



ICAO

*International Civil Aviation Organization*
**Thirty-Sixth Meeting of the Asia/Pacific Air Navigation  
Planning and Implementation Regional Group  
(APANPIRG/36)**
*Bangkok, Thailand, 24 to 26 November 2025*
**Agenda Item 3: Performance Framework for Regional Air Navigation Planning and  
Implementation**
**3.5 MET**
**METEOROLOGY SUB-GROUP (MET SG/29) REPORT**

(Presented by Chair of MET SG)

**SUMMARY**

This paper presents outcomes from MET SG/29 (and contributory bodies). Topics of discussions include additional support for ICAO Meteorological Secretariat, IWXXM-specific monitoring statistics and implementation status, progress in rectifying air navigation deficiencies, implementation and dissemination of VONA, updates to Regional MET-related guidance material, and updates to APAC Seamless ANS plan. MET SG invites the Meeting to adopt six Draft Conclusions.

*Strategic Objectives:*

- A: **Safety** – Enhance global civil aviation safety
- B: **Air Navigation Capacity and Efficiency** — Increase the capacity and improve the efficiency of the global aviation system
- E: **Environmental Protection** — Minimize the adverse environment effects of civil aviation activities.

**1. INTRODUCTION**

1.1. The Meteorology Sub-Group convened for its Twenty-ninth Meeting (MET SG/29) in Bangkok, Thailand, 18-22 August 2025. MET SG/29 reviewed the status of progress on its work plan, including its contributory bodies: Meteorological Information Exchange Working Group (MET/IE WG) and Meteorological Requirements Working Group (MET/R WG).

1.2. This paper presents a progress report on the main activities of MET SG and its two contributory working groups. All documentation and reports from MET SG/29 and the meetings of MET/IE WG and MET/R WG are available at the ICAO Asia/Pacific (APAC) Office website at: <http://www.icao.int/apac> > Meetings > Meeting List 2025. In addition, the full report from MET SG/29 is at the following link:

<https://www.icao.int/APAC/meetingdocs?fid=546>

- 1.3. This paper invites the Meeting to adopt six Draft Conclusions.

## 2. DISCUSSION

### Election of Chairperson

2.1. Recalling that the previous Chairperson, Dr. Pak-wai Chan, had previously announced his intention to step down, the Meeting invited nominations for a new Chair. Ms. Paula Acethorp, Chief Meteorological Officer at the Civil Aviation Authority of New Zealand, was nominated by Australia, noting she has contributed significantly to ICAO APAC for 10 years, including being the Chair of the ICAO APAC MET Services Working Group for 2 years. Ms. Acethorp is also the MET Panel member from New Zealand and leads the MET Panel Meteorological Operations Working Group work stream on the International Airways Volcanic Watch (WG-MOG IAVW).

2.2. The nomination for Ms. Acethorp was seconded by Singapore, and strongly endorsed by the United States, Japan, and Papua New Guinea. With no other nominations received, Ms. Acethorp accepted the role and expressed appreciation for Dr. Chan's service and dedication.

### MET Secretariat Support

2.3. MET SG/29 noted that several Secretariat tasks had been completed since MET SG/28, including the publication of updates to the MET Deficiency Identification Guide, SIGMET Guide, and ROBEX Handbook. Further, Secretariat working papers were made available one week prior to the meeting – earlier than the previous year – although still not meeting the two week before meeting date requirement in the MET SG Terms of Reference. Many actions remain open, particularly those requiring coordination with States and updates to the APAC ANP.

2.4. MET SG/29 expressed concern over the lack of progress on several Secretariat-led tasks. In response, the Secretariat advised that recruitment for an additional officer to support the ENV-part or the MET/ENV programme was nearing completion, and this is expected to improve resource allocation for the MET-part of the programme. Nonetheless, the meeting emphasized that further dedicated support, especially for the MET programme administration—per APANPIRG Decision 35/11—remains essential to meet regional needs effectively.

### Publication of MET Seminar Recordings

2.5. Educational MET Seminars were conducted as part of the MET SG/28 and MET SG/27 meetings, sharing information on topics such as space weather, the new quantitative volcanic ash concentration information (QVA) and volcano observatory notice to aviation (VONA) services, with recordings made to ensure access to personnel across the wider APAC region.

