

International Civil Aviation Organization



ICAO

WORKING PAPER

Tenth Meeting of the Asia/Pacific Meteorological Requirements Working Group (MET/R WG/10)

Online, 24 -28 May 2021

Agenda Item 6: Review of MET/R WG terms of reference and work program

REVIEW THE TERMS OF REFERENCE AND WORK PROGRAM

(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 work of the MET SG and APANPIRG to improve safety, efficiency and sustainability of air traffic management (ATM) operations by facilitating APAC States' provision of meteorological information to meet the requirements of the ATM system.

1.2 This paper invites the meeting to review the terms of reference and work program of the MET/R WG and to propose updates as necessary to ensure the MET/R WG continues to meet its objectives.

2. DISCUSSION

2.1 The Twenty-Fourth Meeting of the Meteorology Sub-group (MET SG/24) approved updates to the MET/R WG terms of reference and work program with its adoption of Decision MET SG/24-18: *Updates to terms of reference and work plan of and MET/R WG, MET/IE WG and MET/S WG*. A copy of the MET SG/24 approved terms of reference and work program for the MET/R WG 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/R WG (at the **Appendix A** to this paper) and propose further updates, as necessary, based on the discussions of the meeting for further review and possible approval by MET SG.

**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 ~~text to be deleted~~, and added text with grey shading (text to be inserted).

TERMS OF REFERENCE

DESCRIPTION	
Name and establishment of 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 in accordance with the working arrangements and instructions provided in the APANPIRG Procedural Handbook.
Reporting mechanism	The MET/R WG shall report its work progress and co-ordination requirements to the MET SG, normally in the form of 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 ¹) 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	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: <ul style="list-style-type: none"> a) Coordinate with other relevant contributory bodies of APANPIRG such as ATM/SG and ATFM/SG; 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; 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; d) Facilitate the monitoring and implementation of 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;

¹ 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]

DESCRIPTION	
	<p>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</p> <p>f) Report to the MET SG for further co-ordination through the ICAO Secretariat with APANPIRG and other relevant bodies.</p>

MEMBERSHIP		
State/Organization/ Name	Position/organization/ (field of expertise)	Contact
AUSTRALIA Mr. Ashwin NAIDU (Chair)	Manager Senior Aviation Customer Lead Australian Bureau of Meteorology (MET)	Tel: +61 2 9296 1503 E-mail: ashwin.naidu@bom.gov.au
CHINA Mr. Hanqingyuan	Deputy Director, Met Division of ATMB, CAAC (MET)	Tel: +86(10)87786529 E-mail: hanqingyuan@atmb.net.cn
CHINA Ms. Huomiao	Engineer MET Center of North China, Air Traffic Management Bureau. CAAC (MET)	E-mail: huomiao0826@163.com
HONG KONG, CHINA Mr. Marco Mang- hin KOK	Scientific Officer Hong Kong Observatory (MET)	Tel: +852 2926 8702 Mobile: +852 6226 7907 Fax: +852 2375 2645 E-mail: mhkok@hko.gov.hk
JAPAN Ms. KOMATSU Naoko (Vice-Chair)	Senior Scientific Officer Office of International Affairs Planning Division Japan Meteorological Agency (MET)	Tel: +81 (3) 3212 8341 x3524 Fax: +81 (3) 3212 8377 E-mail: n-komatsu@met.kishou.go.jp
JAPAN Mr. YASUI Kazuki Ms. IKEDA Michiko	Scientific Officer Office of Aviation Weather Forecasting Forecast Division Japan Meteorological Agency (MET)	E-mail: k_yasui@met.kishou.go.jp michi-ikeda@met.kishou.go.jp
JAPAN Mr. SHIGENOBU Toshiya Ms. ITOU Miho	Special assistant to the Director Air Traffic Control Division, Japan Civil Aviation Bureau (ATM)	tel: +81-3-5253-8749 fax: +81-3-5253-1664 E-mail: shigenobu_t07sa@mlit.go.jp itou-m46be@mlit.go.jp
PAKISTAN Mr. Fazal Ur Rehman	Sr. Joint Director (ATM / ANS Inspector)	Tel: +92-21-99072756 Mobile: +92-306-2266788 Fax: +92-21-99242676 E-mail: fazal_ur_rehman@caapakistan.com.pk

