

## WAFS Change Implementation Notice Board (V49, last updated 18 April 2024)

Deliverable No.	Posting Date of Deliverable	Summary of Change	Magnitude of Change	Impact on End Users	Implementation Schedule	Latest Status Report
<b>UPCOMING CHANGES</b>						
50	18/04/2024	New multi timestep SIGWX forecasts introduced  - new IWXXM format - T+6 to T+48 at 3-hourly intervals	<b>MAJOR</b>	Users will need to register to use the new SADIS API to access the data and set up their systems to ingest and then visualise the new format SIGWX forecasts	Test data available 19/03/2024  Expected to become operational 28 November 2024.	In progress
51	18/04/2024	Changes to T+24 SIGWX forecasts on SADIS FTP	<b>MAJOR</b>	There will be changes to the content of the T+24 PNG charts and T+24 BUFR files.  Embedded CB clouds will no longer be included and tropopause height will be depicted as contours.  Medium level SIGWX will no longer include in-cloud turbulence and icing as a combined field.	28-Nov-24	On target

<b>HISTORICAL CHANGES</b>						
49	05/11/2020	Introduction of SADIS API containing higher resolution WAFS data sets.  Increase to 0.25 degree resolution of all data sets T+6 to T+24 at 1-hourly intervals, T+27 to T+48 at 3-hourly intervals and 6-hourly intervals to T+120  Data at 1000ft vertical intervals using exact pressure level values	<b>MAJOR</b>	Minor impact on end users as to access the new data requires access to the new SADIS API.	19-Mar-24	Complete

48	05/11/2020	New fields introduced at 0.25 degree horizontal resolution as per ICAO Annex 3 Amendment 79: - Turbulence Severity, uses the Graphical Turbulence Guidance algorithms and providing output as Eddy Dissipation Rate. Able to forecast both orographic and clear air turbulence - 0.25 degree Icing Severity, gives a categorical forecast of icing intensity - Cumulonimbus extent, base and top	<b>MAJOR</b>	Small impact on end users as it's a new data set, but will require users to update their systems to be able to visualise it.	5th November 2020.	Complete
47	05/11/2020	Retirement of 1.25 degree WAFS Hazard data sets	<b>MAJOR</b>	Retirement of the following 1.25 degree horizontal resolution fields (as superceded by higher resolution equivalents): - Clear Air Turbulence mean/max - Icing Potential mean/max - Cumulonimbus extent/base/top - In-cloud turbulence mean/max	In-cloud turbulence retired in November 2020. Remaining fields retired on 24 January 2024.	Complete
46	23/02/2016	Additional WAFC GRIB2 levels	<b>MAJOR</b>	Additional data for wind, temperature, and geopotential height for FL080. FL210 and FL480. Additional humidity data for FL080.	Revised implementation date of 26 January 2017. This is considered minor since no modifications to software are expected. In the rare event that incomplete datasets are presented at the cut-off times, the files will be updated when remaining data becomes	Complete
45	23/02/2016	6 month trial of low level forecasts in graphical format on Secure SADIS FTP	<b>MINOR</b>	EUR Low level forecasts in graphical format that comply with specified conditions will be made available on SADIS FTP. Considered minor since data will be made available in a new folder. This should not have an impact on existing software. It is recommended that developers only modify development/test systems during this trial.  Note March 2020 - no longer restricted to only EUR products.	Trial extended until at least 2024	Ongoing

