



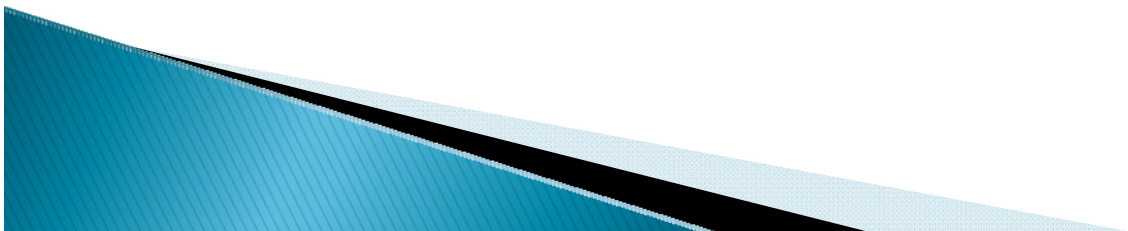
Report from GSN Monitoring Centres in JMA

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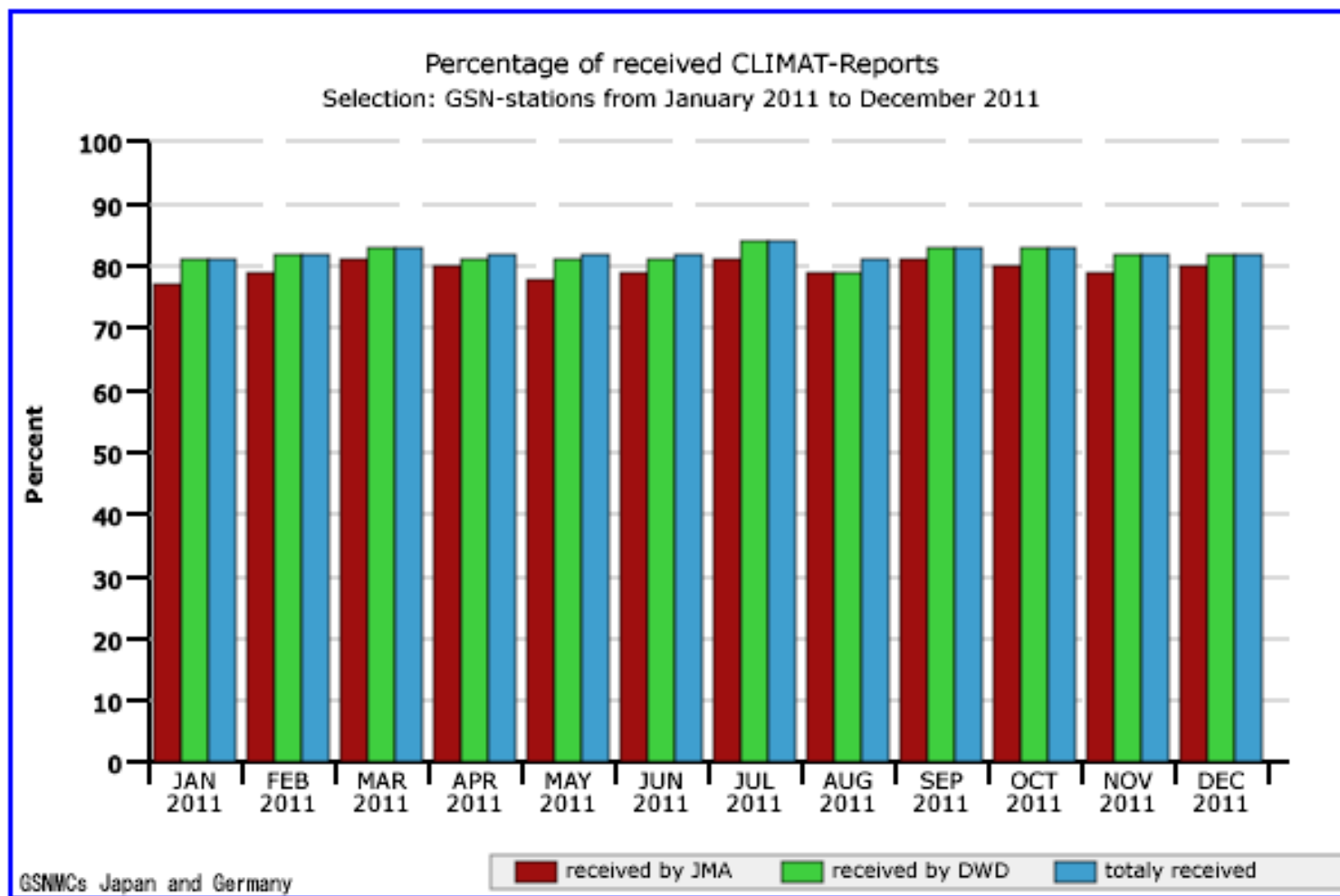
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1. Difference of received CLIMAT reports from CLIMAT GSN stations 1-1. JMA's investigation (1)

