WORLD METEOROLOGICAL ORGANIZATION	**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)**

<table>
<tr><td>WORLD METEOROLOGICAL ORGANIZATION
—————</td><td>INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)
——————</td></tr>
<tr><td>DATA BUOY COOPERATION PANEL</td><td>DBCP-31 / Doc. 6.1
(18-Sep-15)
———————</td></tr>
<tr><td>THIRTY-FIRST SESSION</td><td>ITEM: 6.1</td></tr>
<tr><td>GENEVA, SWITZERLAND
19-23 OCTOBER 2015</td><td>ENGLISH ONLY</td></tr>
</table>

REPORT BY THE TASK TEAM ON DATA MANAGEMENT (TT-DM)

(Submitted by Mayra Pazos (USA), Chair, TT-DM)

SUMMARY AND PURPOSE OF DOCUMENT

The document contains the report by the chairperson of the DBCP Task Team On Data Management

---

ACTION PROPOSED

The Meeting is invited to note the information contained in this document when discussing how it organises its work and formulates its recommendations.

———————

Appendix: **A.** Report by the Task Team on Data Management
B. Terms of Reference of the DBCP Task Team on Data Management
C. BUFR Migration Monitoring Data Buoys – Meteo-France
D. BUFR Migration Monitoring Data Buoys - MEDS
E. CLS report on GTS processing activity

DISCUSSION

6.1.1 Mrs. Mayra Pazos (USA), Chairperson of the DBCP Task Team on Data Management (TT-DM) reported on the progress of the Task Team during the last intersessional period. The Task Team promoted discussion between its members, revised the recommendations proposed last year to assess actions taken and proposed new recommendations.

6.1.2 The meeting agreed on the following:

1. The conversion to use 7-digits numbers instead of the 5-digit numbers must continue until all cross-reference lists are changed.

2. Move forward to publish the document "An Oceanographer's Marine Meteorologist's Cookbook for submitting Data in Real Time and In Delayed Mode on the WEB as a living document, even though it is an unfinished product at this time, and advise who will be in charge of maintaining relevant sections up to date.

3. The trial JCOMM Global Data Assembly Centres (GDACs) for drifting buoys of Météo-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 centres.

4. Make sure all buoy manufacturers adhere to the standard and approved DBCP data formats.

5. Centers must switch to using BUFR template for drifting and moored buoys (templates TM315009 for drifters and TM315008 for moorings) as soon as possible.

6.1.3 The Panel thanked Mrs. Pazos and members of the Task Team for their efforts. It was agreed that Ms. Mayra Pazos would continue as chairperson of the Task Team for the intersessional period. The full report of the Task Team is provided in Appendix A of DBCP-31 preparatory document No. 6.1, and will be included in the DBCP annual report for 2015.

_____

APPENDIX A

REPORT BY THE DBCP TASK TEAM ON DATA MANAGEMENT

During the intersessional period, the TT-Data Management Team promoted discussion between members, revised the proposed recommendations from last year to assess actions taken and proposed new recommendations.

1. Receive and Review reports

MEDS and Meteo-France performed some statistics on their respective sides to compare GTS bulletin headers message counts but they weren't synchronized due to a lack of time and heavy workloads.

One comparison was carried in December 2014 and revealed two sources of discrepancies in counts of sub datasets at both centers:

- One of the discrepancies was that one buoy's messages didn't end with 7777, as required; which posed problems at the Canadian meteorological center which does the routing BUFR messages to MEDS based on bulletin headers. The buoy owners have been notified and MEDS have found a workaround this problem in the meanwhile.

- The other source of problems was that some centers weren't using unique bulletin headers for multiple bulletins sent simultaneously. This problem has been fixed in late January 2015.

Another comparison took place in September 2015 and revealed slight discrepancies in the total of unique buoys received, in part due to the addition of BUFR messages converted from FM13 under ISS headers (MEDS did not receive the ISS headers prior to the comparison), and in part, due to the interpretation of non-standard encoded WMO identifiers in BUFR messages and non-buoy platforms (light vessels, oil rigs) reporting with WMO IDS typically reserved for buoys. MEDS and Meteo-France are currently working on resolving these discrepancies.

2. Table Driven coding requirements for data buoy observations

Meteo- France report on Migration to BUFR

Moored buoys

Three centers are correctly producing moored buoy data according to the official rtemplate (TM 315008): Met Eireann, PMEL and NDBC (for the Global Tropical Moored Buoy Array, not for NWS moored buoys yet).

In addition, CLS uses template TM315008 but, as for drifting buoys, the WMO Ids were not correctly coded by the end of August 2015.

The other centers, either still report buoy data according to the never-validated WMO template or in FM13 SHIP code, or in FM18 BUOY code. Data sent in FM13 are converted to ship BUFR data (template 308009). This practice should be avoided.

Drifting buoys

During the last intersessional period, template TM 315009 was applied to drifting buoy data by almost all originating centers. The main migration, from the old template to the new one, occurred at the beginning of June 2015.

By the end of August 2015, only Joubeh, NDBC and JMA continued to use the never

validated template previously used (see Appendix C). However, WMO buoy Ids were not correctly coded by CLS Toulouse and CLS America in BUFR messages using the new template.

In parallel to BUFR, most of the centers continued to report buoy data in FM18 BUOY code.

