

*International Civil Aviation Organization*



ICAO

**WORKING PAPER**

**Asia and Pacific (APAC)  
Twelfth Meeting of the Meteorological Services  
Working Group (MET/S WG/12)**

Online, 30 March to 01 April 2022

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**Agenda Item 7: Future work program and terms of reference**

**REVIEW MET/S 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 Services Working Group (MET/S 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/S WG supports the MET SG (and APANPIRG) to improve the quality of meteorological services in the Asia/Pacific Region.

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/S WG continues to meet its objectives to support improved safety and efficiency of flight and ground operations.

**2. DISCUSSION**

2.1 A copy of the MET/S WG terms of reference and work plan document, last updated by the Eleventh Meeting of the Meteorological Services Working Group (MET/S WG/11), is provided at the **Appendix A** to 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/S WG at the **Appendix A** to 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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# ICAO ASIA AND PACIFIC METEOROLOGICAL SERVICES WORKING GROUP (MET/S WG)

## TERMS OF REFERENCE AND WORK PLAN

Last updated by MET/S WG/11, 24 – 26 March 2021

### TERMS OF REFERENCE

<b>1. MEMBERSHIP</b>		
<i>The MET/S WG comprises experts provided by States, International Organizations and/or bodies and Organizations having experience in the provision of aeronautical meteorological services.</i>		
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## 2. DESCRIPTION

Objective	Improve the quality of meteorological services, in particular, observations, forecasts, advisories and warnings – including facilitating implementation of the International Airways Volcano Watch (IAVW) and International Tropical Cyclone Watch (ITCW) – in support of the global air navigation plan framework and the aviation system block upgrade (ASBUs) methodology.
Benefits	Improve the safety and efficiency of flight and ground operations.
Functions of the group	Under guidance from ICAO APAC MET Secretariat: <ul style="list-style-type: none"> <li>a) Promote the implementation of meteorological services, in particular, observations, forecasts, advisories and warnings, in support of the aviation system block upgrades (ASBUs), System Wide Information Management (SWIM), MET support to Air Traffic Management, etc.;</li> <li>b) Promote the requirement for, and benefits of, QMS for MET services and competency of aeronautical meteorological personnel;</li> <li>c) Maintain awareness of, and identify new, meteorological deficiencies and formulate strategies to resolve these deficiencies;</li> <li>d) Continually seek ways to improve the quality, compliance against SARPs and operational effectiveness of the meteorological services; Monitor the implementation and use of products and services under the framework of the World Area Forecast System (WAFS), the International Airway Volcano Watch (IAVW) and the International Tropical Cyclone Watch (ITCW);</li> <li>e) Monitor the relevant activities of the MET Panel and appropriate bodies;</li> <li>f) Monitor the relevant activities of VOLCEX/SG; and</li> <li>g) Provide advice and report to the MET Sub-group on the above issues for further co-ordination through the ICAO Secretariat with other appropriate bodies.</li> </ul>
Work Programme	The work to be addressed by the ASIA/PAC MET/S WG includes: <ul style="list-style-type: none"> <li>• Review procedures for the issuance of meteorological observations, forecasts, advisories and warnings in the region and propose actions for their improvement to related performance objectives;</li> <li>• In conjunction with MET/IE WG, investigate the deficiencies in the format and dissemination of meteorological observations, forecasts, advisories and warnings and propose remediation plans;</li> <li>• Respond to the needs of the guidance and/or training related to the implementation of meteorological observations, forecasts, advisories and warnings and inform MET/IE WG of changes required to the SIGMET guide;</li> <li>• In conjunction with MET/R WG and in support of the ASBUs, provide meteorological input for operational planning for specific phenomenon including volcanic ash, radioactive cloud, tropical cyclone, tsunami and space weather;</li> <li>• Follow the developments in the States related to the improvement of meteorological observations, forecasts, advisories and warnings and provide regional input on these matters to relevant ICAO and WMO groups and to gather user requirements from ANSPs, IATA, IFATCA and IFALPA;</li> <li>• Investigate options for rectification of air navigation deficiencies in the field of meteorological services in APAC States;</li> <li>• Provide support for the ICAO APAC volcanic ash exercises;</li> <li>• Report on its work to the MET Sub-group of APANPIRG; and</li> <li>• Maintain a link to the Regional ATM Contingency Plan through the ATM SG.</li> </ul>

