

*International Civil Aviation Organization*

ICAO

**WORKING PAPER (WP/02)****ICAO Asia and Pacific (APAC)  
Twenty-Ninth Meeting of the Meteorology Sub-Group  
(MET SG/29)**

Bangkok, Thailand, 18 - 22 August 2025

**Agenda Item 2: Review outcomes from previous meetings****REVIEW OUTCOMES FROM MET SG/28 AND APANPIRG/35**

(Presented by the Secretariat)

**SUMMARY**

This paper reviews outcomes from MET SG/28 and APANPIRG/35, highlighting adopted Conclusions and Decisions, as well as MET SG action items. The meeting is invited to assess follow-up progress and consider further actions to support effective implementation of the MET SG work plan, and implementation of ICAO SARPs and global and regional plans across the APAC Region.

**1. INTRODUCTION**

1.1 Outcomes from the Twenty-eighth Meeting of the Meteorology Sub-group (MET SG/28), held in Bangkok, Thailand, from 8 to 12 July 2024, and the Thirty-Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/35), held in Bangkok, Thailand, from 25 to 27 November 2024.

1.2 The meeting is invited to review the MET SG/28 and APANPIRG/35 outcomes, including the adopted Conclusions and Decisions, and assess the status of follow-up actions, and note that the MET SG/28 Draft Decision recommending additional Secretariat support was subsequently adopted by APANPIRG/35.

1.3 The paper also highlights technical and procedural updates endorsed by MET SG/28, such as improvements to guidance materials and regional implementation monitoring, which aim to strengthen coordination and implementation of ICAO Standards and Recommended Practices (SARPs) across the APAC Region.

1.4 The meeting is encouraged to consider further actions, as necessary, to support the effective follow-up and implementation of these outcomes.

**2. DISCUSSION****MET SG outcomes**

2.1 Under its terms of reference, outcomes from the MET SG that involve economic, environmental or political aspects, global implications, or concern the working arrangements of

APANPIRG and its contributory bodies, are formulated as “Draft Conclusions” or “Draft Decisions” for further consideration by the APANPIRG.

2.2 Outcomes from the MET SG involving proposals for action on technical matters that do not have additional economic, environmental, inter-regional or political effects, especially those concerning guidance to States in the implementation of ICAO SARPs and global and regional plans, are adopted as “Conclusions” or “Decisions” of the MET SG.

2.3 In addition, MET SG records a “List of Actions” for follow-up by its members.

MET SG/28 outcomes

2.4 Outcomes recorded by MET SG/28 included one (1) Draft Decision (for further consideration by APANPIRG), two (2) Conclusions and seven (7) Decisions (of the MET SG), and thirty-two (32) new action items (in the List of Actions).

MET SG/28 – Draft Decision

2.5 MET SG/28 formulated the following Draft Decision, which is reproduced in **Appendix A**:

- Draft Decision MET SG/28-01: Additional Secretariat Support

2.6 The outcome of APANPIRG’s consideration of the above Draft Decision is indicated in paragraphs 2.12 and 2.13 below.

MET SG/28 – Conclusions and Decisions

2.7 MET SG/28 adopted the following two (2) Conclusions and seven (7) Decisions, which are reproduced in **Appendix A**:

- Conclusion MET SG/28-02: Availability and Timeliness of TAC and IWXXM Meteorological Information
- Conclusion MET SG/28-03: Review of APAC Region IWXXM Implementation Status/ Readiness
- Decision MET SG/28-04: Addition of MET/S WG actions to MET SG action list
- Decision MET SG/28-05: Update to MET Deficiency Identification Guide
- Decision MET SG/28-06: Meteorological Exercise Guidance Material
- Decision MET SG/28-07: Update the Regional Guidance for Tailored Meteorological Information and Services to Support ATM Operations
- Decision MET SG/28-08: Publishing the document on APAC Use Cases and User Requirements for SWIM-based Meteorological Information Services Supporting ATFM
- Decision MET SG/28-09: Updates to APAC ROBEX Handbook
- Decision MET SG/28-10: Updates to Regional SIGMET Guide

2.8 The status of follow-up action on the MET SG/28 Conclusions and Decisions is indicated in **Appendix A**.

MET SG/28 – List of Actions

2.9 MET SG/28 recorded thirty-two (32) new action items in the MET SG List of Actions, which indicates the status of follow-up on the actions and is reproduced in **Appendix B**.

APANPIRG outcomes

2.10 According to the Procedural Handbook, APANPIRG actions are recorded as either “Conclusions” or “Decisions”. Conclusions address matters requiring the attention of States or follow-up by the Secretariat, and primarily support ongoing studies and programmes by APANPIRG, its contributory bodies, and other ICAO groups. Decisions pertain solely to internal working arrangements of APANPIRG and its sub-groups. These actions are generally based on proposals reviewed and adopted at the sub-group level and submitted to APANPIRG as “Draft” Conclusions and Decisions.

