International Civil Aviation Organization

EIGHTEENTH MEETING OF THE METEOROLOGY SUB-GROUP (MET SG/18) OF APANPIRG

ICAO Regional Sub-Office, Beijing, China
18 – 21 August 2014

Agenda Item 4: Review outcomes from ICAO APAC groups

ROBEX WORKING GROUP REPORT

(Presented Chair of ROBEX WG)

SUMMARY

This paper presents a summary of the twelfth meeting of the Regional OPMET Bulletins Exchange Working Group (ROBEX WG) of the Meteorology Sub Group (MET SG) of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG). held in Beijing, China from 17 to 19 March 2014. It includes the agreed actions and work plan of the group.

1. Introduction

1.1 The Twelfth Meeting of the Regional Operational Meteorological (OPMET) Bulletin Exchange Working Group (ROBEX WG/12) was held in Beijing, China from 17 to 19 March 2014. A conjoint session was held on 19 March 2014 with the Fourth Meeting of the Meteorological Hazards Task Force (MET/H TF/4) to address issues common to both groups related to the implementation of SIGMET and advisory information.

1.2 Ms. Sujin Promduang presided over the meeting in the role as chairperson and was assisted by Mr. Peter Dunda, ICAO RO Met, as secretariat and during the conjoint session on 19 March 2014 by Mr. Chan Pak Wai, chairperson of the MET/H TF.

1.3 The full report of the ROBEX WG/12 can be accessed at the following website: http://www.icao.int/APAC/Meetings/Pages/2014-ROBEX-WG12.aspx. Agreed actions for ROBEX WG/12 and the conjoint session are contained in **Appendix B** of this paper.

2. Follow-up of ROBEX WG/11 agreed action

2.1 With regard to follow-up of ROBEX WG/11 agreed actions, the working group considered that action was completed against three (3) items and was still in progress against the remaining six (6) items. A table of the follow-up of ROBEX WG/11 agreed action is in **Appendix A** to this paper.

3. OPMET information

3.1 **OPMET Availability:** The International Air Transport Association (IATA) monitored the availability of OPMET data from the APAC Region on the SADIS and WIFS over a 9-week period commencing 26 December 2013. The results showed that the availability of OPMET for AOP [non-AOP] aerodromes had satisfied the IATA's criteria with 90% [83%] of METAR (SA bulletins) and 92% [97%] of TAF (FT bulletins) being available. The IATA observed a significant improvement in OPMET availability in recent years however there were numerous locations where OPMET availability during the monitoring period did not meet its requirements.

3.2 The IATA monitoring also indicated unavailability of OPMET in WIFS that was available in SADIS, which requires further investigation. The task force agreed it would be useful for the Secretariat to liaise with the SADIS and WIFS Provider States to ensure that adequate contingencies are built into the ROBEX system to ensure consistency of APAC OPMET availability on the two systems.

3.3 **OPMET Data Performance Indices:** Regional OPMET Data Banks (RODBs) Singapore, Tokyo and Bangkok monitored the performance of OPMET data between 1 and 31 January 2014. Overall, the monitoring indicated reasonably good compliance, regularity and availability for TAF (95% to 98%), however the results were comparatively low (84%) for compliance of METAR which was attributable to a small number of locations with significantly low compliance indices. ROBEX WG targets were 95% and 90% for AOP and non-AOP aerodromes, respectively. Poor results from OPMET monitoring at a number of locations in recent years were indicative of systemic problems, which would require urgent attention.

3.4 The working group agreed that the Secretariat should coordinate with States to address the poor results of OPMET monitoring for the specific locations (Agreed action 12/1).

3.5 Results of OPMET monitoring also showed significant differences in performance indices between reception at RODBs Bangkok, Brisbane, Singapore and Tokyo indicating possible differences in the application of the monitoring procedures (likely related to half-hourly vs hourly METARs), which needs to be resolved. The group agreed that the RODBs should utilise a set of test data to verify and validate the exchange of OPMET and ensure the consistency of reporting by RODBs (Agreed action 12/3).

3.6 RODB Nadi agreed to participate in future regional OPMET monitoring activities as required with support from the other RODBs.

4. OPMET exchange

4.1 **IROG Back-up tests:** Back-up testing between IROG Singapore and IROG Bangkok conducted on 7 February 2014 indicated successful reception (477 out of 497 (96%) expected METAR bulletins) and successful transmission (585 out of 605 (97%) expected METAR and TAF bulletins) received by RODB Bangkok with an average transit time of 1 minute. A number of missing METAR bulletins were confirmed by Indonesia to be due to local communication issues at the time of the test.

4.2 **Exchange of OPMET in a digital format:** Singapore reported progress with respect to the implementation of extensible markup language (XML) for OPMET messages using the AvXML Version 1. Australia advised that it had commenced a research project to investigate, develop and test a XML based OPMET exchange system. A comprehensive report of the activities, plans and identified implementation issues with respect to the exchange of OPMET in a digital form should be provided to the MET SG for further consideration (Agreed action 12/2).

