



*International Civil Aviation Organization*

**FOURTEENTH MEETING OF THE ASIA/PACIFIC  
METEOROLOGICAL INFORMATION EXCHANGE WORKING GROUP  
(MET/IE WG/14)**

Bangkok, Thailand, 7 – 9 March 2016

**Agenda Item 7: Future work programme**

**REVIEW MET/IE WG TERMS OF REFERENCE AND WORK PROGRAMME**

(Presented by the Secretariat)

**SUMMARY**

This paper presents the terms of reference and work programme of the Meteorological Information Exchange Working Group (MET/IE WG) for review by the meeting.

**1. INTRODUCTION**

1.1. The main objectives of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) may be summarised as the following: (a) development of the Asia/Pacific Regional Air Navigation Plan and other relevant regional documentation; (b) facilitation of the implementation of air navigation systems and services in the Asia/Pacific Region; and (c) rectification of deficiencies in the air navigation field.

1.2. The Meteorological Information Exchange Working Group (MET/IE WG), formerly known as the Regional OPMET Bulletin Exchange Working Group (ROBEX WG), was established by the Meteorology Sub-group (MET SG) [*MET SG/19 Decision 19/2 — Expert working groups of the Meteorology Sub-group, refers*] of APANPIRG to assist APANPIRG in its planning and implementation work specifically related to problems requiring expert advice for their resolution.

1.3. This paper presents the terms of reference and work programme of the MET/IE WG for review by the meeting.

**2. DISCUSSION**

**ROBEX WG**

2.1. Prior to the establishment of the MET/IE WG, the terms of reference and work programme of the (former) ROBEX WG focussed on the objective to increase OPMET availability and reliability needed for flight planning (efficiency) and in-flight re-planning (safety) in support of

the Global Air Navigation Plan framework and the aviation system block upgrade (ASBUs) methodology.

2.2. A copy of the ROBEX WG terms of reference and work programme document is provided at the **Attachment A** to this paper.

### **MET/IE WG**

2.3. With the establishment of MET/IE WG to replace the ROBEX WG, the MET SG provided the MET/IE WG with terms of reference to assist APANPIRG with its planning and implementation work in close alignment with the Global Air Navigation Plan (GANP) and Aviation System Block Upgrade (ASBU) strategies and the Asia/Pacific regional priorities, and to facilitate coordination, where necessary, with the Meteorology Panel [*MET SG/19 Decision 19/2 — Expert working groups of the Meteorology Sub-group, refers*].

2.4. A copy of the MET/IE WG terms of reference document is provided at the **Attachment B** to this paper.

2.5. When establishing the MET/IE WG, MET SG/19 considered that the MET/IE WG would undertake the tasks [previously] assigned to the ROBEX WG and that it would be appropriate for the existing membership of the ROBEX WG to be transferred to the MET/IE WG.

2.6. In view of the above, a draft, new terms of reference and work programme document for the MET/IE WG is provided at the **Attachment C** to this paper for review by the meeting.

## **3. ACTION REQUIRED BY THE MEETING**

3.1. The meeting is invited to:

- a) note the information contained in this paper;
- b) review and revise the draft, new MET/IE WG terms of reference and work programme document at **Attachment C** to this paper, as necessary; and
- c) forward the draft, new MET/IE WG terms of reference and work programme document to the MET SG for further review and possible adoption.