APANPIRG/35 – Conclusions and Decisions

2.11 Outcomes from APANPIRG/35 included, in total, eleven (11) Conclusions (requiring the attention of States or actions by ICAO), and two (2) Decisions (dealing with the internal working arrangements of APANPIRG and its sub-groups).

2.12 The APANPIRG/35 outcomes of direct relevance to the work plan of the MET SG include one (1) Conclusion and one (1) Decision, which are listed below and reproduced in **Appendix C**:

- Conclusion APANPIRG/35/13 – Update of information in APANPIRG Air Navigation Deficiencies Reporting Form
- Decision APANPIRG/35/11 – Additional Secretariat Support

2.13 APANPIRG/35 adopted the above Decision based on its consideration of the MET SG/28 Draft Decision MET SG/28-01: Additional Secretariat Support.

2.14 The status of follow-up action on the above APANPIRG/35 Conclusion and Decision is indicated in **Appendix C**. Additional discussion on APANPIRG Air Navigation Deficiencies, related to Conclusion APANPIRG/35/13, is provided in WP/06.

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

3.1 The meeting is invited to:

- a) Note the information in this paper;
- b) Review and update the follow-up status on the MET SG/28 and APANPIRG/35 outcomes; and
- c) Consider further actions, if necessary, to support the follow-up action on the outcomes from MET SG/28 and APANPIRG/35.

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**APPENDIX A**

**MET SG/28 – Conclusions and Decisions**

(Note: Proposed updates are indicated with ~~strikethrough~~ and **highlighted** text)

Conclusion/ Decision No	Title of Conclusion/Decision	Text of Conclusion/Decision (What:)	Responsibility	Target Date	Status/ Remarks
(1)	(2)	(3)	(4)	(5)	(6)
<b>C 28-02</b>	<b>Availability and Timeliness of TAC and IWXXM Meteorological Information</b>	<p>The annual OPMET monitoring activity of TAC and IWXXM information should monitor availability and timeliness of TAF and METAR messages (instead of availability, compliance and reliability), highlighting any statistics less than 95%.</p> <p>Further, the MET Deficiency Identification Guide should be updated to:</p> <ul style="list-style-type: none"> <li>• Reflect the requirement for IWXXM OPMET information dissemination</li> <li>• Reflect the requirement for successful translation (where applicable)</li> <li>• Identify METAR and TAF that have availability and timeliness scores of less than 95% during the monitoring period.</li> </ul>	MET SG and ad hoc group on deficiencies	November 2024	<b>COMPLETED</b> [Ref: MET/IE WG/23 – WP/16; and MET Deficiency Report and Identification Guide, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.a.spx">https://www.icao.int/APAC/Pages/eDocs.a.spx</a> )]
<b>C 28-03</b>	<b>Review of APAC Region IWXXM Implementation Status/ Readiness</b>	<p>States/Administrations provide ICAO an update on the status and readiness dates for the following:</p> <p>(a) AMHS with FTBP/IHE and configuration for single body part;</p> <p>(b) AMHS connection(s) will have sufficient capacity to support IWXXM exchange;</p> <p>(c) when operational IWXXM information will available; and</p> <p>(d) commencement of operational exchange of IWXXM with their Regional OPMET Centre (ROC), and where applicable their respective Inter-regional OPMET Gateway.</p>	MET SG, APAC States and ICAO RO	31 December 2024	<b>IN PROGRESS</b> [Ref: Online Register of APAC IWXXM Exchange Status ( <a href="https://www.icao.int/APAC/Pages/eDocs.a.spx">https://www.icao.int/APAC/Pages/eDocs.a.spx</a> )]
<b>D 28-04</b>	<b>Addition of MET/S WG actions to MET SG action list</b>	The outstanding MET/S WG actions, MET/S WG/13-03 and MET/S WG/10-21, are to be added to the action list of the MET SG and progressed, as appropriate.	MET SG and ICAO RO	12-Jul-24	<b>IN PROGRESS</b> [Ref: MET/IE WG/23, WP/03, Appx. B]
<b>D 28-05</b>	<b>Update to MET Deficiency Identification Guide</b>	The Meteorology Sub-group approves the updates to the MET Deficiency Identification Guide and MET Deficiency Report Guide, (subject to the addition of text outlining the role of the Secretariat in proposing any new deficiency, as per the APANPIRG Handbook) to include TCA/VAA and IWXXM form OPMET information deficiency identification and updated potential deficiency thresholds, as provided in Appendix C of the MET SG/28 Report and requests the Secretariat to publish the updated Guides on the ICAO APAC website.	Secretariat/ICAO RO	12-Jul-24	<b>COMPLETED</b> [Ref: MET Deficiency Report and Identification Guide, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.a.spx">https://www.icao.int/APAC/Pages/eDocs.a.spx</a> )]