## 3. COMMUNICATION STRATEGIES

Description	Target Audience	Delivery Method	Frequency/ Date	Responsibility
Interim Work Programme Progress Report	MET/S WG Members	Email and web-conference	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
Major Work Programme Progress Report	MET/S WG Members	Working Paper (MET/S WG meeting)	Annually/published 14-days or more before the meeting	Chair and Secretariat
General correspondence	MET/S WG Members	Email	As required	MET/S WG Members
New, specific proposal for action (WP)	MET/S WG Meeting	Working Paper (MET/S WG meeting)	Annually/submitted 28-days or more before the meeting (published 14-days or more before the meeting)	MET/S WG Members or States
New, specific information (IP)	MET/S WG Meeting	Information Paper (MET/S WG meeting)	Annually/submitted 28-days or more before the meeting (published 14-days or more before the meeting)	MET/S WG Members or States
Working Group Meeting Report	MET/S WG Members and all APAC States	MET/S WG Meeting Report	Annually/published 21-days or less after the meeting	Chair and Secretariat
Working Group Progress Report	MET SG Meeting	Working Paper (MET SG meeting)	Annually/submitted 28-days or more before the meeting (published 14-days or more before the meeting)	Chair and Secretariat

## WORK PROGRAM

Activity	Time Frame	Responsibility	Status
Activity 1: Monitor and provide assistance to the regional implementation of meteorological observations, forecasts, warnings and advisories	2020-2021	MET/S WG	In progress
Activity 2: Track and investigate deficiencies in the format and dissemination of meteorological observations, forecasts, warnings and advisories and propose corrective action and provide information to ICAO and WMO groups for possible assistance	2020-2021	MET/S WG and MET/IE WG	In progress
Activity 3: Review WC, WV & WS SIGMET test results and implement improvements.	2020-2021	MET/S WG	In progress
Activity 4: Provide guidance and/or training related to the implementation of meteorological observations, forecasts, warnings and advisories, including input to the Regional SIGMET Guide as they relate to the Annex 3 amendment cycle and SIGMET tests.	2020-2021	R/O, MET/S WG and MET/IE WG	In progress
Activity 5: Provide input into regional-operational plans as required for specific phenomenon, including VA, radioactive cloud, TC, Tsunami and Space Weather, with consideration to global ICAO groups and WMO developments.	2020-2021	MET/S WG and MET/R WG	In progress
Activity 6: Investigate, and implement as appropriate, options to assist States in resolving air navigation deficiencies in the field of meteorological service.	2020-2021	MET/S WG	In progress
Activity 7: Cost recovery – assist the PMC with development of an effective cost recovery strategy for the Pacific SIDS.	2020-2021	MET/S WG	To commence
Activity 8: SIGMET coordination	2020-2021	MET/S WG	In progress

### 5. WORK PLAN

Activity / Milestone	Accountability	Predecessors	Date	Status
<b>Activity 3: Review SIGMET test results and implement improvements</b>				
Activity 3.1: Review SIGMET tests (conjoint session with MET/IE WG)	MET/S WG	-	Annually Mar	
Activity 3.2: Develop action plan to fix identified deficiencies	MET/S WG	3.1	Annually Mar	
Activity 3.3: Report back to MET SG on regional performance and action plan	Chair	3.2	Annually May	
Activity 3.4: Advise States of SIGMET deficiencies	Secretariat	3.3	Annually Jun	