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

**(Extracted from WP/22 to MET SG/19)**

<b>1. COMPOSITION</b>		
<p>The ROBEX WG is made up of members from States representing the five APAC Regional OPMET Data Banks (RODBs): <i>Australia/Brisbane, Fiji/Nadi, Japan/Tokyo, Singapore and Thailand/Bangkok</i>; the World Area Forecast System (WAFS), Satellite Distribution System (SADIS) and WAFS Internet File System (WIFS) Provider States: <i>United Kingdom and United States</i>; the three APAC Volcanic Ash Advisory Centres (VAACs): <i>Australia/Darwin, Japan/Tokyo and New Zealand/Wellington</i>; the designated focal points for SIGMET tests and regional OPMET bulletin exchange (ROBEX); and the International Air Transport Association (IATA).</p>		
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2. DESCRIPTION	
Objective	Increase OPMET availability and reliability needed for flight planning (efficiency) and in-flight re-planning (safety) in support of the Global Air Navigation Plan framework and the aviation system block upgrade (ASBUs) methodology.
Benefits	Increase in safety and efficiency (time and fuel savings).
Terms of Reference	Under guidance from the ICAO Secretariat: <ul style="list-style-type: none"> <li>- Review the OPMET exchange schemes in the APAC, 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;</li> <li>- Develop standardized quality control, monitoring and management procedures related to ROBEX and other exchange schemes for OPMET information;</li> <li>- Review the regional guidance material related to OPMET exchange;</li> <li>- Liaise with other groups dealing with communication and/or management aspects of the OPMET exchange in APAC, other ICAO Regions and the WAFS Provider States.</li> </ul>
Work Programme	The work to be addressed by the ROBEX WG includes: <ul style="list-style-type: none"> <li>- Examine new and existing requirements for OPMET exchange in APAC, MID and other neighbouring regions along with the WAFS Provider States and assess the</li> </ul>

	<p>feasibility of satisfying these requirements, taking into account the availability of the data;</p> <ul style="list-style-type: none"> <li>- Keep the ROBEX scheme and other OPMET exchange schemes under review and prepare proposals for updating and optimizing the schemes;</li> <li>- Review and update of the procedures for inter-regional OPMET exchange and ensure the availability of the required APAC and MID OPMET data for <b>Secure SADIS FTP</b> and WIFS;</li> <li>- 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, <b>WA</b>, WS, WC, WV, FK, FV and UA;</li> <li>- 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;</li> <li>- Report on deficiencies in the format and dissemination of OPMET messages;</li> <li>- Participate in the testing, implementation and awareness of the transition to digital exchange of OPMET using a code form based on <b>IWXXM XML/GML</b>;</li> <li>- Conduct regular regional VAAC back-up and SIGMET tests;</li> <li>- Provide support for the APAC Volcanic Ash Exercises;</li> <li>- Develop quality control guidance material and promote implementation of quality control for OPMET management.</li> </ul>
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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
<b>Task Force Working Group Meeting</b>	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 <b>and errors</b> 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 <b>IWXXM</b> in support of <b>SWIM AIM and new MET codes (e.g. XML)</b>	<b>2015-2018</b> <del>2013-2016</del>	ROBEX WG		7
Task 6: Review the RODB structure	<b>2017</b> <del>TBC</del>	ROBEX WG		8

5. MILESTONES			
Milestone	Accountability	Dates	Status
<b>Milestone 1:</b> Achieve 95% (90%) or greater OPMET availability for AOP (non-AOP) aerodromes at RODBs and <del>WAFCs</del> WAFS Internet based services as defined in FASID Tables Met2A.	ROBEX WG	Annually Jun	
<b>Milestone 2:</b> Achieve OPMET timeliness, compliance and regularity index of 0.95 (0.90) for AOP (non-AOP) aerodromes at RODBs and <del>WAFCs</del> WAFS Internet based services as defined in FASID Tables Met2A.	ROBEX WG	Annually Jun	
<b>Milestone 3:</b> <del>Improved issuance and compliance of test SIGMETs tests</del> conducted, analysed and report complete.	ROBEX WG	Annually Jun	
<b>Milestone 4:</b> VAAC Back-up tests conducted, analysed and report complete.	VAAC Back-up Focal Points	Annually Jun	
<b>Milestone 5:</b> IROG Back-up tests conducted, analysed and report complete.	Bangkok RODB	Annually Mar	
<b>Milestone 6:</b> RODB Monitoring procedures updated in ROBEX Handbook	Secretariat	Jun 2014	
<b>Milestone 7:</b> Report to ROBEX WG & MET SG on <del>IWXXM digital OPMET</del> exchange (i.e. XML) & testing.	Secretariat & Chair	Annually Mar & May	
<b>Milestone 8:</b> RODB structure review complete.	ROBEX WG	2017 TBC	
<b>Milestone 9:</b> Improved efficiency and effectiveness of ROBEX scheme	RODBs	Annually Jun	

6. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
Activity 1: Increasing OPMET availability at RODBs & <del>WAFCs</del> (95 and 90% for AOP and non-AOP aerodromes) <del>WAFS Internet based services as defined in FASID Tables Met2A</del>				
Activity 1.1: <del>Tokyo RODB to investigate providing Bangkok RODB data in standard format Assist Nadi RODB in conducting OPMET availability testing</del>	Tokyo RODB <del>Brisbane RODB</del>	-	Jun 2015 <del>Nov 2014</del>	
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	
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: <del>Prepare ROBEX paper and report results and deficiencies to ROBEX WG meeting.</del>	Bangkok RODB & IATA	1.5	Annually Mar	

6. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
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: Exchange Develop a common dataset and assess the consistency between RODBs of the 'availability' calculation and standardise.	Singapore, Tokyo, Bangkok RODBs	-	Aug Jul 2014 <sup>5</sup>	
<b>Milestone 1:</b> Achieve 95% (90%) or greater OPMET availability for AOP (non-AOP) aerodromes at RODBs & WAFS.	ROBEX WG	1.9	Annually Jun	
<b>Activity 2: Improving OPMET timeliness, compliance and regularity at RODBs and WAFS</b>				
<b>Internet based Services</b>				
Activity 2.1: Investigate the ingestion of AMHS data into analysis Assist Nadi RODB to collect the data for conducting OPMET testing	Bangkok & Tokyo Brisbane RODB	-	Nov 2014 <sup>5</sup>	
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: Prepare paper and report State irregularities to ROBEX WG meeting	Bangkok RODB & 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	
Activity 2.8: Exchange Develop a common dataset and assess the consistency between RODBs of the timeliness, compliance and regularity calculation and standardise.	Singapore, Tokyo, Bangkok RODBs	-	Aug Jul 2014 <sup>5</sup>	
Activity 2.9: Correct identified issues relating to inconsistencies identified.	Singapore, Tokyo, Bangkok RODBs	2.8	Nov 2014 <sup>5</sup>	

6. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
<b>Milestone 2:</b> Achieve 95% (90%) or greater OPMET timeliness, compliance and regularity for AOP (non-AOP) aerodromes at RODBs & WAFSSs.	ROBEX WG	2.9	Annually Jun	
<b>Activity 3: SIGMET Tests</b>				
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 1 <sup>st</sup> Wed in Nov	To be conducted on <del>5 Nov 2014</del> 4 Nov 2015
Activity 3.4: Conduct WV SIGMET Tests	RODBs	3.2	Annually 2 <sup>nd</sup> Wed in Nov	To be conducted on <del>12 Nov 2014</del> 11 Nov 2015
Activity 3.5: Conduct WS SIGMET Tests	RODBs	3.2	Annually 3 <sup>rd</sup> Wed in Nov	To be conducted on <del>19 Nov 2014</del> 18 Nov 2015
Activity 3.6: Collate and analyse test data against FASID tables	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	
<b>Milestone 3:</b> Improved issuance and compliance of test SIGMETs	ROBEX WG	3.9	Annually Jun	
<b>Activity 4: VAAC Back-up Tests</b>				
Activity 4.1: Review VAAC Back-up Test procedures	ROBEX WG and VAACs		May 2014 2015 and then annually Jan	
Activity 4.2: Update VAAC Back-up Procedures	Secretariat	4.1	Annually May	
Activity 4.3: State Letter regarding VAAC Back-up Tests	Secretariat	4.1	Annually Aug	
Activity 4.4: Conduct VAAC Back-up Test between Darwin and Tokyo	VAACs	4.3	Annually Oct – TBC	