2.6. MET SG/29 expressed its frustration in the continuing lack of publication of the MET Seminar recordings and the unavailability of this targeted education information. To highlight the ongoing requirement for publication of education material in video format, the following Draft Conclusion was formulated:

| Draft Conclusion MET SG/29/01 – Publishing MET Seminar Presentation Recordings          |  |
|---|--|
| What: That ICAO be requested to make available the MET Seminar presentation recordings. | Expected impact:<br><input type="checkbox"/> Political / Global<br><input type="checkbox"/> Inter -Regional<br><input type="checkbox"/> Economic |

|   |   |
|---|---|
|   | <input type="checkbox"/> Environmental<br><input checked="" type="checkbox"/> Ops/Technical |
| Why: To provide Member States and stakeholders with access to valuable technical and operational information shared during the MET Seminars, thereby supporting capacity building, knowledge sharing, and regional collaboration in aeronautical meteorology. | Follow-up: <input type="checkbox"/><br>Required from States                                 |
| When: As soon as practicable  | Status: Draft to be adopted by APANPIRG   |
| Who: <input type="checkbox"/> Sub Groups <input type="checkbox"/> RASG-APAC <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ<br><input type="checkbox"/> Other:                         |   |

2.7. Considering the topic of seminars and given the impending applicability of Amendment 82 to Annex 3 and the publication of the new PANS-MET, MET SG/29 requested the Secretariat arrange a seminar or webinar to facilitate a better understanding of the significant changes introduced by these documents. The Meeting further proposed that the event be organised for October or November 2025.

#### Updates to APAC Air Navigation Plan – MET Tables

2.8. The Secretariat presented Proposals for Amendments (PfAs) to Volumes I and II of the APAC Air Navigation Plan (ANP) to update meteorological provisions. These updates aim to align the ANP with current operational requirements and resolve multiple outstanding action items from previous MET SG and Working Group meetings.

2.9. Key changes include revised listings for State volcano observatories, updated responsibilities for meteorological watch offices and aerodrome MET services, and updated VOLMET broadcast requirements. Notably, outdated references to the SADIS 2G satellite broadcast have been removed. The proposals reflect inputs from various States and international organizations and are consistent with ICAO global standards.

2.10. The Secretariat informed the meeting that the processing of the PfAs is expected to commence immediately following the meeting, with completion anticipated by September 2025.

#### Removal of Obsolete Information and IWXXM Version Notification

2.11. Following the endorsement of updates to the 17<sup>th</sup> Edition of the ROBEX Handbook, MET SG/29 supported the proposal by MET/IE WG, for ICAO to take appropriate action to manage obsolete information on its website. It was noted that many out of data documents were easy to access on the ICAO APAC site using web searches, but they were not clearly marked as being superseded by other material. The following Draft Conclusion was formulated:

|   |   |
|---|---|
| <b>Draft Conclusion MET SG/29/02 – Management of obsolete planning and implementation guidance documents on the ICAO APAC Office website</b>  |   |
| What: That, ICAO take appropriate action to manage (clearly identified as obsolete or remove) the archive of obsolete and historic planning and implementation guidance documents on its website, including those related to MET and other AN fields. | Expected impact:<br><input type="checkbox"/> Political / Global<br><input type="checkbox"/> Inter -Regional<br><input type="checkbox"/> Economic<br><input type="checkbox"/> Environmental<br><input checked="" type="checkbox"/> Ops/Technical |

|  |  |
|--|--|
| Why: Obsolete OPMET- and ANS-related documents (e.g., FASID Tables) that are accessible on the ICAO APAC Office website are not clearly identified as obsolete and non-operational information for historic reference purposes only. Therefore, they could be understood by readers to represent the current operational requirements. | Follow-up: <input type="checkbox"/> Required from States |
| When: As soon as practicable   | Status: Draft to be adopted by APANPIRG                  |
| Who: <input type="checkbox"/> Sub Groups <input type="checkbox"/> RASG-APAC <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ<br><input type="checkbox"/> Other:  |  |

2.12. When reviewing the outcomes of the 2024 SIGMET test, the MET SG/29 noted the mixed results, with IWXXM-format SIGMET dissemination remaining limited. Further, it was noted that some States were using IWXXM versions that were no longer compatible with the current Amendment to Annex 3. In order to support States and other stakeholders to maintain awareness of which IWXXM versions were valid and to avoid compatibility issues, the following Draft Conclusion was formulated:

| <b>Draft Conclusion MET SG/29/03 – IWXXM update notification process</b>   |   |
|--|---|
| What: That, ICAO in coordination with WMO take appropriate action to initiate an IWXXM update notification process for all relevant stakeholders, including IWXXM consumers and system vendors.  | Expected impact:<br><input type="checkbox"/> Political / Global<br><input type="checkbox"/> Inter -Regional<br><input type="checkbox"/> Economic<br><input type="checkbox"/> Environmental<br><input checked="" type="checkbox"/> Ops/Technical |
| Why: WMO develops new versions of IWXXM to affect improvements and support the evolution of ICAO Annex 3 SARPs. To avoid the potential impact on operations due to IWXXM version compatibility issues, States must upgrade the systems for generating, exchanging and consuming IWXXM reports to support the IWXXM version that complies with the latest amendment to Annex 3. | Follow-up: <input type="checkbox"/> Required from States  |
| When: As soon as practicable   | Status: Draft to be adopted by APANPIRG   |
| Who: <input type="checkbox"/> Sub Groups <input type="checkbox"/> RASG-APAC <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input checked="" type="checkbox"/> ICAO HQ<br><input type="checkbox"/> Other:   |   |

#### APAC Seamless ANS Plan

2.13. MET SG/29, when reviewing outcomes from the 14<sup>th</sup> Meeting of the MET/R WG, noted the work undertaken in the development of a mapping document linking MET services to Priority 1 and 2 elements of the APAC Seamless ANS Plan (ASAP). The mapping aligns with ASBU AMET elements and is intended to support regional planning activities. The Meeting approved the mapping document (**Decision MET SG/29/04 – MET information elements of the APAC Seamless ANS Plan**), noting the intention for it to be added as an appendix to the ASAP (ref ATFM SG/15 action 15/9).

#### Updating MET-Related Documentation

2.14. In response to questions from some States regarding how to initiate updates to MET-related regional guidance documents, including the MET Tables within the APAC Air Navigation Plan, the ROBEX Handbook, and the Asia/Pacific Regional SIGMET Guide, a draft quick reference guide was provided by New Zealand. MET SG/29 supported the publication of the proposed guide on the APAC eDocuments website and adopted a Decision (**Decision MET SG/29/09** – Approval of Guidance for Updating APAC MET Documentation).

#### ROBEX Handbook Updates

2.15. MET SG/29 reviewed the proposed update to the ICAO APAC ROBEX Handbook, incorporating updates endorsed by MET/IE WG/23. Key revisions include enhanced guidance for VONA dissemination via AFS, aligning header structures with global practices, and updated focal point contact details. Hong Kong, China reorganized METAR/SPECI and TAF bulletins, adding three aerodromes and streamlining bulletin series for improved regional exchange. These updates support Amendment 82 to Annex 3 and ensure consistency with ICAO provisions and inter-regional practices.

2.16. The Meeting noted additional revisions proposed by United States, Japan, New Zealand, Cambodia and Hong Kong, China, and requested the Secretariat to incorporate these updates into the next revision of the ROBEX Handbook, scheduled for publication in September 2025.

#### Guidance for Tailored Meteorological Information & Services to Support Air Traffic Management (ATM) Operations

2.17. MET/SG 29 reviewed the proposed updates to the *APAC Regional Guidance for Tailored Meteorological Information and Services to Support Air Traffic Management (ATM) Operations* presented by the MET/R WG ad hoc group to include the implementation example from the Republic of Korea. The Meeting supported the proposal to update and publish the guidance material (**Decision MET SG/29/10** – Update the Regional Guidance for Tailored Meteorological Information and Services to Support ATM Operations).

#### Updates to Regional SIGMET Guide

2.18. MET SG/29 reviewed the proposed updates to the Asia/Pacific Regional SIGMET Guide developed by the ad hoc group on Regional SIGMET Guide, to align with Amendment 82 of ICAO Annex 3 and the newly approved PANS-MET (Doc 10157), effective 27 November 2025. Key revisions included updated references, expanded guidance on SIGMET structure and formatting, and the addition of new WMO headers for Tropical Cyclone Advisories from TCAC Darwin. The meeting endorsed the proposed update and requested the guidance material be published (**Decision MET SG/29/11** – Updates to Regional SIGMET Guide).

#### Asia/Pacific Use Cases & User Requirements for SWIM-based MET Information Services Supporting Air Traffic Flow Management (ATFM)

2.19. MET SG/29 reviewed proposed updates to the reference document of *APAC Use Cases and User Requirements for SWIM-based MET Information Services supporting ATFM* developed by the MET/R WG ad hoc group to include a new case, derived from a SWIM demonstration by Hong Kong China, alongside editorial enhancements to further clarify the document's purpose and structure.

