



ICAO

*International Civil Aviation Organization*

**WORKING PAPER**

**Asia and Pacific (APAC)**

**Thirteenth Meeting of the Meteorological Requirements  
Working Group (MET/R WG/13)**

Bangkok, Thailand, 22 to 26 April 2024

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**Agenda Item 4: Future work program and terms of reference**

**REVIEW MET/R WG WORK PROGRAM AND TERMS OF REFERENCE**

(Presented by the Secretariat)

**SUMMARY**

This paper presents the terms of reference and work program of the Meteorological Requirements Working Group (MET/R WG) and invites the meeting to review and propose updates as necessary for possible approval by the Meteorology Subgroup (MET SG).

**1. INTRODUCTION**

1.1 The MET/R WG supports the MET SG (and APANPIRG) to improve safety, efficiency and sustainability of air traffic management (ATM ) operations by providing meteorological (MET) information needed to meet current and future requirements of the ATM system.

1.2 This paper invites the meeting to review the terms of reference and work program of the group and to propose updates as necessary to ensure the MET/R WG continues to meet its objectives to support increased safety, efficiency, capacity and sustainability of the global air traffic system.

**2. DISCUSSION**

2.1 A copy of the MET/R WG terms of reference and work plan document, last reviewed by the Twenty-seventh Meeting of the Meteorology Sub-Group (MET SG/27), is provided in **Appendix A** of this paper.

**3. ACTION BY THE MEETING**

3.1 This paper invites the meeting to review the terms of reference and work program of the MET/R WG in **Appendix A** of this paper and propose further updates, as necessary, based on the agreements reached by the meeting for further review and possible approval by MET SG.

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## **APPENDIX A**

### **ICAO ASIA AND PACIFIC METEOROLOGICAL REQUIREMENTS WORKING GROUP (MET/R WG)**

#### **TERMS OF REFERENCE AND WORK PLAN**

**Editorial note:** Proposed updates show deleted text using strikeout (~~text to be deleted~~) and added text with grey shading (text to be inserted).

#### **TERMS OF REFERENCE**

<b>DESCRIPTION</b>	
Name and establishment of the group	The Meteorological Requirements Working Group (MET/R WG) was established by the Meteorology Sub-group (MET SG) of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) [MET SG/19, Decision 19/2 refers].
Administrative arrangements	The membership and appointment of members, chairing, frequency of meetings and quorum, and recording of meetings shall be determined and conducted following the working arrangements and instructions provided in the APANPIRG Procedural Handbook.
Reporting mechanism	The MET/R WG shall report its work progress and coordination requirements to the MET SG, generally in a report to the MET SG meeting presented by the chairperson of the MET/R WG. The MET/R WG may also provide reports to other relevant bodies as necessary (e.g., contributory bodies of APANPIRG) with assistance from the ICAO Secretariat.
Objective	Improve safety, efficiency and sustainability of air traffic management (ATM <sup>1</sup> ) operations by providing meteorological (MET) information needed to meet current and future requirements of the ATM system.
Benefits	Increase safety – optimize safety risk management Increase efficiency – save time and fuel Increase sustainability – reduce carbon emissions
Functions and delegated authority	<p>Under guidance from the ICAO Secretariat, support the MET SG to assist APANPIRG in its planning and implementation work by carrying out designated tasks on specifically defined problems, including:</p> <ul style="list-style-type: none"><li>a) Coordinate with other relevant contributory bodies of APANPIRG such as ATM/SG and ATFM/SG;</li><li>b) Recommend updates to the Asia/Pacific Regional Air Navigation Plan and other regional guidance material as necessary, based on analysis and evaluation of the current and future requirements for MET information in support of ATM, as well as ATM information required to support the provision of MET services;</li><li>c) Facilitate the exchange of expertise in the Asia/Pacific Region on the integration of MET information into ATM systems to support collaborative decision making (CDM) and the migration of MET information into the SWIM environment;</li><li>d) Facilitate the monitoring and implementation of the sub-regional exchange of MET information (including in digital format) and associated inter-agency agreements that support the integration of MET information in ATM operations in line with the priorities defined in the ASIA/PAC Seamless ATM Plan;</li><li>e) Promote coordination between the MET and ATM communities in the Asia/Pacific Region to enhance the level of understanding of MET requirements and capabilities in support of ATM; and</li><li>f) Report to the MET SG for further coordination through the ICAO Secretariat with APANPIRG and other relevant bodies.</li></ul>

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<sup>1</sup> ATM: the dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management — safely, economically and efficiently — through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions [ICAO Doc 4444, PANS ATM]

