International Civil Aviation Organization

MIDANPIRG Meteorology Sub-Group
Fifth Meeting (MET SG/5)

(Jeddah, Saudi Arabia, 2 - 4 September 2014)

Agenda Item 4.1:   Review of the implementation of WAFS and SADIS

SUMMARY OF RECENT AND FORTHCOMING
DEVELOPMENTS TO THE WAFS

(Presented by the WAFC London Provider, United Kingdom)

SUMMARY

This paper describes WAFS developments since the last meeting of the MID MET Sub Group in June of 2013. Some of these developments have had a direct impact on end users. A number of important developments are planned to the WAFS in future years and these are highlighted in this paper for the consideration of the group.

Action by the meeting is at paragraph 5.

1.   **INTRODUCTION**

1.1   This paper presents developments to the WAFS since the fourth meeting of the Middle East MET Sub Group (24th-27th June 2013). Since then, the eighth meeting of the WAFSOPSG[1] has taken place (2nd-5th September, Bangkok, Thailand). For more detail of the activities of the WAFS, users are encouraged to review information available on the ICAO WAFS Operations Group website at URL:
http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/default.aspx.

2.   **RECENT DEVELOPMENTS**

2.1   **Withdrawal of WAFS Upper Air Forecasts in WMO GRIB Edition 1 code form**

2.1.1   WAFS Upper Air Forecasts in WMO GRIB Edition 1 code form were withdrawn from SADIS on 14 November 2013.

Suggested action: Any user who is still unable to obtain and/or visualize WAFS Upper Air Forecasts in WMO GRIB Edition 2 code form should contact the provider of their SADIS Workstation/Software.

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[1] World Area Forecast System Operations Group

2.2   **Provision of WAFC London Upper Air Forecast data for FL410**

2.2.1   WAFS Upper Air data for FL410 was made available by the WAFCs on 14th November 2013, in accordance with the applicability of ICAO Annex 3 – *Meteorological Service for International Air Navigation*.

Suggested action: Note this information.

2.3   **Removal of the 'trial' label in ICAO Annex 3 in relation to the WAFS Upper Air Forecasts of cumulonimbus cloud, icing and turbulence**

2.3.1   The 'trial' label in relation to the WAFS Upper Air Forecasts of cumulonimbus cloud, icing and turbulence was removed with effect from the applicability date of Amendment 76 to ICAO Annex 3.

Suggested action: Note this information.

2.4   **Earlier availability of WAFS Upper Air Forecasts for CB, icing and turbulence**

2.4.1   In accordance with WAFSOPSG Conclusion 8/13, the WAFCs have been able to accelerate the production of the harmonized CB, icing and turbulence data. The data is now made available by T+4hrs 35mins; with a cut-off time (after which non-harmonized data will be issued) of T+4hrs 50mins. The change was implemented on 12th March 2014.

Suggested action: Note this information.

2.5   **Issuance of WAFC SIGWX forecasts during planned backup tests to normal time**

2.5.1   In accordance with WAFSOPSG Decision 8/8, the WAFCs are able to issue WAFC SIGWX forecasts during planned backup tests to the normal time. This was implemented with effect from 23 October 2013, and is expected to further enhance the transparency of the SIGWX backup test events. In the event of a real requirement for a WAFC backup (i.e. in the rare event that one WAFC is unable to perform its role); then SIGWX forecasts may be issued up to 2 hours later than normal. Under such circumstances, administrative messages would be issued via SADIS.

2.5.2   For information relating to the planned, quarterly SIGWX backup tests, please see section 4.2 below.

Suggested action: Note this information.

2.6   **Guidance and Training for States on the use and visualization of new gridded WAFS forecasts**

2.6.1   The WAFCs have produced a training module regarding the use of WAFS gridded CB, icing and turbulence forecasts. This guidance is provided via the internet with an English language voiceover. In addition, ICAO has provided PDF versions of the training module in the following languages: Arabic, Chinese, English, French, Russian and Spanish.

2.6.2   The training module and the related PDFs are supplemental to the existing guidance material 'Guidance on the Harmonized WAFS Grids for Cumulonimbus Cloud, Icing and Turbulence Forecasts - 11 September 2012'.

All of the material above is available via:
http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/GuidanceMaterial.aspx.