2.20. Apart from minor editorial edits, the Meeting supported the proposed updates and to publish the document (**Decision MET SG/29/12** – Updating the APAC Use Cases for SWIM-based Meteorological Information Services Supporting ATFM).

Report on 2021 ICAO APAC Regional Survey on MET services supporting ATM and ATFM

2.21. Following feedback from MET SG/28, the MET/R WG further refined the report on the *2021 ICAO APAC Regional Survey on MET services supporting ATM and ATFM*, addressing data sensitivity and clarification of intended use. MET SG/29 supported the proposal to publish the report (**Decision MET SG/29/13** – Publication of 2021 Survey of State Meteorological Information Supporting Air Traffic Management Report), as well as the intent to engage ATM stakeholders and develop a framework for a follow-up survey.

MET Contributions to SWIM TF for MET SWIM Information Services

2.22. MET SG/29 reviewed the outcomes from relevant meetings regarding the work of SWIM Task Force Task Team on Information Services to identify the business functionality to be supported by APAC Common SWIM Information Services for addressing the operational needs in APAC, particularly those related to meteorological information services.

2.23. The Meeting acknowledged the updates and the need to prepare for future implementation. It further discussed how MET SG could best contribute to updates to the SWIM TF Task Team document *Business functionalities for APAC Common SWIM Meteorological Information Service*, and agreed that it would empower an ad hoc group, consisting of Chairs of MET/IE, MET/R WG and MET SG, to develop and maintain the meteorological components (**Decision MET SG/29/14** – MET Contributions to SWIM TF for MET SWIM Information Services).

Sharing of Turbulence Reports

2.24. MET SG/29 noted the discussion on extreme turbulence at DGCA/60, held in Sendai, Japan, from 28 July to 1 August 2025, prompted by Discussion Paper DP/3/19, presented by Thailand and co-sponsored by Singapore, highlighting the critical role of robust Emergency Response Plans (ERPs), inter-agency coordination, and airport readiness

2.25. DGCA/60 adopted Action Item 60/9, urging States to strengthen ERPs and share turbulence-related insights and best practices. MET SG/29 encouraged further support for this initiative, recognizing its potential to improve forecasting, identify turbulence hotspots, and enhance aviation safety across the Asia-Pacific region.

2.26. MET SG/29 noted that while turbulence reports are currently exchanged among contributing airlines within the IATA forum, they are not readily accessible to meteorological service providers. Further, MET SG/29 noted that for many States, there was an absence of clearly defined regulatory and procedural measures to support the production and sharing of turbulence reports, despite the requirement to do so being an Annex 3 Standard practice.

2.27. In response to DGCA/60 Action Item 60/9, MET SG/29 requested inclusion of a dedicated agenda item in future MET SG meetings to facilitate the sharing of experiences, best practices, and developments related to turbulence reports. This would support an assessment of how States obtain, produce, and share air-reports, and identify any differences in practices across the region.

2.28. Based on the above discussion, MET SG/29 formulated the following Draft Conclusion:

| <b>Draft Conclusion MET SG/29/05 – Sharing of Turbulence Reports with Meteorological Service Providers</b>  |   |
|---|---|
| <b>What:</b> That States be urged to:<br>a) In accordance with Annex 3, share special air-reports, with meteorological service providers, including turbulence reports, to support enhanced forecasting and situational awareness; and<br>b) Provide information on the number of special air-reports received each calendar year.                    | <b>Expected impact:</b><br><input checked="" type="checkbox"/> Political / Global<br><input checked="" type="checkbox"/> Inter -Regional<br><input checked="" type="checkbox"/> Economic<br><input type="checkbox"/> Environmental<br><input checked="" type="checkbox"/> Ops/Technical |
| <b>Why:</b> To address DGCA/60 Action Item 60/9 and improve aviation safety through better access to turbulence data, recognizing the critical role of timely meteorological information in emergency response planning, turbulence forecasting, and regional collaboration—particularly during high-risk weather periods such as the monsoon season. | <b>Follow-up:</b> <input checked="" type="checkbox"/> Required from States  |
| <b>When:</b> As soon as practicable   | <b>Status:</b> Draft to be adopted by APANPIRG  |
| <b>Who:</b> <input type="checkbox"/> Sub Groups <input type="checkbox"/> RASG-APAC <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ<br><input type="checkbox"/> Other:   |   |

#### Air Navigation Deficiencies

2.29. MET SG/29 noted results of the MET Deficiencies ad hoc group review of the 2024 Annual SIGMET Test results and November 2024 OPMET Monitoring Activity results, which was done in accordance with the MET Deficiency Identification Guide.