<b>6. WORK PLAN</b>				
<b>Activity / Milestone</b>	<b>Accountability</b>	<b>Predecessors</b>	<b>Date</b>	<b>Status</b>
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 Provider State members	RODBs	4.4	Annually Oct – TBC	
Activity 4.7: Analyse Test results	VAAC Back-up Focal Points Members	4.5	Annually Nov	
Activity 4.8: Report to ROBEX WG	VAAC Back-up Focal Points Members	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	
<b>Milestone 4:</b> VAAC Back-up Tests conducted, analysed and report complete.	VAAC Back-up Focal Points Members	4.8	Annually Jun	
<b>Activity 5: IROG Back-up Tests</b>				
Activity 5.1: Investigate back-up arrangements of IROG Tokyo & Brisbane	Secretariat	-	Oct 2015	
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	
Activity 5.7: Report to ROBEX WG	Bangkok RODB	5.6	Annually Mar	
<b>Milestone 5:</b> IROG Back-up Tests conducted, analysed and report complete.	Bangkok RODB	5.7	Annually Mar	
<b>Activity 6: APAC RODB Monitoring procedures</b>				

6. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
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	-	Annually May	
Activity 6.2: Review ROBEX Handbook Appendix A & B table structure to include columns for Hours of Operation and Issue Times.	Chair	6.1	Annually Jul	
Activity 6.3: Review monitoring procedure in ROBEX Handbook.	All RODBs	-	Annually Aug	
Activity 6.4: RODBs to indicate differences in procedures and resolve these differences.	All RODBs	6.3	Annually Aug	
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	Annually Sep	
<b>Milestone 6:</b> RODB Monitoring procedures updated in ROBEX Handbook	Secretariat	6.5	Annually Sep	
<b>Activity 7: New OPMET Exchange Formats</b>				
Activity 7.1: Monitor migration to <b>iWXXM AIM and new OPMET codes (i.e. XML/GML).</b>	Secretariat	-	As required	
Activity 7.2: <b>Investigate, and develop a plan, to undertake IWXXM tests with another IWXXM centre</b> <del>Review documentation relating to the XML schema. Feedback through Secretariat.</del>	<b>Singapore</b> RODB		<del>May 2014</del> <b>Nov 2015</b>	
Activity 7.3: Report to MET SG on plans for implementation of XML schema at APAC RODBs.	Secretariat		Next meeting MET SG	
Activity 7.4: Conduct a trial of <b>iWXXM the new XML schema developed by WMO TT-AvXML.</b>	<b>Singapore</b> RODB	<b>7.2</b>	<del>Oct 2014</del> <b>Mar 2016</b>	
Activity 7.5: Consider options and strategies to deal with <del>digital data</del> exchange of OPMET data <b>in IWXXM format within</b> its area of responsibility, <del>including non-compliance of OPMET products with requirements of WMO TT-AvXML schema.</del>	<b>WG</b> RODBs		<del>Feb 2015</del> <b>2016</b>	

6. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
Activity 7.6: Increase awareness of the requirement of digital exchange of OPMET data in IWXXM format and the impact of inability to do so.	RODBs & Secretariat WG		As required	
Activity 7.7: Report on the status of the testing and implementation of digital OPMET exchange.	RODBs		Annually Mar	
Activity 7.8: Report to ROBEX WG regarding testing and implementation of digital OPMET exchange internationally APAC.	Secretariat	7.1-7.7	Annually Mar	
Activity 7.9: Prepare information (e.g. issues, CONOPS) for ICAO international IWXXM Working Group	WG		Feb 2016	
Activity 7.10: Participate in the ICAO international IWXXM Working Group.	WG		Mar 2016	
<b>Milestone 7:</b> Report to ROBEX WG & MET SG on digital OPMET IWXXM exchange (i.e. XML) & testing.	Secretariat & Chair	7.8	Annually May	
<b>Activity 8: Review RODB Structure</b>				
<del>Activity 8.1: Review optimum inter-regional exchange of APAC OPMET data. In particular consolidate data sent to AFI from either Bangkok or Brisbane.</del>	<del>Bangkok &amp; Brisbane RODBs</del>	-	<del>Dec 2014</del>	
<del>Activity 8.2: Implement optimum inter-regional exchange to AFI</del>	<del>Bangkok or Brisbane RODBs</del>		<del>Jan 2015</del>	
Activity 8.1: Review ROBEX Scheme diagram vs Table in 11.1 of ROBEX Handbook.	All RODBs	8.2	Oct 2014 2015 May 2015 2016	
Activity 8.2: Review AFTN network diagram and add an AMHS diagram in the ROBEX Handbook.	Secretariat	-	Oct 2014 2015	
Activity 8.3: Review RODB structure taking into account: <ul style="list-style-type: none"> <li>o Capability;</li> <li>o <del>Message structure (XML)</del> IWXXM readiness;</li> <li>o Delivery methods (internet, AMHS);</li> <li>o New Products (i.e. ATM requirements);</li> <li>o International consistency.</li> </ul>	ROBEX WG	-	2017	
<b>Milestone 8:</b> RODB structure review complete.	ROBEX WG	-	2017	

6. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
<b>Activity 9: Improve Efficiency and effectiveness of ROBEX Scheme</b>				
Activity 9.1: Align content of SA bulletins with FT bulletins, where appropriate	All RODBs	-	Oct 2015	
Activity 9.2: Adjust FT bulletin filing time, where appropriate	All RODBs	-	Oct 2015	
Activity 9.3: Review FASID table and ensure all necessary aerodromes are contained in OPMET bulletins	All RODBs	-	Oct 2015	
Activity 9.4: Review and update ROBEX HB and ICD to align with of OPMET bulletin contents	All RODBs	-	Oct 2015	
<b>Milestone 9: Efficiency and effectiveness of ROBEX Scheme improved</b>	ROBEX WG	-	2017	

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**TERMS OF REFERENCE FOR THE METEOROLOGICAL INFORMATION EXCHANGE  
WORKING GROUP (MET/IE WG)**

**(Extracted from Attachment 3 to the Report from MET SG/19)**

Under guidance from the ICAO APAC MET Secretariat:

- a) Review the OPMET exchange schemes in the APAC and other regions and develop proposals for their optimization, taking into account the requirements by the aviation users and global OPMET exchange;
- b) Monitor and participate in trials of digital aeronautical meteorological information exchange inter- and intra- regionally;
- c) Develop standardized quality control, monitoring and management procedures related to exchange of IWXXM and TAC OPMET information;
- d) Review the regional guidance material related to OPMET exchange;
- e) Liaise with other appropriate bodies within ICAO and WMO dealing with communication and/or management aspects of the OPMET exchange; and
- f) Provide advice and report to the MET Sub-group on the above issues for further co-ordination through the ICAO Secretariat with other appropriate bodies.

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**ICAO ASIA/PACIFIC  
METEOROLOGICAL INFORMATION EXCHANGE WORKING GROUP  
(MET/IE WG)**

**TERMS OF REFERENCE AND WORK PROGRAMME**

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

Objective	Increase OPMET availability and reliability needed for flight planning (efficiency) and in-flight re-planning (safety) in support of the Global Air Navigation Plan framework and the aviation system block upgrade (ASBUs) methodology.
Benefits	Increase in safety and efficiency (time and fuel savings).
Terms of	Under guidance from the ICAO Secretariat:

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Reference	<ul style="list-style-type: none"> <li>a) Review the OPMET exchange schemes in the APAC and other regions and develop proposals for their optimization, taking into account the requirements by the aviation users and global OPMET exchange;</li> <li>b) Monitor and participate in trials of digital aeronautical meteorological information exchange inter- and intra- regionally;</li> <li>c) Develop standardized quality control, monitoring and management procedures related to exchange of IWXXM and TAC OPMET information;</li> <li>d) Review the regional guidance material related to OPMET exchange;</li> <li>e) Liaise with other appropriate bodies within ICAO and WMO dealing with communication and/or management aspects of the OPMET exchange; and</li> <li>f) Provide advice and report to the MET Sub-group on the above issues for further co-ordination through the ICAO Secretariat with other appropriate bodies.</li> </ul>
Work Programme	<p>The work to be addressed by the MET/IE WG includes:</p> <ul style="list-style-type: none"> <li>- Examine new and existing requirements for OPMET exchange in APAC, 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;</li> <li>- Keep the ROBEX scheme and other OPMET exchange schemes under review and prepare proposals for updating and optimizing the schemes;</li> <li>- Review and update of the procedures for inter-regional OPMET exchange and ensure the availability of the required APAC and MID OPMET data for Secure SADIS FTP and WIFS;</li> <li>- 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, WA, WS, WC, WV, FK, FV and UA;</li> <li>- 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;</li> <li>- Report on deficiencies in the format and dissemination of OPMET messages;</li> <li>- Participate in the testing, implementation and awareness of the transition to digital exchange of OPMET using a code form based on IWXXM;</li> <li>- Conduct regular regional VAAC back-up and SIGMET tests;</li> <li>- Provide support for the APAC Volcanic Ash Exercises;</li> <li>- Develop quality control guidance material and promote implementation of quality control for OPMET management.</li> </ul>