2.7   **Inclusion of WAFS GRIB2 CAT and CB verification data on the 'WAFC London Performance Indicators' page**

2.7.1   WAFC London has made available (from 8th July 2014) verification data for WAFS GRIB2 CAT and CB data. The information can be obtained from the "WAFC London Performance Indicators" webpage: http://www.metoffice.gov.uk/aviation/responsibilities/icao.   The verification data should be used in conjunction with the guidance material noted in 2.6 above.

Suggested action: Note this information.

2.8   **Inclusion of WAFS GRIB2 ICING verification data on the WAFC Washington website**

2.8.1   WAFC Washington has made available, on a trial basis, verification for WAFS GRIB2 icing data. The information can be obtained from the "NCEP Verification System for WAFS Aviation Products" webpage:
http://nomad7.ncep.noaa.gov/WAFS/EMC_VSDB_verif_demo/aviation.cgi This web site will not be operational until December 2014 and may be down from time to time. Users are encouraged to provide feedback to Matt.Strahan@noaa.gov and hui-ya.chuang@noaa.gov.

Suggested action: Note this information.

3.   FORTHCOMING DEVELOPMENTS

3.1   **Implementation of WAFS re-issuance policy for WAFS GRIB2 and WAFS SIGWX forecasts**

3.1.1   In accordance with WAFSOPSG Conclusion 7/5; the WAFCs are continuing to develop processes to enable the transmission of corrections to WAFS SIGWX forecasts and to WAFS GRIB2 forecasts in the event that errors or corruptions are identified. Information with regard to the methodology is provided in the **Appendix**. *Note: The above policy refers only to corrections and does not concern amendments for which there is no requirement.* The planned implementation is September 2014.

Suggested action: Note this information.

3.2   **Future Provision of additional flight levels to WAFS Upper Air Forecasts**

3.2.1   Subject to the finalised version of Amendment 77 to ICAO Annex 3; it is expected that data for additional flight levels will be provided as part of the WAFS gridded upper air forecasts. The extra levels will be FL080 (750hPa); FL210 (450hPa); and FL480 (125hPa). Expected implementation will be November 2016.

Suggested action: Note this information.

4.   STANDING ARRANGEMENTS

4.1   **WAFS SIGWX BUFR Edition**

4.1.1   The WAFC Provider's will continue to issue SIGWX forecasts in BUFR format using BUFR Edition 3. There are no current plans to migrate to BUFR Edition 4.

Suggested action: Note this information and ensure that your systems remain compatible with the BUFR Edition 3 for decoding of SIGWX BUFR. Note also that the SIGWX forecasts in PNG form will continue to be issued until further notice.

4.2   **WAFC backup tests**

4.2.1   The WAFC Provider States have continued to test their SIGWX backup procedures in the event that one WAFC is unable to produce SIGWX forecasts in the BUFR-code and PNG-chart format. Routine backup tests are conducted quarterly, with the results posted on the WAFSOPSG website in the document Forthcoming and Historical Record of WAFC Backup Tests' available via URL: http://www.icao.int/safety/meteorology/WAFSOPSG/Reference%20Documents/Forms/AllItems.aspx.   Tests over the last 12 months have been largely successful and transparent for the overwhelming majority of WAFS users.

4.2.2   Forthcoming backup tests are outlined in the same document: Notification of WAFC backup tests is promulgated on the SADIS broadcasts in advance, by way of administrative messages.

4.2.3   In addition, WAFC backup procedures are outlined in the 'WAFC Backup Procedures' available from the same URL.

Suggested action: Note this information and regularly visit the WAFSOPSG website to obtain information pertaining to WAFC backup tests and procedures.

4.3   **Access to Internet based services (Secure SADIS FTP/WIFS)**

4.3.1   The policies regarding the development of clear guidelines with regard to the accessing of data from Secure SADIS FTP and from WIFS have been endorsed by WAFSOPSG, SADISOPSG[2] and SCRAG[3].

Suggested action: Note this information. Users are encouraged to establish and regularly test backup accounts with the alternative provider to be used in the rare event that their normal service (Secure SADIS FTP or WIFS, as specified by Regional Air Navigation Plan) is unavailable. http://www.icao.int/safety/meteorology/sadisopsg/SADIS%20User%20Guide/Obtaining%20access%20to%20WIFS%20as%20a%20backup%20to%20SADIS%20FTP.pdf

5.   **ACTION BY THE MEETING**

5.1   The meeting is invited to:

   a)   note the information contained in this paper; and

   b)   discuss any relevant matters as appropriate.