4.3 **IROG Changes:** Thailand proposed the use of RODB Brisbane's direct connection to the Africa and Indian Ocean (AFI) Region for APAC-AFI inter-regional exchange to improve the reliability, efficiency and accessibility of OPMET distributed by IROGs in the APAC Region. The working group agreed the proposal should provide the basis for the review of the structure of our ROBEX scheme.

5. Guidance material

5.1 The OPMET guidance material published by the ICAO Regional Office Bangkok includes the ROBEX Handbook, OPMET Interface Control Document (ICD) and the OPMET related FASID tables. The meeting suggested a number of additions and improvements to each of the documents. All States are urged to review each of the documents and provide amendments to the APAC Regional MET Officer (Actions 12/4, 12/5, 12/6, 12/7, 12/8 and 12/9 refers). All documents are available on the ICAO Bangkok website at: http://www.icao.int/APAC/Pages/edocs.aspx

6. VAAC back-up tests

6.1 Volcanic Ash Advisory Centres (VAACs) Wellington and Darwin have developed back-up test procedures. Japan and Australia have endorsed a Scheme of Cooperation (SoC) for VAACs Tokyo and Darwin, effective 1 March 2014. The task force suggested minor editorial adjustments and requested the Secretariat to include the VAAC back-up test procedures in the regional SIGMET Guide (Agreed action 4/1).

7. SIGMET and advisory information

7.1 **SIGMET Tests:** APAC SIGMET tests were conducted on 12, 19 and 26 November 2013 to test the issuance and reception of SIGMET messages for tropical cyclones (WC SIGMET), volcanic ash (WV SIGMET) and for phenomena other than tropical cyclones and volcanic ash (WS SIGMET).

7.2 Results from the WC and WV SIGMET tests were similar to those in 2012, though in some cases multiple test bulletins were received from meteorological watch offices (MWOs), which could cause confusion and affect the results of the SIGMET tests. Participation from ASAIA/PAC States in SIGMET tests was as follows:

- WC SIGMETs: was 72% up from 70% in 2012.
- WV SIGMET was 66% down from 72% in 2012.

The meeting suggested the SIGMET Guide and SIGMET test procedures should be reviewed and updated, accordingly (Agreed action 12/11).

7.3 Results from the WS SIGMET test showed overall participation by States and MWOs had increased on the previous year (66% up from 55% in 2012), mainly due to the participation by Bangladesh and Nepal.

7.4 The working group agreed that the annual State letter notifying details of the 2013 SIGMET test results should urge States to resolve the errors identified in the tests and to report back to ICAO on any issues that cannot be resolved so as to enable the Secretariat to provide, or coordinate the provision of, targeted assistance to States to address the SIGMET test errors where necessary (Agreed action 12/12).

7.5 Australia had addressed formatting errors reported in previous SIGMET tests. Australia also initiated an amendment to the regional air navigation plan to remove the requirement for MWO services at Cairns (YBCS) (Agreed action 12/13). Furthermore, Australia advised it was planning to fully automate the processing of test SIGMET messages with the correct sequence number (Z99) to resolve delays in distribution currently due to the manual handling of Z99 messages.

7.6 **SIGMET Guide:** A new format of the Regional SIGMET Guide template provided by the Meteorological Warnings Study Group (METWSG) was the basis for an updated, Fifth Edition of the Asia/Pacific Regional SIGMET Guide. A large number of issues remained and an ad-hoc group comprising Australia (Rapporteur), Hong Kong-China, Japan, New Zealand and ICAO to further develop a draft Asia/Pacific Regional SIGMET Guide (5th Edition) for consideration by the MET SG (Agreed action 12/14).

7.7 **Compliance to Annex 3 -** Australia advised that it had addressed a number of formatting issues with SIGMETs and was now considering developing a system that would produce two versions of the same SIGMET message: (1) international, which would comply with Annex 3; and (2) domestic, which may include the use of domestic aviation locations. The task force cautioned Australia on the potential for confusion if international users unintentionally received the non-compliant, domestic version of SIGMET from such a system.

7.8 **Turbulence Guidance:** The Republic of Korea (ROK) was developing forecast guidance for turbulence used in support of SIGMET issuance. The task force invited the ROK to provide a detailed report on the progress and performance of the system at a future meeting and to provide any useful information on the algorithms used that may help other States in forecasting turbulence.

8. Review of Work Program

8.1 **Review of the Work Programme:** The TORs, Work Programme and composition of the Task Force were reviewed and updated as detailed in the Appendix C. The changes included:

- The members of the working group had their representation clearly stated, so it was clear who should participate in which tasks;
- The role and provision of data to the WAFS Provider States was strengthened;
- Compliance was added to performance metrics;
- Brisbane RODB to assist Nadi RODB with capturing performance metric information;
- RODBs' to develop a common dataset and assess the consistency of the performance metrics between the different RODBs;

- RODB's to consider options and strategies to deal with digital data exchange of OPMET data in its area of responsibility, including non-compliance of OPMET products with requirements of WMO TT-AvXML schema;

- All members to increase awareness of the requirement of digital exchange of OPMET data and the impact; and

- Updates to the timing of various tasks.