The reception rates of JMA are less than that of DWD in 2011.
The difference (DWD-JMA) of received CLIMAT reports is 301.





1. Difference of received CLIMAT reports from CLIMAT GSN stations 1-1. JMA's investigation (2)

▶ The factor of large difference between DWD and JMA

1) A problem of bulletins of “abnormal messages”

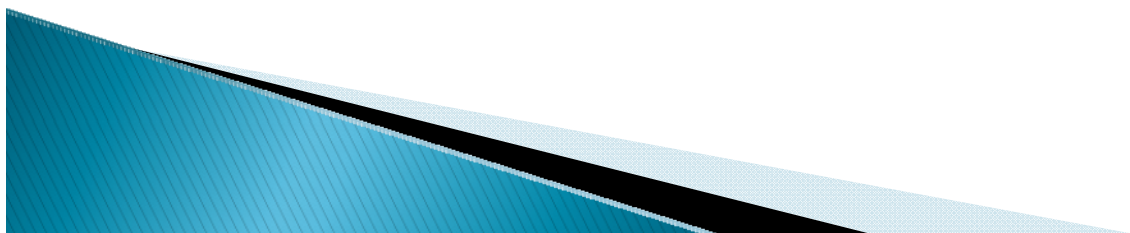
This problem is attributed to CLIMAT reports with more than 80 characters in a line or corrupted characters.

2) A problem of tab-delimited messages

This problem is attributed to CLIMAT reports with tab-delimited format in stead of blank-delimited format.

3) A problem of “flying start messages”

This problem is attributed to the date that send CLIMAT reports to the GTS.





1. Difference of received CLIMAT reports from CLIMAT GSN stations 1-1. JMA's investigation (4)

1) A problem of bulletins of “abnormal messages”

If the CLIMAT reports have more than 80 characters in a line, the data receiving system of JMA/CPD had rejected some bulletins as “abnormal messages” before decoding the CLIMAT reports.

Example:

```

53614 .111 .18915 .20209 .30045041 .401131012 .5031 .60002301 .7220099 .333↓
22100 .30100 .444 .0012129 .1102511 .2021931 .3109111 .4001402 .5114023=↓
53772 .111 .19296 .20224 .30048037 .401141002 .5037 .60009302 .7202101 .333↓
21800 .30200 .60302 .9000002 .444 .0013929 .1100711 .2021029 .3106607 .4003719↓
5114123=↓
54292 .111 .19858 .20184 .31024045 .400311077 .5027 .60010406↓
7201090 .333 .22910 .30600 .61511 .8110000 .444 .0006929↓
1108603 .2017529 .3116913 .4003406 .5121829=↓
54342 .111 .10149 .20212 .31004047 .400461056 .5037 .60023403 .7234108 .333 .22606 .30301 .40100 .61208 .8010000↓
.9000001↓
444 .0009329 .1107859 .2016427 .3113912 .4015906 .5117421=↓
54511 .111 .10179 .20220 .30059046 .401120009 .5035 .60009401 .7223098 .333↓
21400 .30101 .60101 .8010000 .9000001 .444 .0015728 .1100111 .2023927 .3105412↓
4008618 .5118223=↓
54857 .111 .10130 .20224 .30047029 .400850021 .5056 .60031407 .7178084 .333↓
00000 .00700 .00101 .0050000 .0000000 .444 .0011100 .1100011 .0010407 .0100001 .