44	23/02/2016	Revised methodology for presenting concatenated WAFS GRIB2 data to Secure SADIS FTP	<b>MINOR</b>	Concatenated WAFS GRIB2 data will be presented to Secure SADIS FTP folders when either a) all data is available; b) cut-off times of T+4hrs 20min (for wind, temp, gph, humidity) or T+4hrs 50min (CB cloud, icing, turbulence) have been reached. This only affects the WAFS data presented to the GRIB2 folders.	Revised implementation date of 26 January 2017. This is considered minor since no modifications to software are expected. In the rare event that incomplete datasets are presented at the cut-off times, the files will be updated when remaining data becomes available. This is, in effect, no different from current behaviour.	<a href="#">Deliverable Complete.</a>
43	23/02/2016	Deletion of files from Secure SADIS FTP	MINOR	Deletion of: 'LAST_18_HOURS_DATA' file.	Deleted at 1200 UTC 06 April 2016.	<a href="#">Deliverable Complete.</a>
42	23/02/2016	Cessation of SADIS 2G - 31 July 2016	MAJOR	Existing SADIS 2G users are encouraged to migrate to the Secure SADIS FTP service at the earliest opportunity.	SADIS 2G withdrawn at 1200 UTC on 31 July 2016.	<a href="#">Deliverable Complete.</a>
41	14/02/2014	Implementation of re-issuance policy with regard to WAFS SIGWX and WAFS GRIB2 data	<b>MAJOR</b>	The WAFCs will re-issue, under agreed circumstances, WAFS SIGWX and GRIB2 data should the original issue of the data be subject to error or corruption. The WAFCs will make use of the 'BBB' section of the WMO AHL. More details will be made available by the WAFCs as necessary.	Implemented 2nd December 2014 by WAFc London. Implemented 16 Jan 2015 by WAFc Washington.	<a href="#">Deliverable Complete.</a>
40	14/02/2014	Provide WAFS GRIB2 cumulonimbus cloud, icing and turbulence data with minimum delay after wind, temperature, humidity and geopotential altitude data	<b>MINOR</b>	The WAFc will make WAFS GRIB2 cumulonimbus cloud, icing and turbulence data available on Secure SADIS FTP and WIFS by T+4hrs and 35mins.	12-Mar-14	<a href="#">Deliverable Complete.</a>
39	11/12/2012	Introduction of WAFS Upper Air Forecasts (WMO GRIB edition 2) for FL410 (u component of wind, v component of wind, temperature and geopotential height).	<b>MINOR</b>	Additional WMO Abbreviated Header Lines are currently being agreed, and will be notified separately.	Effective 0000 UTC Thursday 14th November 2013.	<a href="#">Deliverable Complete.</a>

38	11/12/2012	Removal of 'Trial' label in relation to WAFS Upper Air Forecasts of cumulonimbus cloud, icing and turbulence.	<b>MINOR</b>	The WAFS Upper Air Forecasts of cumulonimubs, icing and turbulence will no longer be classed as 'trial' products effective 0000 UTC Thursday 14 November 2013. Changes to Secure SADIS FTP and WIFS folder structures will be necessary, and the new data is expected to be distributed over SADIS 2G (subject to endorsement by SADISOPSG).	Preliminary changes to Secure SADIS FTP folder structure August 2013. Full implementation effective 0000 UTC Thursday 14th November 2013.	<a href="#">Deliverable Complete.</a>
37	11/12/2012	Withdrawal of WAFS Upper Air Forecasts in the WMO GRIB Edition 1 format	<b>MAJOR</b>	Users of WAFS Upper Air Forecasts in the WMO GRIB Edition 1 format must have migrated to the WAFS Upper Air Forecasts in GRIB Edition 2 format in sufficient time prior to withdrawal of the GRIB1 datasets. Users who require assistance in migrating from the GRIB1 format to GRIB2 format should contact the relevant WAFC in sufficient time at the following addresses:  WAFC London servicedesk@metoffice.gov.uk  WAFC Washington matt.strahan@noaa.gov	Last dataset to be provided will be that with <b>Data Time 1800 UTC on Wednesday 13 November 2013</b>	<a href="#">Deliverable Complete.</a>
32	18/04/2011	Training requirements for the new gridded forecasts in light of the development of the updated guidance on the interpretation of the forecasts	<b>MINOR</b>	WAFC Provider States develop a paper, in time for WAFSOPSG/7 meeting, to review the training requirements for the new gridded forecasts in light of the development of the updated guidance on the interpretation of the forecasts	Present to WAFSOPSG/7 (Sep 2012)	<a href="#">Deliverable Complete.</a>
36	07/08/2012	Adjustment of WAFS GRIB1 availability times.	<b>MINOR</b>	The WAFCs will make GRIB1 data available on WIFS/Secure SADIS FTP/SADIS FTP as soon as possible after the production of GRIB2. On WIFS and Secure SADIS FTP/SADIS FTP it is anticipated that GRIB1 forecasts will be posted within 25 minutes of GRIB2 being made available. Availability of GRIB1 data over SADIS 2G will continue to be made available 4hrs 30mins to 5hrs 00 mins after model data time.	Effective from the 1200 UTC Model Data Time on 4th October 2012	<a href="#">Deliverable Complete.</a>