9. Other Business

9.1 **Chair:** Ms. Sujin Promduang advised that due to a promotion to Director, Aeronautical Information and Flight Data Management Centre, within Aeronautical Radio of Thailand Ltd, and will be unable to continue as Chair of ROBEX WG. Subsequently, Tim Hailes of the Australia was elected Chair of ROBEX WG.

10. Action by the Meeting

10.1 The meeting is invited to:

a) note the information contained in this paper;

b) provide updates to the list of agreed actions; and

c) formulate actions as appropriate.

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APPENDIX A
FOLLOW-UP OF ROBEX WG/11
AGREED ACTION
Status on 12 March 2014
√ = completed

No.	Title/Action	Follow-up action (target/completion dates in brackets)
11/1	**Status of OPMET provision in Bhutan.** That, the Secretariat (by way of State Letter) verifies the status of implementation of OPMET information in Bhutan to meet the requirements for international air navigation.	State Letter ✓ (April 2013/March 2014) Verification of status in progress (May 2014)
11/2	**Follow-up on OPMET monitoring.** That, the Secretariat (with assistance from RODBs and IATA): a) verify the results of RODB and IATA OPMET monitoring; and b) highlight results of OPMET monitoring to States to address problems where OPMET availability, compliance or regularity do not meet requirements.	State Letter ✓ (April 2013/March 2014)
11/3	**IROG back-up procedures.** That, RODBs Brisbane and Tokyo develop and test IROG back-up procedures based on the procedures developed by RODBs Bangkok and Singapore in the ROBEX Handbook, Appendix D.	IROG back-up procedures and back-up test Australia advised current system unable to back-up another IROG; planned upgrade in approx. 2 years; back-up arrangements with IROG Tokyo could be pursued then
11/4	**ROBEX Handbook – updates.** That, a) the Secretariat incorporates updates provided by the meeting in Attachment 9 to the Report in the next amendment to the ROBEX Handbook; and b) States provide the Secretariat with further updates required in time for the next major amendment of the ROBEX Handbook in September 2013.	ROBEX Handbook amendment ✓ (April 2013/November 2014) Submission of updates for the ROBEX Handbook In progress (July 2013) ROBEX Handbook amendment In progress (September 2013)
11/5	**ASIA/PAC ICD – updates.** That,	ASIA/PAC ICD amendment In progress (April 2013)

	a) the Secretariat incorporates updates provided by the meeting in Attachment 10 to the Report in the next amendment to the ASIA/PAC ICD; and b) States provide the Secretariat with further updates required in time for the next major amendment of the ASIA/PAC ICD in September 2013.	Submission of updates for the ASIA/PAC ICD In progress (July 2013) ASIA/PAC ICD amendment In progress (September 2013)
11/6	**FASID – updates.** That, the Secretariat with assistance from States primarily concerned develop proposal for amendment to FASID as agreed by the meeting in section 4 of the Report.	Proposal for amendment of FASID ✓ (April 2013/February 2014)
11/7	**Follow-up on VAAC back-up test.** That, the VAAC provider States review the VAAC back-up test procedures and amend if necessary to ensure: a) instructions for States are clear on what action is and is not required by MWOs; and b) best practice to disseminate VAA in a secure manner to reach all known users, preferably via the AFTN.	VAAC back-up test procedures reviewed and amended if necessary In progress (August 2013)
11/8	**Follow-up on SIGMET monitoring.** That, the Secretariat promulgate the results of SIGMET monitoring by RODBs Singapore and Brisbane presented in the Appendix L to this Report, which indicated that no SIGMET were issued by Afghanistan, Nauru, Papua New Guinea and Solomon Islands, to the States concerned in order to urgently facilitate the establishment and implementation of effective corrective action plans to address deficiencies related to SIGMET not provided in accordance with requirements.	State Letter ✓ (April 2013/March 2014)
11/9	**SIGMET Guide – updates.** That, the Secretariat incorporates: a) updates provided by the meeting in Appendix N to the Report in the next amendment to the SIGMET Guide; and b) an example to report a situation when no ash is expected in the forecast section of a SIGMET in time for the next major amendment of the SIGMET Guide in September 2013.	SIGMET Guide amendments ✓ (April 2013/November 2013) In progress (September 2013)

APPENDIX B
FOLLOW-UP OF ROBEX WG/12
AGREED ACTION

Status on **19 March 2014**
(✓ = completed)