E-SURFMAR continued to maintain a webpage on ECMWF wikisite with updated information about observation data sent onto the GTS in BUFR for surface marine and oceanographic platforms. See https://software.ecmwf.int/wiki/display/TCBUF/E-SURFMAR A link also exists on ECMWF web site that may help to write software coding for observations in BUFR, Meteo-France uses them.
http://old.ecmwf.int/products/data/software/bufr.html
.

3. Real Time Distribution of Data

Meteo-France continues to report Iridium buoy data on the GTS in FM18-BUOY and FM-94 BUFR formats (template TM315009 since June 2015) for E-SURFMAR and Meteo-France partners, as long as their format is one of those recommended by the DBCP. See the list of available formats: http://esurfmar.meteo.fr/doc/o/db/others/DB_Iridium_formats.pdf .

CLS Toulouse and CLS America are reporting drifting buoy data in BUFR according to template TM315009, however, WMO IDS are not being correctly coded at the moment of writing this report, digits are missing, due to a wrong algorithm, therefore, these data cannot be monitored. CLS is aware of this and are diligently working on it to solve the problem.

Most of the centers plan to stop the transmission of FM18-BUOY TAC messages on the GTS at the beginning of 2016.

By the end of August 2015, Meteo-France processed the data from approximately 250 Iridium drifting buoys (similarly to last year).

Developments are ongoing at Meteo-France to send the BUFR data of French moored buoys onto the GTS according to template TM315008. The implementation should occur during the next intersessional period.

Meteo-France QC tools (http://www.meteo.shom.fr/qctools/) monitor BUFR data as a matter of priority. TAC data are only monitored for buoys not reporting in BUFR.

Pierre Blouch reported to AOML/DAC, that 4 NOAA drifters operating in the Mediterranean Sea had WMO numbers starting with 13 and 62, instead of 61 or 12 which are identifiers for such area. AOML explained that at the time these drifters were deployed, there were no WMO numbers available starting with area 61 or 12 and AOML assigned a WMO number available closest to the area to get the data on the GTS as soon as possible. Later, when the correct WMO numbers were available, it was decided that changing WMO numbers will cause more trouble, so they stayed with the original WMO numbers assigned.

AOML/DAC continues to monitor data on the GTS and acting on requests received by the meteorological centers, to take sensor data, and/or positions off GTS, for drifters whose GTS is managed by AOML.

CLS reported that the number of BUFR bulletins disseminated on the GTS by CLS starting in June 2015 doubled (it went from ~3000 to ~6000 bulletins) for the transition period from the old to the new BUFR template. Meteo-France asked CLS to send for at least 3 months BUFR bulletins for drifters using the old and new BUFR templates at the same time with 2 different headers. Therefore, until end of 2015, each buoy observations is sent 3 times together on the GTS by CLS, once the transition period is over (end of 2015) only one BUFR bulletin with the new sequence and new GTS header will be transmitted on the GTS.

- One alphanumeric bulletin (BUOY) with previous GTS header
- One BUFR bulletin with the old sequence and previous GTS header
- One BUFR bulletin with the new sequence and new GTS header

There was a problem with FM18 BUOY messages generated by CLS America that caused around 70% of SSVX02 KARS observations to be missing from the GTS, from March 31 – April 7. This problem was due to a human error that changed GDP drifting buoys headers SSVX02 KARS to SSBX02 KARS. Many meteorological centers complained and the problem was quickly identified and fixed.

It was reported that several (~45) Argos-3 SVP drifters, made by the same manufacturer, were transmitting at times SST=0 on the GTS. CLS was contacted and a lower limit of 0 was applied to the SST transmitted on the GTS. The manufacturer was also contacted who explained that was a problem observed on their SVP drifters using Kenwood PMT transmitters and that problem had been resolved in their SVPB drifters. The problem was due to the fact that PMT can transmit when the SST is sampled and this can interfere with the sampling causing the zero values. Future versions of SVP firmware will not sample the SST when there is a possibility of the PMT transmitting.

Meteo-France reported there were too many positions reporting latitude and longitude to be equal to 0 on the GTS. It was determined this was due to a processing issue that allocated some drifting observations without location despite the presence of correct Argos or GPS locations. CLS acted quickly and established a new quality control "Location Mandatory" at both processing centers (CLS and CLS-America) which checks that a correct location is encoded in each GTS bulletin.

CLS reports that the daily average delivery time of drifter's bulletins on the GTS has slightly increased from January 2015 due to a new method of time computing adding few minutes in the statistic's numbers.

TAO moored buoys duplicates were observed in the Argos GTS processing chain in June 2015 and with the help of Pierre Blouch (Meteo-France) and CLS, the problem was identified to be caused by a consolidate option setup for such moored buoys in the GTS processing system. With Paul Freitag's (NOAA) agreement, this option was changed from "all values" to "transmit once" on all Atlas moored buoys' templates and the problem was fixed by end of June 2015.

4. Delayed mode distribution and archiving of data

Meteo-France continues to provide, on a weekly basis, surface current data deduced from the moving of drifting buoys to Coriolis. These data are used by Mercator Ocean to validate their model. The presence/absence of the drogue is automatically assessed through different methods. It is not guaranteed.