MEMBERSHIP		
State/Organization/ Name	Position/organization/ (field of expertise)	Contact
PAKISTAN Mr. Jan Muhammad	Deputy Director (MET / Meteorological Inspector)	Tel: +92-21-99072758 Mobile: +92-336-3564464 Fax No: +92-21-99242676 E-mail: jan.muhammad@caapakistan.com.pk; jansolangi.met2009@gmail.com
REPUBLIC OF KOREA Mr. Yeonghun Kim	Assistant Director Aviation Meteorological Office (AMO) of Korea Meteorological Administration (KMA) (MET)	Tel : +82 (32) 222 3008 Fax : +82 (32) 740 2807 E-mail: av_pod@korea.kr
SINGAPORE Mr. Yeo Cheng Xun	Executive Meteorologist Meteorological Services Singapore Singapore Changi Airport P.O. Box 8, Singapore 918141 (MET)	E-mail: YEO_Cheng_Xun@nea.gov.sg
THAILAND Mr. Nuttawut Dandee	Director of Aeronautical Meteorology Division Aeronautical Meteorology Division Thailand Meteorological Department (MET)	Tel: +66 (2) 134 0011 Ext. 216 Fax: +66 (2) 213 4009 –10 E-mail: wut.tmd@gmail.com
THAILAND Mr. Somchai Yimsricharoenkit	Chief of Aeronautical Meteorology Division The Civil Aviation Authority of Thailand (MET/regulator)	Tel: +66 (0) 2568 8825 Fax: +66 (0) 25688847 E-mail: somchai.y@caat.or.th
THAILAND Ms. Sujin Promduang	Director of Aeronautical Information and Flight Data Management Center Aeronautical Radio of Thailand Ltd. (AIS)	Tel: +66 (2) 2859083 Fax: +66 (2) 287 8538 E-mail: sujin.pr@aerothai.co.th
UNITED STATES Mr. Michael WATKINS	FAA Senior Asia/Pacific Air Traffic Representative Singapore (MET/ATM)	Tel: +65 6476 9462 E-mail: michael.w.watkins@faa.gov
VIET NAM Ms. Lan Oanh Nguyen (Lana)	Deputy Director, Air Navigation Department Civil Aviation Authority of Vietnam (MET)	Tel: +84 (24) 3872 3600 E-mail: lanoanh@caa.gov.vn
VIET NAM Mr. Do Tien Duc	Meteorological Official Department of Air Traffic Services Viet Nam Air Traffic Management Corporation (MET)	Tel: +84 (24) 3873 0320 E-mail: dotienduc@vatm.vn
IATA Mr. John MOORE	Assistant Director (Infrastructure) Safety and Flight Operations Asia-Pacific (Airline operators)	Tel: +65 6499 2529 E-mail: moorej@iata.org
ICAO Mr. Shane SUMNER (Secretariat)	Regional Officer ATM International Civil Aviation Organization (ICAO) Asia and Pacific Office (ATM)	Tel: +66 (2) 537 8189 x159 Fax: +66 (2) 537 8199 E-mail: ssumner@icao.int

MEMBERSHIP		
State/Organization/ Name	Position/organization/ (field of expertise)	Contact
ICAO Mr. Peter DUNDA (Secretariat)	Regional Officer MET International Civil Aviation Organization (ICAO) Asia and Pacific Office (MET)	Tel: +66 (2) 537 8189 x153 Fax: +66 (2) 537 8199 E-mail: pdunda@icao.int

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
<u>MET Chairs Coordination Meeting</u>	<u>Chairs of MET SG and its contributory working groups</u>	<u>Web-conference E-mail</u>	<u>reflect the requirement for an annual (quarterly) schedule of c</u>	<u>Chair and Secretariat</u>
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 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. Input to the draft update to the Regional SIGMET Guide to assist States in aligning cross-FIR-boundary SIGMET information in coordination with MET/S WG
2. Documented analysis of MET information used in the Region specifically to support ATM operations
3. Draft regional guidance material on MET information needed to support the elements of the APAC Seamless ATM Plan
4. Draft regional guidance material for tailored MET information supporting ATM operations
5. Seminar on regional implementation of MET information to support ATM operations
6. 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
7. SIGMET coordination activities in APAC Region; Coordinate on the next steps to promote integration and expansion of SIGMET coordination activities among States/Administrations.