```

98 columns !

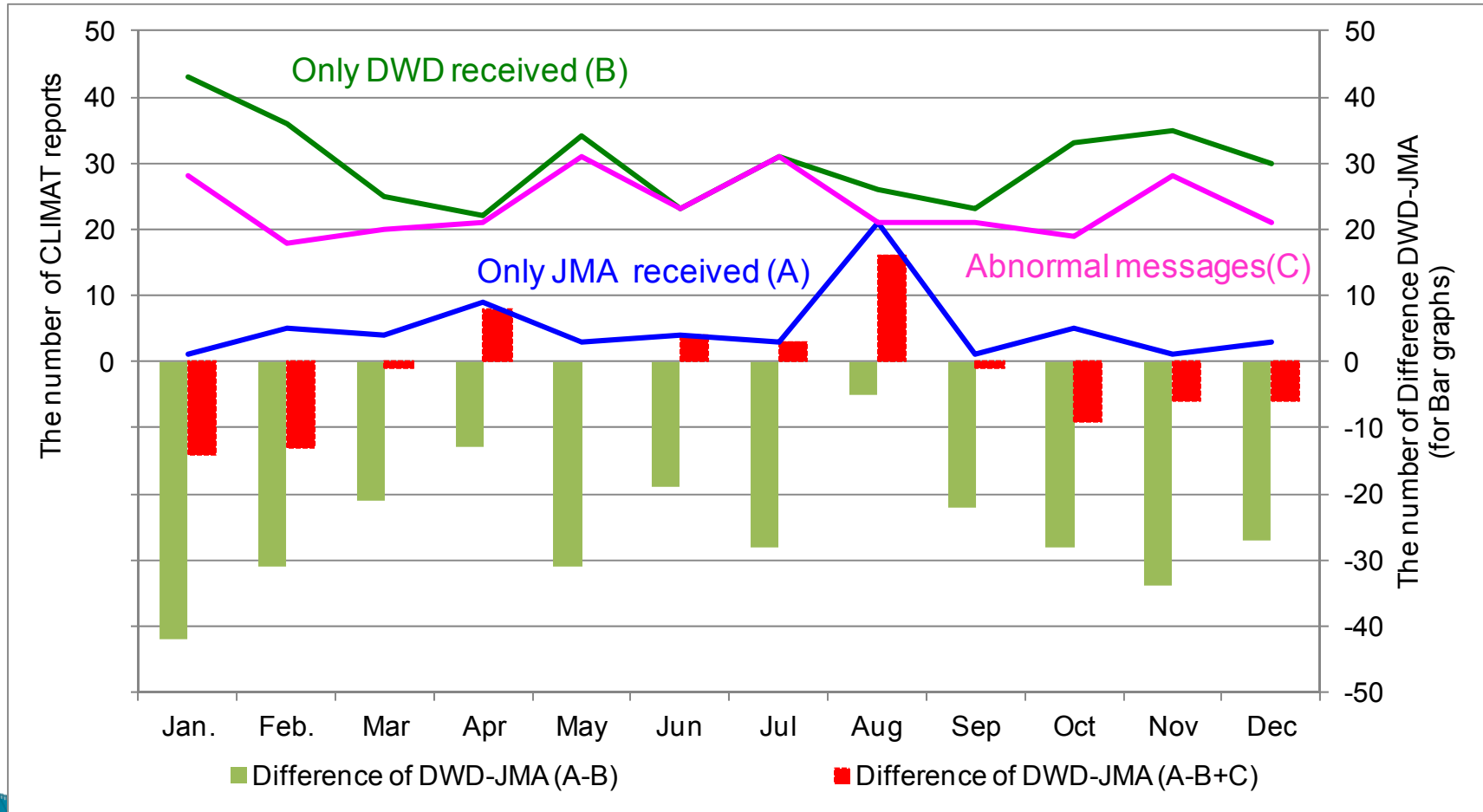


The number of rejected “abnormal messages” was 282 in 2011. This problem was **the biggest factor** of the difference in the number of received CLIMAT stations between DWD and JMA in 2011.