2.30. The review of the 2024 Annual SIGMET Test results revealed several States that did not participate in the SIGMET tests or failed to issue required SIGMETs in both traditional alphanumeric code (TAC) and IWXXM formats. The States that did not participate either already hold a deficiency or the ICAO office has previously been recommended to assess applying a deficiency (in the case of Afghanistan).

2.31. 22 APAC States were identified as not issuing all required SIGMETs in IWXXM format, despite IWXXM's status as a Standard under ICAO Annex 3. The review also covered the issuance of volcanic ash and tropical cyclone advisories in IWXXM format, with five States identified as being non-compliant. Several of these States presented papers to MET SG/29, providing information on either compliant IWXXM dissemination now in place, or on plans for IWXXM implementation in the near term.

2.32. In alignment with the APANPIRG Procedural Handbook (Part V *APAC Supplement to the Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies*), the Meeting did not recommend deficiencies but instead referred the ICAO APAC Office to the information it gathered, through the agreement of two separate conclusions (**Conclusion MET SG/29/06 – Lack of Provision of IWXXM Format SIGMET** and **Conclusion MET SG/29/07 – Lack of Provision of IWXXM Format Advisories**).

2.33. MET SG/29 then reviewed an analysis prepared by New Zealand and Australia, reviewing the status of all air navigation deficiencies in the Asia-Pacific region, with a particular focus on meteorological (MET) deficiencies.

2.34. The Meeting noted that of the 154 deficiencies recorded (at the time of analysis) in the APANPIRG Deficiencies Database, 12 relate to MET services, with 83% of these held by Pacific Small Island Developing States (PSIDS). Notably, eight of the MET deficiencies were categorized as “Urgent” due to their direct impact on aviation safety, and all have remained unresolved for over 14 years—three for more than 25 years. The safety implications were underscored by IATA data<sup>1</sup> showing that meteorology was a contributing factor in 30% of global fatal accidents over the past two decades, and 50% of those in the APAC region.

2.35. Given the limited diversion options for long-haul flights across the Pacific, the Meeting recognised the urgency of addressing these deficiencies. It also noted Articles 69 and 70 of the Chicago Convention, which empowered the ICAO Council to consult with States and recommend remedial actions, including financial arrangements.

2.36. The Meeting agreed with the proposal for APANPIRG to consider alternative strategies to accelerate resolution, such as reassessing long-standing deficiencies and supporting States in documenting corrective actions. The following Draft Conclusion was adopted:

| <b>Draft Conclusion MET SG/29/08 – Establishment of a Group to Address Long-Standing Air Navigation Deficiencies</b>  |   |
|---|---|
| What: That APANPIRG establish a multi-disciplinary group comprising experts from the ATM, AOP, and MET domains to propose practical and sustainable options for resolving long-standing air navigation deficiencies in the Asia/Pacific region.   | Expected impact:<br><input checked="" type="checkbox"/> Political / Global<br><input checked="" type="checkbox"/> Inter-regional<br><input checked="" type="checkbox"/> Economic<br><input type="checkbox"/> Environmental<br><input checked="" type="checkbox"/> Ops/Technical |
| Why: To accelerate progress on deficiencies—many of which have persisted for over a decade—by fostering coordinated, multi-disciplinary approaches that reflect the interconnected nature of air navigation services and support States in overcoming systemic and resource-related challenges, particularly in the Pacific Small Island Developing States (PSIDS). | Follow-up:<br><input checked="" type="checkbox"/> Secretariat   |
| When: 18-Aug-25   | Status: Draft to be adopted by APANPIRG   |
| Who: <input type="checkbox"/> Subgroups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:  |   |

2.37. MET SG/29 was pleased to note the working paper from Solomon Islands, updating the Meeting on work undertaken towards rectifying deficiency AP-MET-20, which previously identified the lack of World Area Forecast System (WAFS) forecasts for inclusion in flight briefings and documentation. The Meeting was advised that High-level SIGWX charts are now available via the Solomon Islands Meteorological Service (SIMS) website, supported by an internal procedure for duty forecasters.

2.38. The Meeting congratulated SIMS on the work to date and noted the outstanding task to confirm the user need for, and the status of, implementation of medium-level SIGWX and WAFS upper wind and upper-air temperature information. Subject to Solomon Islands resolving these issues, and using the MET Deficiency Report and Identification Guide, the meeting further recommended that ICAO consider the removal of deficiency AP-MET-20 from the APANPIRG Air Navigation Deficiency Database.