35	19/09/2011	Production of harmonised trial CB Cloud, icing and turbulence forecasts	<b>MINOR</b>	Both WAFCs will commence production and issuance of harmonised forecasts of the trial CB Cloud, icing and turbulence forecasts in GRIB2 format with effect from the <b>1200 UTC Model Data Time on Tuesday 29th November 2011</b> . Existing WMO AHLs will be used, so no changes to end user systems are expected. The harmonised forecasts will only be made available over WIFS, SADIS FTP and Secure SADIS FTP and will be available by approximately 5 hours 30 minutes after Model Data Time. Non-harmonised versions of the data will not be made available, except as contingency to the harmonised products. All other WAFS Upper Air Forecasts in GRIB2 format are unaffected by this change.	Effective from the 1200 UTC Model Data Time on <b>Tuesday 29th November 2011</b>	<a href="#">Deliverable Complete.</a>
34	18/04/2011	Re-prioritization of GRIB1 and GRIB2 WAFS Upper Air Forecasts	<b>MAJOR</b>	Users will receive GRIB2 WAFS Upper Air Forecasts before GRIB1 WAFS Upper Air Forecasts. GRIB1 Upper Air Forecasts will become secondary in delivery priority to GRIB2.	Effective with 1200 UTC 'data time' GRIB1 and GRIB2 data sets on Thursday 5th July 2012.	<a href="#">Deliverable Complete.</a>
33	18/04/2011	Use of 'OCNL CB' in High Level Significant Weather Forecasts (BUFR and PNG).	<b>MINOR</b>	Should be minimal but users to check with vendors that BUFR decoders and visualisations will correctly display. (See WAFSOPSG/6 IP 7 and final Report).	To be implemented with effect from the 1200 UTC Data Time (DT) SIGWX Forecasts on Wednesday 15th June 2011 (i.e. effective for SIGWX forecasts valid 1200 UTC Thursday 16th June 2011, and issued 1900 UTC 15th June 2011).	<a href="#">Deliverable Complete.</a>
31	18/04/2011	Guidance on the interpretation of the WAFC forecasts for cb clouds, icing and turbulence	<b>MINOR</b>	WAFC Provider States to present guidance on the interpretation of the WAFC forecasts for CB clouds, icing and turbulence to WAFSOPSG/7	Present to WAFSOPSG/7 (Sep 2012)	<a href="#">Deliverable Complete. Updated guidance posted on the WAFSOPSG Website on 11 September 2012'</a>

30	28/02/2011	Cessation of ISCS	<b>MAJOR</b>	Effective 01 July 2012 (01/07/12) the International Satellite Communication System (ISCS) broadcast will be terminated. ISCS users can now obtain WAFS products and OPMET data from the WAFS Internet File Service (WIFS). ISCS users should note that WIFS only provides access to WAFS data and OPMET data listed in the SADIS User Guide Annexes 1 and 4, for flight planning purposes. ISCS authorized users are strongly recommended to transition to WIFS at the earliest date and no later than 01 March 2012 to ensure their workstation has access to WIFS when ISCS is terminated. See <a href="https://aviationweather.gov/wifs/">https://aviationweather.gov/wifs/</a>	Effective 01 July 2012 (01/07/12)	<a href="#">Deliverable Complete.</a>
29	28/02/2011	WAFC London to introduce new SIGWX Charts	<b>INTERMEDIATE</b>	WAFC London is due to replace its existing SIGWX Production Platform on <b>11 October 2011</b> . On implementation the size of PNGs and map areas covered will be identical between WAFC London and WAFC Washington, making backup events (real or test) transparent. Users can view/download samples of the new charts via: <a href="ftp.metoffice.gov.uk">ftp.metoffice.gov.uk</a> ; username collect_new_wafc; password see_data .	Implementaton, expected <b>11 October 2011, with effect from the SIGWX forecasts issued 1245-1300 UTC, and with validity of 0600 UTC on 12 October 2011</b> . Please regularly check this web page.	<a href="#">Deliverable Complete.</a>
28	14/10/2010	Cessation of experimental, 'trial and evaluation' cb, ice, and turbulence parameters in GRIB1 form	<b>MINOR</b>	The experimental, 'trial and evaluation' paramters for cb, ice and turbulence in GRIB1 form were due to be stopped in June 2010. They will now be ceased as of 18 November 2010. These parameters remain as trial and evaluation products only, and will now be available solely in the GRIB2 form via the USA's WIFS and the UK's SADIS FTP distribution systems.	Cessation due as of 18 November 2010	<a href="#">Deliverable Complete.</a>