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Conclusion/ Decision No	Title of Conclusion/Decision	Text of Conclusion/Decision (What:)	Responsibility	Target Date	Status/ Remarks
(1)	(2)	(3)	(4)	(5)	(6)
D 28-06	Meteorological Exercise Guidance Material	The Meteorology Sub-group approves the publication (with the addition of ATFM organizations as potential exercise participants) of the document Guidance for Developing and Coordinating Aviation Exercises for Meteorological Events, as provided in Appendix D of the MET SG/28 report and requests the Secretariat to publish it on the ICAO APAC website.	Secretariat/ICAO RO	12-Jul-24	<b>COMPLETED</b> [Ref: Guidance for Developing and Coordinating Aviation Exercises for Meteorological Events, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
D 28-07	Update the Regional Guidance for Tailored Meteorological Information and Services to Support ATM Operations	That, the MET SG approves the proposed updates in Attachment A of WP/14, i.e., include the example from China in Appendix 1 of the <i>Asia/Pacific Regional Guidance for Tailored Meteorological Information and Services to Support Air Traffic Management Operations</i> .	ICAO RO	As soon as practicable	<b>COMPLETED</b> [Ref: APAC Regional Guidance for Tailored MET Information and Services to Support ATM Operations, Appendix 1 – China, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
D 28-08	Publishing the document on APAC Use Cases and User Requirements for SWIM-based Meteorological Information Services Supporting ATFM	That, the MET SG approves to publish the proposed document on “ <i>APAC Use Cases and User Requirements for SWIM-based Meteorological Information Services Supporting ATFM</i> ” as a reference document on the ICAO APAC eDocument website which includes a procedure for updating the document as a living document.	ICAO RO	As soon as practicable	<b>COMPLETED</b> [Ref: APAC Use Cases and User Requirements for SWIM-based Meteorological Information Services Supporting ATFM, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
D 28-09	Updates to APAC ROBEX Handbook	That, the MET SG approves the following updates to the APAC ROBEX Handbook and publish them in the ICAO APAC Office eDocument website: (i) changes related to OPMET performance indices for OPMET monitoring (WP/07)	ICAO RO	August 2024	<b>COMPLETED</b> [Ref: APAC ROBEX Handbook, Seventeenth Edition, July 2024]

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Conclusion/ Decision No	Title of Conclusion/Decision	Text of Conclusion/Decision (What:)	Responsibility	Target Date	Status/ Remarks
(1)	(2)	(3)	(4)	(5)	(6)
		(ii) removing references to FC and 9-hour TAF (iii) updates to METNO procedures (WP/09) (iv) changes related to implementation of 30-hour TAF issuance by China (IP/03) (v) changes to METAR Bulletin SAID33 to remove Mopah, Merauke (WAKK) proposed by Indonesia			<a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> ]
<b>D 28-10</b>	<b>Updates to Regional SIGMET Guide</b>	That, the MET SG approves the following updates to, and publish, the SIGMET Guide: - inclusion of the additional headers used by MWO Tahiti for their SIGMETs (presented in Flimsy/01 para 2.1) - update of VAAC backup procedures (presented in Appendix C of WP/10) - inclusion for guidance on SIGMET for volcanic ash crossing FIR boundaries (presented in Appendix C of WP/10) - inclusion of additional guidelines on SIGMET coordination for WS SIGMETs (presented in Appendix A and B of WP/10) - update the IWXXM message dissemination tasks in the SIGMET Test procedures (presented in Appendix B of WP/11) - inclusion of additional text related to cases when a neighbouring VAAC continues to issue VAA even if the ash cloud is expected to cross the boundary of the VAAC area of responsibility (presented in Attachment A of Flimsy/03)	ICAO RO	August 2024	<b>COMPLETED</b> [Ref: APAC Regional SIGMET Guide, Eleventh Edition, July 2024 <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> ]

— END OF SECTION —

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**APPENDIX B**

**MET SG – LIST OF ACTIONS**

**New action items recorded by MET SG/28**

(Note: Proposed updates are indicated with ~~strike through~~ and highlighted text)