Metadata:

Meteo-France reports that, although not officially agreed and despite DBCP is responsible for such metadata, platforms metadata are collected in E-SURFMAR VOS metadata database meanwhile a more suitable repository is available
(http://surfmar.meteo.fr/doc/vosmetadata_v6/).

Metadata for Iridium drifting buoys of which the data are managed by Meteo-France, are available at
ftp://esurfmar.meteo.fr/pub/pb/ghrsst/ghrsst_buoys.xls .

AOML/DAC maintains metadata for all drifters processed by this center, updated quarterly and biweekly at:

www.aoml.noaa.gov/phod/dac/dirall.html (quarterly) and
www.aoml.noaa.gov/phod/dac/deployed.html (biweekly)

AOML/DAC has continued to send MEDS updated drifting buoy data to populate their archives. The latest dataset archived at MEDS covers through December 2011. On Nov 2014, AOML   sent another update to cover January 1, 2011 – December 31, 2013, but a decoding error was found in the drifter identification (ID)and WMO numbesr at the time   of insertion in the MEDS archives so the update was stopped until the error was found.
Later, it was decided that perhaps a better approach would be to resubmit all the historical data set since 1979 (a very large task) and make sure MEDS has the cleanest and most improved dataset in their archives. AOML/DAC and MEDS are planning to meet during DBCP to discuss how to further approach this task to minimize the impact on both centers. In the meantime the latest interpolated drifter data are available from the NOAA/AOML website at:
www.aoml.noaa.gov/phod/dac/dacdata.html
Edited and raw data are also available from NOAA/AOML upon requests by e-mail sent to:
Mayra.pazos@noaa.gov or Erik.valdes@noaa.gov

AOML/DAC continues to assembly, quality control and distribute data from Argos and Iridium drifters received at the center. On an average DAC quality controls about 1300 drifters per month
Raw drifter data are received at AOML as follows:
Argos drifters – from CLS-America
Iridium drifters- from CLS-America, Meteo-France, SIO, Joubeh and most recently from Department of Defense (DoD).

The most recent QC interpolated drifter dataset updated through June 2015 can be downloaded from the AOML web page at: **www.aoml.noaa.gov/phod/dac/dacdata.php**

5. 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 coefficients.

Meteo-France maintains the list of description of Iridium recommended formats at:
http://esurfmar.meteo.fr/doc/o/db/others/DB_Iridium_formats.pdf These formats are suitable for conversion in BUFR.

6. Review all relevant JCOMM Publications

It was recommended at DBCP-30, to have the document "An Oceanographer's Marine Meteorologist's Cookbook for submitting Data in Real Time and in Delayed Mode" cookbook published on the web as a living document even as an unfinished product It is expected to be published sometime before DBCP-31

7. Action Items completed during the intersessional period

Even though it was not identified as an action item during DBCP-30, it was brought to the attention of AOML/DAC the deployment log posted on the web had many WMO numbers missing, those were mainly from drifters which GTS is not managed by AOML and for which AOML used to get the WMO number from the JCOMMOPS WMO – platform cross reference list **(**ftp://ftp.jcommops.org/JCOMMOPS/GTS/wmo/wmo_list.txt**)**, which has not been updating regularly. Therefore AOML/DAC is getting many missing WMO numbers from Meteo-France's ghrsst.xls file, which is updated regularly, and from Joubeh's Linc website for those whose drifters GTS is managed by Joubeh. Champika is aware of the problem, and is working with her IT person to have this file updated regularly again, as it will be best to have one file to obtain this information for all platforms.

8. Items for discussion

1- To identify when the complete BUFR migration will take place and who and how the community will be made aware of the final switch date.

Identifying oil rigs and light vessels from the data going out on GTS is not trivial. There have been suggestions to have unique WMO IDS for those types of fixed platforms.
Any comments?

Pierre Blouch suggested to add Christoph Billon as a member of the TTDM after DBCP-31 in anticipation of his retirement in the Summer 2016.

9. Acknowledgements

The Chair of the Task Team on Data Management would like to thank members for their hard work during the intersessional period and for providing inputs to this report.

_____

APPENDIX B

TERMS OF REFERENCE OF THE DBCP TASK TEAM ON DATA MANAGEMENT (TT-DM)
(as adopted at DBCP-29)

The DBCP Task Team on Data Management shall:

1. Receive and review reports from the Data Management Centres specializing in buoy data, i.e. (i) the Meteo-France SOC/DB, and (ii) the ISDM, Canada RNODC/DB; reconcile any overlaps with emphasis on differences.

2. Take the lead on managing table driven coding requirements for data buoy observations, for all relevant applications, and submit them in a consolidated way to the DMPA Task Team on Table Driven Codes.

3. Address issues to do with real time distribution of data, including GTS issues, timeliness and methods to improve data/flows.

4. Address issues relating to delayed mode distribution and archiving of the data.

5. Seek input from data users on which instrumental metadata is most important and how it is best managed and coordinated.

6. Review all relevant JCOMM Publications, to make sure they are kept up to date and comply with Quality Management terminology.

7. Follow up with regard to the development of the WIGOS Pilot Project for JCOMM and make sure that the developments proposed by the Task Team are consistent with the WIGOS and WIS requirements.

