International Civil Aviation Organization



WORKING PAPER (WP/05)

ICAO Asia and Pacific (APAC)

Twenty-Eighth Meeting of the Meteorology Sub-Group (MET SG/28)

Bangkok, Thailand, 8 to 12 July 2024

Agenda Item 3: Air navigation deficiencies

REVIEW APANPIRG AIR NAVIGATION DEFICIENCIES

(Presented by the Secretariat)

SUMMARY

This paper presents the List of (open) APANPIRG air navigation deficiencies in the field of meteorology (MET) and invites the meeting to review and update, as necessary, the associated corrective action plans (CAPs) for the resolution of deficiencies.

1. INTRODUCTION

- 1.1 An APANPIRG air navigation deficiency is a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council or with related ICAO Standards and Recommended Practices (SARPs) and which situation has a negative impact on the safety, regularity or efficiency of international civil aviation.
- 1.2 This paper invites the meeting to review the List of air navigation deficiencies in the field of MET, as recorded by the APAC Air Navigation Planning and Implementation Regional Group (APANPIRG), and provide updates, as necessary, concerning the associated corrective action plans (CAPs) for resolving deficiencies.

2. DISCUSSION

- 2.1 The current list of air navigation deficiencies, as reviewed by the Thirty-fourth Meeting of APANPIRG [Conclusion APANPIRG/34/16: Update of Information in APANPIRG Air Navigation Deficiencies Reporting Form, refers], includes twelve (12) (open) deficiencies concerning MET facilities and services provided in seven (7) APAC States.
- 2.2 A copy of the APANPIRG Reporting Form on Air Navigation Deficiencies in the MET field, including detailed notes, is provided in **Appendix A**. The deficiencies concerning MET facilities and services are also listed in Table 1 below:

Table 1: APANPIRG air navigation deficiencies in the MET field

MET facilities and services	Asia/Pacific States	Def. ID	Status
Aerodrome meteorological observations or	Kiribati	AP-MET-02	open
reports	Nauru	AP-MET-21	open

MET facilities and services	Asia/Pacific States	Def. ID	Status
Meteorological Watch Office (MWO) or	Democratic People's Republic of Korea	AP-MET-16	open
SIGMET information	Nauru	AP-MET-24	open
	Nepal	AP-MET-14	open
	Papua New Guinea	AP-MET-08	open
	Papua New Guinea	AP-MET-22	open
Volcanic ash/activity information	Papua New Guinea	AP-MET-04	open
	Tonga	AP-MET-17	open
WAFS forecasts or flight briefings	Kiribati	AP-MET-18	open
	Nauru	AP-MET-19	open
	Solomon Islands	AP-MET-20	open

- 2.3 In its review of the air navigation deficiencies, APANPIRG/34 acknowledged Nepal's significant progress towards rectifying the deficiency AP-MET-14 concerning the requirements for issuance and dissemination of SIGMET information for Kathmandu FIR. However, noting that Nepal had not yet confirmed the implementation of the ICAO (Annex 3) Standard for disseminating SIGMET information in IWXXM form, APANPIRG/34 considered removal of the deficiency from the Open List would be subject to confirmation of the regular dissemination of the Kathmandu FIR SIGMET information in the IWXXM form (in addition to the TAC form).
- 2.4 In addition, in response to the request [MET SG/27 Action Item 01, refers] for advice concerning the identification of air navigation deficiencies related to the implementation of IWXXM-related SARPs, APANPIRG/34 confirmed that the guidance in the APANPIRG Procedural Handbook (*Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies*) should be followed to identify, assess and report deficiencies in the implementation of Annex 3 SARPs including IWXXM-related deficiencies.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
 - a) Note the information contained in this paper;
 - b) Review the List of (open) APANPIRG air navigation deficiencies in the MET field in **Appendix A** and provide updates, as necessary, especially for the CAPs to rectify the deficiencies; and
 - c) Discuss any relevant matters as appropriate

APPENDIX A

Extracted from APANPIRG/34, Appendix D to the Report on Agenda Item 4. Editorial Note: Updates show deleted text using strikeout (text to be deleted) and added text with grey shading (text to be inserted).