MET SG/28 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
28/01	Revise information in WP/02 to update the lapsed target dates for uncompleted actions in the MET SG List of Actions and indicate the follow-up status on the relevant APANPIRG and MET SG Conclusions and Decisions. [Ref: Report of MET SG/28, para. 2.8.]	Secretariat	MET SG/28 final report	<b>IN PROGRESS</b> [Ref: MET/IE WG/23-WP/03]
28/02	Add the link to the IWXXM package compatibility table to the ICAO APAC Office eDocuments website. [Ref: Report of MET SG/28, para. 2.34.]	Secretariat	MET SG/28 final report	<b>COMPLETED</b> [Ref: IWXXM Package Compatibility Table-external link ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
28/03	Close (former) MET/S WG actions no. MET/S WG/13-01 and MET/S WG/11-01 and retain the actions no. MET/S WG/13-03 and MET/S WG/10-21 for follow-up by the MET SG. [Ref: Report of MET SG/28, para. 2.50.] [Ref: Decision MET SG/28-043]	Secretariat	MET SG/28 final report	<b>IN PROGRESS</b> [Ref: MET/IE WG/23-WP/03]
28/04	Prepare the necessary documentation based on the results in Attachment A of WP/06 for APANPIRG to make a detailed assessment of the shortcomings and deficiencies related to SIGMET service in Afghanistan. [Ref: Report of MET SG/28, para. 3.9.]	Secretariat, with support from the ad hoc group on deficiencies	APANPIRG/35	
28/05	Forward the identified issues and proposed corrective actions (from Attachment A and B of WP/06) for consideration by the States concerned. [Ref: Report of MET SG/28, para. 3.14.]	Secretariat	MET SG/28 final report	
28/06	Consider the feasibility of including WIFS in the annual SIGMET tests. [Ref: Report of MET SG/28, para. 2.8.]	MET/IE WG	MET/IE WG/23	
28/07	Propose appropriate updates to the SIGMET test procedures to better incorporate the IROG functionality into the annual SIGMET test analysis. [Ref: Report of MET SG/28, para. 3.16.]	Ad hoc group on SIGMET Guide	Aug 2024 – for 2024 APAC SIGMET tests	
28/08	Publish the <i>MET Deficiency Identification Guide</i> and <i>MET Deficiency Report Guide</i> , (subject to the addition of text outlining the role of the Secretariat in proposing any new deficiency, as per the APANPIRG Handbook). [Ref: Report of MET SG/28, para. 3.18.] [Decision MET SG/28-054]	Secretariat	MET SG/28 final report	<b>COMPLETED</b> [Ref: MET Deficiency Report and Identification Guide, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
28/09	Correct the issues that MET SG/28 identified in the proposed updates to the ROBEX Handbook, Appendix F, as presented in Appendix A of WP/07. [Ref: Report of MET SG/28, para. 4.2.]	Secretariat, Thailand and MET/IE WG Chairs	In preparation for the November 2024 Monitoring activity	<b>COMPLETED</b> [Ref: APAC ROBEX Handbook, Seventeenth Edition, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]

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MET SG/28 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
28/10	Finalise the details of the proposed ROBEX Handbook, VONA exchange, updates, as presented in Attachment A of WP/08, to facilitate the dissemination of VONA via the AFS, as required by the proposed amendment to Annex 3 [Action MET/IE WG/22-10: ROBEX Handbook updates – VONA dissemination, refers]. [Ref: Report of MET SG/28, para. 4.4.]	MET/IE WG Chairs	MET/IE WG/23	<b>COMPLETED</b> [Ref: MET/IE WG/23–WP/11]
28/11	Prepare a proposal to include VONA in the SIGMET test procedures for 2026. [Ref: Report of MET SG/28, para. 4.5.]	New Zealand	MET SG/29	
28/12	Include the proposed updates to ICAO APAC Regional SIGMET Test Procedures from Appendix B of WP/11 in the State letter invitation for the 2024 annual SIGMET tests. [Ref: Report of MET SG/28, para. 4.11.]	Secretariat	Aug 2024 – for the 2024 APAC SIGMET tests	<b>COMPLETED</b> [Ref.: T 4/7.5 – AP128/24 (MET) 29 October 2024]
28/13	Include the proposed updates to ICAO APAC Regional SIGMET Test Procedures, as presented in Appendix B of WP/11, in the next proposed updates of Appendix C of the Regional SIGMET Guide. [Ref: Report of MET SG/28, para. 4.12.]	SIGMET Guide	MET SG/29	<b>COMPLETED</b> [Ref: APAC Regional SIGMET Guide, Eleventh Edition, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
28/14	Consolidate the SIGMET issuance practices, as shown in Appendix A of WP/12, for potential inclusion in the guidelines on SIGMET Coordination to supplement the Asia/Pacific SIGMET Guide. [Ref: Report of MET SG/28, para. 4.14.]	Ad hoc group on SIGMET coordination	MET/R WG/14	
28/15	Publish the <i>Guidance for Developing and Coordinating Aviation Exercises for Meteorological Events</i> , as presented in Appendix D to the MET SG/28 report (with the addition of ATFM organizations as potential exercise participants), on the ICAO APAC website. [Ref: Report of MET SG/28, para. 4.16.] [Ref: Decision MET SG/28-065]	Secretariat	MET SG/28 final report	<b>COMPLETED</b> [Ref: Guidance for Developing and Coordinating Aviation Exercises for Meteorological Events, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
28/16	Publish the example from China, as presented in Attachment A of WP/14, in Appendix 1 of the <i>Asia/Pacific Regional Guidance for Tailored Meteorological Information and Services to Support Air Traffic Management Operations</i> . [Ref: Report of MET SG/28, para. 4.19.] [Ref: Decision MET SG/28-076]	Secretariat	MET SG/28 final report	<b>COMPLETED</b> [Ref: APAC Regional Guidance for Tailored MET Information and Services to Support ATM Operations, Appendix 1 – China, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
28/17	Publish the <i>APAC Use Cases and User Requirements for SWIM-based Meteorological Information Services Supporting ATFM</i> , as presented in Attachment A of WP/15 (with minor typo corrected), which includes a procedure for updating the document as a living document, on the ICAO APAC eDocument website. [Ref: Report of MET SG/28, para. 4.20. – 4.22.] [Ref: Decision MET SG/28-087]	Secretariat	MET SG/28 final report	<b>COMPLETED</b> [Ref: APAC Use Cases and User Requirements for SWIM-based Meteorological Information Services Supporting ATFM, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]