8. Make recommendations to the DBCP Executive Board or the DBCP for addressing the issues above.

9. Report to the DBCP Executive Board and the DBCP at its annual Sessions.

Membership:

The membership is open to all Panel members. The Chairperson[1], appointed by the Panel, has selected the following team members:

1.   Mayra Pazos (TT Chairperson and GDP representative)
2.   Yann Bernard (CLS Technical Manager)
3.   Pierre Blouch (E-SURFMAR Service Manager, Eumetnet)
4.   Mathieu Ouellet(RNODC representative)
5.   Tony Chedrawy (Metocean)
6.   Gilbert Emzivat (SOC representative)
7.   Johan Stander (SA Weather Service)
8.   Jon Turton (UK Met Office)
9.   Jeff Wingenroth (Data Buoy Instrumentation)
10.   Basanta Kumar Jena (Scientist, NIOT, India)
11.   Tshikana Rasehlomi
12.   Karen Grissom
13.   Champika Gallage (DBCP Technical Coordinator, *exofficio*)

---

1 The Chair and Co-Chair of the Task Team should not be in a situation of conflict of interest.

APPENDIX C

BUFR Migration Monitoring – Buoy data

Pierre Blouch – Météo-France

Study performed on buoy data received and processed at Meteo-France on August 18th, 2015. The following tables give the number of buoys for which the BUFR data were correctly processed and the template which was used.

Drifting buoys

CCCC	Provider	TTAAii	BUFR Template	Nb of buoys	Remark
CWAO	Joubeh	IOBX02	Non validated	53	
CWAO	Joubeh	IOBX05	Non validated	22	
KARS	CLS America	IOBX02	Non validated	1064	Wrong WMO Ids in TM315009
KARS	CLS America	IOBX07	Non validated	16	Wrong WMO Ids in TM315009
KARS	CLS America	IOBX12	Non validated	2	Wrong WMO Ids in TM315009
KARS	CLS America	IOBX13	Non validated	3	Wrong WMO Ids in TM315009
KWBC	Pacific Gyre	IOBX06	TM315009	11	
KWNB	NDBC	IOBX01	Non validated	44	
LFPW	Meteo-France	IOB[A-L]01	TM315009	253	
LFVW	CLS Toulouse	IOBX02	Non validated	8	Wrong WMO Ids in TM315009
LFVW	CLS Toulouse	IOBX13	Non validated	2	Wrong WMO Ids in TM315009
RJTD	JMA	IOBC01	Non validated	5	
VHHH	HKO	IOBC01	TM315009	1	
	Total			1484	

Remarks:

1. All observations sent in BUFR are also sent in FM18-BUOY code in parallel, excepted those of KWBC and VHHH. Most of the other centres plan to stop the transmission of TAC messages onto the GTS at the beginning of 2016.

2. CLS Toulouse and CLS America also report drifting buoy data in BUFR according to template TM315009 (under other GTS headers than those given above). However, WMO Ids are not correctly coded at the moment. So, these data cannot be monitored. Otherwise, 91.6% of buoy data would be sent onto the GTS according to the now validated template.

Moored buoys

CCCC	Data Provider	TTAAii	BUFR Template	Nb of buoys	Remark
CWAO	Joubeh	IOBX02	Non validated	2	
DEMS	IMD			0	15 buoys reporting in FM18 only
EDZW	BSH/DWD	ISSXnn	TM308009	9	From a FM13 to BUFR conversion?
EGRR	Met Office	ISS[A/D]nn	TM308009	17	From a FM13 to BUFR conversion?
EIDB	Met Eireann	IOBA21	TM315008	4	FM18 BUOY in parallel
KARS	CLS America	IOBX08	Non validated	30	Wrong WMO Ids in TM315008?
KPML	NOAA/PMEL	IOB[B/C]18	TM315008	2	
KWNB	NDBC	IOB[F/G]08	TM315008	50	
KWNB	NDBC	ISS…	TM308009	194	From a FM13 to BUFR conversion?
LEMM	AEMET	IOBX[01-20]	Non validated	13	No TAC reports in parallel
LFPW	Meteo-France	ISS[D/E]nn	TM308009	3	From a FM13 to BUFR conversion
LFPW	Meteo-France			0	19 buoys reporting in FM18 only
LFVW	CLS Toulouse	IOBX01	Non validated	1	Wrong WMO Ids in TM315008?
LFVW	CLS Toulouse	IOBX03	Non validated	4	Wrong WMO Ids in TM315008?
LFVW	CLS Toulouse	IOBX11	Non validated	10	Wrong WMO Ids in TM315008?
LGAT	HCMR/HNMS	IOBD01	Non validated	1	No TAC reports in parallel
LPMG	IPMA			0	2 buoys reporting in FM18 only
RKSL	KMA			0	11 buoys reporting in FM18 only
	Total			340	

Remarks:

1. The number of "buoys" noted for Met Office, includes a few light vessels but exclude third party platforms (e.g. oil rigs) reporting through the same way.

2. The number of "buoys" noted for NDBC and reporting through ship BUFR (194) may include fixed platforms which are not moored buoys.

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

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

APPENDIX D

BUFR Migration Monitoring – Buoy data

Mathieu Ouellet – MEDS

Study performed on buoy data received and stored at MEDS on August 18th, 2015.