<sup>1</sup> <https://www.iata.org/en/publications/safety-report/>



### MET-based Aviation Exercises

2.39. MET SG/29 reviewed four papers relating to exercises in the Asia/Pacific and European regions, featuring space weather and volcanic eruption scenarios. Acknowledging the outcomes and lessons learned, the Meeting encouraged States to explore the possibility of conducting a space weather exercise or workshop for the APAC Region, as well as continued volcanic ash exercises.

### Volcano Observatory Notice to Aviation (VONA)

2.40. MET SG/29 noted work undertaken by New Zealand and the United States towards the dissemination of VONA messages. The United States outlined their plans for their five State volcano observatories (SVOs) to deliver their VONA via a dedicated email tool to the Washington Inter-regional OPMET Gateway (IROG) for global dissemination. New Zealand shared information on the VONA Input System, designed to assist South Pacific State volcano observatories in creating and disseminating VONA, in both TAC and IWXXM format, via the AMHS connection of the Wellington volcanic ash advisory centre (VAAC), hosted by MetService NZ.

2.41. The meeting encouraged continued collaboration between State volcano observatories and VAACs to support effective implementation and monitoring of volcanic hazard information and noted that an update to the *Handbook on the International Airways Volcano Watch* (Doc 9766) was awaiting publication by ICAO and that this would provide further supporting information to States.

### Quantitative Volcanic Ash Concentration Information (QVA) Service

2.42. The Meeting appreciated the information from VAAC London on its work in developing its QVA service and noted the availability of the presentations from the 2024 QVA Workshop, hosted on the Civil Aviation Authority of New Zealand YouTube channel (<https://www.youtube.com/@CivilAviationAuthorityNZ>).

2.43. The Meeting further noted that with QVA services also being developed by the APAC VAACs, and these will be the first MET/SWIM service implemented in APAC, there was a need for States and users to prepare for their use. In particular, State civil aviation authorities will need to understand the advantages and limitations of the QVA service, to be able to approve airline operations through areas of known concentration volcanic ash. The following Draft Conclusion was agreed:

| <b>Draft Conclusion MET SG/29/15 – Enabling the use of QVA by airlines</b>   |  |
|--|--|
| What: That, State Aviation Authorities are requested to consider and plan for the use of quantitative volcanic ash concentration information (QVA).  | Expected impact:<br><input type="checkbox"/> Political / Global<br><input checked="" type="checkbox"/> Inter-regional<br><input checked="" type="checkbox"/> Economic<br><input type="checkbox"/> Environmental<br><input checked="" type="checkbox"/> Ops/Technical |
| Why: The provision of QVA by volcanic ash advisory centres (VAACs) is a Recommended Practice in Amendment 82 to Annex 3, applicable from 27 November 2025. Airlines can use QVA for enhanced safety decision-making and improved efficiency, resulting in fewer flight cancellations and diversions. | Follow-up:<br><input checked="" type="checkbox"/> Required from States   |
| When: As soon as practicable   | Status: Draft to be adopted by APANPIRG  |
| Who: <input type="checkbox"/> Subgroups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:  |  |

Revised Work Plan

2.44. MET SG/29 reviewed the terms of reference (ToR) and work plan of the MET SG and proposed updates to maintain responsiveness to operational priorities and technological advancements, and ensure continued support for safe, efficient, and sustainable international air navigation in the region. Proposed updates to the ToR and Work Plan are presented in **Appendix A** of this Report.

2.45. The meeting noted that the METSG ToR require that the Meeting report should be made within 21 days, invitations should be available not less than 3 months prior to the meeting, papers should be available 14 days before the meeting. Neither MET SG, or subsidiary working groups are meeting these requirements and this is likely a consequence of a lack of Secretariat capacity. The meeting again emphasized that further dedicated support, especially for the MET programme administration—per APANPIRG Decision 35/11—remains essential to meet regional needs effectively.

**3. ACTION BY THE MEETING**

3.1. The Meeting is invited to:

- a) Note the progress of the MET SG and its contributory working groups; and
- b) Adopt the Draft Conclusions in paragraphs 2.6, 2.11, 2.12, 2.28, 2.36, and 2.43.