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COMMUNICATION STRATEGIES				
Description	Target Audience	Delivery Method	Frequency / Date	Responsibility
Work Plan	MET/R WG, MET SG	Document via e-mail and MET/R WG meeting	As required, but reviewed at MET/R WG and MET SG meetings	Chair and Secretariat
Interim Work Program Progress Report	MET/R WG Members	Web-conference E-mail	Quarterly/as determined by Chair	Chair and Secretariat
MET Chairs Coordination Meeting	Chairs of MET SG and its contributory working groups	Web-conference E-mail	Quarterly	Chair and Secretariat
General correspondence	MET/R WG Members	E-mail	As required	MET/R WG Members
MET/R WG Meeting	MET/R WG Members	Meeting (face-to-face or tele- /web-conference)	As required	Chair and Secretariat
Status and Milestone Reports	MET/R WG Members	E-mail and working paper at MET/R WG meeting	At least annually	Chair and Secretariat
MET/R WG Report	MET SG and ATFM SG (and ATM/SG, through MET SG) and all APAC States	ICAO website and working paper at MET SG meeting	Following each MET/R WG meeting	Chair and Secretariat

## PLAN OF WORK

DELIVERABLES
1. Documented analysis of MET information used in the Region specifically to support ATM operations

DELIVERABLES
2. Draft regional guidance material on MET information needed to support the elements of the APAC Seamless ATM Plan
3. Draft regional guidance material for tailored MET information supporting ATM operations
4. Strengthen collaboration and relationship between MET, ATM and Airspace Users
5. Coordinated review of the APAC ANP Volume III, including proposals for improvements to the ANRF and other parts of Volume III, to clarify the MET-related implementation planning guidance
6. Development of APAC Use Case and User Requirements for SWIM-based MET Information Services Supporting ATFM
7. Promote and assist ATM and Airspace Users with user education on the Space Weather Advisory service
8. Meteorological Information for the Asia Pacific Regional Framework for Collaborative ATFM

MILESTONES	By date	Responsibility	Status
<b>1. Deliverable 1:</b> Analysis of MET information requirements (current and future) for the Region specifically to support ATM operations			
1.1. Final draft documented analysis of the survey of MET information requirements (current and future) for the Region specifically to support ATM operations	MET SG/27	Ad hoc Group: Rapporteur-Australia, Singapore, New Zealand, China, Japan, Thailand, Hong Kong China, Viet Nam	In progress
1.2. Identify follow-up actions (including presenting the results at ATM and Airspace Forums)	MET SG/27	Ad hoc Group (above)	In progress
<b>2. Deliverable 2:</b> Draft regional guidance material on MET information needed to support the elements of the APAC Seamless ANS Plan			
2.1. Further development (of the list of MET information or services necessary to support the implementation of each element of the Asia/Pacific Seamless ANS Plan) in coordination with ATFM/SG	MET/R WG/13	Ad hoc group-3: Rapporteur-Singapore, Australia, China, Hong Kong China, Japan, Thailand	On hold
<b>3. Deliverable 3:</b> Regional guidance material for tailored MET information supporting ATM operations			
3.1. Finalize and submit to MET SG/26 the proposed updates to the Regional Guidance for Tailored Meteorological Information and Services to Support ATM Operations – as agreed in Decision MET/R WG/11/01, part a), and Draft Decision MET/R WG/11/02,	MET SG/26	Ad hoc group	Completed
3.2. Provide the Secretariat examples on State's post operational analysis and suggestions regarding the amendment to the Guidance document to enhance the post-operational analysis framework – as agreed in Decision MET/R WG/11/01, part b)	30 November 2022	MET/R WG members	Completed
3.3. Enhance the contents relevant to post-operational analysis in the main body of the Guidance based on the information provided by the MET/R WG members	MET/R WG/12	Ad hoc group	Superseded by 3.4
3.4. Review the draft Guidance attached to MET/R WG/12 WP/11 and provide comments to the ICAO RO MET	14 July 2023	MET/R WG and ATFM SG members	To begin
3.5. Consider including States implementation example reported by IP06 and IP04 and finalize and submit to MET SG the proposed updates to the Regional Guidance for Tailored Meteorological Information and Services to Support ATM Operations – as agreed in Decision MET/R WG/12/xx	MET SG/27	Ad hoc group: Rapporteur-Japan, Australia, China, Hong Kong, China, Republic of Korea, Singapore, Thailand, Vietnam and IATA	To begin
3.6. Share the States' practices and challenges of verification and evaluation of impact-based MET information to support ATM operation in the MET/ATM seminar and/or MET/R WG/13 and the ad-hoc group analyze provided information and consider appropriate actions, such as include it to the Guidance	MET/R WG/13	MET/R WG members	To begin
<b>4. Deliverable 4:</b> Strengthen collaboration and relationship between MET, ATM and Airspace Users			
4.1. Report to ATFM/SG (and ATM SG) (including the following topics: MET/ATM webinar 2022 outcomes, MET/ATM survey results, updates on the regional MET/ATM guidance document, education on the SWX	ATFM/SG/12	Chair and Secretariat	Completed