Table 1. Buoys, messages counts and templates per bulletin header

CCCC	TTAAii	# drifting buoy IDs	# moored buoy IDs	# invalid IDs	# sub datasets	Template	Remarks
CWAO	IOBX02	53	7	0	892	130 elem	
CWAO	IOBX05	22	0	0	358	130 elem	
EIDB	IOBA21	0	4	0	96	TM315008	
KARS	IOBX02	1050	0	17	22722	84 elem	$A_1=0$
KARS	IOBX05	0	0	1	22	TM315009	
KARS	IOBX06	0	0	790(+3)	22282	TM315009	$A_1=0$, $b_w=0$
KARS	IOBX07	16	0	0	680	84 elem	
KARS	IOBX08	0	30	0	377	84 elem	
KARS	IOBX12	2	0	0	47	84 elem	
KARS	IOBX13	3	0	0	53	84 elem	
KARS	IOBX15	0	0	10	543	TM315009	$A_1=0$, $b_w=0$
KARS	IOBX16	0	0	2	47	TM315009	$A_1=0$, $b_w=0$
KPML	IOBB18	0		0	24	TM315008	Section 3 Octet7 <128
KPML	IOBC18	0		0	24	TM315008	Section 3 Octet7 <128
KWBC	IOBX01	44	0	0	1007	84 elem	
KWBC	IOBX05	0 (+11)	0	0	340	84 elem	Section 3 Octet7 reserved bits error
KWBC	IOBX06	0 (+11)	0	0	558	TM315009	Section 3 Octet7 reserved bits error
KWNB	IOBF08	0	37	0	870	TM315008	Section 3 Octet7 <128
KWNB	IOBG08	0	13	0	303	TM315008	Section 3 Octet7 <128
LEMM	IOBX01	0	1	0	24	120 elem	
LEMM	IOBX02	0	1	0	24	120 elem	
LEMM	IOBX03	0	1	0	22	120 elem	
LEMM	IOBX04	0	1	0	24	120 elem	
LEMM	IOBX05	0	1	0	23	120 elem	
LEMM	IOBX07	0	1	0	23	120 elem	
LEMM	IOBX08	0	1	0	24	120 elem	
LEMM	IOBX09	0	1	0	24	120 elem	

LEMM	IOBX12	0	1	0	24	120 elem	
LEMM	IOBX13	0	1	0	24	120 elem	
LEMM	IOBX14	0	1	0	21	120 elem	
LEMM	IOBX15	0	1	0	17	120 elem	
LEMM	IOBX16	0	1	0	23	120 elem	
LFPW	IOBA01	119 (+2)	0	0	2864	TM315009	
LFPW	IOBB01	1	0	0	24	TM315009	
LFPW	IOBC01	1	0	0	24	TM315009	
LFPW	IOBD01	11 (+1)	0	0	304	TM315009	
LFPW	IOBE01	36 (+1)	0	0	873	TM315009	
LFPW	IOBG01	1	0	0	24	TM315009	
LFPW	IOBH01	17	0	0	430	TM315009	
LFPW	IOBI01	6	0	0	144	TM315009	
LFPW	IOBJ01	10	0	0	240	TM315009	
LFPW	IOBK01	28	0	0	667	TM315009	
LFPW	IOBL01	18	0	0	419	TM315009	
LFVW	IOBX01	0	1	0	11	84 elem	
LFVW	IOBX02	8	0	0	199	84 elem	
LFVW	IOBX03	0	4	0	89	84 elem	
LFVW	IOBX05	0	0	2	46	TM315009	$A_1=0$, $b_w=0$
LFVW	IOBX06	0	0	5 (+3)	199	TM315009	$A_1=0$, $b_w=0$
LFVW	IOBX11	0	10	0	2058	84 elem	
LFVW	IOBX13	2	0	0	46	84 elem	
LGAT	IOBD01	1	0	0	5	109 elem	
LIIB	IOBD12	n/a	n/a	n/a	n/a	116 elem	End Section not correct
RJTD	IOBC01	5	0	0	87	84 elem	
VHHH	IOBC01	1	0	0	0	TM315009	
Sum		1468	121	830	60295		

Comments

- Counts in brackets () indicate number of buoys reporting under more than one header (see Table 2 for more details)

- Section 3 Octet7<128: Octet 7 from the Data Description section (#3) indicates whether data reported in BUFR message is observed or else. Buoys from headers with this remark do not report their data as « observed »

- Section 3 Octet7 reserved bits error : Bits 3 to 8 in Octet 7, Data Description section (#3), are reserved and should be set to 0. Messages disseminated under headers with this remark do not currently observe this rule.

- End Section not correct : the End section of a BUFR message should be comprised of four "7" characters in CCITT International Alphabet No.5 to mark the end of the message. Messages disseminated under headers with this remark do not currently observe this rule.

- Invalid WMO Ids : valid WMOIds should be in the **$A_1 b_w nnnnn$** format where **A_1** is between 1 and 7 ; **b_w** between 1 and 6, and **nnnnn** lesser than 99999.