No.	Title/description	Follow-up action (target/completion dates in brackets)
12/1	**Improvement of OPMET availability on SADIS and WIFS** Identify and address issues where OPMET availability on SADIS and WIFS did not meet the requirements of IATA.	RODBs in coordination with the Secretariat to investigate the results of IATA OPMET monitoring (on SADIS and WIFS) and address issues such as incorrect distribution lists or misalignment of requirements in the FASID Table MET 2A. Secretariat to coordinate with States to address the issues related to specific locations (June 2014).
12/2	**Facilitating the implementation of digital exchange in the APAC Region** Report on the activities, plans and identified implementation issues with respect to the exchange of OPMET in a digital form.	Secretariat to coordinate with States a comprehensive report of the activities, plans and identified implementation issues with respect to the exchange of OPMET in a digital form for the next meeting of the MET SG (June 2014).
12/3	**Verification and validation of the exchange of OPMET** Verify and validate the exchange of OPMET in the APAC Region using a set of test data.	RODBs to construct a test dataset, perform calculations, compare results and to standardize (report to next meeting).
12/4	**ROBEX Handbook updates** Develop and publish updates to the ROBEX Handbook.	Ad-hoc group comprising RODB experts to progress the required ROBEX Handbook updates as discussed under agenda item 5 of the Report; Secretariat to publish the updates (June 2014).
12/5	**ICD updates** Develop and publish updates to the ICD.	RODBs to provide updates for their respective appendices in the ICD; Secretariat to publish the updates (June 2014).
12/6	**Requirement for aerodrome forecasts in TAF code in FASID Tables MET 1A and MET 2A** Verify the inclusion of TAF with validity 9 hours and 18 hours in the explanation of the FASID Tables MET 1A and MET 2A.	Secretariat to determine whether an appropriate amendment proposal would be required to remove references to 9 hours and 18 hours validity TAF in the FASID Tables MET 1A and MET 2A (June 2014).
12/7	**Review of FASID Table MET 6** Review FASID Table MET 6 for possible inconsistencies in the requirements specified for Malaysia.	Secretariat to ensure the latest version of FASID Table MET 6 reflects current requirements (June 2014).

No.	Title/description	Follow-up action (target/completion dates in brackets)
12/8	**Updates to ROBEX Handbook** Update the ROBEX Handbook to realign with amendments to FASID Tables MET 1A and MET 2A with respect to locations in Indonesia.	Secretariat to include updates to realign the ROBEX Handbook with amendments to FASID Tables MET 1A and MET 2A with respect to locations in Indonesia are included in the ROBEX Handbook updates (Agreed Action 12/4 refers) (June 2014).
12/9	**Amendment to FASID Tables MET 1B, MET 3A and MET 3B** Amendment to FASID Tables MET 1B, MET 3A and MET 3B concerning MWOs Cairns and Townville.	Secretariat in coordination with Australia to develop and process an amendment proposal to FASID Tables MET 1B, MET 3A and MET 3B concerning MWOs Cairns and Townville (June 2014).
12/10 (MET/HTF 4/1)	**SIGMET Guide/VAAC back-up test procedures** VAAC back-up test procedures between Wellington and Darwin to be included in the next amendment or edition of the APAC Regional SIGMET Guide	Secretariat to include VAAC back-up test procedures in SIGMET Guide (Target date TBD in 2014, in coordination with ad-hoc group's revision of SIGMET Guide for presentation to MET SG/18)
12/11 (MET/HTF 4/2)	**SIGMET Guide/SIGMET test procedures** a) List of WMO headings for SIGMET bulletins used by APAC MWOs (to be used for compilation of SIGMET test results) to be updated to reflect the limitations in WC SIGMET issuance from certain MWOs as notified by States in the next amendment or edition of the APAC Regional SIGMET Guide; and b) Specific guidance for the issuance of test WC/WV SIGMET when a test advisory message for tropical cyclone/volcanic ash is not received to be included in the SIGMET test procedures in the next amendment or edition of the APAC Regional SIGMET Guide.	Secretariat to include (a) updated information on WC SIGMET issuance and (b) specific guidance for non-receipt of test advisory messages in SIGMET tests in SIGMET Guide (Target date TBD in 2014, in coordination with ad-hoc group's revision of SIGMET Guide for presentation to MET SG/18)
12/12 (MET/HTF 4/3)	**SIGMET test results** a) ICAO State letter urging States to resolve the errors identified in the 2013 SIGMET tests (reported by Japan and Singapore and provided in Attachments C3 and C4 to the Report); and b) States to advise ICAO on any issues that cannot be resolved or require further coordination/assistance to address the SIGMET test errors.	(a) Secretariat to issue State letter (April 2014) (b) States respond if necessary (June 2014)

No.	Title/description	Follow-up action (target/completion dates in brackets)
12/13 (MET/HTF 4/4)	**Proposal for amendment of FASID Table MET 1B – Cairns (YBCS)** Update the regional air navigation plan, FASID Table MET 1B, to remove the requirement for MWO services at Cairns (YBCS) – in line with current requirements.	Secretariat (in coordination with Australia) to prepare and process the PfA (June 2014)
12/14 (MET/HTF 4/5)	**Draft Asia/Pacific Regional SIGMET Guide (5th Edition)** Comprehensive revision of the draft Asia/Pacific Regional SIGMET Guide (5th Edition) based on the suggested changes in Attachments C5, C6 and C7 to the Report.	Ad-hoc group comprising Australia (Rapporteur), Hong Kong-China, Japan, New Zealand and ICAO to produce the revised draft Asia/Pacific Regional SIGMET Guide (5th Edition) and forward to the Secretariat for inter-regional coordination then to the MET SG for further consideration (June 2014).