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[2] Satellite Distribution System Operations Group
[3] SADIS Cost Recovery Administrative Group

APPENDIX A

**PROPOSAL FOR DEALING WITH CORRECTIONS TO WAFS
SIGWX FORECASTS AND WAFS GRIB2 DATA ON SADIS**

1. **Introduction**

    1.1. This document describes how the WAFCs will send corrected significant weather (SIGWX) forecasts and WAFS GRIB2 data. Please note that the WAFCs will ***not*** update or amend previously issued forecasts on the basis of updated information from new model runs or latest observations. The WAFCs will only issue corrections to address errors, such as missing information or corruption.

2. **General Methodology**

    2.1. When a BUFR, PNG or GRIB2 file needs to be corrected, it will have 'CCA' added to its WMO AHL. For example, if the original 'JUCE00 EGRR 191800' *bulletin* requires correction, then 'JUCE00 EGRR 191800 CCA' would be issued. If further corrections are necessary, the 2nd correction will have '**CCB**' added to its WMO AHL, and the third correction will have '**CCC**', and so on. For simplicity and brevity, only 'CCA' will be referenced subsequently in this document.

    2.2. On Secure SADIS FTP, all of the associated *files* will also have the '**CCA**' indicator added to their WMO AHL. For example, if the Jets BUFR file needs to be corrected, the Jets BUFR file and all the other BUFR and PNG files, such as the Cloud and Trop files, will be renamed with '**CCA**' appended to their filenames.

    2.3. With regard to SADIS 2G, all of the associated bulletins will be re-transmitted. For example, if it is necessary to correct the High Level CAT BUFR file, all of the other BUFR files and PNG files for that SIGWX forecast time will be retransmitted, with 'CCA' added to their WMO AHLs. This process would also apply to the WAFS GRIB2 forecasts.

    2.4. Secure SADIS FTP will replace all the associated files with the corrected files, appending '**CCA**' to the filenames. The original files will be deleted. See Section 1 belowfor details on filename conventions for Secure SADIS FTP.

    2.5. A strictly formatted administrative message will be sent to notify users of the correction. The format and proposed WMO headers of this administrative message can be found in Section 2 below of this document.

    2.6. Corrected PNG charts will have the '**CCA**' added to the bulletin ID, found in the top left corner of the PNG chart.

    2.7. User created visualizations of BUFR and GRIB2 forecasts should note that the underlying data was corrected in an appropriate manner.

    2.8. Examples of corrected BUFR and GRIB2 files can be found in Section 1 to 4 below.

Section 1

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The tables below provide examples of filenames of corrected products for both WIFS and Secure SADIS FTP. Note that the corrected files will be in the same directories as the original files, and the original files will be deleted.

Secure SADIS FTP

Product type	Example Original Filename	Example Corrected Filename
PNG	PGCE05_EGRR_0000.PNG	PGCE05_EGRR_0000_CCA.PNG
BUFR	JUCE00_EGRR_191800	JUCE00_EGRR_191800_CCA
GRIB2	T+06_0000	T+06_0000_CCA
Signature	JUCE00_EGRR_191800.SIG	JUCE00_EGRR_191800_CCA.SIG

Section 2

Example of the proposed format of the Administrative Message used to notify users of corrections to SIGWX or GRIB2 products. Note that WAFC London will use the WMO header FKUK66 EGRR, and WAFC Washington will use the WMO Header FKUS66 KKCI. Users should use this message as a trigger to update their software with new files.

      FXUK66 EGRR 200343
      RETRANSMITTED WAFC LONDON DATA:
      DATA TYPE: WAFC LONDON SIGWX BUFR AND PNG
      ORIGINAL WMO AHL: PG//// EGRR 191800
              JU//// EGRR 191800
      RETRANSMITTED WMO AHL: PG//// EGRR 191800 CCA
                JU//// EGRR 191800 CCA
      WHERE PG//// REPRESENTS ALL WAFC LONDON SIGWX PNG FILES
      AND JU//// REPRESENTS ALL WAFC LONDON SIGWX BUFR FILES
      ALL WAFC LONDON SIGWX BUFR AND PNG FILES INDICATED ABOVE ARE
      NOW BEING RE-TRANSMITTED.
      ISSUED BY WAFC LONDON=

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Section 3

Example of the first few lines of a corrected BUFR file, if it were dumped to text by software such as Microsoft Notepad.