Table 2. Number of buoys reporting under more than one header

	LFVW IOBX06	KWBC IOBX06	LFPW IOBD01	LFPW IOBE01
KARS IOBX06	3			
KWBC IOBX05		11		
LFPW IOBA01			3	
LFPW IOBA01				3

Table 3. Provider codes (CCCC)

CCCC	Provider	Country
CWAO	Joubeh	Canada
DEMS	IMD	India
EDZW	BSH/DWD	Germany
EGRR	Met Office	U.K.
EIDB	Met Eireann	Ireland
KARS	CLS America	USA
KPML	NOAA/PMEL	USA
KWBC	Washington, DC	USA
KWNB	NDBC	USA
LEMM	AEMET	Spain
LFPW	Meteo-France	France
LFVW	CLS Toulouse	France
LGAT	Athens	Greece
LPMG	IPMA	Portugal
RJTD	JMA	Japan
RKSL	KMA	Korea
VHHH	HKO	Hong Kong

References

Dragosavac, M. 2007. BUFR User's Guide. Technical Notes, European Centre for Medium-Range Weather Forecasts Technical Notes.

WMO. Rules for allocating WMO numbers. Web page retrieved 2015-09-16.

APPENDIX E

(CLS REPORT)

CLS report on GTS processing activity for the DBCP Task Team Data Management

Reference:	CLS-DCL-NT-2015-XXX
Nomenclature:	-
Issue:	1. 0
Date:	Aug. 11, 2015

Chronology Issues:			
Issue:	Date:	Reason for change:	Author
1.0	11/08/2015	Creation	Yann Bernard

List of Contents

1. 2014-2015 GTS processing statistics

### Number of WMO platforms GTS processed per day
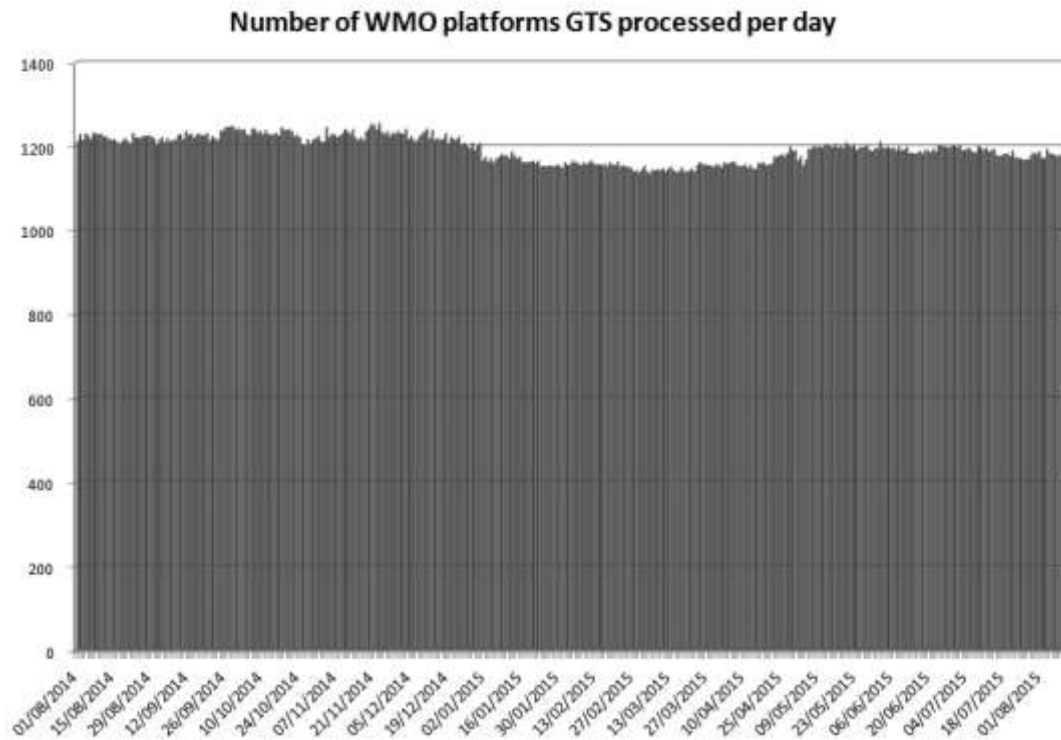
The number of WMO numbers processed by CLS on the 2014-2015 period remained relatively stable with around 1 200 GTS platforms reporting daily observations on the GTS.