JMA already fixed the data receiving system, and JMA can now process “abnormal messages”.



1. Difference of received CLIMAT reports from CLIMAT GSN stations 1-1. JMA's investigation (3)





1. Difference of received CLIMAT reports from CLIMAT GSN stations 1-1. JMA's investigation (5)

2) A problem of tab-delimited messages

The CLIMAT reports from some stations are encoded by tab-delimited format instead of blank-delimited format.

Example:

↓Tab

98232⊙111 10182 20185 30247/// 402740223 60591/19

JMA/CPD's auto-CLIMAT-processing program merges "111" with "98232".

Result:

98232111 10182 20185 30247/// 402740223 60591/19

GSN monitoring system of DWD may be not able to evaluated it as the CLIMAT of "98232".

JMA already updated JMA's auto-CLIMAT-processing program in order to process these CLIMAT reports appropriately.

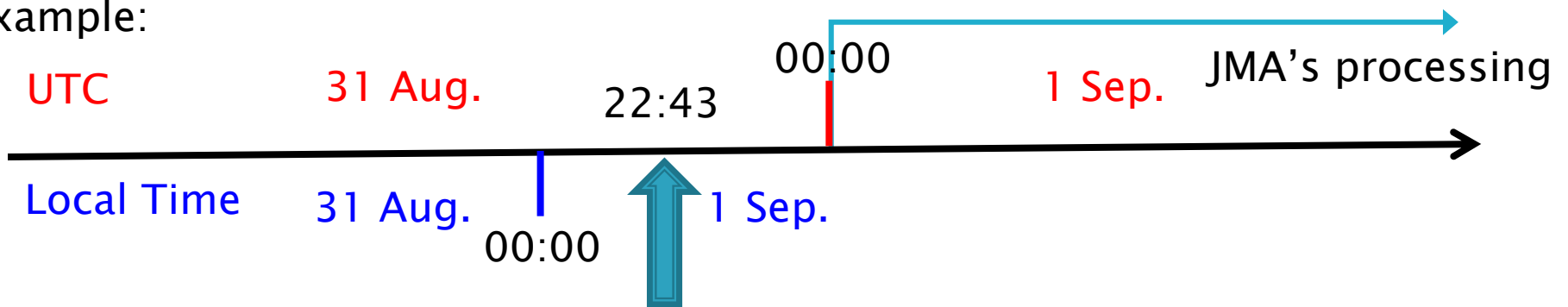


*1. Difference of received CLIMAT reports from CLIMAT GSN stations
1-1. JMA's investigation (6)*

3) A problem of “flying start messages”

A few stations input the CLIMAT report to GTS before the 1st day of the following month at UTC.

Example:



CLIMAT reports were submitted to GTS.

↑
“flying start message”

JMA monitors the CLIMAT reports from 00:00 UTC on the last day of the month to 23:59 UTC on the 20th day of the following month.



1. Difference of received CLIMAT reports from CLIMAT GSN stations 1-2. Present situation

JMA addressed these problems.

	2012			2013							Total
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	
Not rec. in DWD	136	113	115	145	113	103	111	118	105	122	1181
Not rec. in JMA	131	113	114	140	112	103	110	117	101	130*	1171
Difference of DWD-JMA	5	0	1	5	1	0	1	1	4	-8	10

* JMA did not receive the not-received CLIMAT reports for July 2013 via GTS, although JMA received an email on 12 August that some Chilean CLIMAT reports did not go through GTS. As a result, the difference became large.

There is not big difference between DWD and JMA in the number of received CLIMAT reports.



1. Difference of received CLIMAT reports from CLIMAT GSN stations 1-2. Present situation - list of not-received GSN stations -

- ▶ JMA makes the list of not-received GSN stations in DWD and JMA on a trial basis in order to clarify the difference.

