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METP-WG/MOG/1-WP/2
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WORKING PAPER

MEETING OF THE METEOROLOGY PANEL (METP) WORKING GROUP MOG

FIRST MEETING

Gatwick, London, United Kingdom, 8 to 11 September 2015

Agenda Item 3: Matters relating to SADIS
3.2: Status of outstanding SADISOPSG Conclusions

CONCATENATION AND AVAILABILITY OF WAFS GRIB2 FILES.

(Presented by the SADIS Provider)

SUMMARY

This working paper seeks endorsement to revise the concatenation processes for WAFS GRIB2 files on Secure SADIS FTP.

Action by the METP-WG/MOG is in paragraph 4.

1. INTRODUCTION

1.1 The group will recall that at the nineteenth meeting of the SADIS Operations Group Meeting (SADISOPSG/19)[1], the group formulated Conclusion 19/16 relating to a review of how World Area Forecast System (WAFS) gridded forecasts in GRIB2 code-form (GRIB2) data is concatenated and made available on Secure SADIS FTP in the GRIB2 folders.

1.2 This paper seeks endorsement to revise the concatenation processes for WAFS GRIB2 files on Secure SADIS FTP.

2. DISCUSSION

2.1 The group will be aware that the update cycle for WAFS GRIB2 datafiles in the 'GRIB2' folders is every 5 minutes on Secure SADIS FTP and the current process is to present the GRIB2 datafiles to that schedule even if the content of those datafiles is incomplete (i.e., not all of the required GRIB2 bulletins are available – for whatever reason). The SADISOPS/19 meeting was informed of some weaknesses of the current process, and of some alternatives that could be considered.

[1] SADISOPSG/19, 27-29 May 2014, London, United Kingdom

2.2 Accordingly, SADISOPSG/19 formulated the following Conclusion;

Conclusion 19/16: Review of the provision of concatenated data files containing WAFS GRIB2 bulletins on Secure SADIS FTP

That the SADIS Provider, in coordination with the SADISOPSG Technological Developments Team, be invited to:

a) consider alternative methods of providing and updating concatenated data files containing WAFS GRIB2 bulletins on Secure SADIS FTP as made available in the following folders:

1) GRIB2/COMPRESSED/EGRR; and
2) GRIB2/COMPRESSED/KWBC

and,

b) report back to the SADISOPSG/20 Meeting (or successor expert group).

2.3 The SADIS Provider and the SADISOPSG Technological Developments Team would like to inform the meeting that they invited the member for Australia to participate in this process, and are pleased to report that the member for Australia accepted.

2.4 Following review of the current processes and consideration of alternatives, a consensus developed supporting a change in methodology.

2.5 It is therefore proposed that the process be changed such that The WAFS GRIB2 datafiles will be made available in the Secure SADIS FTP 'GRIB2' folders when the first of the following criteria is fulfilled:

a) all required bulletins have been received; or,

b) a specified cut-off time has been reached

2.5.1 In the case of a), then the advantage will be that users will only need to download the data once, since all data will be present. In the case of b), very rarely, it may be the case that not all data is available, but there comes a point in time when users will require some data to work with. As soon as later bulletins arrive, the data files will be updated – much as the existing process.

2.6 Given such a methodology, the next consideration is to determine the cut-off time to apply. The group will be aware that the WAFCs produce non-harmonized data (wind, temperature, humidity, geopotential altitude, tropopause data) and data that is normally harmonized (cumulonimbus cloud, icing and turbulence). Since these datasets are available at different times, it would also seem appropriate to have different cut-off times.

2.7 Accordingly, it is proposed that the following cut-off times be endorsed

- WAFC London wind, temperature, humidity, geopotential altitude and tropopause data: T+4hrs 20min.
- WAFC London cumulonimbus cloud, icing and turbulence data: T+4hrs 50min.

- WAFC Washington wind, temperature, humidity, geopotential altitude and tropopause data: T+4hrs 20min
- WAFC Washington cumulonimbus cloud, icing and turbulence: T+4hrs 50min.

2.8 It is worth re-iterating that on the vast majority of occasions the WAFS GRIB2 data will be available in the 'GRIB2' folders much earlier than the cut-off times listed above. The cut-off time is required to ensure that some data is always made available at a specified time under those rare occasions when there are delays to production of data.