27	22/08/2010	Provision of WAFS Aviation GRIB2 data via SADIS 2G and ISCS	<b>MAJOR</b>	<p>In accordance with the coming into effect of ICAO Annex 3, Amendment 75 (18th November 2010), and endorsement by SADISOPSG for the provision of GRIB2 over SADIS 2G, WAFS London Aviation GRIB2 will be made operationally available via SADIS 2G and WAFS Washington Aviation GRIB2 will be made operationally available via ISCS on 18th November 2010. WAFS may commence preliminary transmissions from Tuesday 9th November in advance of the operationally available date of 18th November as required by Annex 3. Note 1: WAFS Aviation GRIB2 data will be issued after WAFS Aviation GRIB1 data (approximately 1 hour later). Note 2: Data for CB, icing and turbulence will not be available initially via satellite, until endorsed by WAFSOPSG for transmission. CB, icing and turbulence data is available - for trial and evaluation purposes - via SADIS FTP and WIFS.</p>	<p>Preliminary transmissions may commence from Tuesday 9th November. Operational transmissions will be available from 18th November 2010.</p>	<a href="#">Deliverable Complete.</a>
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26	06/04/2010	Change to Legend details in WAFS GRIB data	<b>MINOR</b>	<p>In accordance with the WAFSOPSG/5 Conclusion 5/16 a) 1) and the coming into effect of ICAO Annex 3, Amendment 75 (18th November 2010), there will be the need for providers of visualised WAFS Aviation GRIB1 and GRIB2 data to indicate the issuer of the data (WAFS London or WAFS Washington), and the Provider. In addition, there are changes to the precise terminology used in the Legend Boxes. WAFS Aviation GRIB1 and GRIB2 data does not contain 'Provider' data, nor does it contain Legend details. Workstation Vendors have been contacted separately to implement the changes to their systems in order to be compliant with the new Legends format. See Section 6.2.3 in <a href="http://www2.icao.int/en/anb/met-aim/met/wafsopsg/WAFSOPSG%20Meeting%20Metadata/WAFSOPSG.5%20Report%20-%20complete.pdf">http://www2.icao.int/en/anb/met-aim/met/wafsopsg/WAFSOPSG%20Meeting%20Metadata/WAFSOPSG.5%20Report%20-%20complete.pdf</a></p>	The change to procedure will be implemented during the 17th November 2010, to be compliant with Annex 3 on 18th November 2010.	<a href="#">Deliverable Complete.</a>
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25	06/04/2010	Change to WAFC Legend details in WAFS SIGWX PNG charts	<b>MINOR</b>	<p>In accordance with the WAFSOPSG/5 Conclusion 5/16 a) 2), and the coming into effect of ICAO Annex 3, Amendment 75 (18th November 2010), both WAFC London and WAFC Washington will modify the Legends in their WAFC SIGWX PNG charts to indicate the issuer and provider of the charts. In addition, there are changes to the precise wording and abbreviations to be used in the Legend boxes. BUFR SIGWX does not contain Provider or 'Legend' information, and Workstation Vendors have been contacted separately to implement the changes to their systems in order to be compliant with the new Legends format. WAFS Aviation GRIB1/GRIB2 users should be aware of this change, although strictly there will be no difference to the GRIB1/GRIB2 output provided by the WAFCs. See Section 6.2.3 in <a href="http://www2.icao.int/en/anb/met-aim/met/wafsopsg/WAFSOPSG%20Meeting%20Metadata/WAFSOPSG.5%20Report%20-%20complete.pdf">http://www2.icao.int/en/anb/met-aim/met/wafsopsg/WAFSOPSG%20Meeting%20Metadata/WAFSOPSG.5%20Report%20-%20complete.pdf</a></p>	The change to procedure will be implemented during the 17th November 2010, to be compliant with Annex 3 on 18th November 2010.	<a href="#">Deliverable Complete.</a>
24	16/11/2009	Alignment of WAFC SIGWX BUFR PNG Chart data	<b>MAJOR</b>	<p>The WAFCs will revise the issuance times of Significant Weather forecast data for Medium Level BUFR and for all PNG charts such that, under normal operations, Medium Level BUFR and all PNG Charts will be issued one hour earlier than currently, and as such at the same time as the existing High Level BUFR data (i.e. 17 hours ahead of validity time). Please note that, under conditions when one of the WAFCs is backing up the other WAFC (whether under real circumstances or in test scenarios), all data will be issued 15 hours ahead of validity time.</p>	The change to procedure will be implemented with effect from the first forecasts issued at approximately 1855 UTC on 15 June 2010. Because of the lead time of the forecasts the first forecasts to be so affected will carry a validity time of 1200 UTC 16 June 2010.	<a href="#">Deliverable Complete.</a>

