



International Civil Aviation Organization

**NINETEENTH MEETING OF THE METEOROLOGY SUB-GROUP
(MET SG/19) OF APANPIRG**

Bangkok, Thailand, 3 - 6 August 2015

**Agenda Item 6: Research, development and implementation issues in the MET field
6.1 WAFS (including WAFS TF Report)**

UPDATE OF WORK PLAN OF WAFS TF

(Presented by Chairman, WAFS Task Force)

SUMMARY

This paper presents an update of the Work Plan of the WAFS Task Force (WAFS TF).

1. Introduction

1.1 The Work Plan of the WAFS Task Force (WAFS TF) was first developed at the 14th meeting of the CNS/MET SG (CNS/MET SG/14) of APANPIRG. It was subsequently updated annually. The last update was made at the MET SG/18 meeting.

2. Discussions

2.1 The meeting may recall that under the Work Plan of WAFS TF, the work to be addressed by WAFS TF includes:

- (a) Monitoring the operational use of GRIB2 WAFS forecasts;
- (b) Facilitating the utilization of gridded forecasts of icing, turbulence and CB clouds and providing user's feedback on the use of the gridded forecasts;
- (c) Establishing training requirements for WAFS products;
- (d) Consolidating guidance and information related to the implementation of WAFS and updates to WAFS services and products for easy reference by user States in the Asia and Pacific Region;
- (e) Providing inputs (via the MET SG) to APANPIRG on the regional planning and development of WAFS for coordination with the WAFSOPSG; and
- (f) Keeping the WAFS TF Work Plan up to date.

2.2 Appendix A contains an update to the Work Plan of WAFS TF. In view of a proposal to modify the APANPIRG MET_SG task forces and working group, the work to be addressed by the existing WAFS TF may need to be appropriately allocated to new working groups to be established.

3. Action by the meeting

3.1 The meeting is invited to note the information provided in this paper.



ICAO APANPIRG /MET WAFS TASK FORCE (WAFS TF)

1. TASK TEAM		
<i>Secretariat</i>	<i>Address</i>	<i>Contact</i>
<i>Peter C. Dunda</i>	Regional Officer MET International Civil Aviation Organization Asia and Pacific Office 252/1, Vibhavadee Rangsit Road Ladyao, Chatuchak Bangkok 10900 Thailand	Ph: +66 (2) 537-8189 Ext. 153 Fax: +66 (2) 537-8199 Em: Pdunda@incao.int
<i>Chair</i>	<i>Address</i>	<i>Contact</i>
<i>Cheng Cho-ming Hong Kong, China</i>	<i>Hong Kong Observatory 134A, Nathan Road Tsim Sha Tsui, Kowloon Hong Kong SAR, China</i>	<i>Ph: +852 2926 8223 Fax: +852 2721 6557 Em: cmcheng@hko.gov.hk</i>
<i>Members</i>	<i>Address</i>	<i>Contact</i>
<i>Tim Hailes Australia</i>	<i>Bureau of Meteorology GPO Box 1289 Melbourne VIC 3001 Australia</i>	<i>Ph: +61 (0) 3 9669 4273 Fax: +61 (0) 3 9662 1222 Em: t.hailes@bom.gov.au</i>
<i>Ms. Lin Cai Yan China</i>	<i>Engineer Air Traffic Management Bureau of CAAC No. 12, Zhonglu Road, Third Ring Road East Chaoyang District, Beijing 10022 People's Republic of China</i>	<i>Ph: +86 (10) 8792 2180 Fax: +86 (10) 8792 2180 Em: lincaiyan@atmb.net.cn</i>
<i>Dr. R. Suresh India</i>	<i>Scientist and Director-in-charge Aerodrome Meteorological Office ATS Complex, Chennai Airport Chennai 600027 India</i>	<i>Ph: +91 (44) 2256 1636 Fax: +91 (44) 2256 0168 Em: suresh.imd@gmail.com</i>
<i>Keith W. Mackersy New Zealand</i>	<i>Technical Consultant, Meteorology Civil Aviation Authority of New Zealand P.O. Box 3555 Wellington 6140 New Zealand</i>	<i>Ph: +64 4 560 9400 Fax: +64 4 569 2024 Em: Keith.Mackersy@caa.govt.nz</i>
<i>CHOW Kwok Wah Singapore</i>	<i>Senior Meteorological Officer Meteorological Services Division, NEA P.O. Box 8, Singapore Changi Airport Singapore 918141</i>	<i>Ph: +65 6731 3984 Fax: +65 6731 3132 Em: chow_kwok_wah@nea.gov.sg</i>
<i>Ms. Rassmee Damrongkietwattana Thailand</i>	<i>Professional Meteorologist Bureau of Aeronautical Meteorology Thai Meteorological Department Thailand</i>	<i>Ph: +66 (2) 1340006-7 Fax: +66 (2) 1340009-10 Em: rassmee@hotmail.com</i>