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MET SG/28 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
28/18	Facilitate a discussion on the role of MET in the ANS seamless plan, noting that the MET inclusions in the ANS seamless plan did not appear to reflect requirements for en-route meteorological information.  [Ref: Report of MET SG/28, para. 4.32.]	Secretariat	ATM/SG/12	
28/19	Publish the APAC ROBEX Handbook updates, as presented in Attachments A and B of Flimsy/02, WP/07, WP/09, IP/03, and para. 4.2 of the MET SG/28 report, on the ICAO APAC Office eDocument website.  [Ref: Report of MET SG/28, para. 4.35. and 5.7.] [Ref: Decision MET SG/28-098]	Secretariat	MET SG/28 final report	<b>COMPLETED</b> [Ref: APAC ROBEX Handbook, Seventeenth Edition, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
28/20	Publish the SIGMET Guide updates, as presented in Flimsy/01, WP/10, WP/11 and Flimsy/03.  [Ref: Report of MET SG/28, para. 4.39.] [Ref: Decision MET SG/28-109]	Secretariat	MET SG/28 final report	<b>COMPLETED</b> [Ref: APAC Regional SIGMET Guide, Eleventh Edition, July 2024 ( <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> )]
28/21	Incorporate the aerodrome meteorological service requirements as reflected by the information in IP/02, the proposed amendments as presented in Appendices A and B of WP/16, and the change from 24- to 30-hour validity TAF as presented in IP/03, into the next proposal for amendment of the APAC ANP Volume II Tables MET II-2 and MET II-3.  [Ref: Report of MET SG/28, para. 5.2., 5.4., 5.5. and 5.9.]	Secretariat	Aug 2024	<b>IN PROGRESS</b>
28/22	Incorporate the specific information related to United States State Volcano Observatories as presented in para. 2.2 of WP/17 in the latest proposal for amendment of the APAC ANP Vol I, Table MET I-1.  [Ref: Report of MET SG/28, para. 5.11.]	Secretariat	Aug 2024	<b>IN PROGRESS</b>
28/23	Further refine the <i>Report on 2021 ICAO APAC Regional Survey on the provision of MET services to support ATM and ATFM</i> , considering information privacy, for what purpose the information will it be used and, therefore, where and how the survey results should be published or shared.  [Ref: Report of MET SG/28, para. 5.13.]	MET/R WG	MET SG/29	
28/24	Review and report on the outcomes and lessons learned from <i>2021 ICAO APAC Regional Survey on the provision of MET services to support ATM and ATFM</i> ; including tangible actions that have or will be done based on the results of the survey, to assist the MET SG with identifying whether there would be value in conducting another survey.  [Ref: Report of MET SG/28, para. 5.14.]	MET/R WG	MET SG/29	
28/25	Present a paper to the ATM/SG informing the ATM community of the <i>Report on 2021 ICAO APAC Regional Survey on the provision of MET services to support ATM and ATFM</i> that was presented to ATFM/SG/14 and summarising the main outcomes from the report.  [Ref: Report of MET SG/28, para. 5.15.]	Secretariat, with support from the MET/R WG Chair	ATM/SG/12	
28/26	Present a paper to ATM/SG highlighting the issue presented in para. 2.3 of IP/09, describing the current situation and proposing that when a State Volcano Observatory reports that a volcano's	Secretariat and New Zealand	ATM/SG/12	<b>COMPLETED</b> [Ref: ATM/SG/12 –WP/37; and