23	19/06/2009	WAFS web services	MAJOR	One web-based service to be provided by each WAFS. Users will be able to access a minimal set of WAFS charts, providing objective forecasts of automated gridded icing, turbulence and CB, derived from GRIB 2. Service targeted primarily at LDC members.	Superseded by deliverable No.31	<a href="#">Superseded by deliverable No.31</a>
22	19/06/2009	Web-based training package	MINOR	WAFSs to deliver a web-based training package for WAFS users on the intended use and visualisation of gridded WAFS forecasts for icing, turbulence and CB.	Superseded by deliverable No.32	<a href="#">Superseded by deliverable No.32</a>
21	19/06/2009	GRIB 2 WAFS data on ISCS and SADIS FTP services	<b>MAJOR</b>	WAFS users and visualisation providers will be able to access GRIB 2 upper-air data for use in flight planning. GRIB2 will be provided in parallel with existing GRIB1 for at least 3 years, during which time users will be expected to migrate to the new code form. GRIB2 data will be compressed global gridded fields, at 3-hourly timesteps (T+6 to 36) and 1.25*1.25 regular (unthinned) grid. Users will require appropriate decompression and GRIB2 decoding utilities. GRIB2 data will be provided 1 hour later than current GRIB1 data. Issue times will be 0400 to 0500 UTC, 1000 to 1100 UTC, 1600 UTC to 1700 UTC and 2200 UTC to 2300 UTC.	GRIB2 data (including trial forecast parameters of cumulonimbus, icing and turbulence), will be available via SADIS FTP and WIFS only as of 2nd March 2010.	<a href="#">Deliverable Complete.</a>
20	11/06/2008	Cessation of the SADIS 1G broadcast service	<b>MAJOR</b>	In accordance with SADISOPSG Conclusions 9/15 and 13/24, the SADIS 1G service will be terminated in January 2009 in view of the implementation of SADIS 2G. Any SADIS 1G user who has not migrated to SADIS 2G by January 2009 are advised to utilise the SADIS FTP service as an interim measure until such a time that they have procured a SADIS 2G VSAT receiving system.	SADIS 1G termination scheduled for Monday 5th January 2009 between 1030 UTC and 1230 UTC. Notification message issued to all SADIS users on 10 June 2008. Reminder notices issued from 01 September 2008. SADIS 2G and SADIS FTP NOT affected by this change.	<a href="#">Deliverable Complete.</a>

19	09/06/2008	WAFS administrative message per WAFSOPSG Decision 4/5	<b>MINOR</b>	Both WAFCs will utilize an administrative message to note any problems or errors with SIGWX forecasts. WMO headers will be FXUK65 EGRR for WAFc London, and FXUS65 KKCI for WAFc Washington.	Implementation originally expected by WAFSOPSG/5 (September 2009). After temporary delay, finally endorsed by WAFSOPSG/5	<a href="#">Deliverable Complete.</a>
18	19/02/08	V4.1 of BUFR Guidelines document issued	<b>MINOR</b>	V4.1 of document includes a number of minor editorial improvements and guidance covering changes under Amendment 74 to Annex 3, SIGWX legend boxes, jetstream representation, BUFR bulletins that contain no data, and T4 chart references.	Document released to ICAO on 17 Dec 2007 after final reviews by both WAFCs.	<a href="#">Deliverable Complete.</a>
17	01/06/07	Changes to the labeling of unnamed TCs on SIGWX	<b>MINOR</b>	Unnamed tropical systems (e.g. Tropical Depressions), less than 34 knots, that are forecast to become Tropical Cyclone (34 kts or greater) by SIGWX chart validity time, will contain the label name "TC NIL", to match the naming convention of Amendment 74, effective 07 November 2007. Current practice by both WAFCs is to begin placing TCs on the SIGWX once they are named by the TCAC.	Implement 07 November 2007 in conjunction with Annex 3 (for SIGWX forecasts valid 0000 UTC 07 November 2007).	<a href="#">Deliverable complete.</a>
16	27/04/07 Updated posting 19/02/08.	Changes to WAFS SIGWX Chart Legend Box in line with WAFSOPSG Conclusion 3/3.	<b>MAJOR</b>	Users may need to acquire upgraded software to depict correct SIGWX Legend Box correctly after the implementation date. See V4.0 of WAFS BUFR Guidelines document or WAFSOPSG Conclusion 3/3 for revised legend box example.	Implement 07 November 2007 in conjunction with Annex 3 (for SIGWX forecasts valid 0000 UTC 07 November 2007).	<a href="#">Deliverable complete.</a>