    0000179500
    958
    JUCE00 EGRR 191800 CCA
    BUFR à——————————————   J   @

Section 4

Example of a corrected GRIB2 file if it were dumped to text by software such as Microsoft Notepad.

    0002938400
    639
    YUXC85 EGRR 210000 CCA
    GRIB   r¥   J Ý

Re-issuance of WAFC London corrected SIGWX.

On Secure SADIS FTP, SIGWX BUFR files are located in the 'BUFR' directory, under which there are two subfolders:

11/08/2010 12:00AM	Directory	EGRR
09/01/2010 12:00AM	Directory	KKCI

Within each of EGRR and KKCI, lie 'parameter' subfolders

10/21/2013 12:50PM	Directory	H_CAT
10/21/2013 12:50PM	Directory	H_EMBEDDED_CB
10/21/2013 12:50PM	Directory	H_FRONTS
10/21/2013 12:50PM	Directory	H_JETS
10/21/2013 12:50PM	Directory	H_TROP
10/21/2013 12:50PM	Directory	M_CAT
10/21/2013 12:50PM	Directory	M_CLOUD
10/21/2013 12:50PM	Directory	M_FRONTS
10/21/2013 12:50PM	Directory	M_JETS
10/21/2013 12:50PM	Directory	M_TROP
10/21/2013 12:50PM	Directory	OTHER_PARAMETERS

SIGWX BUFR, files are presented thus within their 'parameter' folder:

10/20/2013 12:50AM	1,805	JUCE00_EGRR_191800
10/20/2013 12:50AM	256	JUCE00_EGRR_191800.SIG
10/20/2013 06:50AM	1,911	JUCE00_EGRR_200000
10/20/2013 06:50AM	256	JUCE00_EGRR_200000.SIG
10/20/2013 12:50PM	1,455	JUCE00_EGRR_200600
10/20/2013 12:50PM	256	JUCE00_EGRR_200600.SIG
10/20/2013 06:50PM	1,429	JUCE00_EGRR_201200
10/20/2013 06:50PM	256	JUCE00_EGRR_201200.SIG
10/21/2013 12:50AM	2,295	JUCE00_EGRR_201800
10/21/2013 12:50AM	256	JUCE00_EGRR_201800.SIG
10/21/2013 06:50AM	2,431	JUCE00_EGRR_210000
10/21/2013 06:50AM	256	JUCE00_EGRR_210000.SIG
10/21/2013 12:50PM	1,761	JUCE00_EGRR_210600
10/21/2013 12:50PM	256	JUCE00_EGRR_210600.SIG

Consider, the High Level CAT parameter (H_CAT):

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10/20/2013 12:50AM   1,805 JUCE00_EGRR_191800

This is how the data is represented as 'text' (say in notepad), WMO AHL bulletin ID is highlighted.

> 0000179500
> 958
> JUCE00 EGRR 191800
> BUFR à———————————————— J   @
> ——————————————

A corrected bulletin (as part of a complete set of re-issued files) would have to follow the following process.

1) When issued, as a correction, the WMO AHL *bulletin* should read 'JUCE00 EGRR 191800 CCA'. This bulletin would be sent to MetSwitch and onward to downstream users. Secure SADIS FTP would need to detect the bulletin and recognise the 'CCA'. New *files* will be created containing the corrected *bulletins*. The file behaviour would be:

> a) create a 'new' file 'JUCE00_EGRR_191800_CCA'
> b) create a 'new' signature file 'JUCE00_EGRR_191800_CCA.SIG'
> c) need to delete the original 'JUCE00_EGRR_191800' file
> d) delete the original 'JUCE00_EGRR_191800.SIG' file

The new, corrected file would be something like this, and note the modification to the WMO AHL:

> 0000179500
> 958
> JUCE00 EGRR 191800 CCA
> BUFR à———————————————— J   @
> ——————————————

Since the policy is that when a correction is issued for WAFS SIGWX forecasts, **all** SIGWX BUFR parameters originally issued by that WAFC will be re-issued (including those parameters that do not have an error). Similar actions will take place for all SIGWX BUFR files issued by that WAFC corrected from the original 191800 datatime.

i.e. the following files would be issued:

> JUWE96_EGRR_191800_CCA   (BUFR high level jetstreams)
> JUCE00_EGRR_191800_CCA   (BUFR high level CAT)
> JUBE99_EGRR_191800_CCA   (BUFR high level cloud)
> JUTE97_EGRR_191800_CCA   (BUFR high level TROP)
> JUFE00_EGRR_191800_CCA   (BUFR high level fronts)
> JUVE00_EGRR_191800_CCA   (BUFR high level TRS, Volcano, Radiation)
> JUOE00_EGRR_191800_CCA   (BUFR medium level TROP)
> JUTE00_EGRR_191800_CCA   (BUFR medium level jetstreams)
> JUJE00_EGRR_191800_CCA (BUFR medium level fronts)
> JUNE00_EGRR_191800_CCA   (BUFR medium level cloud)
> JUME00_EGRR_191800_CCA   (BUFR medium level CAT)

The PNGs would also be reissued.
They are presented thus on Secure SADIS FTP:

In the 'SIGWX_PNG' folder there are two subfolders
    09/01/2010 12:00AM   Directory SWH_PNG
    09/01/2010 12:00AM   Directory SWM_PNG

In SWH_PNG:
    10/21/2013 12:55PM   Directory AREA_A
    10/21/2013 12:50PM   Directory AREA_B
    10/21/2013 12:55PM   Directory AREA_B1
    10/21/2013 12:50PM   Directory AREA_C
    10/21/2013 12:50PM   Directory AREA_D
    10/21/2013 12:50PM   Directory AREA_E
    10/21/2013 12:55PM   Directory AREA_F
    10/21/2013 12:50PM   Directory AREA_G
    10/21/2013 12:55PM   Directory AREA_H
    10/21/2013 12:55PM   Directory AREA_I
    10/21/2013 12:55PM   Directory AREA_J
    10/21/2013 12:50PM   Directory AREA_K
    10/21/2013 12:55PM   Directory AREA_M

In SWM_PNG
    10/21/2013 12:50PM   Directory AREA_ASIA_SOUTH
    10/21/2013 12:50PM   Directory AREA_EURO
    10/21/2013 12:50PM   Directory AREA_MID
    10/21/2013 12:55PM   Directory AREA_NAT

As an example (from AREA E)
    10/21/2013 06:50AM   89,817 PGCE05_EGRR_0000.PNG
    10/21/2013 06:50AM   256 PGCE05_EGRR_0000.PNG.SIG
    10/21/2013 12:50PM   88,168 PGCE05_EGRR_0600.PNG
    10/21/2013 12:50PM   256 PGCE05_EGRR_0600.PNG.SIG
    10/20/2013 06:50PM   87,399 PGCE05_EGRR_1200.PNG
    10/20/2013 06:50PM   256 PGCE05_EGRR_1200.PNG.SIG
    10/21/2013 12:50AM   90,284 PGCE05_EGRR_1800.PNG
    10/21/2013 12:50AM   256 PGCE05_EGRR_1800.PNG.SIG

Corrected SIGWX PNGs would be replaced with the following:
    10/21/2013 06:50AM   89,817 PGCE05_EGRR_1800 CCA.PNG
    10/21/2013 06:50AM   256 PGCE05_EGRR_1800 CCA.PNG.SIG

All other SIGWX PNGs would be similarly re-issued with the following filenames on Secure SADIS FTP.

    PGSE05_EGRR_191800_CCA (PNG ICAO High Level SIGWX Area B)
    PGRE05_EGRR_191800_CCA (PNG ICAO High Level SIGWX Area C)
    PGZE05_EGRR_191800_CCA (PNG ICAO High Level SIGWX Area D)
    PGGE05_EGRR_191800_CCA (PNG ICAO High Level SIGWX Area E)
    PGCE05_EGRR_191800_CCA (PNG ICAO High Level SIGWX Area G)
    PGAE05_EGRR_191800_CCA (PNG ICAO High Level SIGWX Area H)

PGKE05_EGRR_191800_CCA (PNG ICAO High Level SIGWX Area M)
PGDE14_EGRR_191800_CCA (PNG ICAO Medium Level SIGWX Area EURO)
PGCE14_EGRR_191800_CCA (PNG ICAO Medium Level SIGWX Area MID)
PGZE14_EGRR_191800_CCA (PNG ICAO Medium Level SIGWX Area S ASIA)

An automated SIGWX Correction message would be sent with the following:

FXUK66 EGRR 200343
RETRANSMITTED WAFC LONDON DATA:
DATA TYPE: WAFC LONDON SIGWX BUFR AND PNG
ORIGINAL WMO AHL: PG//// EGRR 191800
        JU//// EGRR 191800
RETRANSMITTED WMO AHL: PG//// EGRR 191800 CCA
         JU//// EGRR 191800 CCA
WHERE PG//// REPRESENTS ALL WAFC LONDON SIGWX PNG FILES
AND JU//// REPRESENTS ALL WAFC LONDON SIGWX BUFR FILES
ALL WAFC LONDON SIGWX BUFR AND PNG FILES INDICATED ABOVE ARE
NOW BEING RE-TRANSMITTED.
ISSUED BY WAFC LONDON=

In addition, the usual FXUK65 EGRR message will be issued to inform those users who a) have not got systems that can re-process the re-issued files, or are – for whatever reason – unable to obtain updated visualisations (soft or hard copy).

