



*International Civil Aviation Organization*

**SEVENTEENTH MEETING OF THE METEOROLOGY  
SUB-GROUP (MET SG/17) OF APANPIRG**

Bangkok, Thailand, 13 – 16 May 2013

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**Agenda Item 4: World Area Forecast System (WAFS)**

4.2) Current Status of WAFS Implementation

**REGIONAL PROGRESS IN WAFS IMPLEMENTATION**

(Presented by Chairman, WAFS Task Force)

**SUMMARY**

This paper provides an update on the progress of WAFS implementation in the ASIA/PAC Region.

**1. Introduction**

1.1 This paper provide an update on the progress of WAFS implementation in the ASIA/PAC Region subsequent to CNS/MET SG/16 and discuss the follow-up actions that are needed to ensure implementation and utilization of the WAFS products in the ASIA/PAC Region.

**2. Regional Progress**

2.1 The progress of WAFS implementation in ASIA/PAC Region has been tracked by the document ASIA/PAC WAFS Implementation Plan and Procedures developed and maintained by the WAFS TF (the then WAFS/I TF) since 1998. This document was last updated by CNS/MET SG/16 in July 2012. Subsequent to CNS/MET SG/16, the document ASIA/PAC WAFS Implementation Plan and Procedures was consolidated and integrated into the WAFS TF Work Plan. In particular, the progress of WAFS implementation in ASIA/PAC Region is now tracked by Attachment I in the WAFS TF Work Plan. A draft revision to the latter Attachment is included as Appendix I to this paper.

2.2 The meeting is invited to review the progress of WAFS implementation in the ASIA/PAC Region as given in Appendix I, in particular the following items that are already due for completion or will be due for completion within the next year:

<b>Item</b>	<b>Task/Stage of Implementation of WAFS</b>	<b>Anticipated Date</b>
20	Regional training on the use of the gridded forecasts.	Initial training material forwarded to WAFSOPSG members on 15 Apr 2013 for comments
21	WAFS end-user workstations upgraded to accept the GRIB2 code form.	May 2011 – November 2013
23	Planned cessation of WAFS upper air forecasts in GRIB 1 format. GRIB2 will be the sole format provided.	November 2013
27	The GRIB2 maximum icing potential deemed operational for Extended Division Time Operation (EDTO) purposes.	March 2011
28	The GRIB2 forecasts for icing, turbulence and CB clouds expected to be endorsed for operational use with Amendment 76 to ICAO Annex 3.	November 2013
29	Implementation of WAFS re-issuance policy for WAFS GRIB2 and WAFS SIGWX forecasts.	September 2014

2.3 Regarding item 20, it was agreed that the WAFS Provider States would review the training requirements for the new gridded WAFS forecasts for CB clouds, icing and turbulence in light of the development of updated guidance on the interpretation (WAFSOPSG/6 Conclusion 6/13). WAFS Provider States reported in the WAFSOPSG/7 that the use of the gridded datasets in user flight planning systems typically involved proprietary software, and it was therefore not feasible to conduct training in this aspect of the data provision. Instead, WAFS Provider States would proceed with the development of computer-based (including voice over) initial training material for WAFS gridded global forecasts for CB clouds, icing and turbulence in order to support implementation under Amendment 76 to Annex 3 (Conclusion 7/13). A PowerPoint presentation which would form the basis of the training material was forwarded to members of WAFSOPSG for comment on 15 Apr 2013. While some preliminary verification statistics were available, it remained rather difficult for the users to relate that to the safety risk management plan and further guidance would be required. Preliminary feedbacks from a major airline operator in Hong Kong, China echoed the view and indicated that they found the gridded forecast not easy to understand and have no idea how to incorporate the forecast potentials into their systems. .

2.4 Items 21 and 23 are related to the planned cessation of GRIB1 broadcast in November 2013. In a recent survey, some States in ASIA/PAC Region still expressed difficulty in migrating to GRIB2 data. Further discussion on this can be found in a separate WP on the survey results.

2.5 Regarding item 29, the WAFSOPSG/7 meeting agreed, in view of the reasonable needs and expectations of users, together with the principles of the quality management system and the current capabilities of the WAFCs, a re-issuance policy for WAFS GRIB2 and WAFS SIGWX forecasts, which is expected to be implemented on 16 September 2014.

2.6 The meeting may wish to note that, in the WAFSOPSG/7 meeting, WAFC Provider States were invited to issue administrative messages to inform users of the availability of (a) new or updated guidance, system documentation or changes to WAFS services provided; and (b) when harmonized grids are unavailable.

### 3. Availability of SIGMET Information from WAFCs

3.1 SIGMET information from WAFC London and WAFC Washington during the period 1-28 February 2013 were analysed with a view to finding out how well the information is distributed by the two centres. The detailed results were given in Table A below:

**Table A - Number of SIGMET Retrieved from WAFCs**

<b>No. of SIGMET retrieved from</b>			
<b>WAFC Washington only</b>	<b>Both WAFC Washington &amp; London</b>	<b>WAFC London only</b>	<b>Total</b>
1886 (17.4%)	8160 (75.2%)	805 (7.4%)	10851 (100.0%)

Note:

- (a) All repeated SIGMETs were excluded in the above statistics.
- (b) Period of study: 1 – 28 February 2013.
- (c) Total number of FIR/UIR or CTA involved was 219.