APPENDIX C
ICAO APAC REGIONAL OPMET BULLETIN EXCHANGE WORKING GROUP (ROBEX WG)

1. COMPOSITION
The ROBEX WG is made up of members from States representing the five APAC Regional OPMET Data Banks (RODBs): *Australia/Brisbane, Fiji/Nadi, Japan/Tokyo, Singapore and Thailand/Bangkok*; the World Area Forecast System (WAFS), Satellite Distribution System (SADIS) and WAFS Internet File System (WIFS) Provider States: *United Kingdom and United States*; the three APAC Volcanic Ash Advisory Centres (VAACs): *Australia/Darwin, Japan/Tokyo and New Zealand/Wellington*; the designated focal points for SIGMET tests and regional OPMET bulletin exchange (ROBEX); and the International Air Transport Association (IATA).

Secretariat	**Address**	**Contact**
Mr. Peter Dunda ICAO	Regional Officer MET International Civil Aviation Organization 252/1, Vibhavadi Rangsit Road Ladyao, Chatuchak Bangkok 10900 Thailand	Tel: +66 (2) 537-8189 Ext. 153 Fax: +66 (2) 537-8199 Email: PDunda@icao.int

Chair	**Address**	**Contact**
Ms. Sujin Promduang THAILAND (Bangkok RODB)	General Administrative Manager Aeronautical Information Management Centre Aeronautical Radio of Thailand Ltd. 102 Ngamduplee, Sathorn, Bangkok 10120 Thailand	Tel: +66 (2) 285 9083 Fax: +66 (2) 287 3131 Email: sujin@aerothai.co.th

Members	**Address**	**Contact**
Mr. Aidan Cooley AUSTRALIA (Brisbane RODB)	ATM Systems Specialist Airservices Locked Bag 747 Eagle Farm QLD 4009	Tel: +61 (7) 3866 3762 Mob: +61 417 434 975 Fax: +61 (7) 3866 3506 Email: aidan.cooley@airservicesaustralia.com
Mr. Tim Hailes AUSTRALIA (Brisbane RODB & Darwin VAAC)	National Manager Regional Aviation Weather Services Weather & Ocean Services Branch Australian Bureau of Meteorology GPO 1289 Melbourne VIC 3001	Tel: +61 (3) 9669 4273 Mob: +61 4 2784 0175 Email: t.hailes@bom.gov.au Cc: metauthority@bom.gov.au
Mr William Reece FIJI (Nadi RODB)	Station Officer Telecoms (Training & Standards) Airports Fiji Limited, Private Mail Bag, Nadi Airport Fiji Islands	Tel: +679 673 1198 Mob: +679 990 6105 Fax: +679 673 1198 Email: williamr@afl.com.fj
Mr. Yuichi Yamakoshi JAPAN	Senior Scientific Officer Administration Division Forecast Department Japan Meteorological Agency 1-3-4 Otemachi, Chiyoda-ku	Tel: +81 (3) 3212 8341 Email: y-yamakoshi@met.kishou.go.jp

Members	Address	Contact
(Tokyo RODB & Tokyo VAAC)	Tokyo 100-8122	
Mr Keith Mackersy NEW ZEALAND (Wellington VAAC)	Meteorological Specialist Civil Aviation Authority of New Zealand PO Box 3555 Wellington	Tel: +64 4 9040543 Fax: +64 4 9041543 Email: keith.mackersy@caa.govt.nz
Ms. Chua Guat Mui SINGAPORE (Singapore RODB)	Principal Technical Officer Meteorological Services Singapore P.O. Box 8, Singapore Changi Airport Post Office Singapore 918141	Tel: +65 6542 2861 Fax: +65 6542 2915 Email: chua_guat_mui@nea.gov.sg
Mr. Chris Tyson UNITED KINGDOM (WAFC London)	SADIS Manager & International Aviation Analyst Met Office, Fitzroy Road Exeter Devon EX1 3PB	Tel: +44 (0) 1392 884892 Fax: +44 (0) 870 900 5050 Email: chris.tyson@metoffice.gov.uk
Mr. Steven Albersheim UNITED STATES (WAFC Washington)	Federal Aviation Administration Senior Meteorologist, Programme Lead International FAA Headquarters 800 Independence Ave, S.W. Washington, D.C. 20591	Tel: +1 (202) 385 7185 Fax: +1 (202) 385 7240 Email: steven.albersheim@faa.gov
Hans-Rudi Sonnabend IATA	Head of Meteorological Services Lufthansa Systems Aeronautics GmbH Am Prime Parc 2 D-65479 Raunheim Germany	Tel: +49 (69) 6969 0362 Fax: +49 (69) 6969 4736 Email: hans-rudi_sonnabend@lhsystems.com met.services@lhsystems.com
2. DESCRIPTION		
Objective	Increase OPMET availability and reliability needed for flight planning (efficiency) and in-flight re-planning (safety).	
Benefits	Increase in safety and efficiency (time and fuel savings).	
Terms of Reference	Under guidance from the ICAO Secretariat: - Review the OPMET exchange schemes in the APAC, ~~and~~ MID and neighbouring Regions and develop proposals for their optimization, taking into account the requirements by the aviation users and the current trends for global OPMET exchange; - Develop standardized quality control, monitoring and management procedures related to ROBEX and other exchange schemes for OPMET information; - Review the regional guidance material related to OPMET exchange; - Liaise with other groups dealing with communication and/or management aspects of the OPMET exchange in APAC, ~~and~~ other ICAO Regions and the WAFS Provider States ~~(e.g., APAC ATN Implementation Coordination Group, BMG EUR Region, CNS/MET SG MID Region, SADISOPSG)~~.	
Work Programme	The work to be addressed by the ROBEX WG includes:	