Editorial Note: Opulies show	REPORTING FORM ON (OPEN) AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION									
Identificati	on	Deficiencies			Corrective action					
Requirements	States/ Facilities (Index No.)	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action		
		Requirements for MWO and SIGMET service not established for Pyongyang FIR	2008	Reported by ICAO Regional Office mission	Establish MWO to provide required service, including SIGMET information for Phnom Penh FIR. See notes below for more information.	GACA, Democratic Peoples' Republic of Korea	TBC	A		
Meteorological observations and reports. (Annex 3: Chapter 4)	Kiribati (AP-MET-02)	METAR from Kiribati not available on regular basis.	1998	Reported by airlines	Equipment to be installed and arrangements to be made for regular observations and reports, including: training of personnel; maintenance of equipment; calibration and verification of meteorological observations; and proper/secure transmission of data. See notes below for more information.	State designated MET authority	TBC	A		
8	Kiribati (AP-MET-18)	WAFC forecasts not available for inclusion in flight briefings and documentation	2008	Reported by TCB CAEMSA-SP Technical Expert	Implement procedures and systems for the required meteorological information to be supplied to operators and flight crew members, including forecasts generated from the digital forecasts provided by the WAFCs. See notes below for more information.	State designated MET authority	TBC	U		
8	Nauru (AP-MET-19)	WAFC forecasts not available for inclusion in flight briefings and documentation	2008	Reported by TCB CAEMSA-SP Technical Expert	Implement procedures and systems for the required meteorological information to be supplied to operators and flight crew members, including forecasts generated from the digital forecasts provided by the WAFCs. See notes below for more information.	State designated MET authority	TBC	U		
Meteorological observations and reports. (Annex 3: Chapter 4)	Nauru (AP-MET-21)	METAR/SPECI service not provided	2008	Reported by TCB CAEMSA-SP Technical Expert	Equipment to be installed and arrangements to be made for regular observations and reports, including: training of personnel; maintenance of equipment; calibration and verification of meteorological observations; and proper/secure transmission of data. See notes below for more information.	State designated MET authority	TBC	U		

·	REPORTING FORM ON (OPEN) AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION									
Identificati	1	Deficiencies		Corrective action						
Requirements	States/ Facilities (Index No.)	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action		
Provision of SIGMET information (Annex 3, Chapter 7)	Nauru (AP-MET-24)	Lack of SIGMET issued for the Nauru FIR.	Sep 2011	IATA deemed this situation unsafe and unacceptable to airline operations.	Implement procedures for SIGMET information to be issued by the designated meteorological watch office/s concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations. See notes below for more information.	State designated MET authority	ТВС	U		
Provision of SIGMET information (Annex 3: Chapter 7)	Nepal (AP-MET-14)	Requirements for issuance and dissemination of SIGMET information for Kathmandu FIR have not been fully implemented	2000		Implement procedures for SIGMET information to be issued by the designated meteorological watch office/s concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations. See notes below for more information.	State designated MET authority	TBC	A		
Reporting of information on volcanic eruptions to civil aviation units. (Annex 3, 3.6, 4.8)	Papua New Guinea (AP-MET-04)	Information on volcanic activity not provided regularly to ATS units, MWOs and VAACs.	1995	Observed by States concerned. Reported at the WMO/ICAO Workshop on Volcanic Ash Hazards (Darwin, 1995)	Establish arrangements for State volcano observatories to send the required volcano observation information as quickly as practicable to the associated ACC/FIC, MWO and VAAC. See notes below for more information.	Rabaul Volcano Observatory, NWS and ASL of Papua New Guinea	TBC	A		
Provision of SIGMET for volcanic ash (Annex 3: Chapter 7)	Papua New Guinea (AP-MET-08)	Requirements for issuance and proper dissemination of SIGMET for volcanic ash have not been fully implemented	Dec 2003	Reported by airlines, noted by Volcanic Ash Advisory Centres and confirmed by ICAO mission	Implement procedures for SIGMET information to be issued by the designated meteorological watch office/s concerning the occurrence or expected occurrence of volcanic ash. See notes below for more information.	NWS of Papua New Guinea	TBC	U		
Provision of SIGMET information (Annex 3, Chapter 7)	Papua New Guinea (AP-MET-22)	Lack of SIGMET issued for the Port Moresby FIR.	Sep 2011	IATA deemed this situation unsafe and unacceptable to airline operations.	Implement procedures for SIGMET information to be issued by the designated meteorological watch office/s concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations. See notes below for more information.	State designated MET authority	TBC	U		

