



ICAO

International Civil Aviation Organization

**The Ninth Meeting of the APANPIRG ATM Sub-Group
(ATM/SG/9)**

Video Teleconference, 01 – 05 November 2021

Agenda Item 7: AOP, MET, AIM, SAR

OUTCOMES FROM MET SG/25 RELEVANT TO ATM SG

(Presented by the Secretariat)

SUMMARY

This paper presents some of the outcomes from MET SG/25 for further review and consideration by the ATM/SG/09. The paper focuses on areas most relevant to the ATM/SG, including the following matters: Draft Conclusions on APAC implementation of IWXXM and SWIM, and global development of space weather advisory information; a Draft Decision concerning APAC SWIM/TF; and progress on the survey of MET information to support ATM, regional guidance for MET information to support ATM, resolution of SIGMET deficiency, international SIGMET coordination, and support for SWX advisory users.

1. INTRODUCTION

1.1 The Meteorology Sub-group (MET SG) supports the Asia and Pacific (APAC) Air Navigation Planning and Implementation Regional Group (APANPIRG) by facilitating the APAC States' planning and implementation of required MET service for international air navigation.

1.2 MET SG has established the following contributory bodies to focus its activities in the following specific technical areas:

- Meteorological Information Exchange Working Group (MET/IE WG);
- Meteorological Requirements Working Group (MET/R WG);
- Meteorological Services Working Group (MET/S WG); and
- Volcanic Ash Exercises Steering Group (APAC) (VOLCEX/SG).

1.3 This paper highlights some of the primary outcomes of the MET SG, of relevance to the ATM SG, for further review and consideration by the Meeting.

2. DISCUSSION

History of MET SG/25

2.1 The ICAO APAC Office hosted the Twenty-Fifth Meeting of the Meteorology Sub-group (MET SG/25) online from 18 to 22 October 2021.

FAQs resource to support IWXXM (Ref: MET SG/25, WP/05)

2.2 The MET/IE WG produced a Frequently Asked Questions (FAQs) resource to support the required implementation and dissemination (in the APAC Region) of meteorological information in the ICAO Meteorological Information Exchange Model (IWXXM) form.

2.3 MET SG/25 approved the IWXXM FAQs document (as presented in Appendix D of the MET SG/25 Report) and requested the Secretariat publish it on the ICAO APAC Office e-Documents website (MET SG/25 Conclusion MET SG/25-01, refers).

Online Register of APAC IWXXM status (Ref: MET SG/25, WP/08)

2.4 The MET/IE WG also developed an online register of current IWXXM exchange status, which required input from States to provide users with an up to date status of implementation of IWXXM exchange between OPMET centres in the APAC Region.

2.5 To encourage the provision of timely updates by States to the online register and facilitate the Region-wide implementation of the IWXXM exchange, MET SG/25 formulated the following Draft Conclusion:

Draft Conclusion MET SG/25-03: Updating Online Register of IWXXM Exchange Status	
That, States/Administrations provide timely updates to the Online Register of IWXXM Exchange Status on the latest status of AMHS capability for IWXXM exchange among ROCs and NOCs, and the availability of IWXXM MET reports.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To inform users and Regional OPMET Bulletin Exchange Scheme participants of each States' ability to generate and receive IWXXM over the required communication links and facilitate the Region-wide implementation of IWXXM exchange.	
When: Now	Status: Adopted by Subgroup
Who: <input type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: ROs	

Cost-efficient support of Meteorological SWIM Services (Ref: MET SG/25, WP/16)

2.6 A recent decision by the ICAO APAC SWIM Task Force (SWIM/TF) stipulating that the APAC SWIM architecture and implementation approach will occur principally over the CRV¹ raised significant concerns for APAC Meteorological Service Providers planning to offer SWIM services.

¹ Common aeronautical Virtual private network

2.7 Currently, the Meteorological Service Providers (and airlines) do not have access to the CRV. Furthermore, the CRV might not provide an efficient and cost-effective solution for the highly data-intensive MET information services envisaged in the SWIM environment. Given these concerns, MET SG/25 discussed the need for Meteorological Service Providers to provide SWIM services directly to users for volume intensive and non-sensitive MET information and how this could be supported through the work of the SWIM TF.

2.8 Given the above, MET SG/25 formulated the following Draft Conclusion:

Draft Conclusion MET SG/25-07: SWIM architecture to enable the cost-effective and efficient provision and consumption of MET information services	
That, APAC SWIM TF ensures it defines a SWIM architecture, corresponding technical infrastructure requirements, and implementation approach that continues to enable the cost-effective and efficient provision and consumption of MET information services to all users to support aviation safety and air navigation capacity and efficiency, in consideration of use cases of highly data-intensive MET information services.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: SWIM architecture, principally over CRV, might not provide a cost-effective and efficient solution for all use cases envisaged in ICAO’s global plans, in particular after commencement of the provision of highly data-intensive quantitative and probabilistic MET information services and enable access from anywhere in the globe.	
When: Now	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: ROs	

2.9 MET SG/25 also nominated MET experts at the invitation of the SWIM TF to participate in a Task Lead meeting (on 28 October 2021) to explain the concerns raised above.