<i>Milestone 3: Improved issuance and compliance of SIGMETs</i>	MET/S WG	3.4	Annually	
<b>Activity 4: GUIDANCE AND EDUCATIONAL MATERIAL</b>				
Activity 4.1: Review the regional SIGMET Guide in coordination with the other ICAO Regions to be in line with Amendment 81 to Annex 3	MET/S WG Australia (rapporteur), Hong Kong China, Japan, and Singapore, in conjunction with Secretariat		2023	
Activity 4.2: develop proposals for SIGMET Guide updates to include guidance relevant to SIGMET information in IWXXM form	Australia (rapporteur), Hong Kong China, Japan, and Singapore, in conjunction with Secretariat		2021	
Activity 4.3: Develop and implement a plan to educate MET service providers and aviation users on the new ICAO SWX provisions – based on SWXC coordination group (METP)	Secretary		2021	
Activity 4.4: Develop proposal to amend the ROBEX Handbook to facilitate the exchange of routine TAF for locations where States issue routine TAF every three hours instead of the recommended practice of every six hours [Report of MET/S WG/8, paragraph 3.5 refers].	Chair, Secretariat and State/s concerned		As advised by State/s concerned	
Activity 4.5: Develop proposal to amend ANP Volume III to clarify MET-related implementation planning guidance.	Chair, Secretariat		2021	
<i>Milestone 4: Guidance and educational material available</i>	MET/S WG		TBD	
<b>Activity 6 – Air Navigation Deficiencies</b>				
Activity 6.1: Assist the ICAO Secretariat with the following: a) Define a process, based on the APANPIRG Procedural Handbook, for identifying, analysing, removing and proposing MET Deficiencies; b) Develop templates to be used for Deficiency Corrective Action Plans (CAP), Progress Reports and Final Reports; c) Develop thresholds for Deficiencies based on OPMET Monitoring performance indicators and SIGMET testing; d) Review the analysis of the annual, and any ad hoc, OPMET Monitoring, and SIGMET Tests against agreed thresholds; e) Identify deficiencies from the OPMET Monitoring and SIGMET Test analysis, along with other tests and exercises, mission reports, analysis of differences against ICAO provisions, aircraft accident and incident reports and reports provided by users of air navigation services; f) Work with States concerned to develop a CAP, arrange for testing and monitoring and assist with the reporting to ICAO on the resolution of air navigation deficiencies; and g) Report recommended updates to MET Deficiencies, through MET/S WG, to MET SG.	Paula ACETHORP (Rapporteur) Secretariat CHEONG Wee Kiong Jarrad DENMAN Mike GRAF Keiko ITO Christy Y.Y. LEUNG Sujin PROMDUANG THAM Yap Fung Kentaro TSUBOI	4.1	Ongoing	
Activity 6.2: Monitor the implementation of the solution/s to remove deficiencies.	MET/S WG	4.2	Ongoing	
Activity 6.3: Monitor global development on the establishment of a hazardous weather information system.	MET/S WG		Ongoing	
Activity 6.4: Report progress to MET SG	Secretariat	4.3	Ongoing	
<i>Milestone 6: Reduction in air navigation deficiencies.</i>	MET/S WG		2021	
<b>Activity 7 – Cost recovery strategy</b>				
Activity 7.1: Cost recovery – assist the PMC with development of an effective cost recovery strategy for the Pacific SIDS.	Secretariat		2021	

<b>Activity 8 – SIGMET coordination activities in APAC Region</b> Coordinate on the next steps to promote integration and expansion of SIGMET coordination activities among States/Administrations.				
Activity 8.1 Consolidated progress report on SIGMET coordination activities in the APAC Region and recommendations based on lessons learnt: - new and existing SIGMET coordination activities - WP (MET/R WG) and SP (MET/ATM Seminar) MET/IE WG and MET/S WG - key lessons learnt/recommendations for regional guidance on SIGMET coordination - identify opportunities for integration and expansion of SIGMET coordination activities	Ad-hoc group: Japan, Singapore, Hong Kong China, (Joint Rapporteurs) China, Indonesia, Malaysia, India, Viet Nam, Thailand, Fiji and IFALPA, coordinated by the Chairperson and Secretary		MET/S WG	

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