Number of drifters GTS processed per day
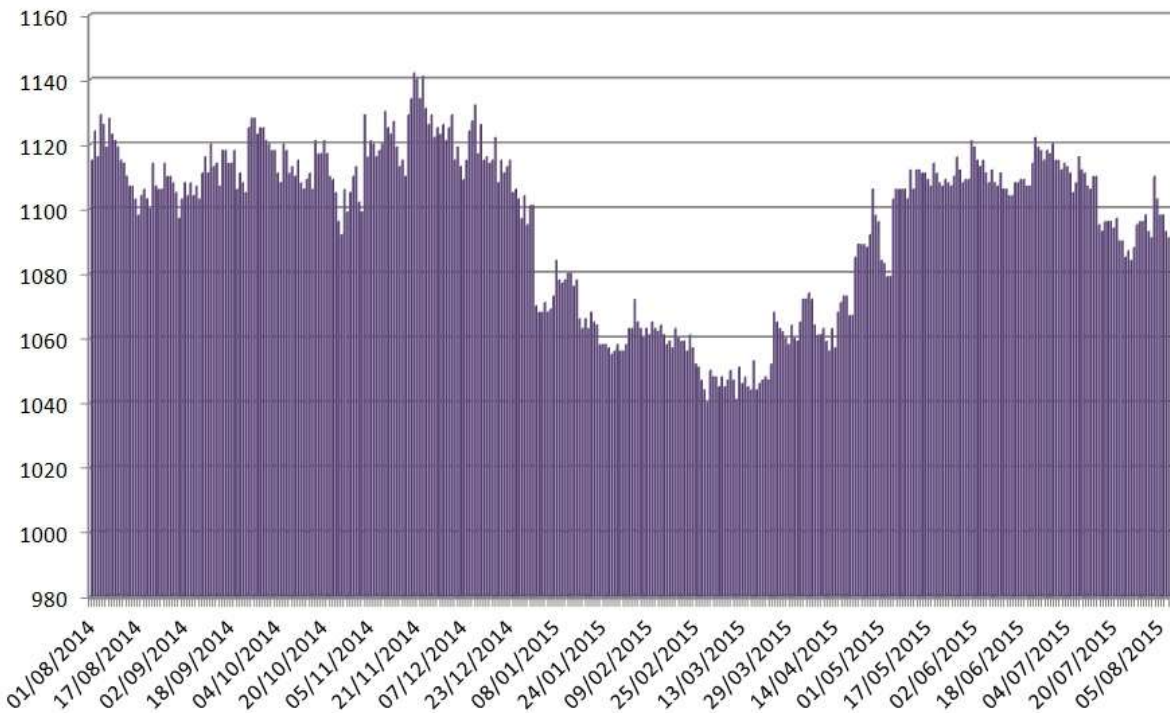
We can see the seasonal impact on number of drifters processed with more active drifters in Summer and Autumn during and after deployments.

Number of BUFR bulletins sent on GTS per day
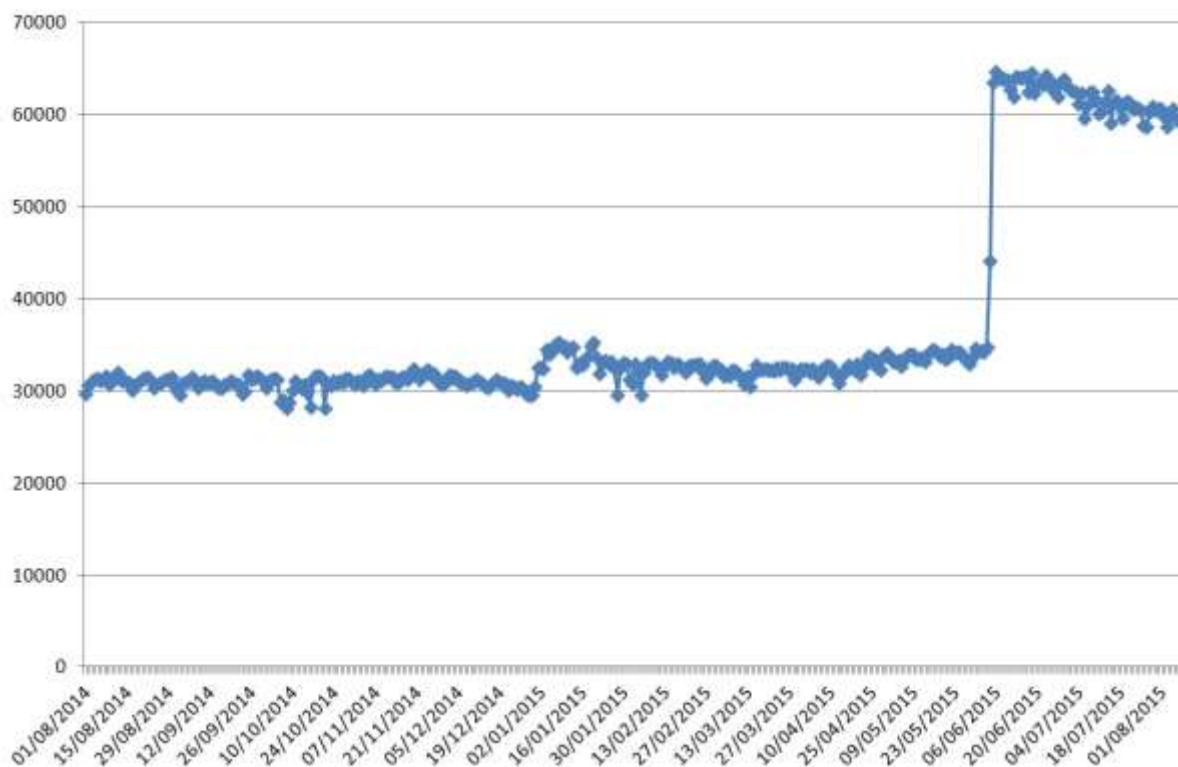
The number of BUFR bulletins displayed on the GTS by CLS has been multiplied by 2 in June 2015 for the transition period from the old to the new BUFR template. Météo-France asked CLS to send for at least 3 months BUFR bulletins with the previous and the new sequence for drifting buoys in the same time with 2 different headers.