2.10 In addition, MET SG/25 noted that most SWIM TF members have a background in communications, navigation or surveillance. At the same time, the meteorological community is significantly underrepresented on the SWIM TF. Therefore, MET SG/25 strongly recommended that States increase the participation of meteorological service experts in the SWIM TF by formulating the following Draft Decision:

Draft Decision MET SG/25-08: Meteorological expert contribution to SWIM/TF	
That, States consider identifying meteorological experts to contribute to the APAC SWIM/TF to ensure meteorological aspects are fully considered.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Currently, few members of the SWIM/TF come from a meteorological background. The SWIM/TF would benefit from a greater understanding of the requirements and plans for meteorological information services.	
When: Now	Status: Draft to be adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: ROs	

Survey of State Meteorological Information supporting Air Traffic Management (Ref: MET SG/25, WP/09)

2.11 The MET/R WG progressed the development of a survey questionnaire (as presented in Attachment A to MET SG/25, WP/09) on the provision of current and future MET information services by States to support ATM, particularly ATFM.

2.12 The survey questionnaire would be distributed to States by ICAO State letter specifically inviting States to respond to the survey via an online survey tool. In addition, the letter would request responses from both the MET and ATM communities and encourage additional airspace users' responses.

2.13 The State letter will be disseminated in early November 2021 with a deadline for (the online) responses by 15 December 2021. MET SG/25 envisaged the survey results would be available for consideration by the next MET/R WG and MET SG meetings in 2022.

Updates to the APAC Regional Guidance for Tailored MET Information and Services to support ATM Operations (Ref: MET SG/25, WP/20)

2.14 The MET/R WG designated ad hoc group proposed updates to the *APAC Regional Guidance for Tailored Meteorological Information and Services to Support Air Traffic Management (ATM) Operations* (as presented in Appendix F of the MET SG/25 Report). MET SG/25 approved the updates, including the new format for the specific examples and case scenarios in Appendix 1 and 2 of the document and the procedure for maintaining and publishing the guidance (MET SG/25 Conclusion MET SG/25-10, refers).

Progress on the resolution of air navigation deficiency AP-MET-23 by the Solomon Islands (Ref: MET SG/25, WP/12)

2.15 Solomon Islands reported progress towards resolving the APANPIRG air navigation deficiency, AP-MET-23, concerning providing a meteorological watch office (MWO) and SIGMET service at Honiara. However, MET SG/25 noted some unresolved issues concerning the SIGMET's content, format, and timeliness. Therefore, MET SG/25 requested the Solomon Islands to conduct additional corrective actions, with assistance from its partner States, to enable the MET SG to validate the full resolution of the deficiency AP-MET-23 (MET SG/25 Action No. 25/10 and 25/11, refer).

International SIGMET Coordination activities (Ref: MET SG/25, WP/14, WP/15, IP/03, IP/04, IP/05, IP/06, IP/20)

2.16 Several APAC States reported progress on their coordination of SIGMET with neighbouring States, as required¹ by ICAO Annex 3. Considering the various experiences and lessons learnt reported by States, MET SG/25 decided on additional tasks for the ad hoc group on SIGMET coordination, which would facilitate further coordination of SIGMET in the APAC Region (MET SG/25 Decision MET SG/25-06, refers).

Updates on the provision of Space Weather Advisories (Ref: MET SG/25, WP/17)

2.17 Developments concerning ICAO's space weather (SWX) advisory service included recent changes to the WMO headers for SWX advisory messages (as presented in MET SG/25, WP/17). In addition, the operational launch of the fourth ICAO-designated global space weather advisory centre

¹ Amendment 79 to Annex 3, 3.4.4, Recommendation.— *An MWO should coordinate SIGMET with neighbouring MWO(s), especially when the enroute weather phenomenon extends or is expected to extend beyond the MWO's specified area of responsibility, in order to ensure the provision of harmonized SIGMET.*

(SWXC), operated by the China-Russian Federation Consortium (CRC), is scheduled for 16 November 2021.

2.18 Considering the need for States to ensure their systems and processes are in place to distribute SWX advisory information to aviation users within their airspace, MET SG/25 formulated the following Draft Conclusion:

Draft Conclusion MET SG/25-09: Update on the provision of Space Weather Advisory	
That, States/Administrations urgently implement or adjust their systems to enable the forwarding of space weather advisories (in TAC and IWXXM form) as appropriate to users.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: CRC will commence operation with effect from 16 November 2021, and the WMO message headers for TAC and IWXXM format SWX advisory messages were updated to have separate headers for each space weather impact type.	
When: Now	Status: Adopted by Subgroup
Who: <input type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: ROs	

2.19 In addition, the Secretariat and Chairs of MET/S WG and MET/IE WG will coordinate with the ICAO Meteorology Panel (METP)¹ on the possibility of organising SWX advisory training activities and exercise/s to support users in the APAC Region (MET SG/25, Action No. 25/13, refers).

Next Meeting

2.20 The tentative schedule for the next meetings of the MET SG and its contributory Working Groups is as follows:

- 28-30 March 2022 – MET/IE WG/20
- 30 March 2022 – Conjoint session of MET/IE WG/20 and MET/S WG/12
- 30 March-01 April 2022 – MET/S WG/12
- 3rd or 4th week of May 2022 (TBC) – MET/R WG/11 and MET/ATM Seminar
- July 2022 (TBC by Chair and Secretariat) – MET SG/26

2.21 The Secretariat would also make arrangements for a virtual, seventh meeting of the ICAO APAC Volcanic Ash Exercises Steering Group (VOLCEX/SG/7).

¹ METP is the primary body designated by ICAO to develop the SWX services

3. ACTION BY THE MEETING

- 3.1 The Meeting is invited to:
- a) note the information contained in this paper; and
 - b) discuss any relevant matters as appropriate.

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