- ▶ Sample:

```

=== Received DWD Only === 1 stations ↓
↓
67323 INHAMBANE ..... Mozambique ↓
↓
↓
=== Received JMA Only === 5 stations ↓
↓
16022 PAGANELLA ..... Italy ↓
16134 MONTE CIMONE ..... Italy ↓
16224 VIGNA DI VALLE ..... Italy ↓
16258 MONTE S. ANGELO ..... Italy ↓
16550 CAPO BELLAVISTA ..... Italy ↓
↓
↓
=== No Received ..... === 100 stations ↓
↓
13577 LAZARPOLE ..... Macedonia, The Former Yugoslav Republic ↓
13615 TIRANA ..... Albania ↓
17600 PAPHOS AIRPORT ..... Cyprus ↓
21432 KOTEL' NYY / OSTROV KOTEL' NYY ..... Russian Federation ↓
21921 KJUSJUR ..... Russian Federation ↓
21931 JURILE INALIA (KAZACHYE) ..... Russian Federation ↓

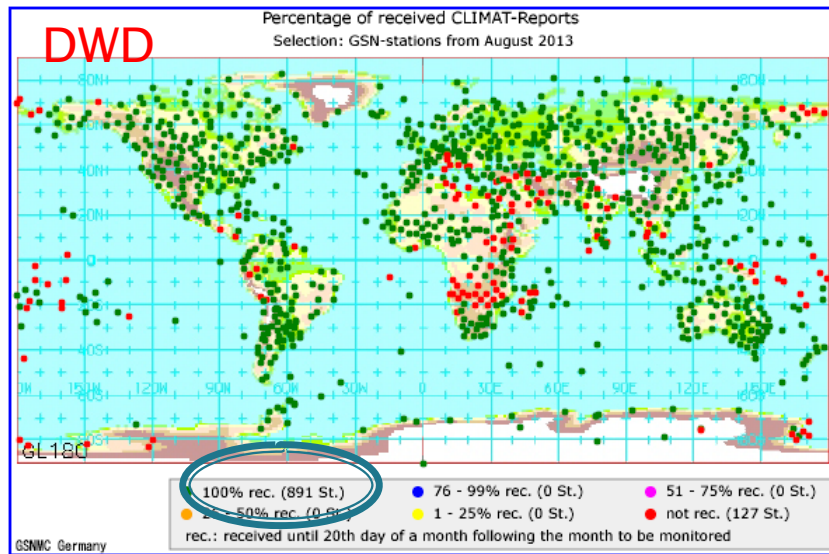
```

Jun. 2013

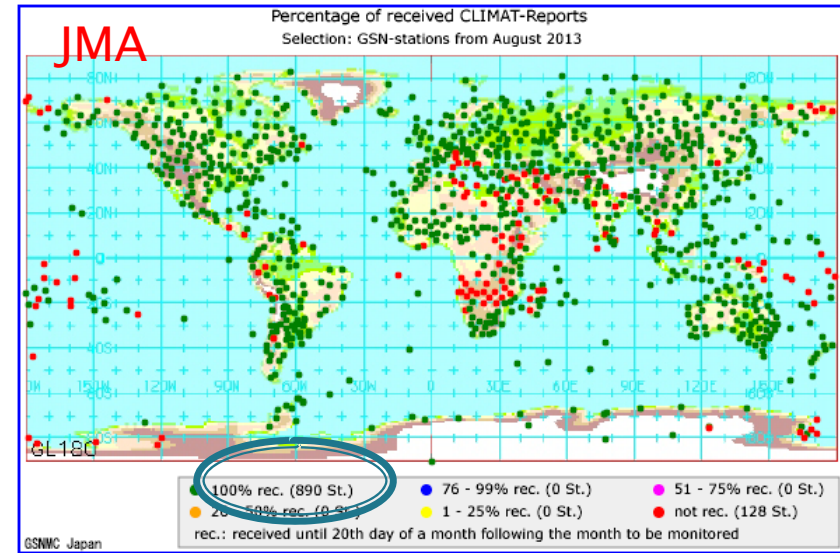


a little difference between DWD's map and JMA's list

There are a little difference between DWD's web site map and JMA's list. The cause is unknown by now.



100% rec.(891 st.)



100% rec.(890st.)