Daily average delivery time (in min) of drifters bulletins on GTS
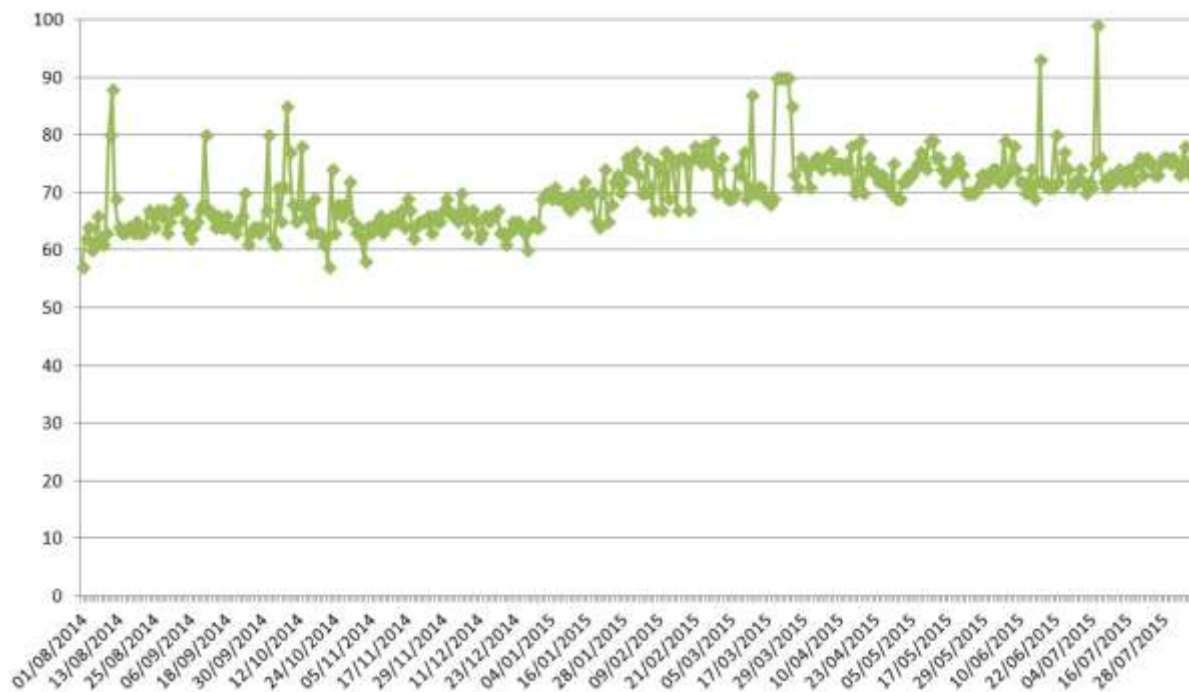
The daily average delivery time of drifters bulletins on the GTS has slightly increased from January 2015 due to a new method of time computing adding few minutes in the statistics numbers.

2. 2014-2015 GTS processing enhancements & operations at CLS

<u>BUFR templates</u>: The 2 new BUFR sequences for drifting buoys (TM 315009) and moored buoys (TM 315008) have been developed and qualified at CLS. These 2 new BUFR sequences have been applied on all active buoys processed by CLS and all processing templates in June 2015. Today, as requested by Météo-France and EUMETNET, for a transition period each buoy observation is sent 3 times together on the GTS by CLS:
- one alphanumeric bulletin (BUOY) with previous GTS header
- one BUFR bulletin with the old sequence and previous GTS header
- one BUFR bulletin with the new sequence and new GTS header

Here below the corresponding table between previous and new GTS headers used by CLS:

New BUFR bulletins headers	Old BUFR bulletins headers	Description
IOBX05	IOBX13	GDP drifters processed by CLS France
IOBX06	IOBX02	GDP drifters processed by CLS America
IOBX15	IOBX07	Arctic and Antarctic drifters processed by CLS France
IOBX16	IOBX12	Arctic and Antarctic drifters processed by CLS America
IOBX17	IOBX01	Other drifting buoys processed by CLS France
IOBX18	IOBX03	Other drifting buoys processed by CLS America
IOBX09	IOBX11	TRITON buoys
IOBX10	IOBX08	TAO, PIRATA, RAMA buoys
IOBX19		Other moored buoys processed by CLS France
IOBX04		Other moored buoys processed by CLS America

Once the transition period will be over (end of 2015) only one BUFR bulletin with the new sequence and new GTS header will be transmitted onto the GTS for drifting buoy observation.
At the time of writing this report, a bug has been identified in our 2 new BUFR sequences (TM 315009 and 315008) due to a different coding of the WMO number than in the previous BUFR template sequence for buoys. We hope to solve this issue early October.

<u>April 2015 GTS header incident:</u> Due to a human error, GTS header for GDP drifting buoys SSVX02 KARS has been changed into SSBX02 KARS from March 31 to April 7, 2015.

<u>ATLAS buoys duplicates</u>: In June 2015 we investigated with the help of Pierre Blouch (Météo-France) on duplicates issue for TAO moored buoys. Duplicates were due to a consolidate option setup for Atlas moored buoys in the Argos – GTS processing chain. With Paul Freitag (NOAA) agreement this option was changed from "all values" to "transmit once" on all Atlas moored buoys and templates. All the doubles are now removed from the GTS since end of June 2015.