MILESTONES	By date	Responsibility	Status
advisory service, guidance on exchanging special air-reports, etc.)			
4.2. Plan for a future seminar on regional implementation of MET information to support ATM operations	MET SG/26	Chair and Secretariat in coordination with ATM/SG	Completed
4.3. Plan to conduct MET/R WG/13 in conjunction with ATFM/SG/14 to include a joint plenary component on matters of importance to both groups, including a Seminar on MET/ATM collaboration	MET SG/27	Chair and Secretariat in coordination with ATFM/SG Chair	To begin
<b>5. Deliverable 5:</b> A coordinated review of the APAC ANP Volume III, including proposals for improvements to the air navigation reporting form (ANRF) and other parts of Volume III, to clarify the MET-related implementation planning guidance			
5.1. Support MET SG with the development of MET-specific requirements in the ANP, Volume III; giving consideration to:  i. The need to coordinate development of proposals for the ANP Volume III with the other APANPIRG Sub-Groups;  ii. The implications of the proposed project to migrate the APAC Seamless ANS Plan and other regional plans and guidance material into ANP Volume III; and  iii. Examples of ANP Volume III from other ICAO regions	MET SG/27	Rapporteur-Secretariat, Australia, Hong Kong China, IATA, Japan, Singapore, Thailand	To begin
<b>6. Deliverable 6:</b> Development of APAC Use Case and User Requirements for SWIM-based MET Information Services Supporting ATFM			
6.1. In coordination with other related sub-groups, working groups, etc., identify: i) SWIM-based MET information affecting ATFM operations; ii) how often these products be provided and rules for updates to meet the ATFM needs; and (iii) identify any other information required by ATFM and gaps to meet the needs of ATFM users	MET SG/27	Ad-hoc group 8 (see below)	In progress
6.2. Identify MET and ATFM data to be exchanged using SWIM-based Information Exchange Service	MET SG/27	Ad-hoc group 8 (see below)	In progress
6.3. Based on the findings (above), develop APAC use cases and a user requirements document for future SWIM-based MET information services supporting ATFM	MET SG/27	Ad-hoc group 8 (see below)	In progress
6.4. Review the proposed updates to the draft reference document in Attachment A to MET/R WG/12 WP/12 and provide comments and suggestions for additional use cases, if any, to the ICAO Secretariat	14 July 2023	MET/R WG members and ATFM/SG members	In progress
6.5. Submit an updated version of the reference document to MET SG for review, giving consideration to the comments and suggestions received in 6.4.	MET SG/27	Ad-hoc group (see below)	To begin
<b>7. Promote and assist ATFM-ANSPs and Airspace Users with user education on the Space Weather Advisory service</b>			
7.1. Seek input from end users (by way of questionnaire) on the content of a SWX workshop or seminar	MET SG/27	Secretariat and MET/R WG members	To begin
7.2. Seek input from end users on the content of a SWX advisory exercise	MET SG/27	Secretariat and MET/R WG members	To begin
7.3. Deliver information on Space Weather service to participants at the ICAO APAC MET/ATM seminars	MET/ATM seminars 2022 and 2023	Australia	Completed
<b>8. Meteorological Information for the Asia Pacific Regional Framework for Collaborative ATFM</b>			
8.1. Review Meteorological Information for ATFM (paragraphs 5.59-5.67) in the Regional Framework Document for Collaborative ATFM and provide inputs of the latest examples to the ICAO Secretariat and the task coordinators [Ref: Decision MET/R WG/11/05]	17 June 2022	MET/R WG members	Completed
8.2. Provide input on seasonal meteorological information for the Regional Framework	TBC	MET/R WG members	

Ad-hoc group for Deliverable 6: Development of APAC Use Case and User Requirements for SWIM-based MET Information Services Supporting ATFM			
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Australia	Ashwin Naidu	BOM	MET
CANSO	Stuart Ratcliffe	CANSO	ATFM
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Hong Kong China	John Chong	HKO	MET
Hong Kong China	Anfernee Poon	Acting Senior Operations Officer (Strategic Planning) / HKCAD	ATFM
IATA	John Moore	IATA	ATFM/MET
Japan	HOUMIHO YONE Toshihiro	JCAB	ATFM
Japan	IKEDA Michiko	JMA	MET
Pakistan	Fazal Ur Rehman	PCAA	ATFM
Pakistan	Syed Ali Baqadar Shah	PCAA	MET
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Republic of Korea	Jiwon, LEE	Assistant of Director / KMA	MET
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Singapore	Yeo Cheng Xun	MSS	MET
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Thailand	Dudsadee Sungthong	Strategic ATFM Team/AEROTHAI	ATFM
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