2.9 Another advantage of the proposal is that end user software should not need to be updated. Any software that automatically re-polls when downloaded GRIB2 datafiles are incomplete should still function as normal, the advantage being that such re-polls before the specified cut-off time will no longer be required. On rare occasions when data is incomplete after the cut-off time, the existing re-poll algorithms would be expected to continue to function.

2.10 **Availability of WAFS GRIB2 data in the 'ALL' folder.**

2.10.1 It is worth noting that the WAFS GRIB2 data is also made available within the 5 minute '.dat' files within the 'ALL' folder of Secure SADIS FTP. There is no proposal to modify the process within the 'ALL' folder. The WAFS GRIB2 data will be provided as available in accordance with the normal 5 minute update cycle of this folder.

3. CONCLUSION

3.1 In light of the foregoing, and based on the consensus recommendation of the SADIS Technological Developments Team and the member for Australia, the group is invited to formulate the following draft Conclusion;

Conclusion 1/xx Revised methodology for presenting concatenated WAFS GRIB2 data to Secure SADIS FTP.

That, the SADIS Provider be invited to modify the processes by which WAFS GRIB2 gridded forecasts are presented to the 'GRIB2' folders of the Secure SADIS FTP server. Specifically, the files should only be presented to the 'GRIB2' folders if a) all required GRIB2 bulletins have been received; or b) if the specified cut-off time threshold has been reached.

Note 1: - The cut-off times to be applied will be T+4 hours 20 minutes for wind, temperature, humidity, geopotential altitude and tropopause WAFS GRIB2 data; and T+4 hours 50 minutes for cumulonimbus cloud, icing and turbulence WAFS GRIB2 data .

Note 2: - The change should be implemented at 1200 UTC 10 March 2016.

4. ACTION BY THE METP-WG/MOG

4.1 The METP-WG/MOG is invited to:

a) note the information contained in this paper; and

b) decide on the draft conclusion proposed for the group's consideration.

APPENDIX: Historical availability of WAFC London GRIB2 datasets

The tables below provide information relating to the availability of WAFC London GRIB2 datasets.
This information was considered by the ad hoc group in determining the 'cut-off' times to apply.

By way of summary:

With regard to wind, temp, geopotential altitude, humidity and tropopause GRIB2 availability statistics between June 2013 and November 2014 are;

Total datasets: 2176
Total datasets available by T+4:20: 2160 (99.26%)
Total datasets available by T+6:00: 2172 (99.82%)

Earliest availability of complete dataset T+3hrs 26min
Latest availability of complete dataset T+5hrs 05min
Average time of availability of complete dataset: T+3hrs 36min

For cumulonimbus cloud, icing and turbulence harmonized GRIB2 availability statistics between March 2014 and November 2014 (note, a significant change was introduced in March 2014 to bring the issue time forward).

Total datasets: 1039
Total datasets available by T+4:35: 1019 (98.08%)
Total datasets available by T+4:50: 1027 (98.85%)
Total datasets available by T+6:00: 1036 (99.71%)

Earliest availability of complete dataset T+4hrs 10min
Latest availability of complete dataset T+5hrs 27min
Average time of availability of complete dataset: T+4hrs 13min

WAFC London GRIB2 Availability (not including CB, icing or turbulence parameters)

