



*International Civil Aviation Organization*

**WORKING PAPER**

**TWENTIETH MEETING OF THE METEOROLOGY SUB-GROUP  
(MET SG/20) OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING  
AND IMPLEMENTATION REGIONAL GROUP (APANPIRG)**

*Bangkok, Thailand, 6 – 9 June 2016*

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**Agenda Item 5: Air navigation deficiencies in the MET field**

**REVIEW AIR NAVIGATIONS DEFICIENCIES IN THE MET FIELD**

(Presented by the Secretariat)

**SUMMARY**

The list of APANPIRG air navigation deficiencies in the MET field and the States' associated corrective action plans is presented for review by the MET SG. Updates from States and appropriate international organizations are required in order for the MET SG to propose appropriate corrective actions and to facilitate the development, implementation and progress of the corrective action plans by States to resolve the identified deficiencies. Progress on the corrective action plans and recommendations on updates to the status of the air navigation deficiencies in the list will be reported to APANPIRG/27 in September 2016.

**1. INTRODUCTION**

1.1 The definition of (an air navigation) deficiency (as adopted by ICAO Council, 30 November 2001) 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 and/or efficiency of international civil aviation.

1.2 The resolution of air navigation deficiencies has been given the highest priority by APANPIRG. In accordance with the terms of reference, APANPIRG (and its contributory bodies – including the MET SG) shall facilitate the conduct of any necessary systems performance monitoring to identify specific deficiencies in the air navigation field, especially in the context of safety, propose appropriate corrective actions and facilitate the development and implementation of corrective action plans by States to resolve the identified deficiencies.

1.3 This paper reviews the information on air navigation deficiencies in the field of MET in the Asia/Pacific Region and the associated corrective action plans (CAPs), which is currently available in the APANPIRG list of air navigation deficiencies, and recommends that improvements be made especially with respect to the development, implementation and progress of the CAPs.

## 2. DISCUSSION

### Reporting of air navigation deficiencies

2.1 The current APANPIRG list of air navigation deficiencies was developed in accordance with recommendations by the APANPIRG/17 Meeting, August 2006, in Conclusion 17/53, which called for a regional on-line database to list air navigation deficiencies in the Asia/Pacific Region. In order to ensure transparency and facilitate resolution of deficiencies, the ICAO Regional Office was invited to establish a regional on-line database of air navigation deficiencies and provide secure access to States' administrations and other users concerned. Detailed information on the *Uniform Methodology for the identification, assessment and reporting of air navigation deficiencies*, is provided in the *APANPIRG Procedural Handbook*.

2.2 In accordance with the *Uniform Methodology*, information on air navigation deficiencies is provided regularly in the *Reporting Form on Air Navigation Deficiencies* for review by APANPIRG under the terms of reference.

### APANPIRG list of air navigation deficiencies in the MET field

2.3 The APANPIRG list contains specific deficiencies in the MET field, identified by the lack of compliance with the regional air navigation plan or ICAO SARPs of specific MET facilities and services required in the Asia/Pacific Region.

2.4 The list currently contains twenty (20) air navigation deficiencies in the MET field related to facilities and services required in the eleven (11) Asia/Pacific States, listed below. Full details of the current list of APANPIRG air navigation deficiencies in the MET field is provided in the *Reporting Form on Air Navigation Deficiencies* at the **Attachment** to this paper, which was last reported to APANPIRG/26, Bangkok, Thailand, 7 – 10 September 2015 (APANPIRG Conclusion 26/64 refers).

**Table 1:** Air navigation deficiencies in the MET field listed in the APANPIRG database

MET facilities and services	Asia/Pacific States	Def. ID
Aerodrome meteorological observations or reports	Kiribati	AP-MET-02
	Nauru	AP-MET-21
	Solomon Islands	AP-MET-01
Meteorological watch office (MWO) or SIGMET information	Cambodia	AP-MET-11
	Democratic Peoples' Republic of Korea	AP-MET-16
	Indonesia	AP-MET-06
	Lao Peoples' Democratic Republic	AP-MET-12
	Nauru	AP-MET-24
	Nepal	AP-MET-14
	Papua New Guinea	AP-MET-08/22
	Philippines	AP-MET-07
	Solomon Islands	AP-MET-23
Volcanic ash/activity information	Indonesia	AP-MET-03
	Papua New Guinea	AP-MET-04
	Tonga	AP-MET-17
WAFS forecasts and/or flight briefings	Cambodia	AP-MET-09
	Kiribati	AP-MET-18
	Nauru	AP-MET-19
	Solomon Islands	AP-MET-20