<i>Chris Tyson United Kingdom (SADIS Provider State)</i>	SADIS Manager & International Aviation Analyst Met Office, Fitzroy Road Exeter Devon EX1 3PB United Kingdom	<i>Ph: +44(0)1392 884 892 Fax: +44(0)1392 885 681 Em: chris.tyson@metoffice.gov.uk</i>
<i>Steven Albersheim United States (WIFS Provider State)</i>	Federal Aviation Administration Senior Meteorologist Program Lead International FAA Headquarters 800 Independence Avenue, S.W. Washington, D.C. 20591 United States	<i>Ph: +1 202-385-7185 Em: Steven.Albersheim@faa.gov</i>
<i>Graham Rennie IATA</i>	Principal Advisory Global Operations Development Qantas Airways, Qantas Centre C/5 203 Coward Street Mascot, NSW Australia	<i>Ph: +61 (0) 2 9691 1157 Fax: +61 (0) 2 9691 1118 Em: grennie@qantas.com.au</i>

2. DESCRIPTION	
<i>Objective</i>	<i>Facilitate effective utilization of World Area Forecast System (WAFS) and associated services and products in the Asia Pacific Region.</i>
<i>Benefits</i>	<i>Improve the regional utilization of WAFS weather forecasts (including SIGWX forecasts, upper winds and upper-air temperatures, humidity, direction, speed and height of maximum winds and tropopause heights, as well as turbulence, icing, cumulonimbus clouds) used by airlines and ATM to optimize flight routes, which will enhance efficiency and reduce carbon emissions.</i>
<i>Terms of Reference</i>	<i>Under guidance from ICAO Secretariat: a) Facilitate the operational use of the WAFS in the Asia and Pacific Region; b) Promote awareness of current and future capabilities with respect to WAFS; c) Maintain awareness of the status of implementation of WAFS within the Asia and Pacific Region and any user State deficiencies; d) Monitor and evaluate the operational effectiveness of the use of WAFS datasets and products generated from those datasets; and e) Provide advice to the MET Sub-group on the above.</i>
<i>Work Program</i>	<i>The work to be addressed by the ASI/PAC WAFS Task Force (WAFS TF) includes: a) Monitoring the operational use of GRIB2 WAFS forecasts; b) Facilitating the utilization of gridded forecasts of icing, turbulence and CB clouds and providing user's feedback on the use of the gridded forecasts; c) Establishing training requirements for WAFS products; d) Consolidating guidance and information related to the implementation of WAFS and updates to WAFS services and products for easy reference by user States in the Asia and Pacific Region; e) Providing inputs (via the MET SG) to APANPIRG on the regional planning and development of WAFS for coordination with the WAFSOPSG; and f) Keeping the WAFS TF Work Plan up to date.</i>

3. COMMUNICATION STRATEGIES				
<i>Description</i>	<i>Target Audience</i>	<i>Delivery Method</i>	<i>Frequency / Date</i>	<i>Responsibility</i>
<i>Work Plan</i>	<i>Task Force Members</i>	<i>Document via email</i>	<i>As required but reviewed at least yearly</i>	<i>Chair</i>
<i>General correspondence</i>	<i>Task Force Members</i>	<i>Email</i>	<i>As required</i>	<i>Task Force Members</i>
<i>Task Force Meeting</i>	<i>Task Force Members</i>	<i>Meeting</i>	<i>As required, supplemented by teleconference</i>	<i>Chair</i>
<i>Status & Milestone Reports</i>	<i>ICAO Secretariat and Task Force Members</i>	<i>Report via email</i>	<i>At least yearly</i>	<i>Chair</i>
<i>Task Force Report</i>	<i>MET SG</i>	<i>Working/ Information Paper</i>	<i>Yearly</i>	<i>Chair</i>
<i>Task Force Report</i>	<i>APANPIRG WAFSOPSG</i>	<i>Working Paper</i>	<i>Yearly</i>	<i>Secretariat</i>