15	30/03/07	V4.0 of BUFR Guidelines document issued	<b>MINOR</b>	V4.0 of document includes: Removal of reference to T4 formatted SIGWX charts. Reference to availability of WAFC Washington BUFR data on SADIS and ISCS broadcasts, and withdrawal of reference to NWS FTP server. Reference to operational products on SADIS FTP. Changes to legend box depiction under ICAO Annex 3 Amendment 74 proposals. Adoption of flight-level specific jet depth information/depiction. ICAO Annex 3 Amendment proposed changes to depiction of surface fronts and intertropical convergence zones (SWH and SWM), and non-CB cloud amount and type (SWM). Update to contact details. (Note: V4.0 of this document supercedes earlier versions of this document.)	Document released to ICAO on 22 March 2007 after final reviews by both WAFCs.	<a href="#">Deliverable complete.</a>
14	20/11/06. Updated posting 19/02/08.	Removal of surface fronts and well-defined convergence zones (e.g., ITCZ) from the SWH and SWM forecasts. Removal of non-CB cloud distribution (type and coverage) from the SWM forecasts.	<b>MAJOR</b>	1) SWH and SWM forecasts will no longer contain these elements. 2) BUFR files JUJE00 EGRR, JUJE00 KKCI, JUFE00 EGRR, and JUFE00 KKCI will continue to be sent, but contain no data (i.e. they will be empty bulletins). Workstation software should not need to be changed to accommodate these empty files. 3) Users should not need to acquire upgraded software to depict SIGWX correctly after the implementation date.	Implement 07 November 2007 in conjunction with Annex 3 (for SIGWX forecasts valid 0000 UTC 07 November 2007).	<a href="#">Deliverable complete.</a>

13	27/10/06	Provision of WAFC London thinned GRIB encoded forecasts of icing, turbulence and convective clouds on the SADIS FTP service.	<b>MAJOR</b>	Users are invited to download the data from the SADIS FTP service (GRIB folder, sub-directory ice_turb_CB), and assess the utility of these trial and evaluation products using appropriate visualisation software. Users are urged to inform the WAFCs and ICAO about the usefulness of these products over an evaluation period (lasting at least 12 months from implementation) to facilitate the decision making process of the WAFS Operations Group. An update to the SADIS FTP Service document (Version 4.0) is available from WAFC London (greg.brock@metoffice.gov.uk) to facilitate the use of these new products.	WAFC London thinned GRIB encoded forecasts of icing, turbulence and convective cloud are now available from the SADIS FTP server (with effect 25th October 2006).	<a href="#">Deliverable complete.</a>
12	27/10/06. <a href="#">Updated posting 19/02/08.</a>	Advancement of the lead time of WAFS SIGWX forecasts	<b>MAJOR</b>	SWH forecasts in BUFR format to be issued 17 hours before valid time. SWM forecasts in BUFR format, SWH and SWM forecasts in PNG format, to be issued 16 hours before valid time. Backup SWH and SWM forecasts to be issued 15 hours before valid time. SIGWX forecasts to be initialised with 30-hour model data.	Implement on Wednesday 06 February 2008 for products issued at 1900 UTC with validity 1200 UTC on Thursday 07 February 2008.	<a href="#">Deliverable complete.</a>
11	20/03/06 Posted 20 March 2006	V3.0 of BUFR Guidelines document issued	<b>MINOR</b>	V3.0 of document includes a number of editorial improvements and guidance covering the new depiction of jet depth information that will become applicable during July 2006. Guidance is also included to cover the correct orientation of frontal symbology. This document is provided primarily for the benefit of BUFR visualisation software suppliers with the aim to assist developers with the construction of ICAO compliant visualisation software. It is recommended that the document is reviewed to ensure that your BUFR visualisation software is current with the latest recommended standard.	Document released to ICAO on 17 March 2006 after final reviews by both WAFCs.	<a href="#">Deliverable complete. Document available on the WAFSOPSG web site on 17 March 2006. (Note: V3.0 of this document supercedes earlier versions of this document.)</a>