Development of corrective action plans for the resolution of air navigation deficiencies

2.5 The *Uniform Methodology* requires that States provide CAPs, comprising detailed descriptions of the actions to be taken for the expeditious rectification of the listed deficiencies. States' CAPs should be provided in a concise and concrete format for inclusion in the APANPIRG air navigation deficiencies database and reporting to APANPIRG in the *Reporting Form on Air Navigation Deficiencies*\*

*\*Note: If necessary, detailed information may be provided as an attachment; CAPs should include the corrective measures to be taken by the States and the target dates by which the identified deficiencies will be resolved.*

2.6 Under the terms of reference, the MET SG is required to assist APANPIRG with the review of the air navigation deficiencies in the MET field and, as necessary, to propose appropriate corrective actions and facilitate the development and implementation of CAPs by States to resolve identified deficiencies.

2.7 The sixth meeting of the Meteorological Services Working Group (MET/S WG/6), held in Bangkok, Thailand, from 9 – 11 March 2016, which shares in the MET SG work programme, reviewed the information provided in the *Reporting Form on Air Navigation Deficiencies* and noted the following:

- Long-term lack of significant progress in resolving some of the air navigation deficiencies in the MET field (e.g., some cases date back to 1995);
- Resolution of air navigation deficiencies given highest priority by APANPIRG;
- APANPIRG/26 (September 2015) urged States to put in additional resources to resolve the deficiencies and inform ICAO on action taken;
- States with deficiencies are responsible to provide updates to the database;
- Periodic updates required annually (at the least) by States to ICAO – for review by APANPIRG and Sub-Group meetings; and
- Updates on CAPs have been infrequent and, in most cases, the CAPs are not concise and lack defined target dates.

2.8 Some States have reported progress on CAPs, but the necessary validation by ICAO (and States and appropriate international organizations where required) of the corrective action taken has not progressed sufficiently; mainly due to the difficulty in obtaining adequate supporting data. For example:

- Tonga submitted an official report (May 2013) on the implementation of its CAP for the dissemination of information on detection of volcanic ash (Def. ID: AP-MET-17 refers). Validation by ICAO (with assistance from VAAC Wellington) of the corrective action taken has not been possible using real data due to the ensuing absence of volcanic eruption/s in the area concerned. It was noted, however, that future volcanic ash exercises conducted in the area would facilitate the validation process.

- Indonesia submitted an official report (Aug 2014) on corrective action taken to ensure information on volcanic activity, including SIGMET, is provided regularly in accordance with the requirements (Def. ID: AP-MET-03 and AP-MET-06, refer). ICAO is yet to validate the action taken, although it was noted that volcanic ash exercises conducted in the region would facilitate this process.
- Solomon Islands informed ICAO that corrective action had been taken to enable the provision of aerodrome meteorological observations and reports, SIGMET information and WAFS forecasts for flight briefing (Def. ID: AP-MET-1, AP-MET-20 and AP-MET-23, refer), however validation of the corrective action is difficult to proceed without submission of the official report providing full details of the action taken.
- Philippines participated in SIGMET tests and volcanic ash exercises, which may facilitate the validation of corrective action taken to resolve the deficiency identified in SIGMET service, however the submission of the official report providing full details of the action taken would further facilitate the validation process; Philippines requested assistance from ICAO with respect to submission of the report.

2.9 In view of the discussion above, MET/S WG/6 agreed to the following actions: (6/1) that updates on the status of CAPs should be provided by States concerned to the MET SG and APANPIRG; and (6/2) that targeted monitoring of SIGMET service should be organised and conducted to facilitate the development and implementation of CAPs, and validation of corrective actions taken, in relation to the SIGMET-related deficiencies.

### 3. CONCLUSION

3.1 The APANPIRG list of air navigation deficiencies identifies a number of MET services and facilities in specific Asia/Pacific States where a lack of compliance with the relevant international requirements has been identified as having a negative impact on the safety, regularity and/or efficiency of international civil aviation. It is noted that the resolution of air navigation deficiencies has been given the highest priority by APANPIRG.

3.2 In view of the above, States concerned, with assistance from the MET SG, are required to develop and implement concise and concrete CAPs (in accordance with the *Uniform Methodology* in the *APANPIRG Procedural Handbook*) and to update and periodically report on progress of the CAPs to APANPIRG (in the *Reporting Form on Air Navigation Deficiencies*), in order to progress the resolution of the air navigation deficiencies in the MET field.

3.3 However, a review of the available information provided on air navigation deficiencies in the MET field in the Asia/Pacific Region shows that both the development/implementation of CAPs, and the reporting of progress on the CAPs, needs to be improved significantly in order to meet the APANPIRG objectives towards the resolution of air navigation deficiencies in the APANPIRG database.