=== Recei ved DWD Onl y === 0 st at i ons

=== Recei ved JMA Onl y === 0 st at i ons

=== Nb Recei ved === 127 st at i ons

13577 LAZAROPLE

Republ i c

13615 TIRANA

16022 PAGANELLA

16134 MONTE CIMONE

□ □ □ □ □

Macedoni a, The For mer Yugosl av

Al bani a

Ital y

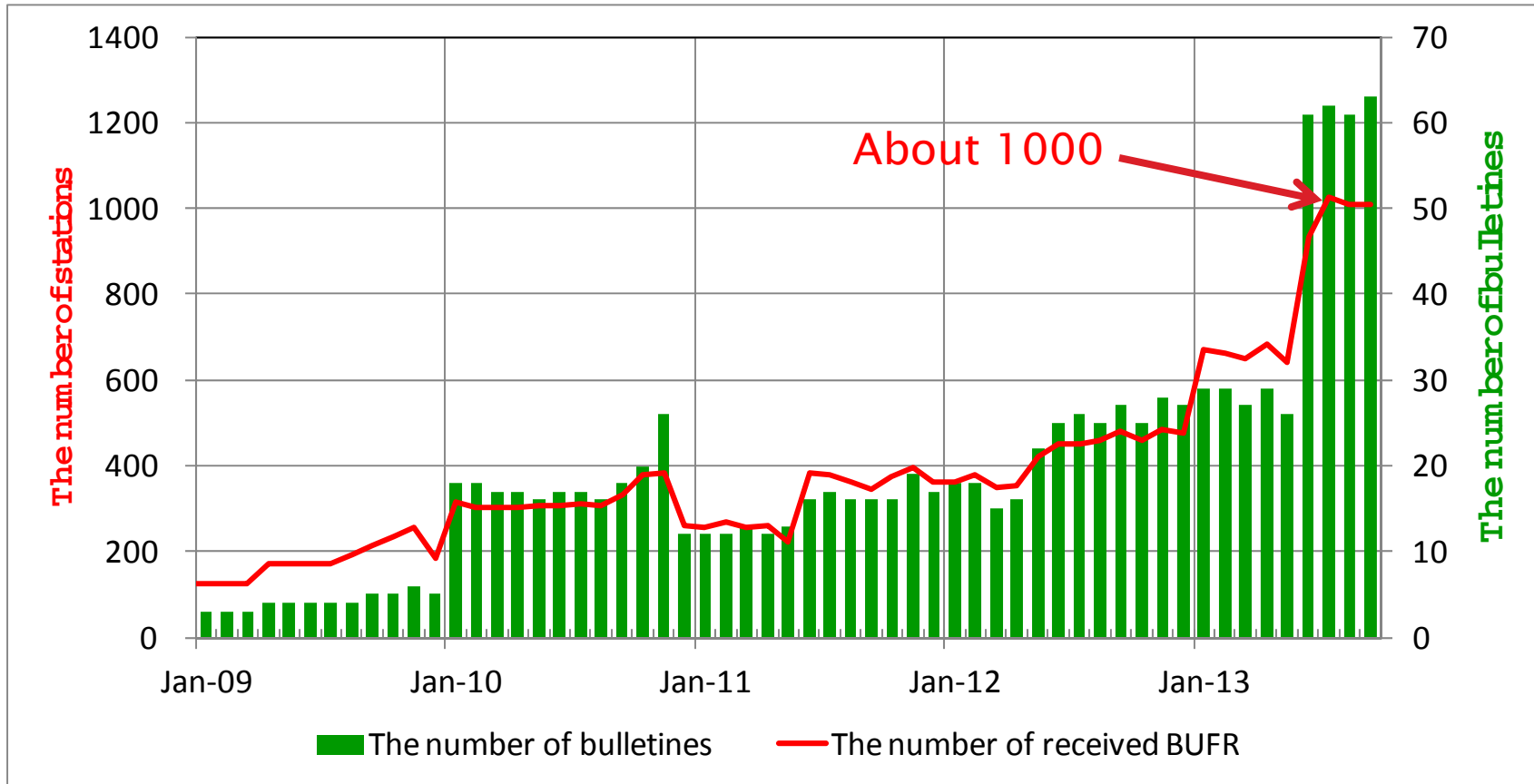
Ital y

←The JMA's list shows no difference between DWD and JMA.