10	29/02/05 Posted 6 October 2005	V2.8 of BUFR Guidelines document issued	<b>MINOR</b>	V2.8 of document will include a number of editorial improvements and guidance covering the new depiction of jet depth information that will become applicable during March 2006. This document is provided primarily for the benefit of BUFR visualisation software suppliers with the aim to assist developers with the construction of ICAO compliant visualisation software. It is recommended that the document is reviewed to ensure that your BUFR visualisation software is current with the latest recommended standard.	Document circulated to workstation vendors on 4 October 2005, and uploaded to the ICAO WAFS Operations Group web site for general circulation.	<a href="#">Deliverable complete.</a>
9	01/08/05	V2.7 of BUFR Guidelines document issued	<b>MINOR</b>	V2.7 of document available to users from ICAO web site:- <a href="http://www.icao.int/anb/wafsopsg/WAFS%20SIGWX%20BUFR-V2.pdf">http://www.icao.int/anb/wafsopsg/WAFS%20SIGWX%20BUFR-V2.pdf</a> This document is provided primarily for the benefit of BUFR visualisation software suppliers with the aim to assist developers with the construction of ICAO compliant visualisation software. This latest version of the document includes a number of minor changes to the earlier version. It is recommended that the document is reviewed to ensure that your BUFR visualisation software is current with the latest recommended standard.	V2.7 of document now superceded by version 2.8 (V2.8) which is available from ICAO WAFSOPSG web site.	<a href="#">Deliverable complete.</a>
8	12/7/2005 Posted 29 September 2005	Addition of PNG formatted WAFS SIGWX charts to SADIS broadcasts (1G and 2G)	<b>INTERMEDIATE</b>	Users are invited to use the PNG formatted charts from the SADIS satellite broadcasts and assess the utility of these experimental products. Users are urged to inform the WAFCs and ICAO about the usefulness of these charts. If these products are not considered useful then they may be withdrawn. Users will need to remove the WMO telecommunications envelope to enable these products to be viewed through PNG visualisation software such as a web browser.	Products derived by WAFS London added to the broadcasts on 13 July 2005. Products derived by WAFS Washington added to the broadcast on 28 September 2005, except SWM chart covering area 'NAT' which was added on 30 September 2005. Note deliverable 4 - PNG formatted charts also available from the SADIS FTP Server	<a href="#">Deliverable complete.</a>