**4. ACTION BY THE MEETING**

4.1 The meeting is invited to:

- a) Note the information in this paper; and
- b) Provide information (by 8 August 2016) as necessary to improve the *Reporting Form on Air Navigation Deficiencies* at the Attachment, including:
  - i) Proposals for appropriate actions to facilitate development and implementation of CAPs;
  - ii) Updates on the progress of CAPs; and
  - iii) Updates on deficiencies that may be considered for removal from the open list including full details of the corrective actions taken.

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<b>REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE ASIA/PAC REGION</b> (Extracted from APANPIRG/26 – WP/11, Appendix D)								
Identification		Deficiencies			Corrective action			
Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action *
Meteorological observations and reports. (Annex 3, Chapter 4)	Solomon Islands AP-MET-01	Weather information is inadequate and not provided on a regular basis	1996 Confirmed 2006 SOA	Reported by airlines operating to Solomon I.	Equipment to be upgraded and arrangements to be made for regular observations.  TC expert recommendation to replace and/or calibrate MET obs. equipment AGGH – 2008.  State made aware of MET Services gaps identified by ICAO TC Project, CAEMSA-SP, in late 2008.  CAEMSA-SP Phase II plan for Donors and associated remedies.  Activation of WIFS will assist in overcoming deficiency.  AWS was installed (2012) at Honiara (Henderson), AGGH, by New Zealand, including training of Solomon Is. technical personnel in the maintenance of the equipment.  Responsibility for ongoing system calibration and verification may need to be determined.  Secure transmission of weather information to the appropriate RODB may need to be verified (noting that transmission via email to the Australian Bureau of Meteorology may not be appropriate).  [APANPIRG/25] Solomon Is. expected to address issues concerning calibration and verification of meteorological observation systems and proper/secure transmission of information.  [APANPIRG/26] Solomon Islands advised that with the assistance from the WMO and Australia (Bureau of Met), Solomon Islands is now ready to take back these responsibilities – then these deficiencies will be addressed.	Ministry of Transport, Works and Aviation, Solomon I. <i>Note: OPMET/MTF to carry out survey</i>	2011	A

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Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action *
Meteorological observations and reports. (Annex 3, Chapter 4)	Kiribati AP-MET-02	METAR from Kiribati not available on regular basis.	1998 Confirmed 2005 SIP	Reported by airlines	State’s MET authority to consider urgent action to be taken for providing regular observations and reports.  TC expert recommendation to purchase/install AWOS – 2008.  ICAO SIP conducted in 2005.  State made aware of MET Services gaps identified by ICAO TC Project CAEMSA-SP, in late 2008.  CAEMSA-SP Phase II plan for Donors and associated remedies. Activation of WIFS will assist in overcoming deficiency.  [APANPIRG/25] Kiribati requested assistance from New Zealand with respect to the supply of a new/replacement meteorological observing system. Kiribati was considering funding options for a new meteorological observing system and a full meteorological observing programme.  [APANPIRG/26] No update provided.	Directorate of Civil Aviation, Kiribati. <i>Note: OPMET/MTF to carry out survey</i>	2011	A
Reporting of information on volcanic eruptions to civil aviation units. (Annex 3, 3.6, 4.8)	Indonesia AP-MET-03	Information on volcanic activity not provided regularly to ATS units and MWOs.	1995 Confirmed by ICAO SIP mission Dec 2003	Observed by States concerned. Reported at the WMO/ICAO Workshop on Volcanic Ash Hazards (Darwin, 1995)	Three-party LOA to be signed between the MGA, DGCA and DVGHM.  Information exchange between CVGHM & ABA in draft form.  VSAT comms. installed to improve the monitoring in E Nusa Tenggara – provides direct transfer of data to CVGHM HQ full time. (AusAID-funded project).  Bilingual reporting form based on VONA to improve comm. to VAAC in Sulawesi.  [APANPIRG/25] Indonesia submitted an official report to the RO (August 2014) on corrective action taken: (a) BMKG and DGCA signed a MoU to	DGCA, MGA Indonesia	2014	A