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MET SG/28 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
	unrest level is elevated, States should issue NOTAM to inform aviation stakeholders and ensure user awareness of the heightened risk of an eruption.  [Ref: Report of MET SG/28, para. 6.7.]			ATM/SG/12 Report, 7.14-7.16]
28/27	Inform and discuss with other APANPIRG Sub-Groups such as AOP SG and ATM/SG about the issue of earthquake and tsunami as a potential hazard to aviation, as presented in WP/19, and refer any outcomes back to the MET SG [ACTION 27].  [Ref: Report of MET SG/28, para. 6.15.]	Secretariat	AOP SG/08 and ATM/SG/12	<b>IN PROGRESS</b> [Ref: AOP/SG/8-WP/27; and AOP/SG/8 Report, 9.9-9.15]
28/28	Seek more user groups (e.g., IATA, etc.) involvement in the activities of the MET SG, including future MET Seminars.  [Ref: Report of MET SG/28, para. 8.4.]	Secretariat	MET SG/29	
28/29	Expand the agenda for MET SG/29 to include MET exercises, possibly as a sub-item under agenda item 6 or 4, and a new agenda item on environmental-related matters relevant to the MET SG.  [Ref: Report of MET SG/28, para. 8.5.]	Secretariat and Chair	MET SG/29	
28/30	Upload the Seminar presentation recordings and slides, the Q&A, and the feedback summary on the meeting website, and share the Seminar material with the other APANPIRG Subgroups.  [Ref: Report of MET SG/28, para. 8.6.]	Secretariat	As soon as possible	<b>IN PROGRESS</b>
28/31	Present the issues concerning the space weather advisory service, which were raised by the Seminar, in a paper at the upcoming meeting of the ATM/SG.  [Ref: Report of MET SG/28, para. 8.7.]	Secretariat	MET SG/29	<b>COMPLETED</b> [Ref: ATM/SG/12-WP/36; and ATM/SG/12 Report, 7.9-7.13]
28/32	Update the ICAO APAC Office website as soon as possible to remove outdated documents on the “MET” part of the ICAO APAC eDocuments website provide the latest information on the State Contingency Point of Contact for Volcanic Ash Events and changes to the MET SG and contributory bodies in the APANPIRG Framework.  [Ref: Report of MET SG/28, para. 8.10., 8.11., 8.12.]	Secretariat	As soon as possible	<b>COMPLETED</b> [Ref: <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a> ; and <a href="https://www.icao.int/APAC/Meetings/Pages/APANPIRG.aspx">https://www.icao.int/APAC/Meetings/Pages/APANPIRG.aspx</a> ]

**Unresolved action items recorded by MET SG/27**

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

MET SG/27 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
27/02	<b>Updates to the ICAO APAC ROBEX Handbook:</b> Coordinate with all the States concerned (ref: MET SG/27, WP/09 and WP/14) to incorporate the proposed updates in the ROBEX Handbook, Sixteenth Edition [ACTION MET SG/27-02] [Ref: Report of MET SG/27, para. 4.4.]  Ref: MET/IE WG22, WP/19 Ref: MET/R WG/13 Report, para. 2.09., and MET/R WG/13 action item 03 <a href="https://www.icao.int/APAC/Documents/edocs/2024-04_APAC-ROBEX-HB_16TH-ED.pdf">https://www.icao.int/APAC/Documents/edocs/2024-04_APAC-ROBEX-HB_16TH-ED.pdf</a>	Secretariat	MET SG/29 Dec-2023	<b>IN PROGRESS</b> [Updates <del>completed</del> from MET SG/27-WP/09, Appx. A]