7	17/06/05 Posted 29 September 2005	Removal of FL530 WAFS GRIB data from SADIS broadcast	<b>INTERMEDIATE</b>	Users will need to verify that their data reception facility and data processing facility will not be adversely affected by the removal of the following products from the SADIS broadcasts: HH(I-P)(B-G)10 EGRR; HT(I-P)(B-G)10 EGRR; HU(I-P)(B-G)10 EGRR; HV(I-P)(B-G)10 EGRR	Implementation carried out and then withdrawn until further notice, i.e. FL530 GRIB data is transmitted routinely on all SADIS services. The withdrawal of this data caused serious problems for a number of users.	It is anticipated that FL530 data will continue to be broadcast on all SADIS services until further notice. <a href="#">Deliverable Complete</a>
6	Posted 27 October 2006	Revision to the format used to display jet depth information on WAFS SIGWX charts	<b>INTERMEDIATE</b>	Users will need to obtain updated BUFR visualisation software that can display the jet depth information in the new format	Implementation planned for July 2006. Guidance material made available to workstation vendors on 4 October 2005.	Implementation delayed from March 2006. Now postponed to 26 July 2006. (Posted 23 February 2006). <a href="#">Deliverable Complete</a> 26 July 2006.
5	17/06/05. Updated 19/02/08	Distribute available ASHTAMs and NOTAMs related to volcanic ash on the WAFS broadcasts	<b>MAJOR</b>	Users that would like to use the products will need to obtain appropriate data reception and processing software.	Implementation of this service was withdrawn on the SADIS FTP Service on 9 March 2006 as a result of some OPMET bulletins being incorrectly routed to the AFTN address reserved for the ASHTAM and volcanic ash NOTAM messages. The service will be reinstated on all 3 SADIS services when the originators of the OPMET messages modify their routing. Implementation on ISCS planned	The NWXX01 EGRR collective containing all ASHTAM and volcanic ash NOTAM information is received from the UK Met Office and provided on the ISCS broadcast service. Since the NWXX01 EGRR collective contains all ASHTAM and NOTAM information from around the globe, the U.S. has no plan to generate a similar collective. <a href="#">Deliverable Complete</a> .
4	17/06/05 Posted 6 October 2005	Provision of WAFS SIGWX charts in the PNG (portable network graphics) format on the SADIS FTP server.	<b>INTERMEDIATE</b>	Users are invited to download the charts from the SADIS FTP server, and assess the utility of these experimental products. Users are urged to inform the WAFCs and ICAO about the usefulness of these charts. If these products are not considered useful by the users then they may be removed from the broadcasts towards the end of 2006.	WAFS London and WAFS Washington PNG formatted charts are now available from the SADIS FTP server.	"Unbulletinized" versions of the WAFS Washington charts were added to the server on 3 October 2005. ("Bulletinized" = PNG formatted charts with a WMO telecommunications envelope wrapped around the PNG data; "Unbulletinized" = PNG formatted chart with no header assigned.) <a href="#">Deliverable Complete</a> .
3	17/06/05 Posted 27 October 2006	Cessation of WAFS T4 SIGWX charts (SWH and SWM) on the WAFS broadcasts	<b>MAJOR</b>	Users will be required to obtain their WAFS SIGWX data from the WAFS BUFR encoded data provided by both WAFCs. Appropriate visualisation software will be required to produce compliant charts from the BUFR data. As a back up to the BUFR-coded SIGWX forecasts, WAFS London will continue SIGWX forecasts in PNG format on the SADIS broadcast and FTP service; and WAFS Washington will continue SIGWX in PNG format on the NOAA FTP service. (posted 27 October 2006).	The WAFS T4 SIGWX charts will be removed from the SADIS and ISCS broadcasts on 30 November 2006.	On schedule (posted 01 February 2006). WAFSOPSG/3 re-affirmed the cessation of T4 SIGWX on the WAFS broadcasts 30 November 2006. <a href="#">Deliverable Complete</a> .

2	3/5/2005 Posted 12 July 2005	Implementation of BUFR encoded SWM data	<b>MAJOR</b>	Obtain compliant BUFR SWM visualisation software. Review WAFS SIGWX chart production processes and, if required, train staff accordingly.	Data produced by WAFS London available on SADIS and FTP server from 6 April 2005. Contact Richard Orrell (richard.orrell@metoffice.gov.uk) for further information.	WAFS Washington BUFR encoded SWM data available on 30 June 2005 (posted 3 May 2005). WAFS Washington (KKCI) BUFR encoded SWM data added to SADIS services (incl. FTP service) on 6 July 2005. <a href="#">Deliverable Complete.</a>
1	17/06/05 Posted 30 September 2005	Cessation of WAFS T4 Wind & Temperature Charts from WAFS broadcasts	<b>MAJOR</b>	Users will be required to obtain WAFS wind & temperature information from the WAFS GRIB encoded data provided by both WAFCS. Appropriate visualisation software will be required to produce compliant charts from the GRIB data.	The WAFS T4 wind & temperature charts will be removed from SADIS and ISCS broadcasts on 1 July 2005. Charts will be removed from SADIS FTP Service on 30 September 2005.	On schedule (posted 17 June 2005) Implemented on SADIS 1G and 2G broadcasts (posted 12 July 2005) Charts withdrawn on SADIS FTP Service on 30 September 2005. No further extension is anticipated. <a href="#">Deliverable Complete.</a>