— — — — —

## **APPENDIX A**

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

### **METEOROLOGY SUB-GROUP (MET SG) TERMS OF REFERENCE**

#### **1. Objectives of the MET SG**

- a) Ensure the continuous and coherent development of the MET parts of the Asia/Pacific Regional Air Navigation Plan (APAC ANP) and other relevant regional documentation in a manner that is harmonized with adjacent regions, consistent with ICAO standards and recommended practices (SARPs), the Global Air Navigation Plan and the Global Aviation Safety Plan and reflects global requirements;
- b) Facilitate the implementation of aeronautical meteorological systems and services, as identified in the APAC ANP, Aviation System Block Upgrade (ASBU) priority modules and Asia/Pacific Seamless ANS Plan elements, with due observance to the primacy of air safety, regularity and efficiency; and
- c) Identify and address specific air navigation deficiencies in the field of aeronautical meteorological (MET) services.

#### **2. Functions of the MET SG:**

- a) Review MET parts of the APAC ANP, prepare amendment proposals as necessary to reflect updates and changes in the operational and global requirements;
- b) Monitor the level of and, as necessary, facilitate the implementation of aeronautical meteorological services to support the effective implementation of ASBU priority modules and the Asia/Pacific Seamless ANS Plan elements;
- c) **Identify potential** air navigation deficiencies in the field of aeronautical meteorology **to the Regional Office**, e.g., through systems performance monitoring, ~~and, w~~**Where necessary**, propose appropriate corrective action and facilitate the development and implementation of action plans by States to resolve identified deficiencies;
- d) Review and update the APANPIRG list of air navigation deficiencies in the field of aeronautical meteorology, as necessary, to reflect the current situation;
- e) Monitor research and development and trials, exercises and demonstrations in the field of aeronautical meteorology and other relevant areas and facilitate the transfer of this information and expertise, as necessary, between States;
- f) Develop guidance materials and conduct seminars aimed at improving aeronautical meteorological services through the use of existing and/or new procedures, facilities and technologies;
- g) **Develop education materials to assist states in implementing aeronautical meteorological services.**
- h) Review and identify inter-regional and intra-regional coordination issues in the field of aeronautical meteorology and, as necessary, recommend actions to address those issues; and

- i) Share aeronautical meteorological initiatives being undertaken to reduce the environmental impact of aviation operations.
- j) Share information on the impacts of climate change on aviation operations.

### **3. Establishment of the MET SG**

3.1. The Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) established the MET SG to assist in its planning and implementation work, charging MET SG with preparatory work on specifically defined problems in the field of aeronautical meteorology requiring expert advice for their resolution. APANPIRG also appointed MET SG as the 'parent' group for other contributory bodies working in the field of aeronautical meteorology for APANPIRG.

### **4. Membership of the MET SG**

4.1. Membership of the MET SG comprises experts provided by States, whether Members or not of the APANPIRG, International Organizations and bodies having experience in the provision of aeronautical meteorological information and services.

### **5. Chairing and Secretary of the MET SG**

5.1. The MET SG shall elect a Chairperson, and Vice-Chairperson if needed, from the experts provided by States. The maximum term of the Chairperson and Vice Chairperson is four years. The Secretary of APANPIRG will appoint the Secretary of the MET SG.

### **6. Meetings of the MET SG**

6.1. The Chairperson of the MET SG, in consultation with Members and the Secretary, shall decide the date and duration of Meetings. As a rule, the MET SG should agree, at each Meeting, on the date and duration of the next Meeting and on a tentative schedule of future Meetings.

### **7. Documentation and Record of Meetings of the MET SG**

7.1. The MET SG shall record the proceedings of its Meetings in the form of a Report or a Summary and submit the Report or Summary for review and consideration by APANPIRG. A Meeting Report should cover completed action on any part of the MET SG work plan and outline the needs of MET SG for further directives or guidance from the APANPIRG to proceed in its work. Reports on Meetings shall be of a simple layout and as concise as practicable and should normally cover:

- a) Short introduction;
- b) Summary of findings (presented in the order of discussion of the agenda items, including any proposals for action); and
- c) Work plan and schedule for future Meetings.

7.2. The Secretary should publish the Report as early as practicable (21-days) after the Meeting.

7.3. The Secretary should disseminate the meeting invitation as early as practicable, i.e., not less than 3-months before the Meeting, and reminders for submission of papers approx. 6-weeks and 1-week before the due date for submission of papers.

7.4. Contributors should submit papers to the ICAO Secretariat as early as practicable, i.e., 28-days before the Meeting at which they are intended to be considered. The Secretary should publish papers, and send a notification of their availability, as early as practicable, i.e., 14-days before the Meeting at which they are intended to be considered.

7.5. The Secretary, in consultation with the Chairperson, may decide to accept papers submitted less than 28-days before the Meeting at which they are intended to be considered when there is a clear benefit to the Meeting in doing so.