4. PERFORMANCE FRAMEWORK FORM (PFF)				
<i>Tasks</i>	<i>Time Frame</i>	<i>Responsibility</i>	<i>Status</i>	<i>Milestone</i>
<i>Task 1 : Monitor the operational use of GRIB2 WAFS forecasts in the ASIA/PAC Region.</i>	<i>20154- 202019</i>	<i>WAFS TF</i>	<i>In progress</i>	<i>4</i>
<i>Task 2 : Facilitate the implementation and utilization of gridded forecasts for icing, turbulence and CB clouds in the ASIA/PAC Region.</i>	<i>20145- 202019</i>	<i>WAFS TF</i>	<i>In progress</i>	<i>1, 3, 4</i>
<i>Task 3 : Establish training requirements in WAFS products in the ASIA/PAC Region and provide this information to the WAFSOPSG report to MET SG</i>	<i>20154- 202014</i>	<i>WAFS TF</i>	<i>In progress</i>	<i>2, 4</i>
<i>Task 4: Maintain and distribute WAFS service reference document to ASIA/PAC States</i>	<i>20154- 202019</i>	<i>WAFS TF</i>	<i>In progress</i>	<i>3</i>
<i>Task 5: Monitor the implementation and utilization of WAFS (including SADIS/Secure SADIS FTP/WIFS services) and training needs within the ASIA/PAC Region, and report to MET SG</i>	<i>20145- 202019</i>	<i>WAFS TF</i>	<i>In progress</i>	<i>4, 5</i>

5. MILESTONES			
<i>Milestone</i>	<i>Accountability</i>	<i>Dates</i>	<i>Status</i>
<i>Milestone 1: Monitor the performance and utilization of gridded forecasts for icing, turbulence and CB clouds</i>	<i>WAFS TF Chair</i>	<i>1 Jul 165 Annual</i>	<i>In progress</i>
<i>Milestone 2: Report WAFS training needs</i>	<i>WAFS TF Chair</i>	<i>1 Jul 165 Annual</i>	<i>In progress</i>

Milestone 3: Maintain and distribute WAFS service reference document to ASIA/PAC States	WAFS TF Chair	31 Nov 156 Annual	In progress
Milestone 4: Conduct survey on the implementation and utilization of WAFS (including SADIS/Secure SADIS FTP/WIFS services) and training needs within the ASIA/PAC Region and report to MET SG	WAFS TF Chair	1 Jul 165 Annual	In progress
Milestone 5: Update WAFS TF Work Plan	WAFS TF Chair	1 Jul 165 Annual	In progress

6. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
Activity 1: Monitoring of the performance and utilization of new gridded forecasts for icing, turbulence and CB clouds				
Activity 1.1: Monitor the performance of new gridded forecasts for icing, turbulence and CB clouds	WAFS TF	-	May 165 Annual	In progress
Activity 1.2: Provide summary on performance of new gridded forecasts for icing, turbulence and CB clouds for inclusion in MET SG working/information paper	WAFS TF Chair	1.1	Jun 165 Annual	In progress
Activity 1.3: Analyse any survey results on the utilization of new gridded forecasts for icing, turbulence and CB clouds	WAFS TF	4.3	Jun 165 Annual	In progress
Activity 1.4: Present findings to MET SG	WAFS TF Chair	1.2-1.3	Jul 165 Annual	In progress
Activity 1.5: When necessary, prepare WAFSOPSG working/information paper on WAFS training needs	WAFS TF	1.2-1.4	Mar 15 18 mthly	In progress
Activity 1.6: When necessary, present paper to WAFSOPSG	WAFS TF via WAFSOPSG member	1.5	Mar 15 18 mthly	In progress
Milestone 1: Monitor the performance and utilization of new gridded forecasts for icing, turbulence and CB clouds	WAFS TF Chair	1.1-1.6	Jul 165 Annual	In progress
Activity 2: Reporting of WAFS training needs				
Activity 2.1: Analyse survey returns on WAFS training needs	WAFS TF Chair	4.3	May 165	In progress
Activity 2.2: Present survey finding to MET SG	WAFS TF Chair	2.1	Jul 165 Annual	In progress
Activity 3.3: When necessary, prepare WAFSOPSG working/information paper on WAFS training needs	WAFS TF Chair	2.1-2.2	Mar 15 18 mthly	In progress
Activity 2.4: When necessary, present paper to WAFSOPSG	WAFS TF via WAFSOPSG members	2.3	Mar 15 18 mthly	In progress