### 3. COMMUNICATION STRATEGIES

Description	Target Audience	Delivery Method	Frequency / Date	Responsibility
Work Plan	MET/IE WG Members	Document via email & MET/IE WG Meeting	As required but reviewed at the MET/IE WG Meeting and the MET SG	Chair
General correspondence	MET/IE WG Members	Email	As required	MET/IE WG Members
Working Group Meeting	MET/IE WG Members	Meeting	Annually	Chair



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Status & Milestone Reports	ICAO Secretariat and MET/IE WG Members	Report via email & WP at MET/IE 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	MET/IE WG		1
Task 2: Improve timeliness, compliance and regularity of OPMET exchange	Ongoing	MET/IE WG		2
Task 3: Identify gaps and errors in processes, procedures and OPMET exchange	Ongoing	MET/IE WG		3, 4, 5
Task 4: Review regional guidance material related to OPMET data	Ongoing	MET/IE WG		3, 4, 5, 6
Task 5: Facilitate and monitor the migration to IWXXM in support of SWIM	2016-2018	MET/IE WG		7
Task 6: Review the RODB structure	2017	MET/IE WG		8

## 5. MILESTONES

Milestone	Accountability	Dates	Status
<b>Milestone 1:</b> Achieve 95% (90%) or greater OPMET availability for AOP (non-AOP) aerodromes where OPMET information is required at RODBs, Secure SADIS FTP and WIFS (i.e., aerodromes listed in former FASID Table MET 2A).	MET/IE WG	Annually Jun	
<b>Milestone 2:</b> Achieve OPMET timeliness, compliance and regularity index of 0.95 (0.90) for AOP (non-AOP) aerodromes where OPMET information is required at RODBs, Secure SADIS FTP and WIFS (i.e., aerodromes listed in former FASID Table MET 2A).	MET/IE WG	Annually Jun	
<b>Milestone 3:</b> SIGMETs tests conducted, analysed and report complete.	MET/IE WG	Annually Jun	
<b>Milestone 4:</b> VAAC Back-up tests conducted, analysed and report complete.	VAAC Back-up Focal Points	Annually Jun	
<b>Milestone 5:</b> IROG Back-up tests conducted, analysed and report complete.	Bangkok RODB	Annually Mar	
<b>Milestone 6:</b> RODB Monitoring procedures updated in ROBEX Handbook	Secretariat	Jun 2014	

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<b>Milestone 7:</b> Report to MET/IE WG & MET SG on IWXXM exchange & testing.	Secretariat & Chair	Annually Mar & May	
<b>Milestone 8:</b> RODB structure review complete.	MET/IE WG	2017	
<b>Milestone 9:</b> Improved efficiency and effectiveness of ROBEX scheme	RODBs	Annually Jun	

## 6. WORK PLAN

Activity / Milestone	Accountability	Predecessors	Date	Status
Activity 1: Increasing OPMET availability for aerodromes where OPMET information is required at RODBs, Secure SADIS FTP and WIFS (i.e., aerodromes listed in former FASID Table MET 2A)				
Activity 1.1: Tokyo RODB to investigate providing Bangkok RODB data in standard format	Tokyo RODB	-	TBA	
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	
Activity 1.5: Score against ANP Table MET II-2 (and former FASID Table MET 2A).	Singapore, Tokyo, Bangkok RODBs & IATA	1.3 & 1.4	Annually Feb	
Activity 1.6: Prepare ROBEX paper and report results and deficiencies to MET/IE WG meeting.	Bangkok RODB & 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: Exchange a common dataset and assess the consistency between RODBs of the 'availability' calculation and standardise.	Singapore, Tokyo, Bangkok RODBs	-	TBA	
<b>Milestone 1:</b> Achieve 95% (90%) or greater OPMET availability for AOP (non-AOP) aerodromes at RODBs & WAFS.	MET/IE WG	1.9	Annually Jun	
<b>Activity 2: Improving OPMET timeliness, compliance and regularity at RODBs and WAFS Internet based Services</b>				

