



# ASIA/PAC WAFS Implementation Plan and Procedures

13<sup>th</sup> Edition - July 2010

## ASIA/PAC WAFS Implementation Plan and Procedures

13th Edition - July 2010

### Introduction

1. The Asia/Pacific WAFS Implementation Plan and Procedures has been revised to take account of progress made in the region.

### The Implementation of WAFS

2. This plan is based on the understanding that the implementation of WAFS in the Asia/Pacific Region involves the:

- a. Production and dissemination by the WAFCs of global forecast winds, temperatures, tropopause height, tropopause temperature and humidity in GRIB format.
- b. Implementation of communication system/s for the reception or retrieval of WAFS products in the Asia/Pacific Region by all States in support of international air navigation. The current communication systems include satellite broadcast (SADIS and ISCS/2), FTP and WAFS Internet File Service (WIFS) and will soon include secure SADIS FTP. States may need to use an alternative distribution system.
- c. Production and distribution by the WAFCs, of Global, quality controlled SWH (FL 250 - 630) in BUFR format and in PNG format for the ICAO standard areas.
- d. Production and distribution by the WAFCs of quality controlled SWM (FL 100 - 250) in BUFR format and in PNG format over limited geographical areas where required by PIRGs.
- e. Capability of States to convert current BUFR and GRIB messages to graphical products on an operational basis.
- f. Implementation of WIFS.
- g. Access to WAFS data on the planned secure FTP server at WAFC London.
- h. Development and utilization of gridded forecasts of icing, turbulence and CB.
- i. Transition from GRIB1 to GRIB2 WAFS data.

### **WAFS SIGWX Forecasts & Gridded Fields**

3. There will be an ongoing requirement for NMSs to monitor the quality of WAFS products.

4. Action required to be taken by States to adhere to the provision of Annex 3 to ensure the relevant advisories for tropical cyclones, volcanic ash, the accidental release of radioactive material and SIGMETs are made available to the WAFCs in a timely manner. The WAFS Implementation Task Force will coordinate with the ICAO Secretariat and the VAACs in the Region to also make available ASHTAMs and NOTAMs for VA to the WAFCs in a timely manner.

5. The SIGWX forecasts produced by WAFS Washington are also available on the US NWS Aviation Weather Center Internet site at: <http://aviationweather.gov/iffdp/sgwx.php>. All WAFS London and WAFS Washington products are available on the internet-based SADIS FTP server.

6. States are encouraged to provide regular feedback to WAFS London and WAFS Washington about the quality and accuracy of both SIGWX products and various gridded data fields. Contact details for comments are:

#### **WAFS Washington**

- i. NWS/Aviation Weather Center  
Attention: Mr Michael Pat Murphy  
Warning Coordination Meteorologist  
7220 NW 101<sup>st</sup> Terrace  
Kansas City, Missouri  
USA 64153-2371
- ii. E-mail addressed to: Michael.Pat.Murphy@noaa.gov
- iii. Fax number: 1 816 880 0650

#### **WAFS London**

- i. The Met. Office  
Attention: Mr. Nigel Gait  
International Aviation Manager  
Fitzroy Road  
Exeter  
Devon EX1 3PB  
United Kingdom
- ii. E-mail addressed to: nigel.gait@metoffice.gov.uk
- iii. Fax number: +44 (1392) 885 681

### **Gridded Forecasts of Icing, Turbulence and CB**

7. Gridded forecasts of icing, turbulence and CB are made available on a trial basis by the two WAFCs via SADIS FTP & WIFS for evaluation by NMSs. Currently there is no standard method for the displaying these gridded forecasts. Work is underway at WAFSOPSG to determine a standardized method of displaying these parameters and provide “at a glance” products, similar to current SIGWX charts, for flight planning purposes. Training will be provided to WAFS users on the utilization of the gridded forecasts. This training is likely to be provided in the form of computer based training (CBT).

## Distribution of WAFS Products

8. The two WAFCs provide global forecast winds, temperatures, tropopause height, tropopause temperature and humidity in GRIB format, global quality controlled SWH and quality controlled SWM for limited geographical areas in PNG and BUFR formats. These products are available via satellite (SADIS & ISCS) and internet (FTP & WIFS) communication channels. Suitable decoding and visualization software is required by States in the Asia/Pacific Region to operationally construct graphical SIGWX from the BUFR messages and a range of products from the gridded GRIB datasets. The provision of PNG formatted SIGWX charts from WAFCs is expected to continue for the foreseeable future.