REPORTING FORM ON (OPEN) AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION										
Identificati	Identification Deficiencies				Corrective a	ction				
Requirements	States/ Facilities (Index No.)	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action		
\mathcal{E}	Solomon Islands (AP-MET-20)	WAFC forecasts not available for inclusion in flight briefings and documentation	2008	Reported by TCB CAEMSA-SP Technical Expert	Implement procedures and systems for the required meteorological information to be supplied to operators and flight crew members, including forecasts generated from the digital forecasts provided by the WAFCs. See notes below for more information.	State designated MET authority	TBC	U		
Reporting of information on volcanic eruptions to civil aviation units. (Annex 3: 3.6, 4.8)	Tonga (AP-MET-17)	Information on volcanic activity not provided regularly to ATS units, MWOs and VAACs		Reported by TCB CAEMSA-SP technical expert	Establish arrangements for State volcano observatories to send the required volcano observation information as quickly as practicable to the associated ACC/FIC, MWO and VAAC. See notes below for more information.	MOI and MEIDECC	TBC	U		

NOTES ON THE (OPEN AND CLOSED) AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION					
Index No.	State	Update Date	NOTES ON <u>OPEN</u> AND <u>CLOSED</u> DEFICIENCIES	Status	
AP-MET-01	Solomon Islands	December 2020	Removed from the open List; APANPIRG/31 Conclusion 31/19, refers.	Closed	
AP-MET-02	Kiribati	September 2023	MET SG/27 was informed that: • Kiribati is now delivering observations regularly but is continuing work on upgrading its observing facility before providing resolution information.	Open	
		September 2017	APANPIRG/28 noted that Kiribati should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.		
AP-MET-03	Indonesia	September 2017	Removed from the open List, APANPIRG/28 Conclusion 28/29 refers.	Closed	
AP-MET-04	Papua New Guinea	September 2023	MET SG/27 was informed that: • VAACs Darwin and Wellington are planning a series of exercises in the next six months with the Papua New Guinea (PNG) State Volcano Observatory and MWO to address the PNG volcanic activity information and SIGMET deficiencies, along with the Nauru SIGMET deficiency (due to PNG providing SIGMETs on Nauru's behalf).	Open	
		November 2022	APANPIRG/33 noted MET SG/26 recommended that Papua New Guinea: Conduct additional corrective actions, including seeking confirmation from the recipient operational units and providing evidence of the relevant established procedures; and Submit an official report to ICAO providing complete details of the action taken.		

		NOTES ON TH	E (<u>OPEN</u> AND <u>CLOSED)</u> AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION	
Index No.	State	Update Date	NOTES ON <u>OPEN</u> AND <u>CLOSED</u> DEFICIENCIES	Status
		September 2017	APANPIRG/28 noted that Papua New Guinea should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	
AP-MET-05	_	_	This Index No. is not used.	Closed
AP-MET-06	Indonesia	September 2017	Removed from the open List, APANPIRG/28 Conclusion 28/29 refers.	Closed
AP-MET-07	Philippines	November 2019	Removed from the open List, Conclusion APANPIRG/30/19, refers.	Closed
AP-MET-08	Papua New Guinea	September 2023	MET SG/27 was informed that: • VAACs Darwin and Wellington are planning a series of exercises in the next six months with the Papua New Guinea (PNG) State Volcano Observatory and MWO to address the PNG volcanic activity information and SIGMET deficiencies, along with the Nauru SIGMET deficiency (due to PNG providing SIGMETs on Nauru's behalf).	Open
		September 2017	APANPIRG/28 noted that Papua New Guinea should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	
AP-MET-09	Cambodia	September 2018	Removed from the open List, APANPIRG/29 Decision 29/23 refers	Closed
AP-MET-10		_	This Index No. is not used.	Closed
AP-MET-11	Cambodia	September 2018	Removed from the open List, APANPIRG/29 Decision 29/24 refers	Closed
AP-MET-12	Lao PDR	September 2018	Removed from the open List, APANPIRG/29 Decision 29/24 refers	Closed
AP-MET-13	ı	_	This Index No. is not used.	Closed
AP-MET-14	Nepal	December 2023	APANPIRG/34 considered the deficiency could be removed from the Open List subject to receiving confirmation of the regular dissemination of the Kathmandu FIR SIGMET information in IWXXM form (in addition to TAC form)	Open
		September 2023	 MET SG/27 noted that: Nepal made significant progress towards rectification of the deficiency, including confirmation of the regular issuance of SIGMET information in 2022, successful participation in the annual APAC regional SIGMET tests, coordination of SIGMET with neighbouring MWOs, and validation from users of receipt of the SIGMET information. Nepal was not disseminating SIGMET information in the IWXXM form in addition to the dissemination of SIGMET information in the TAC form, as required by Annex 3. Nepal was in the process of procuring a solution to provide SIGMET in IWXXM form. APANPIRG may review the status of the deficiency and remove it from the Open List, subject to Nepal confirming in writing to ICAO, and validated by RODB Bangkok, that the regular dissemination of SIGMET information in IWXXM form in addition to TAC form. 	