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<b>6. WORK PLAN</b>				
Activity / Milestone	Accountability	Predecessors	Date	Status
Activity 2.1: Investigate the ingestion of AMHS data into analysis	Bangkok & Tokyo RODB	-	TBA	
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: Prepare paper and report State irregularities to MET/IE WG meeting	Bangkok RODB & 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	
Activity 2.8: Exchange a common dataset and assess the consistency between RODBs of the timeliness, compliance and regularity calculation and standardise.	Singapore, Tokyo, Bangkok RODBs	-	TBA	
Activity 2.9: Correct identified issues relating to inconsistencies identified.	Singapore, Tokyo, Bangkok RODBs	2.8	TBA	
<b>Milestone 2:</b> Achieve 95% (90%) or greater OPMET timeliness, compliance and regularity for AOP (non-AOP) aerodromes at RODBs & WAFSS.	MET/IE WG	2.9	Annually Jun	
<b>Activity 3: SIGMET Tests</b>				
Activity 3.1: Review SIGMET Test procedures	MET/IE 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 1 <sup>st</sup> Wed in Nov	To be conducted on 2 Nov 2016
Activity 3.4: Conduct WV SIGMET Tests	RODBs	3.2	Annually 2 <sup>nd</sup> Wed in Nov	To be conducted on 9 Nov 2016

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<b>6. WORK PLAN</b>				
<b>Activity / Milestone</b>	<b>Accountability</b>	<b>Predecessors</b>	<b>Date</b>	<b>Status</b>
Activity 3.5: Conduct WS SIGMET Tests	RODBs	3.2	Annually 3 <sup>rd</sup> Wed in Nov	To be conducted on 16 Nov 2016
Activity 3.6: Collate and analyse test data against ANP Table MET II-2 (and former FASID Table MET 2A)	RODBs	3.3 - 3.5	Annually Jan	
Activity 3.7: Report to MET/IE 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	
<b>Milestone 3:</b> Improved issuance and compliance of test SIGMETs	MET/IE WG	3.9	Annually Jun	
<b>Activity 4: VAAC Back-up Tests</b>				
Activity 4.1: Review VAAC Back-up Test procedures	MET/IE WG and VAACs		Annually Jan	
Activity 4.2: Update VAAC Back-up Procedures	Secretariat	4.1	Annually May	
Activity 4.3: State Letter regarding VAAC Back-up Tests	Secretariat	4.1	Annually Aug	
Activity 4.4: Conduct VAAC Back-up Test between Darwin and Tokyo	VAACs	4.3	Annually Oct – 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 Provider State members	RODBs	4.4	Annually Oct – TBC	
Activity 4.7: Analyse Test results	VAAC Back-up Focal Points Members	4.5	Annually Nov	
Activity 4.8: Report to MET/IE WG	VAAC Back-up Focal Points Members	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	
<b>Milestone 4:</b> VAAC Back-up Tests conducted, analysed and report complete.	VAAC Back-up Focal Points Members	4.8	Annually Jun	