8. Development of APAC Use Case and User Requirements for SWIM-based MET Information Services Supporting ATFM

MILESTONES	By date	Responsibility	Status
Deliverable 1: Input to the draft update to the Regional SIGMET Guide to assist States in aligning cross-FIR-boundary SIGMET information in coordination with MET/S WG			
1.1 Input to First draft of guidance for inclusion in Regional SIGMET Guide for review by MET/R WG members (taking into consideration lessons learnt from the SIGMET coordination projects occurring in the Region)	next meeting of MET/R WG	Ad hoc group 1: Japan, Singapore and Secretariat in coordination with MET/S WG	Completed
1.2 First draft of guidance for inclusion in Regional SIGMET Guide for review by MET SG	MET SG/22	Secretariat in coordination with MET/S WG, MET SG	Completed
1.3 Submit the latest version of the guidance for possible approval by MET SG	MET SG/23	Ad hoc group 1: Japan, Singapore and Secretariat in coordination with MET/S WG	Closed-Completed

MILESTONES	By date	Responsibility	Status
Deliverable 2: Analysis of MET information used in the Region specifically to support ATM operations			
2.1 Survey on regional requirements for MET information to support ATM operations	Oct/Nov 2015	Secretariat	Completed
2.2 Preliminary draft documented analysis of MET information used in the Region specifically to support ATM operations	Jun 2016	Secretariat and Chair	Completed
2.3 Final draft documented analysis of MET information used in the Region specifically to support ATM operations	Next meeting	Ad hoc group 2: Australia (Rapporteur), Singapore, New Zealand, China, Japan, Thailand, Hong Kong China, Viet Nam	Completed
2.4 Develop a revised questionnaire and conduct a survey, taking into account outcomes from the review of the survey results by the MET SG and ATM/SG and how this can support the next MET/ATM seminar	By 10 June 2019	Ad hoc group 2	Closed-Completed
2.5 Submit draft survey questionnaire to MET SG/23 for approval	By 10 June 2019 for MET SG/23 on 17 June	As above	Closed-Completed
2.6 Revise questionnaire taking into account outcomes from MET/R WG/9 and further feedback and comments from the WG members	29 May 2020	As above	To begin
2.7 Conduct a small trial-run of the survey questionnaire	29 Jun 2020	As above	To begin
2.8 Submit final draft survey questionnaire to MET SG/24 for approval	29 Jun 2020	As above	To begin

2.9 Conduct the Regional survey	Q3-4 2020 or as decided by MET SG	As above	To begin
---------------------------------	-----------------------------------	----------	----------

MILESTONES	By date	Responsibility	Status
Deliverable 3: Draft regional guidance material on MET information needed to support the elements of the APAC Seamless ATM Plan			
3.1 First draft of a list on the MET information or services necessary to support implementation of each element of the Asia/Pacific Seamless ATM Plan	Jul 2016 ATM/SG	Ad hoc group 3: Australia, China, Hong Kong, China, and Japan, Thailand, Singapore (Rapporteur)	Completed
3.2 Revise the draft list and present to ATM/SG/5	17 July 2017	Ad hoc group 3	Completed
3.3 Further development pending outcomes of ICAO A40 review of GANP 2019	TBD	TBD	On hold

MILESTONES	By date	Responsibility	Status
Deliverable 4: Draft regional guidance material for tailored MET information supporting ATM operations			
4.1 List of tailored MET information or services used in the region to support ATM operations	Jun 2016	Ad hoc group 4: Australia, China, Hong Kong, China, IATA, Japan (Rapporteur), Republic of Korea, Singapore, Thailand and Viet Nam	Completed
4.2 List of sub-regional exchange of MET information and associated agreements that facilitate ATM operations, particularly where major traffic flows affect multiple FIRs	Jun 2016	As above	Completed
4.3 First draft of regional guidance material for tailored MET information supporting ATM operations	Aug 2016	As above	Completed
4.4 Draft of version 2 produced, based on survey results and outcomes/recommendations provided by MET SG and/or ATM/SG	Jun 2018	As above	Completed
4.5 Submit the regional guidance material for tailored MET information supporting ATM operations for possible approval by MET SG and inform the ATM/SG	By 10 June 2019 for MET SG/23 on 17 June	As above	Closed-Completed
4.6 Review the regional guidance material for tailored MET information supporting ATM operations and propose updates as necessary for possible approval by MET SG	Next meeting of MET/R WG	As above	Closed-Completed
4.7 Review the working draft guidance and provide comment to the ICAO RO MET	12 June 2020	MET/R WG	To begin
4.8 Finalize the updated guidance for approval at the MET SG in July 2020	29 June 2020	Ad-hoc group, consisting of Australia, China, Hong	To begin