		NOTES ON TH	E (<u>OPEN</u> AND <u>CLOSED)</u> AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION	
Index No.	State	Update Date	NOTES ON <u>OPEN</u> AND <u>CLOSED</u> DEFICIENCIES	Status
		September 2017	APANPIRG/28 noted that Nepal should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	
AP-MET-15	_	_	This Index No. is not used.	Closed
AP-MET-16	Democratic People's Republic of Korea	September 2017	APANPIRG/28 noted that DPRK should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	Open
AP-MET-17	Tonga	September 2023	MET SG/27 was informed that: • Tonga is developing an MOU between organisations involved in providing and sharing volcanic activity information, which includes the procedures to be followed.	Open
		November 2022	APANPIRG/33 noted MET SG/26 recommended that Tonga: Conduct additional corrective actions, including seeking confirmation from the recipient operational units and providing evidence of the relevant established procedures; and Submit an official report to ICAO providing complete details of the action taken.	
		September 2017	APANPIRG/28 noted that: Removal of the Deficiency from the open List is subject to the concurrence of the ATS units, MWOs and VAACs concerned that the Deficiency is resolved.	
		June 2018	MET SG/22 noted that: • VAAC Wellington was coordinating with Tonga on the validation of corrective action taken to resolve the Deficiency.	
		29 May 2017	MOI, Civil Aviation Division, advised that: • Relevant operating procedures implemented in the units concerned and case studies of real volcanic events presented as evidence of the State volcano observatory's issuance of the required volcano observation information.	
		10 May 2013	Ministry of Infrastructure (MOI), Civil Aviation Division, advised that: • MOU established between the national authority providing volcano monitoring (Ministry of Lands, Environment, Climate Change and Natural Resources – MLECCNR) and the national authority providing meteorological service for international air navigation (MOI) for the reporting of volcanic activity to the associated ACCs, MWOs and VAACs in accordance with the relevant ICAO SARPs.	
AP-MET-18	Kiribati	September 2023	MET SG/27 was informed that: • Kiribati, Nauru and Solomon Islands are working with their local users to determine whether there is any requirement for local WAFS information provision.	Open
		September 2017	APANPIRG/28 noted that Kiribati should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	