Members	Address	Contact
	- Examine new and existing requirements for OPMET exchange in APAC, ~~and~~ MID and other neighbouring regions along with the WAFS Provider States and assess the feasibility of satisfying these requirements, taking into account the availability of the data; - Keep the ROBEX scheme and other OPMET exchange schemes under review and prepare proposals for updating and optimizing the schemes; - Review and update of the procedures for inter-regional OPMET exchange and ensure the availability of the required APAC and MID OPMET data for SADIS and WIFS; - Review the regional guidance material on OPMET exchange to ensure procedures are provided for the exchange of all required OPMET data types: SA, SP, FT, WS, WC, WV, FK, FV and UA; - Conduct trials and develop procedures for quality control, monitoring and management of the OPMET exchange to foster implementation of quality management of OPMET data by the ROBEX centres and the RODBs; - Report on deficiencies in the format and dissemination of OPMET messages; - Participate in the testing, ~~and~~ implementation and awareness of the transition to digital exchange of OPMET using a code form based on XML/GML; - Conduct regular regional VAAC back-up and SIGMET tests; - Develop quality control guidance material and promote implementation of quality control for OPMET management.	

3. COMMUNICATION STRATEGIES				
Description	**Target Audience**	**Delivery Method**	**Frequency / Date**	**Responsibility**
Work Plan	ROBEX WG Members	Document via email & ROBEX WG Meeting	As required but reviewed at the ROBEX WG Meeting and the MET SG	Chair
General correspondence	ROBEX WG Members	Email	As required	ROBEX WG Members
Task Force Meeting	ROBEX WG Members	Meeting	Annually	Chair
Status & Milestone Reports	ICAO Secretariat and ROBEX WG Members	Report via email & WP at ROBEX WG Meeting	Annually	Chair
Task Force Report	All APAC States	Working Paper at MET SG	Annually	Chair

4. PERFORMANCE FRAMEWORK FORM (PFF)				
Tasks	**Time Frame**	**Responsibility**	**Status**	**Milestone**
Task 1: Improve the availability of OPMET data	Ongoing	ROBEX WG		1
Task 2: Improve timeliness, compliance and regularity of OPMET exchange	Ongoing	ROBEX WG		2
Task 3: Identify gaps in processes, procedures and OPMET exchange	Ongoing	ROBEX WG		3, 4, 5

Task 4: Review regional guidance material related to OPMET data	Ongoing	ROBEX WG		3, 4, 5, 6
Task 5: Facilitate and monitor the migration to AIM and new MET codes (e.g. XML)	2013-2016	ROBEX WG		7
Task 6: Review the RODB structure	TBC	ROBEX WG		8

5. MILESTONES			
Milestone	**Accountability**	**Dates**	**Status**
Milestone 1: Achieve 95% (90%) or greater OPMET availability for AOP (non-AOP) aerodromes at RODBs and WAFCs.	ROBEX WG	Annually Jun	
Milestone 2: Achieve OPMET timeliness, compliance and regularity index of 0.95 (0.90) for AOP (non-AOP) aerodromes at RODBs and WAFCs.	ROBEX WG	Annually Jun	
Milestone 3: Improved issuance and compliance of test SIGMETs Tests.	ROBEX WG	Annually Jun	
Milestone 4: VAAC Back-up Tests conducted, analysed and report complete.	VAAC Back-up Focal Points	Annually Jun	
Milestone 5: IROG Back-up Tests conducted, analysed and report complete.	Bangkok RODB	Annually Mar	
Milestone 6: RODB Monitoring procedures updated in ROBEX Handbook	Secretariat	Jun 2014	
Milestone 7: Report to ROBEX WG & MET SG on digital OPMET exchange (i.e. XML) & testing.	Secretariat & Chair	Annually Mar & May	
Milestone 8: RODB structure review complete.	ROBEX WG	TBC	

6. WORK PLAN				
Activity / Milestone	**Accountability**	**Predecessors**	**Date**	**Status**
Activity 1: Increasing OPMET availability at RODBs & WAFCs (95 and 90% for AOP and non-AOP aerodromes)				
Activity 1.1: Assist Nadi RODB in conducting OPMET availability testing	Brisbane RODB	-	Nov 2014	
Activity 1.2: Perform real time monitoring if required	RODBs & IATA	-	If required	
Activity 1.3: Monitor RODB OPMET reception in Jan and use Dec as PI threshold.	RODBs	-	Annually Dec/Jan	
Activity 1.4: Monitor SADIS/WIFS OPMET reception.	IATA	-	Annually Jan	