9. Recently the two WAFCs offered a range of gridded datasets in GRIB2 format. The GRIB2 products offer a higher spatial resolution (unthinned 1.25° x 1.25°, rather than thinned 2.5° x 2.5°) and higher temporal resolution (3 hourly rather than 6 hourly). The two WAFCs welcome feedback on these new GRIB2 fields as well as the new communication channels (secure FTP and WIFS).

### WAFC London Services

10. WAFC London provides WAFS data over its satellites service (SADIS 2G) and via SADIS FTP internet based service. The SADIS 2G service will continue to operate until at least 2015. States wishing to utilise the satellite service should arrange for the procurement of the necessary hardware, and as necessary, compliant visualization software. Guidance material for users accessing the SADIS 2G broadcast is available at the SADIS web site – <http://www.metoffice.gov.uk/sadis/index.html>.

11. The current SADIS FTP service is made available for the purpose of providing a backup to the satellite based service. To improve deficiencies in the FTP protocol, specifically proof of source and data integrity, WAFC London is in the process of implementing a secure SADIS FTP service using Digital Signing technology. It is anticipated that this service will be available by November 18, 2010.

### WAFC Washington Services

12. WAFC Washington plan to terminate the ISCS satellite broadcast on 30 June 2012. The data currently provided by ISCS satellite service will then be available via the WAFS Internet File Service (WIFS). The WIFS commenced operation in May 2010. WIFS provides access to WAFS products which are stored in directories, grouped by type. This data is accessed by the WAFS workstation application using the GNU “wget”, a free software package for retrieving files using HTTPS, a widely-used secure Internet protocol. This open source package is available for Windows or Linux Operating Systems. In order to get access to WIFS, States:

- require WIFS server access details. To obtain these details, each State needs to submit a WIFS registration form, which is available on the WIFS web site, <http://aviationweather.gov/wifs>.
- should commence discussions with their WAFS visualisation/workstation provider to ensure their software supports WIFS data retrieval. Further details on the WIFS can be found at the aforementioned WIFS web site.

## Indicative Timetable for Implementation of WAFS

Appendix XX

---

13. The table given in Attachment 1 provides an indicative timetable for the implementation of WAFS within the Asia/Pacific Region.

**Volcanic Ash Advisory Centres (VAACs)**

14. The VAACs are encouraged to monitor WAFS SIGWX forecasts that cover their areas of responsibility, and to advise the appropriate WAFS to ensure the accurate inclusion of the volcanic ash symbol.

**Tropical Cyclone Advisory Centres (TCAC)**

15. The TCACs are encouraged to monitor WAFS SIGWX forecasts that cover their areas of responsibility, and to advise the appropriate WAFS to ensure the accurate inclusion of the tropical cyclone symbol.

16. The operational contact points in the WAFSs for coordination with the VAACs and TCACs are:

**WAFS Washington**

- i. NWS/Aviation Weather Center  
7220 NW 101<sup>st</sup> Terrace  
Kansas City, Missouri  
USA 64153-2371
- ii. Tel: 1 816 584 7269

**WAFS London**

- i. The Met. Office  
Attention: WAFS London Forecaster  
Fitzroy Road  
Exeter  
Devon EX1 3PB  
United Kingdom
- ii. Tel: 00-44-1392-884926 or 00-44-1392-884908

**ASIA/PAC WAFS Implementation Plan and Procedures****Attachment 1***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 WAFCs 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

Item	Task/Stage of Implementation of WAFS	Anticipated Date
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 parallel broadcast of WAFS forecasts in the GRIB2 code form via internet based services (FTP/WIFS)	Completed
18	WAFCs begin parallel broadcast of WAFS forecasts in the GRIB2 code form (excluding gridded forecasts of icing, turbulence and CB) via satellite services (SADIS/ISCS)	November 2010
19	WAFCs provide web-based gridded forecasts of icing, turbulence and CB	Suspended until WAFSOPSG/6
20	Regional training on the use of the gridded forecasts	To be discussed at WAFSOPSG/6 Mar 2011
21	WAFS end-user workstations upgraded to accept the GRIB2 code form	May 2011 – November 2013
22	Termination of the ISCS G2 service	30 June 2012
23	Broadcast of WAFS forecasts in the GRIB 1 ceases	November 2013