		NOTES ON TH	E (<u>OPEN</u> AND <u>CLOSED)</u> AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION	
Index No.	State	Update Date	NOTES ON <u>OPEN</u> AND <u>CLOSED</u> DEFICIENCIES	Status
AP-MET-19	Nauru	September 2023	MET SG/27 was informed that: • Kiribati, Nauru and Solomon Islands are working with their local users to determine whether there is any requirement for local WAFS information provision.	Open
		September 2017	APANPIRG/28 noted that Nauru should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	
AP-MET-20	Solomon Islands	September 2023	MET SG/27 was informed that: • Kiribati, Nauru and Solomon Islands are working with their local users to determine whether there is any requirement for local WAFS information provision.	Open
		September 2017	APANPIRG/28 noted that Solomon Islands should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	
		June 2019	MET SG/23 requested the Secretary in conjunction with support from other States to provide Solomon Islands with assistance in preparing the full report on rectification of the Deficiency.	
AP-MET-21	Nauru	September 2017	APANPIRG/28 noted that Nauru should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	Open
AP-MET-22	Papua New Guinea	September 2023	MET SG/27 was informed that: • VAACs Darwin and Wellington are planning a series of exercises in the next six months with the Papua New Guinea (PNG) State Volcano Observatory and MWO to address the PNG volcanic activity information and SIGMET deficiencies, along with the Nauru SIGMET deficiency (due to PNG providing SIGMETs on Nauru's behalf).	Open
		September 2017	APANPIRG/28 noted that Papua New Guinea should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	
AP-MET-23	Solomon Islands	November 2022	Removed from the open List; refer to: Conclusion APANPIRG/33/14 – Update of information in APANPIRG Air Navigation Deficiencies Reporting Form; APANPIRG/33 WP/14 – STATUS OF AIR NAVIGATION DEFICIENCIES IN THE ASIA/PAC REGION; APANPIRG/33 WP/13 – METEOROLOGY SUB-GROUP (MET SG/26) REPORT; and APANPIRG/33 IP/08 – RECTIFICATION OF APANPIRG AN DEFICIENCY AP-MET-23	Closed

		NOTES ON TH	E (<u>OPEN</u> AND <u>CLOSED)</u> AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION	
Index No.	State	Update Date	NOTES ON <u>OPEN</u> AND <u>CLOSED</u> DEFICIENCIES	Status
		October 2021	MET SG/25 requested the Solomon Islands, with assistance from its partner States, to conduct additional corrective action to enable the MET SG to confirm that Solomon Islands had fully resolved the Deficiency; maintain a log of all SIGMETs issued over at least one month to capture the operational WC-, WS- and WV-SIGMETs, plus any test WV-SIGMETs; pass the details [of the log] to the ad hoc group [on AN Deficiencies] to compare against SIGMETs received by RODB Brisbane [MET SG/25, Action No. 25/10]. Subject to Solomon Islands demonstrating resolution of the issues concerning content, format and timeliness of SIGMET information (as discussed in MET SG/25, WP/12) and sustainable provision of ICAO-compliant SIGMET service, MET SG would support the removal of Deficiency AP-MET-23 from the APANPIRG open list. Therefore, to facilitate the removal of the Deficiency from the open List, MET SG/25 requested the Secretariat coordinate with the Solomon Islands to report the resolution of the Deficiency to APANPIRG [MET SG/25, Action No. 25/11].	
		June 2019	MET SG/23 requested the Secretary in conjunction with support from other States to provide Solomon Islands with assistance in preparing the full report on rectification of the Deficiency.	
		September 2017	APANPIRG/28 noted that Solomon Islands should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	
AP-MET-24	Nauru	September 2023	MET SG/27 was informed that: • VAACs Darwin and Wellington are planning a series of exercises in the next six months with the Papua New Guinea (PNG) State Volcano Observatory and MWO to address the PNG volcanic activity information and SIGMET deficiencies, along with the Nauru SIGMET deficiency (due to PNG providing SIGMETs on Nauru's behalf).	Open
		September 2017	APANPIRG/28 noted that Nauru should: • Verify the status of implementation of CAP; and • Work together with ICAO to develop and properly record the remaining steps of the CAP to resolve the Deficiency.	

Acronyms/Abbreviations/Definitions (used in this document)

ACC — Area control centre

ASL — Air Services Ltd.

ATS — Air traffic services

CAEMSA-SP — Cooperative Agreement for the Enhancement of Meteorological Services to Aviation - South Pacific

CAP — Corrective action plan

FIC — Flight information centre

FIR — Flight information region

GACA — General Administration of Civil Aviation
IATA — International Air Transport Association

MEIDECC — Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communication

MET — Meteorological

Acronyms/Abbreviations/Definitions (used in this document)

METAR — Aerodrome routine meteorological report (in meteorological code)

MWO — Meteorological watch office NWS — National Weather Service

SIGMET — Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the

atmosphere that may affect the safety of aircraft operations

SPECI — Aerodrome special meteorological report (in meteorological code)

TBC — To be confirmed

TCB — Technical Cooperation Bureau (of ICAO)

VAAC — Volcanic ash advisory centre
WAFC — World area forecast centre

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