6. WORK PLAN				
Activity / Milestone	**Accountability**	**Predecessors**	**Date**	**Status**
Activity 1.5: Score against FASID Table MET 1A and 2A.	Singapore, Tokyo, Bangkok RODBs & IATA	1.3 & 1.4	Annually Feb	
Activity 1.6: Report results and deficiencies to ROBEX WG meeting.	Bangkok RODB~~s~~ & IATA	1.5	Annually Mar	
Activity 1.7: Report summary of OPMET availability results to MET SG	Secretariat & Chair	1.6	Annually May	
Activity 1.8: Advise States of OPMET deficiencies.	Secretariat	1.7	Annually Jun	
Activity 1.9: Provide support for States to rectify deficiencies if requested.	RODBs	1.8	As required	
Activity 1.10: Develop a common dataset and assess the consistency between RODBs of the 'availability' calculation and standardise.	Singapore, Tokyo, Bangkok RODBs	-	Jul 2014	
Milestone 1: Achieve 95% (90%) or greater OPMET availability for AOP (non-AOP) aerodromes at RODBs & WAFCs.	ROBEX WG	1.9	Annually Jun	
Activity 2: Improving OPMET timeliness, compliance and regularity				
Activity 2.1: Assist Nadi RODB to collect the data for conducting OPMET testing	Brisbane RODB	-	Nov 2014	
Activity 2.2: Monitor OPMET timeliness, compliance and regularity in Jan and use Dec as PI threshold.	RODBs & IATA	-	Annually Dec/Jan	
Activity 2.3: Collate and analyse data	Singapore, Tokyo, Bangkok RODBs & IATA	2.2	Annually Feb	
Activity 2.4: Report State irregularities to ROBEX WG meeting	Bangkok RODB~~s~~ & IATA	2.3	Annually Mar	
Activity 2.5: Report summary of OPMET timeliness, compliance and regularity results to METSG	Chair	2.4	Annually May	
Activity 2.6: Inform States of compliance	Secretariat	2.5	Annually Jun	
Activity 2.7: Provide support for States to rectify deficiencies if requested.	RODBs	2.6	As required	

6. WORK PLAN				
Activity / Milestone	**Accountability**	**Predecessors**	**Date**	**Status**
Activity 2.8: Develop a common dataset and assess the consistency between RODBs of the 'compliance' and 'regularity' calculation and standardise.	Singapore, Tokyo, Bangkok RODBs	-	Jul 2014	
Milestone 2: Achieve 95% (90%) or greater OPMET timeliness, compliance and regularity for AOP (non-AOP) aerodromes at RODBs & WAFCs.	ROBEX WG	2.7	Annually Jun	
Activity 3: SIGMET Tests				
Activity 3.1: Review SIGMET Test procedures	ROBEX WG	-	Annually Aug	
Activity 3.2: State Letter regarding SIGMET Tests	Secretariat	3.1	Annually Sep	
Activity 3.3: Conduct WC SIGMET Tests	RODBs	3.2	Annually 1st Wed in Nov	To be conducted on 5 Nov 2014
Activity 3.4: Conduct WV SIGMET Tests	RODBs	3.2	Annually 2nd Wed in Nov	To be conducted on 12 Nov 2014
Activity 3.5: Conduct WS SIGMET Tests	RODBs	3.2	Annually 3rd Wed in Nov	To be conducted on 19 Nov 2014
Activity 3.6: Collate and analyse test data	RODBs	3.3 - 3.5	Annually Jan	
Activity 3.7: Report to ROBEX WG	SIGMET Focal Points	3.6	Annually Mar	
Activity 3.8: Report on SIGMET Test Results to MET SG.	Chair	3.7	Annually May	
Activity 3.9: Advise States of SIGMET deficiencies	Secretariat	3.8	Annually Jun	
Milestone 3: Improved issuance and compliance of test SIGMETs	ROBEX WG	3.9	Annually Jun	
Activity 4: VAAC Back-up Tests				
Activity 4.1: Review VAAC Back-up Test procedures ~~to include Wellington~~	ROBEX WG and VAACs		May 2014 and then annually Jan	
Activity 4.2: Update VAAC Back-up Procedures ~~in SIGMET Guide~~	Secretariat	4.1	Annually May	