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<b>6. WORK PLAN</b>				
<b>Activity / Milestone</b>	<b>Accountability</b>	<b>Predecessors</b>	<b>Date</b>	<b>Status</b>
<b>Activity 5: IROG Back-up Tests</b>				
Activity 5.1: Investigate back-up arrangements of IROG Tokyo & Brisbane	Secretariat	-	TBA	
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	
Activity 5.7: Report to MET/IE WG	Bangkok RODB	5.6	Annually Mar	
<b>Milestone 5:</b> IROG Back-up Tests conducted, analysed and report complete.	Bangkok RODB	5.7	Annually Mar	
<b>Activity 6: APAC RODB Monitoring procedures</b>				
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	-	Annually May	
Activity 6.2: Review ROBEX Handbook Appendix A & B table structure to include columns for Hours of Operation and Issue Times.	Chair	6.1	Annually Jul	
Activity 6.3: Review monitoring procedure in ROBEX Handbook.	All RODBs	-	Annually Aug	
Activity 6.4: RODBs to indicate differences in procedures and resolve these differences.	All RODBs	6.3	Annually Aug	
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	Annually Sep	

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<b>6. WORK PLAN</b>				
<b>Activity / Milestone</b>	<b>Accountability</b>	<b>Predecessors</b>	<b>Date</b>	<b>Status</b>
<b>Milestone 6:</b> RODB Monitoring procedures updated in ROBEX Handbook	Secretariat	6.5	Annually Sep	
<b>Activity 7: New OPMET Exchange Formats</b>				
Activity 7.1: Monitor migration to iWXXM.	Secretariat	-	As required	
Activity 7.2: Investigate, and develop a plan, to undertake IWXXM tests with another IWXXM centre.	Singapore RODB		TBA	
Activity 7.3: Report to MET SG on plans for implementation of XML schema at APAC RODBs.	Secretariat		Next meeting MET SG	
Activity 7.4: Conduct a trial of IWXXM.	Singapore RODB	7.2	Mar 2016	
Activity 7.5: Consider options and strategies to deal with exchange of OPMET data in IWXXM format within its area of responsibility.	WG		Feb 2016	
Activity 7.6: Increase awareness of the requirement of digital exchange of OPMET data in IWXXM format and the impact of inability to do so.	WG		As required	
Activity 7.7: Report on the status of the testing and implementation of digital OPMET exchange.	RODBs		Annually Mar	
Activity 7.8: Report to MET/IE WG regarding testing and implementation of digital OPMET exchange internationally.	Secretariat		Annually Mar	
Activity 7.9: Prepare information (e.g. issues, CONOPS) for ICAO international IWXXM Working Group	WG		Feb 2016	
Activity 7.10: Participate in the ICAO international IWXXM Working Group.	WG		Mar 2016	
<b>Milestone 7:</b> Report to MET/IE WG & MET SG on IWXXM exchange & testing.	Secretariat & Chair	7.8	Annually May	
<b>Activity 8: Review RODB Structure</b>				
Activity 8.1: Review ROBEX Scheme diagram vs Table in 11.1 of ROBEX Handbook.	All RODBs		May 2016	

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<b>6. WORK PLAN</b>				
<b>Activity / Milestone</b>	<b>Accountability</b>	<b>Predecessors</b>	<b>Date</b>	<b>Status</b>
Activity 8.2: Review AFTN network diagram and add an AMHS diagram in the ROBEX Handbook.	Secretariat	-	TBA	Note: a replacement CNS Chart is not available.
Activity 8.3: Review RODB structure taking into account: <ul style="list-style-type: none"> <li>○ Capability;</li> <li>○ IWXXM readiness;</li> <li>○ Delivery methods (internet, AMHS);</li> <li>○ New Products (i.e. ATM requirements);</li> <li>○ International consistency.</li> </ul>	MET/IE WG	-	2017	
<b>Milestone 8:</b> RODB structure review complete.	MET/IE WG	-	2017	
<b>Activity 9: Improve Efficiency and effectiveness of ROBEX Scheme</b>				
Activity 9.1: Align content of SA bulletins with FT bulletins, where appropriate	All RODBs	-	TBA	
Activity 9.2: Adjust FT bulletin filing time, where appropriate	All RODBs	-	TBA	
Activity 9.3: Review ANP Table MET II-2 and ensure all necessary aerodromes are contained in OPMET bulletins	All RODBs	-	TBA	
Activity 9.4: Review and update ROBEX HB and ICD to align with of OPMET bulletin contents	All RODBs	-	TBA	
<b>Milestone 9:</b> Efficiency and effectiveness of ROBEX Scheme improved	MET/IE WG	-	2017	

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