## 8. Delegated authority of the MET SG

8.1. The MET SG may propose actions for further consideration by APANPIRG and record these in the MET SG Report as either draft Conclusions or draft Decisions of APANPIRG.

8.2. Additionally, APANPIRG has empowered MET SG to adopt proposals for action on technical matters (especially those concerning guidance to States in the implementation of ICAO SARPs and global and regional plans) that do not have additional economic, environmental, inter-regional or political effects, which should be considered by APANPIRG. The MET SG shall record these in its Meeting Report as Conclusions or Decisions of MET SG.

### METEOROLOGY SUB-GROUP (MET SG) WORK PLAN

| ToR Ref*             | Detailed description of deliverable  | Responsibility  | Target date | Status of progress                  |
|----------------------|--|---|-------------|-------------------------------------|
| a)                   | <b>Draft amendment proposal</b> for APAC ANP to fulfil missing data in Tables MET.   | Secretariat   | As required | In progress                         |
| a)                   | <b>Draft amendment proposal</b> for APAC ANP to clarify the MET-related implementation planning guidance in the ANRF and other parts of Volume III.  | MET/R WG<br>MET/IE WG<br>with guidance from Secretariat | MET SG/29   | In progress                         |
| b)                   | <b>Revised draft regional guidance material</b> on MET information needed to support the elements of the APAC Seamless ANS Plan.   | MET/R WG<br>(Deliverable 2)                             | As required | <del>In progress</del><br>Delivered |
| b)<br>c)<br>h)<br>g) | Promote aviation exercise outcomes of significance to MET SG, create or update as required guidance material for developing aviation exercises for meteorological events, provide expert support to exercise leaders as appropriate. | MET SG  | As required | In progress                         |
| c)<br>d)             | <b>Monitor</b> the regional implementation of meteorological observations, forecasts, warnings, and advisories, to identify potential deficiencies in the MET field.   | MET SG Chair,<br>Secretariat                            | Annually    | In progress                         |
| c)<br>d)             | <b>Investigate</b> , and implement as appropriate, options to assist States in resolving AN deficiencies in the MET field.   | MET SG  | Annually    | In progress                         |
| b)<br>e)<br>f)       | <b>Report on the Progress of</b> implementation and testing of IWXXM exchange.   | MET/IE WG<br>(Activity 7)                               | Annually    | In progress                         |
| g)                   | <b>Information</b> on ICAO provisions related to meteorological authority and quality assurance, cost recovery, competency, training and qualifications for meteorological service provision shared with States.                     | MET SG Chair,<br>Secretariat                            | Annually    | In progress                         |
| h)<br>g)             | <b>Analysis</b> of MET information used in the Region specifically to support ATM operations.  | MET/R WG<br>(Deliverable 1)                             | MET SG/29   | In progress                         |

| ToR Ref*             | Detailed description of deliverable   | Responsibility                  | Target date | Status of progress |
|----------------------|---|---------------------------------|-------------|--------------------|
| h)<br>i)<br>j)       | Share aviation meteorological initiatives being undertaken to reduce the environmental impact of aviation operations and share information on the impacts of climate change on aviation operations. | MET SG Chair, Secretariat       | Annually    | In progress        |
| e)<br>f)<br>g)<br>h) | <b>SIGMET coordination activities in APAC Region</b><br>Coordinate on the next steps to promote integration and expansion of SIGMET coordination activities among States/Administrations.           | MET/R WG (Deliverable 9)        | MET SG/29   | In progress        |
| f)                   | <b>Develop</b> User Requirements for SWIM-based MET Information Services <del>Supporting ATFM</del> .   | MET/R WG (Deliverable 6)        | MET SG/29   | In progress        |
| f)                   | <b>Develop</b> technical requirements and support the Region's implementation of SWIM-based MET Information Services.   | MET/IE WG                       |             |                    |
| e)<br>f)<br>g)       | <b>Conduct seminars</b> to improve knowledge and to assist States implementation of new MET service.  | MET SG<br>MET/R WG<br>MET/IE WG | Annually    | In progress        |
| f)<br>g)             | Develop or improve regional guidance material related to the implementation of aviation meteorological services, including input to the Regional SIGMET Guide.                                      | MET SG<br>MET/R WG<br>MET/IE WG | Annually    | In progress        |

\* Corresponding functions of the MET SG, as listed in the *Terms of Reference of the MET SG* (Ref: APANPIRG Procedural Handbook, Sixth Edition — 1 June 2020, A/L No 01)

— END —