2 Situation for received BUFR

2.1 Present situation



The number of received stations (red line) was less than 400 till April 2012. After that, it increased to about 500. After June 2013, it reaches to about 1000.

Total: 1028 (July 2013)
 RBCN: 736 (Region I to Region VI)
 Antarctic: 44 (Region VII)
 Other: 248



2 Situation for received BUFR

2.2 Some errors in BUFR

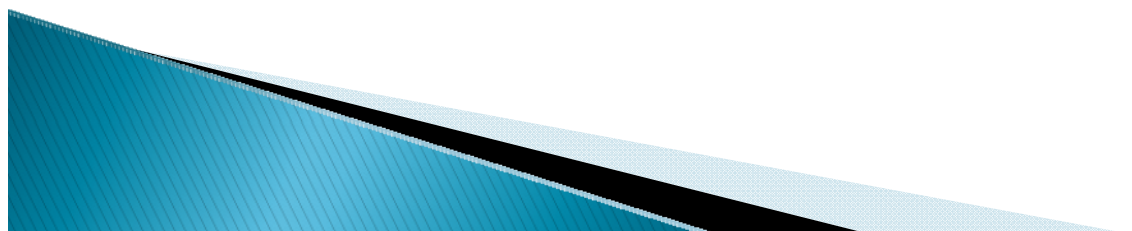
1) Missing station name

```
0.01.001.WMO_block_number/Numeric-->.50↓
0.01.002.WMO_station_number/Numeric-->.527↓
0.01.015.Station_or_site_name/CCITT_IA5-->.MISSING↓
0.02.001.Type_of_station/Code_table-->.MISSING↓
0.04.001.Year/Year-->.2013↓
0.04.002.Month/Month-->.7↓
0.04.003.Day/Day-->.1↓
0.04.004.Hour/Hour-->.12↓
0.04.005.Minute/Minute-->.0↓
```

station or site name (0 01 015) is missing. But, this WMO Number is 50527, it is HAILAR in China.

2) Unregistered stations

Some stations were not registered in Pub. 9. As a result, the some stations were not identified in Pub. 9 in July 2013.





2 Situation for received BUFR

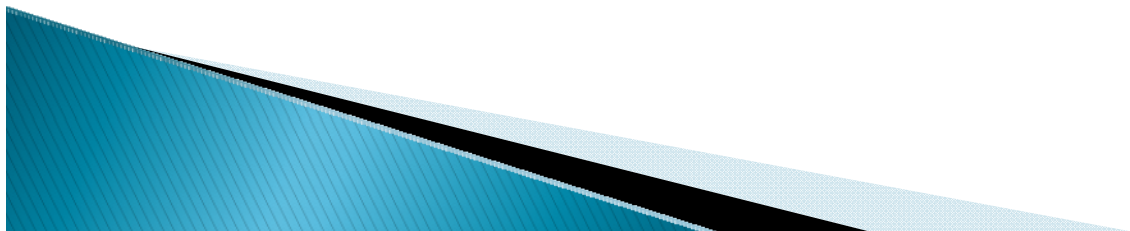
2.2 Some errors in BUFR

3) Incorrect element number

BUFR for CLIMAT has 179 elements normally, but some stations had a different element number.

One of the reasons is that some NMHSs did not send the normal values in BUFR.

According to B/C 30.3.1, any missing element shall be reported as a missing value.