Month	Total sets	Complete sets by +4:20	Complete sets by +6:00	Earliest time for complete set	Latest time for complete set	Average time for complete set	Incomplete sets
Jun 2013	120	120 (100%)	120 (100%)	T+3:05	T+4:10	T+3:33	0
Jul 2013	124	123 (99.2%)	124 (100%)	T+3:30	T+4:30	T+3:32	0
Aug 2013	124	124 (100%)	124 (100%)	T+3:25	T+3:55	T+3:32	0
Sep 2013	120	119 (99.2%)	119 (99.2%)	T+3:30	T+7:10	T+3:32	0
Oct 2013	124	123 (99.2%)	124 (100%)	T+3:25	T+5:40	T+3:32	0
Nov 2013	120	116 (96.7%)	120 (100%)	T+3:25	T+4:35	T+3:36	0
Dec 2013	124	124 (100%)	124 (100%)	T+3:30	T+4:00	T+3:36	0
Jan 2014	124	123 (99.2%)	124 (100%)	T+3:25	T+4:25	T+3:35	0
Feb 2014	112	111 (99.1%)	112 (100%)	T+3:15	T+4:25	T+3:30	0
Mar 2014	124	123 (99.2%)	123 (99.2%)	T+3:25	T+9:10	T+4:00	0
Apr 2014	120	120 (100%)	120 (100%)	T+3:25	T+4:05	T+3:30	0
May 2014	124	124 (100%)	124 (100%)	T+3:25	T+3:30	T+3:26	0
Jun 2014	120	120 (100%)	120 (100%)	T+3:25	T+3:50	T+3:27	0
Jul 2014	124	122 (98.4%)	123 (99.2%)	T+3:25	T+6:05	T+3:38	0
Aug 2014	108***	107 (99.1%)	108 (100%)	T+3:35	T+5:15	T+3:42	0
Sep 2014	120	119 (99.2%)	119 (99.2%)	T+3:35	T+7:05	T+3:44	0
Oct 2014	124	122 (98.4%)	124 (100%)	T+3:35	T+5:35	T+3:40	0
Nov 2014	120	120 (100%)	120 (100%)	T+3:40	T+4:10	T+3:43	0

*** Monitoring unavailable 1st to 4th inclusive August 2014

WAFC London GRIB2 CB, Icing and Turbulence Availability

Month	Total sets	Complete sets by +5:30	N/A	Complete sets by +6:00	Earliest time for complete set	Latest time for complete set	Average time for complete set	Incomplete sets

Jun 2013	120	118 (98.3%)	N/A	118 (98.3%)	T+5:20	T+6:10	T+5:23	2
Jul 2013	124	124 (100%)	N/A	124 (100%)	T+5:20	T+5:30	T+5:23	0
Aug 2013	124	122 (98.4%)	N/A	123 (99.2%)	T+5:15	T+8:20	T+5:24	0
Sep 2013	120	118 (98.3%)	N/A	118 (98.3%)	T+5:20	T+7:25	T+5:24	1
Oct 2013	124	122 (98.4%)	N/A	123 (99.2%)	T+5:20	T+6:20	T+5:34	0
Nov 2013	120	113 (94.2%)	N/A	117 (97.5%)	T+5:20	T+7:55	T+5:35	0
Dec 2013	124	110 (88.7%)	N/A	123 (99.2)	T+5:20	T+8:50	T+5:33	0
Jan 2014	124	106 (85.5%)	N/A	123 (99.2%)	T+5:20	T+6:35	T+5:25	0
Feb 2014	112	111 (99.1%)	N/A	112 (100%)	T+5:10	T+5:35	T+5:32	0
Mar 2014	45	45 (100%)	N/A	45 (100%)	T+5:15	T+5:20	T+5:15	0
From 12 March 2014, issue time brought forward	Total sets	Complete sets by +4:35	Complete sets by +4:50	Complete sets by +6:00	Earliest time for complete set	Latest time for complete set	Average time for complete set	Incomplete sets
Mar 2014	79	78 (98.7%)	78 (98.7%)	78 (98.7%)	T+4:15	T+7:25	T+4:20	0
Apr 2014	120	120 (100%)	120 (100%)	120 (100%)	T+4:10	T+4:25	T+4:13	0
May 2014	124	119 (96.0%)	119 (96.0%)	124 (100%)	T+4:10	T+5:10	T+4:15	0
Jun 2014	120	119 (99.2%)	120 (100%)	120 (100%)	T+4:10	T+4:35	T+4:14	0
Jul 2014	124	120 (96.8%)	123 (99.2%)	124 (100%)	T+4:10	T+4:55	T+4:13	0
Aug 2014	108***	107 (99.1%)	107 (99.1%)	107 (99.1%)	T+4:10	T+7:40	T+4:12	0
Sep 2014	120	118 (98.3%)	118 (98.3%)	120 (100%)	T+4:10	T+4:55	T+4:14	0
Oct 2014	124	121 (97.6%)	123 (99.2%)	124 (100%)	T+4:10	T+5:30	T+4:12	0
Nov 2014	120	118 (98.3%)	119 (99.2%)	119 (99.2%)	T+4:10	T+4:30	T+4:11	1 (0.8%)

*** Monitoring unavailable 1st to 4th inclusive August 2014

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