to be decided who would do these revisions in particular for the data buoy related parts. Perhaps it would be a good thing for JCOMMOPS

This issue will be further discussed by the WMO Secretariat.

Action Items Completed

1. The AOML Drifter Data Assembly Center added extra links at the top of three of its main web pages, as suggested by reviewers of the document: “An Oceanographer’s Marine Meteorologists Cookbook for submitting Data in Real Time and in Delayed Mode” cookbook, for easy access to information on:

- drifter data formats
- Acquiring, processing , archiving and distribution of drifter data
- Information on how to deploy drifters

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

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

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

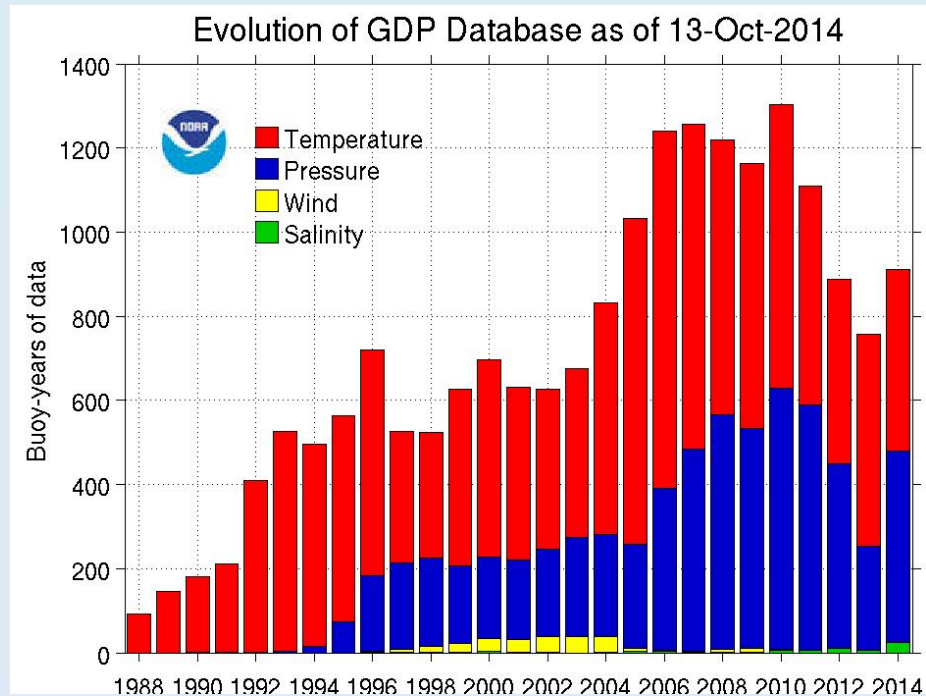
New Action Items

1. The conversion to use 7-digit numbers instead of the 5-digit numbers must continue until all cross-reference lists are changed.
2. Move forward to complete, review and publish the document “An Oceanographer’s Marine Meteorologist Cookbook for Submitting Data in Real Time and in Delayed Mode”. Recommend if it should be published on the web or hard copy and advise who will be in charge of maintaining relevant sections up to date.
3. The trial JCOMM Global Data Assembly Centers (GDACs) for drifting buoys of Meteo-France (former SOC) and ISDM (former RNODC/DB) to continue to work towards the implementation of a routine procedure to compare GTS bulletin headers between the two centers.
4. Make sure all buoy manufacturers adhere to the standard and approved DBCP data formats.

New Action Items

5. The New BUFR template will start to be used as planned in December 2014
6. We need an official date from WMO to stop the dissemination of the old FM-18 format on the GTS
7. WMO needs to communicate these changes to the national weather service centers

The Task Team on Data Management would like to thank the Technical coordinator **Ms. Kelly Stroker** for all her support, valuable help and hard work during these years and we take this opportunity to welcome **Ms. Champika Gallage** into her role as the new Technical Coordinator for DBCP and as member of TTDM.



**Thank you all who contributed with
inputs to this report**