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MET SG/27 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
27/03	<p><b>Update to Regional SIGMET Guide:</b> Include the proposed example on guidance on SIGMET for volcanic ash crossing FIR boundaries, Appendix A of WP/10, in the next update of the APAC Regional SIGMET Guide. [Ref: Report of MET SG/27, para. 4.7.]</p> <p>Ref: MET/R WG/13 Report, para. 2.9., and MET/R WG/13 action item 03.</p>	Secretariat	Dec 2023	<p><b>COMPLETED</b> [Ref: APAC Regional SIGMET Guide, Eleventh Edition, July 2024 (<a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a>)]</p> <p><b>TO COMMENCE</b></p>
27/04	<p><b>Volcanic ash advisory and SIGMET examples:</b> Review and revise the volcanic ash advisory and SIGMET examples in WP/10, Appendix B, when the OBS (or EST) VA CLD on the Volcanic Ash Advisory (VAA) indicates "VA NOT IDENTIFIABLE FM SATELLITE DATA", to ensure consistency between the SIGMET and advisory information. [Ref: Report of MET SG/27, para. 4.8.]</p>	Ad hoc group in collaboration with the VAACs	Jul 2024 (MET SG/28)	<p><b>COMPLETED</b> [Ref: APAC Regional SIGMET Guide, Eleventh Edition, July 2024 (<a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a>)]</p> <p><b>TO COMMENCE</b></p>
27/05	<p><b>Document of cases of SIGMET coordination:</b> Identify common SIGMET coordination practices from the document of cases of SIGMET coordination in WP/11 and develop further the document to separate the procedural information, which could potentially be used to supplement to the Asia/Pacific Regional SIGMET Guide. [Ref: Report of MET SG/27, para. 4.16.]</p> <p>Ref: MET/R WG/13 Report, para. 2.10., and MET/R WG/13 WP/09 – SIGMET coordination common practices and guidelines</p>	Ad hoc group	MET/R WG/14 Jul 2024 (MET SG/28)	<b>IN PROGRESS</b>
27/07	<p><b>Update of VAAC backup procedures in APAC Regional SIGMET Guide:</b> Include the proposed updates for the example in Appendix A of WP/10 and the proposal in WP/13 in the eleventh edition of the Asia/Pacific Regional SIGMET guide. [Ref: Report of MET SG/27, para. 4.22.]</p> <p>Ref: MET/R WG/13 Report, para. 2.09., and MET/R WG/13 action item 03.</p>	Secretariat	Dec 2023	<p><b>COMPLETED</b> [Ref: APAC Regional SIGMET Guide, Eleventh Edition, July 2024 (<a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a>)]</p> <p><b>IN PROGRESS</b></p>
27/09	<p><b>Siem Reap Angkor International Airport (VDSA) – METNO process:</b> Notify the update to the ROBEX system by following the METNO process. [Ref: Report of MET SG/27, para. 5.3.]</p>	Responsible NOC	MET SG/29 Dec-2023	<b>TO COMMENCE</b>
27/10	<p><b>Proposal for amendment of the APAC Air Navigation Plan:</b> Compile a proposal for amendment and to the ANP incorporating amendments in WP/14 and paragraph 5.5. of the Report of MET SG/27 and seek confirmation from the States concerned before circulating the proposal for amendment to States and Organizations for comments and Regional agreement. [Ref: Report of MET SG/27, para. 5.6.]</p>	Secretariat	MET SG/29 Dec-2023	<p><b>IN PROGRESS</b> <b>TO COMMENCE</b></p>
27/11	<p><b>MET deficiencies review of 2022 SIGMET test:</b> Utilise the proposed actions in WP/17, Appendix A, when advising States of SIGMET corrective actions. [Ref: Report of MET SG/27, para. 5.9.]</p>	Secretariat	MET SG/29 Dec-2023	<b>TO COMMENCE</b>
27/12	<p><b>Proposed amendment to ICAO Annex 3:</b></p>	Secretariat	MET SG/29 Dec-2023	<b>TO COMMENCE</b>

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MET SG/27 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
	Survey States on their needs for implementation support for the proposed amendment to ICAO Annex 3. [Ref: Report of MET SG/27, para. 5.17.]			

**Unresolved action items recorded by MET SG/26**

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

MET SG/26 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
26/04	<b>APANPIRG AN Deficiencies – requirements for WAFS forecasts:</b> Provide technical assistance to help the States concerned understand and determine the requirements for WAFS forecasts. [Ref: Report of MET SG/26, para. 3.2.]  Ref: MET SG/27, WP/07 – Review APANPIRG Air Navigation Deficiencies	Secretariat	<del>MET SG/29</del> Nov 2022	IN PROGRESS
26/07	<b>APAC ANP, Volume III amendment – examples from other ICAO Regions:</b> Consider examples of Volume III adopted by other ICAO Regions in the MET work plan on a proposal for amendment of MET-specific material in the APAC ANP, Volume III. [Ref: Report of MET SG/26, para. 5.8.]  Ref: MET SG/27, WP/14 – Review of the Asia/Pacific Air Navigation Plan	Secretariat and MET/R WG	<del>MET SG/29</del> Nov 2022	IN PROGRESS
26/08	<b>APAC ANP, Volume II amendment – Nepal:</b> Initiate an appropriate proposal for amendment of the ANP Volume II, to reflect the requirements for aerodrome meteorological offices in Nepal. [Ref: Report of MET SG/26, para. 5.9.]  Ref: MET SG/27, WP/14 – Review of the Asia/Pacific Air Navigation Plan	Secretariat and Nepal	<del>MET SG/29</del> Nov 2022	IN PROGRESS

**Unresolved action items recorded by MET SG/25**

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

MET SG/25 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
25/06	<b>Finalise the proposals for amendment of the APAC ANP (Vol I and II) and ROBEX Handbook</b> as agreed in previous meetings to ensure accuracy of the requirements specifications against which the OPMET monitoring is analysed [Ref: para. 4.6.-4.7.]  Ref: MET SG/27, WP/14 – Review of the Asia/Pacific Air Navigation Plan, and WP/09 – Updates to the ICAO APAC ROBEX Handbook	Secretariat	<del>MET SG/29</del> Nov 2021	IN PROGRESS
25/07	<b>Finalise a proposal for amendment of the APAC ANP (Table MET II-1) and consequential amendment to the APAC Regional SIGMET Guide</b> as necessary to ensure the correct use of FIR indicator for Port Moresby [Ref: para. 4.12.-4.14.]  Ref: MET SG/27, WP/14 – Review of the Asia/Pacific Air Navigation Plan, and APAC Regional SIGMET Guide, Tenth Edition, uploaded to the ICAO APAC website: <a href="https://www.icao.int/APAC/Pages/eDocs.aspx">https://www.icao.int/APAC/Pages/eDocs.aspx</a>	Secretariat	<del>MET SG/29</del> Nov 2021	IN PROGRESS ANP amendment pending; SIGMET Guide amended, 9 <sup>th</sup> Ed.