		Kong, China, Japan (rapporteur), Republic of Korea, Singapore, Thailand, Vietnam and IATA	
--	--	---	--

MILESTONES	By date	Responsibility	Status
Deliverable 5: Seminar on regional implementation of MET information to support ATM operations			
5.1 Plan for future seminar on regional implementation of MET information to support ATM operations (May 2020) – initial proposal for MET SG/23 to consider	By 10 June 2019 for MET SG/23 on 17 June	Chair and Secretariat (organizing committee)	On hold pending further advice from MET SG

MILESTONES	By date	Responsibility	Status
Deliverable 6: 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			
6.1 First draft of proposed APAC ANP Volume III improvements (pending outcomes from the ICAO eANP WG development on ANP Vol III common template) Support MET SG with development of MET-specific requirements in the ANP, Volume III	TBD As required	TBD MET/R WG	On hold In progress

MILESTONES	By date	Responsibility	Status
Deliverable 7: SIGMET coordination activities in APAC Region; Coordinate on the next steps to promote integration and expansion of SIGMET coordination activities among States/Administrations.			
[Revise the deliverable to focus on determining the end-users' requirements; and taking into account the additional proposals to be presented in MET/R WG/9: WP/09 – <i>Review and update of the Work Programme</i>]		MET-group Chairs considered this task is more appropriate to be included under the work plan of MET/S WG	

MILESTONES	By date	Responsibility	Status
Deliverable 8: Development of APAC Use Case and User Requirements for SWIM-based MET Information Services Supporting ATFM			
[Establish a new deliverable taking into account the proposals to be presented in MET/R WG/9: WP/04 – <i>APAC User Requirements for SWIM-based MET Information Services Supporting ATFM</i>] Note: this row will be removed after agreement by the meeting on the points below		An ad-hoc group comprising SMEs from both MET/R WG and ATFM/SG	To begin
8.1 In coordination with SWIM TF, identify and develop the specifications of future SWIM-based MET information services required to support ATFM operations		Ad-hoc group 8 (see below)	To begin
8.2 Identify MET and ATFM data to be exchanged using SWIM-based Information Exchange Service		Ad-hoc group 8 (see below)	To begin
8.3 Based on the findings (above), develop APAC		Ad-hoc group 8 (see below)	To begin

use cases and user requirements document for future SWIM-based MET information services supporting ATFM		below)	
---	--	--------	--

Ad-hoc group 8

State / Administration / IO	NamePosition	Position and/or Organisation	Expertise
Australia	Jesper Bronsvort	Airservices Australia	ATFM
Australia	Ashwin Naidu	BOM	MET
CANSO	Stuart Ratcliffe	CANSO	ATFM
Hong Kong China	Marco Kok (Rapporteur)	HKO	MET/SWIM
Hong Kong China	Peter Chadwick	Senior Air Traffic Control Specialist (Strategic Planning) / HKCAD	ATFM
Hong Kong China	(Mr) Anfernee Poon	Project Officer / HKCAD	ATFM
IATA	John Moore	IATA	ATFM/MET
Japan	SHIGENOBU Toshiya	JCAB	ATFM
Japan	YASUI Kazuki	JMA	MET
Pakistan	Fazal Ur Rehman	PCAA	ATFM
Pakistan	Jan Muhammad	PCAA	MET
Republic of Korea	Dong-won, LEE	Assistant of Director / KMA	MET
Republic of Korea	Jiwon, LEE	Assistant of Director / KMA	MET
Singapore	Clarence Foo	Head, ATM development/CAAS	ATFM
Singapore	Zhang HuanBin	Head, ATC Specialist/CAAS	ATFM
Singapore	Aw Ying Kit	Senior Engineer, ATM Systems /CAAS	ATFM
Singapore	Yeo Cheng Xun	MSS	MET
Thailand	Amornrat Jirattigalachote (Amo)	Strategic Planning Manager /AEROTHAI	ATFM/SWIM
Thailand	Dudsadee Sungthong	Strategic ATFM Team/AEROTHAI	ATFM
Vietnam	Mr. Nguyen Van Dung	VATM	MET/ATFM