6. WORK PLAN				
Activity / Milestone	**Accountability**	**Predecessors**	**Date**	**Status**
Activity 4.3: State Letter regarding VAAC Back-up Tests	Secretariat	4.1	Annually Jul	
Activity 4.4: Conduct VAAC Back-up Test between Darwin and Tokyo	VAACs	4.3	Annually Sep – TBC	
Activity 4.5: Conduct VAAC Back-up Test between Darwin and Wellington	VAACs	4.3	Annually Oct – TBC	
Activity 4.6: Collect test results and send to VAAC ~~Back-up Test Focal Point~~Provider State members	RODBs	4.4	Annually Sep & Oct (TBC)	
Activity 4.7: Analyse Test results	VAAC Back-up Focal PointsMembers	4.5	Annually Nov	
Activity 4.8: Report to ROBEX WG	VAAC Back-up Focal PointsMembers	4.6	Annually Feb	
Activity 4.9: Report to MET SG.	Chair	4.8	Annually May	
Activity 4.10: Advise relevant States, VAACs and RODBs of any deficiencies.	Secretariat	4.7	Annually Jun	
Milestone 4: VAAC Back-up Tests conducted, analysed and report complete.	VAAC Back-up Focal PointsMembers	4.8	Annually Jun	
Activity 5: IROG Back-up Tests				
Activity 5.1: ~~Identify~~ Investigate ~~feasibility for IROG~~ back-up arrangements ~~testing~~ of IROG Tokyo & Brisbane	Secretariat	-	Oct 2014	
Activity 5.2: Review IROG Back-up Test procedures to include all IROG.	All IROGs	-	Annually Feb	
Activity 5.3: Updated IROG Back-up Procedures in ROBEX Handbook.	Secretariat	5.2	Annually May	
Activity 5.4: Identify list of MET Bulletins to monitor.	All IROGs	-	Annually Jan/Feb	
Activity 5.5: Conduct IROG Back-up Tests	All IROGs	5.4	Annually Jan/Feb	
Activity 5.6: Collect & analyse test results	All IROGs	5.5	Annually Feb	

6. WORK PLAN				
Activity / Milestone	**Accountability**	**Predecessors**	**Date**	**Status**
Activity 5.7: Report to ROBEX WG	Bangkok RODB	5.6	Annually Mar	
Milestone 5: IROG Back-up Tests conducted, analysed and report complete.	Bangkok RODB	5.7	Annually Mar	
Activity 6: APAC RODB Monitoring procedures				
Activity 6.1: Letter to ROBEX Centres requesting confirmation that ROBEX Handbook Appendix A, B & C has the correct information regarding the Bulletins. Also ask for Hours of Operation and Issue Times of METAR and TAF.	Secretariat	-	May 2014	
Activity 6.2: Review ROBEX Handbook Appendix A & B table structure to include columns for Hours of Operation and Issue Times.	Chair	6.1	Jul 2014	
Activity 6.3: Review monitoring procedure in ROBEX Handbook.	All RODBs	-	Aug 2014	
Activity 6.4: RODBs to indicate differences in procedures and resolve these differences.	All RODBs	6.3	Aug 2014	
Activity 6.5: Any changes to RODB monitoring procedures and updates to Appendix A, B and C in ROBEX Handbook.	Secretariat	6.2 & 6.4	Sep 2014	
Milestone 6: RODB Monitoring procedures updated in ROBEX Handbook	Secretariat	6.5	Sep 2014	
Activity 7: New OPMET Exchange Formats				
Activity 7.1: Monitor migration to AIM and new OPMET codes (i.e. XML/GML).	Secretariat	-	As required	
Activity 7.2: Review documentation relating to the XML schema ~~version 1.0, release candidate 2~~. Feedback through Secretariat.	RODBs		May 2014	
Activity 7.3: Report to MET SG on plans for implementation of XML schema at APAC RODBs.	Secretariat		Next meeting MET SG	

6. WORK PLAN				
Activity / Milestone	**Accountability**	**Predecessors**	**Date**	**Status**
Activity 7.4: Conduct a trial of the new XML schema developed by WMO TT-AvXML.	Singapore RODB	-	Oct 2014	
Activity 7.5: Consider options and strategies to deal with digital data exchange of OPMET data in its area of responsibility, including non-compliance of OPMET products with requirements of WMO TT-AvXML schema.	RODBs		Feb 2015	
Activity 7.6: Increase awareness of the requirement of digital exchange of OPMET data and the impact.	RODBs		As required	
Activity 7.7: Report to ROBEX WG regarding testing and implementation of digital OPMET exchange in APAC.	Secretariat	7.1-7.6	Annually Mar	
Milestone 7: Report to ROBEX WG & MET SG on digital OPMET exchange (i.e. XML) & testing.	Secretariat	7.7	Annually May	
Activity 8: Review RODB Structure				
Activity 8.1: Review optimum inter-regional exchange of APAC OPMET data. In particular consolidate data sent to AFI from either Bangkok or Brisbane.	Bangkok & Brisbane RODBs	-	May 2014	
Activity 8.2: Review ROBEX Scheme diagram vs Table in 11.1 of ROBEX Handbook.	All RODBs	8.1	May 2014	
Activity 8.3: Review AFTN network diagram and add an AMHS diagram in the ROBEX Handbook.	Secretariat	-	Aug 2014	
Activity 8.4: Review RODB structure taking into account: ○ Capability; ○ Message structure (XML) readiness; ○ Delivery methods (internet, AHMS); ○ New Products (i.e. ATM requirements).	ROBEX WG	-	TBC	

6. WORK PLAN				
Activity / Milestone	**Accountability**	**Predecessors**	**Date**	**Status**
Milestone 8: RODB structure review complete.	ROBEX WG	-	TBC	

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