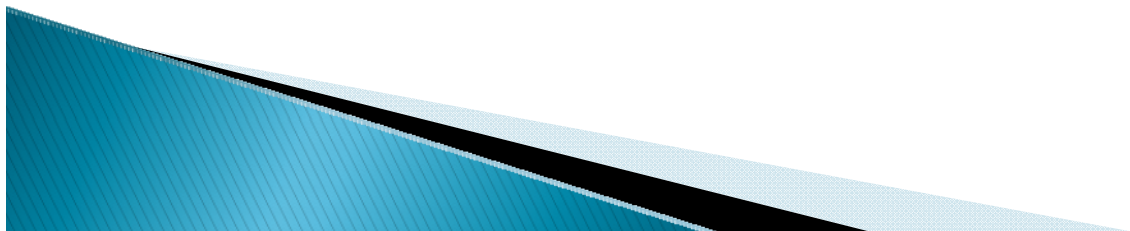


2 Situation for received BUFR

2.3 Problems of GTS routing for BUFR

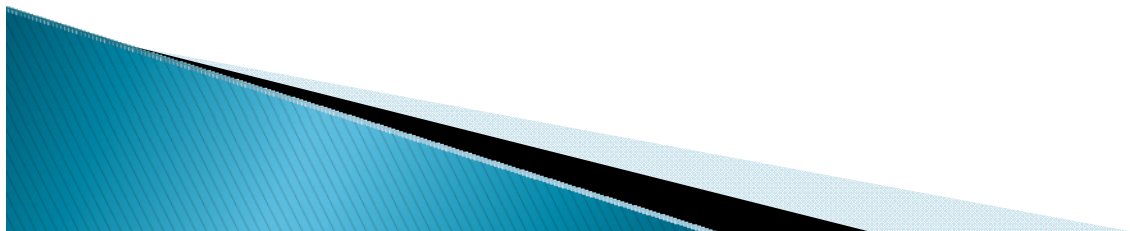
▶ Bangladesh's BUFR

- JMA sometimes cannot receive BUFR reports for CLIMAT of Bangladesh.
- JMA received the following BUFR for CLIMAT from Bangladesh.
 - – On 2 Jan. 2013, BUFR for December 2012
 - – On 2 May 2013, BUFR for April 2013
 - – On 3 Jun. 2013, BUFR for May 2013
 - – On 3 Jul. 2013, BUFR for June 2013
- But, Bangladesh input them to GTS every month.
- The cause of missing remains unresolved.



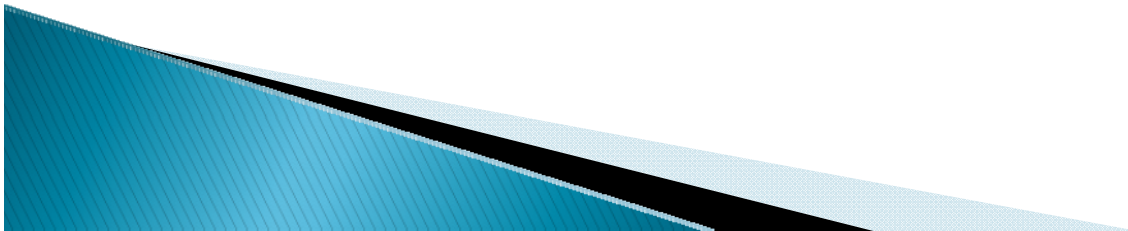
Conclusion

- ▶ At present, **there is few difference** between DWD and JMA in the number of received CLIMAT reports.
- ▶ **The number of received BUFR is less than 30%** of all RBCN stations, although it reached to about 1000 recently.
- ▶ There are a lot of errors in BUFR.
- ▶ It is possible that there are GTS routing errors in BUFR.





End





*The CLIMAT reports after the 20th day of the following month.
-GSN stations in 2013-*

This table shows the number of received CLIMAT reports via GTS from the 21th day to the end of the following month in 2012.

GSN	Region						
	1	2	3	4	5	6	7
Jan	2	1	0	0	0	0	0
Feb	1	0	0	0	0	1	0
Mar	0	0	0	1	0	0	0
Apr	3	0	0	0	4	0	0
May	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0
Jul	0	0	0	1	0	0	0
Aug	0	0	0	0	0	0	0
Sep	4	0	0	1	0	0	0
Oct	8	3	0	0	0	5	0
Nov	0	0	0	0	0	1	0
Dec	0	1	0	1	0	0	0
Average	1.50	0.42	0.00	0.33	0.33	0.58	0.00

	1	2	3	4	5	6	7
GSN	156	259	94	178	151	138	42
rate	1.0%	0.2%	0.0%	0.2%	0.2%	0.4%	0.0%