<i>Milestone 2: Report WAFS training needs</i>	<i>WAFS TF Chair</i>	2.2-2.4	Jul 165 Annual	<i>In progress</i>
Activity 3: Maintenance and distribution of WAFS service reference document to ASIA/PAC States				
Activity 3.1: WAFS TF to provide input on revising WAFS service reference document	WAFS TF	-	Sep 165	In progress
Activity 3.2: Update of WAFS service reference document	WAFS TF Chair	3.1	Sep 165	In progress
Activity 3.3: Upload WAFS service reference document (e-Document) to APAC web-site	ICAO Secretariat	3.2	Nov 165	In progress
<i>Milestone 3: Maintain and distribute WAFS service reference document to ASIA/PAC States</i>	<i>WAFS TF Chair</i>	3.2, 4.4	Nov 165	<i>In progress</i>
Activity 4: Conduct survey on implementation and utilization of WAFS (including SADIS/Secure SADIS FTP/WIFS services) and training needs within the ASIA/PAC Region and report to MET SG				
Activity 4.1: Develop a survey on the current and future implementation of WAFS (including SADIS/Secure SADIS FTP/WIFS services), the utilization of WAFS forecasts and WAFS training needs	WAFS TF	-	Nov 154 Update annually, if necessary	In progress
Activity 4.2: Distribute the survey to States	WAFS TF Chair	4.1	Dec 154 Annual	In progress
Activity 4.3: States to respond to survey	States	4.2	Feb 165 Annual	In progress
Activity 4.4: Analyse survey results	WAFS TF Chair	4.3	May 165 Annual	In progress
Activity 4.5: Present findings to MET SG	WAFS TF Chair	1.3, 2.1, 4.4	Jul 165 Annual	In progress
Activity 4.6: When necessary, prepare WAFSOPSG working/information paper	WAFS TF Chair	1.3, 2.1, 4.4-4.5	Mar 15 18 mthly	In progress
Activity 4.7: When necessary, present paper to WAFSOPSG	WAFS TF via WAFSOPSG Members	4.6	Mar 15 18 mthly	In progress
<i>Milestone 4: Conduct survey on implementation and utilization of WAFS (including SADIS/Secure SADIS FTP/WIFS services) and training needs within the ASIA/PAC Region and report to MET SG</i>	<i>WAFS TF Chair</i>	4.1-4.7	Jul 165 Annual	<i>In progress</i>
Activity 5: Updating of WAFS TF Work Plan				
Activity 5.1: Update the WAFS TF Work Plan (including the “Indicative Timetable for Implementation of WAFS” in Attachment I) before MET SG meeting	WAFS TF Chair	-	Jun 165 Annual	In progress
Activity 5.2: Report updated WAFS TF Work Plan at MET SG meeting	WAFS TF Chair	5.1	Jul 165 Annual	In progress
<i>Milestone 5: Update WAFS TF Work Plan</i>	<i>WAFS TF Chair</i>	5.2	Jul 165 Annual	<i>In progress</i>

Attachment I

Indicative Timetable for Implementation of WAFS

Item	Task/Stage of Implementation of WAFS	Anticipated Date
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 WAFSs 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

Item	Task/Stage of Implementation of WAFS	Anticipated Date
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.	Completed
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 GRIB 1 format. GRIB2 will be the sole format provided.	Completed
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.	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.	Completed
29	Implementation of WAFS re-issuance policy for WAFS GRIB2 and WAFS SIGWX forecasts.	September 2014 Completed