1) Should further corrections be necessary, then the sequence CCB, CCC, CCD etc should be followed.

2) Should such messages be received from WAFC Washington, then they should be processed in the same fashion – distributed directly over SADIS 2G (SIGWX only, not GRIB2), and processed in the as described above for Secure SADIS FTP. The FXUS66 KKCI would be issued by WAFC Washington and distributed to inform users, and act as a trigger.

For GRIB2 data:

On Secure SADIS FTP, GRIB2 data is in the 'GRIB2' folder. There is a subfolder;

06/15/2011 12:00AM   Directory COMPRESSED

And two lower level subfolder for WAFC London and WAFC Washington data.

08/20/2013 12:14PM   Directory EGRR
08/20/2013 12:14PM   Directory KWBC

Folders for CB, icing and turbulence are provided, and time-step concatenated GRIB2 bulletins. (sub folders in the CAT, CB, ICE and INCLDTURB also concatenate the GRIB2 data into separate time steps).

08/20/2013 12:14PM   Directory CAT
08/20/2013 12:14PM   Directory CB
08/20/2013 12:14PM   Directory ICE

08/20/2013 12:14PM	Directory	INCLDTURB
10/21/2013 12:45PM	Directory	T+06
10/21/2013 12:45PM	Directory	T+09
10/21/2013 12:45PM	Directory	T+12
10/21/2013 12:45PM	Directory	T+15
10/21/2013 12:45PM	Directory	T+18
10/21/2013 12:45PM	Directory	T+21
10/21/2013 12:45PM	Directory	T+24
10/21/2013 12:45PM	Directory	T+27
10/21/2013 12:45PM	Directory	T+30
10/21/2013 12:45PM	Directory	T+33
10/21/2013 12:45PM	Directory	T+36

So, typically, for the T+06 folder:

10/21/2013 03:30AM	1,550,574	T+06_0000
10/21/2013 03:30AM	256	T+06_0000.SIG
10/21/2013 09:30AM	1,550,375	T+06_0600
10/21/2013 09:30AM	256	T+06_0600.SIG

A very truncated 'text' version of the T+06_0000 file is shown below, the WMO AHL of the *bulletin* is highlighted:

```
0002938400
639
YUXC85 EGRR 210000
GRIB        r¥    J Ý
```

Data would be distributed as normal over SADIS 2G.

On Secure SADIS FTP, the following processes would need to occur:

> Issue T+06_0000_CCA file
> Issue T+06_0000_CAA.SIG signature file
> Delete original T+06_0000 file
> Delete original T+06_0000.SIG file

On Secure SADIS FTP, each concatenated file would contain corrected bulletins (note modified WMO AHLs):

```
0002938400
639
YUXC85 EGRR 210000 CCA
GRIB        r¥    J Ý
```

An automated GRIB2 Correction message would be sent with the following:

> FXUK66 EGRR 200343
> RETRANSMITTED WAFC LONDON DATA:
> DATA TYPE: WAFC LONDON GRIB2 UPPER AIR FORECASTS

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    ORIGINAL WMO AHL: Y/X/// EGRR 210000
    RETRANSMITTED WMO AHL: Y/X/// EGRR 210000
    WHERE Y/X/// REPRESENTS ALL WAFC LONDON GRIB2 WAFS FILES
    ALL WAFC LONDON GRIB2 WAFS FILES INDICATED ABOVE ARE NOW
    BEING RE-TRANSMITTED.
    ISSUED BY WAFC LONDON=

1) Should further corrections be necessary, then the sequence will be CCB, CCC, CCD etc should be followed.

2) Should such messages be received from WAFC Washington, then they should be processed in the same fashion – and processed in the same way for Secure SADIS FTP. The FXUS66 KWBC would be distributed to inform users, and act as a trigger.

- END -