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MET SG/25 – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
25/09	<b>Review SIGMET Guide</b> as necessary to guide MWOs to handle cases when VAAC would not hand over to the neighbouring VAAC even if the ash cloud is expected to cross the AoR [Ref: para. 4.12.-4.14.]	Ad hoc group	<del>MET SG/29</del> Mar 2023	<b>TO COMMENCE</b>
25/12	<b>Provide updates to the contact lists in the ICAO Doc 9766-AN/968 (Handbook on the International Airways Volcano Watch (IAVW))</b> to the ICAO METP [Ref: para. 5.15.]	MET SG, Secretariat	<del>MET SG/29</del> Mar 2022	<b>TO COMMENCE</b>
25/13	<b>Coordinate possible SWX advisory exercise/s and training workshop/s</b> with the appropriate body under METP for [Ref: para. 5.28.]  Ref: ICAO APAC webinar on space weather information service (TBD) Ref: Secretariat to coordinate with Australia [MET/IE WG/20 - ACTION 01] Ref: MET/R WG new deliverable #7 to promote user education on SWX service.	Secretariat	<del>MET SG/29</del> Nov 2021	<b>IN PROGRESS</b>

**Unresolved action items recorded by (the former) MET/S WG**

(Note: Proposed updates are indicated with ~~strike through~~ and **highlighted text**)

(Former) MET/S WG – LIST OF ACTIONS				
Action No.	Detailed description of actions	Responsibility	Target date	Status
MET/S WG/13-03	Share information on the update of the IAVW Handbook (due to be published in approx. 3 months) which would realign the guidance on exercise messages with Annex 3.	Secretariat	<del>MET SG/29</del> <del>MET SG/27</del>	<b>Outstanding</b> – IAVW Handbook yet to be published.
MET/S WG/10-21	ANP updates – State Volcano Observatories: Designate an ad-hoc group consisting of the Secretariat and members from the VAACs and RODBs to identify the APAC States with active or potential active volcanoes, which do not have a designated State volcano observatory listed in the APAC ANP, Vol I, Table MET I-1; conduct the necessary coordination to facilitate the States concerned with the designation of a State volcano observatory and listing it in the APAC ANP; coordinate the action above with the development of a comprehensive proposal for amendment of the ANP to reflect APAC States' current requirements for State volcano observatories [Ref: Report of MET/S WG/10, para. 4.17., 8.3. and 8.4.]	MET/S WG and Secretariat	<del>MET SG/29</del> <del>Before MET SG/27</del>	<b>IN PROGRESS</b> First part of action complete, <b>second part of action remains outstanding.</b>

— END OF SECTION —

## APPENDIX C

### **APANPIRG/35 Conclusions and Decisions** (extracted from ATTACHMENT 5 to the APANPIRG/35 Report)

(Note: Proposed updates are indicated with ~~strikethrough~~ and **highlighted** text)

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Responsibility	Deliverable	Target Date	Status
(1)	(2)	(3)	(4)	(5)	(6)	(7)
...						
<b>D 35/11</b> <b>A &amp; B</b>	<b>Additional Secretariat Support</b>	That, the APANPIRG request ICAO seek additional support for the ICAO RO Met through: a) secondment of an administration resource; b) updating the role location requirements allowing the secondees to work remotely to ICAO APAC Office (i.e. in their home State); and/or c) seeking additional administration support within ICAO.	ICAO RO	Revised secondment opportunity	February 2025	<b>IN PROGRESS</b> [Note: additional ENV Officer recruited on 1-yr secondment in Nov 2024; and recruitment of additional, fixed-term ENV and Implementation Support Officer advertised on 26 Feb 2025, Job ID: 24509]
...						
<b>C 35/13</b> <b>A &amp; B</b>	<b>Update of information in APANPIRG Air Navigation Deficiencies Reporting Form</b>	That, 1) ICAO to update the APANPIRG Air Navigation Deficiency Database to reflect the information as presented in <b>Appendices A - D</b> to the Report on Agenda Item 4.  2) States/Administrations be urged to: a) establish action plan with defined target dates for resolution of deficiencies, update the status on the corrective action taken and report the progress to the ICAO APAC Office in the Reporting Form of Air Navigation Deficiencies identified in ATM and Airspace Safety, AOP, CNS and MET fields as detailed in <b>Appendices A to D*</b> to the Report on Agenda Item 4; and	ICAO RO  APAC States and Administrations	State Letter  Action in accordance with the Conclusion.	February 2025	<b>IN PROGRESS</b>

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Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision	Responsibility	Deliverable	Target Date	Status
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		b) update contact details of a Focal Point ( <b>Appendix E*</b> ) to coordinate actions to resolve the Deficiencies.				

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