3.2 Of all SIGMETs distributed by the WAFCs, a majority (75.2%) was available from both WAFC London and WAFC Washington but there was also a substantial amount (24.8%) being distributed by only one of the two WAFCs. In fact, there were a number of FIR/UIR or CTA the SIGMET of which were available from only one of the two WAFCs during the study period. Some examples are given in Table B below:

**Table B - Number of SIGMETs Retrieved from only one of the two WAFCs**

<b>ATS unit serving the FIR or CTA</b>	<b>Issuing MWO</b>	<b>Name of FIR/UIR or CTA</b>	<b>No. of SIGMETs from WAFC Washington</b>	<b>No. of SIGMETs from WAFC London</b>
OKBK	OKBK	OKAC KUWAIT FIR	48	0
SBAZ	SBAZ	SBAZ AMAZONICA FIR	677	0
SBBS	SBBS	SBBS BRASILIA FIR	463	0
SBCW	SBCW	SBCW CURITIBA FIR	276	0
SBRE	SBRE	SBRE RECIFE FIR	195	0

ZMUB	ZMUB	ZMUB ULAANBAATAR FIR	24	0
FSSS	FSIA	FSSS SEYCHELLES FIR	0	62
FZZA	FZAA	FZZA KINSHASA FIR/UIR	0	64
UAII	UAII	UAII SHYMKENT FIR	0	35
WIIF	WIII	WIIF JAKARTA FIR	0	168
GCCC	GCGC	GCCC CANARIAS FIR/UIR	1*	15
LECB	LEMM	LECB BARCELONA FIR	1*	37
LECM	LEMM	LECM MADRID FIR/UIR	1*	80

*Note: \* The only SIGMET received from Washington is the test SIGMET message.*

3.3 Furthermore, there were 3 FIR/UIR or CTA (GCCC, LECB and LECM) the test SIGMET of which were available in both WAFCs but the rest of the SIGMETs were only available from WAFc London.

3.4 To support meteorological offices in providing SIGMET information relevant to the whole route in accordance with ICAO Annex 3 9.1.3 (e), it is essential for both WAFCs to provide SIGMET information for the whole globe. It is thus considered that the situation of SIGMET availability needs to be improved via closer coordination between the WAFCs and the Regional OPMET databanks.

#### **4. Action by the Meeting**

4.1 The meeting is invited to note the information provided in this paper and to exchange views on the progress of WAFS Implementation in the ASIA/PAC Region. Following the discussions on the availability of SIGMET Information in WAFCs in Section 3 above, the meeting may wish to formulate the following draft Conclusion:

##### **Draft Conclusion 17/xx – Improvements to WAFS Implementation**

That the Regional OPMET databanks, in coordination with the WAFc Provider States, be urged to improve upon the availability of SIGMET information on WAFS.

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**Appendix I*****Indicative Timetable for Implementation of WAFS***

<b>Item</b>	<b>Task/Stage of Implementation of WAFS</b>	<b>Anticipated Date</b>
1	WAFS London products on access controlled internet site.	Completed
2	The establishment of back-up distribution arrangements for WAFS products.	Completed
3	Training in the operational conversion of GRIB forecasts to Wind / Temp charts.	Completed
4	All states that receive GRIB products capable of converting GRIB forecasts to Wind / Temp charts.	Completed
5	Removal of T4 Facsimile Wind / Temp charts from the satellite broadcast.	Completed
6	Training in the operational conversion of BUFR to SIGWX charts.	Completed
7	States having the ability to operate the decoding software to convert BUFR SIGWX messages into graphical format.	Completed
8	The satellite distribution by the two WAFSCs of global SWH and of SWM for limited geographical areas in BUFR format.	Completed
9	Launch of SADIS 2G service.	Completed
10	SADIS 2G seminar for ASIA/PAC States.	Completed
11	Removal of T4 Facsimile SIGWX products from the satellite broadcast.	Completed
12	Procurement of SADIS 2G hardware by SADIS user States.	Completed
13	Termination of the SADIS 1G service.	Completed
14	Launch of trial gridded forecasts of icing, turbulence and convective clouds.	Completed
15	Implementation of WAFS Internet File Service (WIFS).	Completed
16	Workshop on gridded forecasts of icing, turbulence and convective clouds.	Completed

17	WAFCs begin provision of WAFS forecasts in the GRIB2 code form via internet based services (SADIS FTP/ Secure SADIS FTP /WIFS).	Completed
18	WAFCs begin broadcast of WAFS forecasts in the GRIB2 code form (excluding gridded forecasts of icing, turbulence and CB clouds) via satellite services (SADIS/ISCS).	Completed
19	WAFCs provide web-based gridded forecasts of icing, turbulence and CB clouds.	Suspended until further notice
20	Regional training on the use of the gridded forecasts.	<del>To be discussed at WAFSOPSG/7 Sep 2012</del> Initial training material forwarded to WAFSOPSG members on 15 Apr 2013 for comments
21	WAFS end-user workstations upgraded to accept the GRIB2 code form.	May 2011 – November 2013
22	Termination of the ISCS-G2 service.	Completed
23	Planned cessation of WAFS upper air forecasts in GRIB1 format. GRIB2 will be the sole format provided.	November 2013
24	Implementation of Secure SADIS FTP Service.	Completed
25	Re-prioritisation of GRIB2 over GRIB1.	Completed
26	SADIS FTP will be ceased. Secure SADIS FTP will be the sole Internet based service provided by the UK.	<del>30 November 2012</del> Completed
27	The GRIB2 maximum icing potential deemed operational for Extended Division Time Operation (EDTO) purposes.	March 2011
28	The GRIB2 forecasts for icing, turbulence and CB clouds expected to be endorsed for operational use with Amendment 76 to ICAO Annex 3.	November 2013
29	Implementation of WAFS re-issuance policy for WAFS GRIB2 and WAFS SIGWX forecasts.	September 2014