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Identification		Deficiencies			Corrective action			
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					strengthen the dissemination of volcanic ash activity reports and to improve management of flight operations during volcanic eruptions; (b) CVGHM, NOTAM office–DGCA, MWOs and BMKG implemented a volcanic activity report dissemination system (1 May 2012) to ensure information on volcanic activity is provided regularly to ATS units and MWOs; and (c) Indonesia (BMKG, DGCA, and CVGHM) and VAAC (Darwin) held a coordination meeting (June 2014) to strengthen the coordination of volcanic ash information between Indonesia and VAAC. ICAO to validate the action taken and then inform APANPIRG on the status of the deficiency for possible removal from the Open List.  [APANPIRG/26] Future volcanic ash exercises in the APAC region would facilitate the validation of action taken with respect to provision of information on volcanic ash.			
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 and MWOs.	1995  Confirmed by ICAO SIP mission Dec 2003	Observed by States concerned. Reported at the WMO/ICAO Workshop on Volcanic Ash Hazards (Darwin, 1995)	Procedures to be set up for exchange of data between NWS, ATS and Rabaul Volcano Observatory (RVO) and a LOA to be signed  Discussion of an agreement between RVO & PNG CAA to provide volcanic information to aviation through cost recovery is underway.  [APANPIRG/25] Recent analysis of meteorological services provided in PNG (conducted by PNG, Australia and the ICAO) produced a number of recommendations for actions that would strengthen services and help rectify MET deficiencies. Future volcanic ash exercises in the APAC region would facilitate reporting of information on volcanic eruptions to civil aviation units in States concerned.  [APANPIRG/26] No update provided.	NWS, ATS PNG <i>Note: ICAO Regional Office to monitor</i>	TBD (no action plan submitted to RO)	A

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Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action *
Provision of SIGMET for volcanic ash  (Annex 3, Chapter 7; ASIA/PAC FASID Table MET 1B)	Indonesia AP-MET-06  Philippines AP-MET-07  Papua New Guinea AP-MET-08	Requirements for issuance and proper dissemination of SIGMET, including SIGMET for volcanic ash, have not been fully implemented	ICAO SIP mission Dec 2003	a) Reported by airlines b) Noted by Volcanic Ash Advisory Centres	a) ICAO to carry out a Special Implementation Project (SIP) with the primary objective to improve implementation of SIGMET procedures, especially for VA.  b) State to take urgent actions to implement the SIGMET procedures.  Note. ICAO SIP carried out in 2003, progress in issuance of SIGMET for VA is noted; the outstanding problems to be resolved within 1-year (progress reported by VAAC Darwin)  LOA between ATO, PHIVOCS & PAGASA signed in 2004 to make reporting part of information dissemination practice. LOA is undergoing periodic review (ref. letter of PAGASA dated March 12, 2008)  VAAC Darwin trained forecasters in PNG and Philippines to prepare VA SIGMET  Participated in VA SIGMET test 17 Nov 2009  SIGMET monitoring over a period of 2 months in August and September 2012 indicated that no SIGMET was received from PNG (MET SG/17, 8.4.3 & 13.9 refers).  Indonesia advised (MET SG/17) that procedures were developed for the issuance of SIGMET (WS, WV and WC) compliant with ICAO provisions and that MWO Jakarta (WIII) and MWO Ujung Pandang (WAAF) have issued SIGMET according to the requirements since April 2013.  MET SG/17 noted that validation of SIGMET receipt at RODBs and WIFS/SADIS gateways would be necessary and may require additional SIGMET monitoring and participation in SIGMET tests.	a) State’s Met authorities b) ICAO to implement the SIP. c) ICAO Regional Office to co-ordinate and monitor.	2014 (AP-MET-06), To be advised (AP-MET-07 and 08)	U

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Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action *
					<p>[APANPIRG/25] Indonesia submitted an official report to the RO (August 2014) on corrective action taken: (a) BMKG implemented national procedures for issuance of SIGMET (April 2013) at both MWOs (Jakarta/WIII and Ujung Pandang/WAAA); and (b) MWOs successfully participated in SIGMET tests. ICAO to validate the action taken and then inform APANPIRG on the status of the deficiency for possible removal from the Open List. PNG did not participate in 2013 SIGMET tests. A recent analysis of the meteorological services provided in PNG (conducted by PNG, Australia and the ICAO) produced a number of recommendations for actions that would strengthen services and help rectify MET deficiencies. Future volcanic ash exercises in the APAC region would facilitate provision of SIGMET for volcanic ash in States concerned.</p> <p>[APANPIRG/26] Philippines participated in ICAO APAC SIGMET tests in November 2014 and has since requested assistance (from ICAO) with an assessment or evaluation in order to facilitate rectification of the deficiency. Philippines participated in first ICAO APAC volcanic ash exercise (VOLPHIN15/01), which tested SIGMET issuance. Debrief of VOLPHIN15/01, including assessment of SIGMET information, will be done in September 2015 (VOLCEX/SG/2).</p>			
<p>a) Service for operators and flight crew members. (Annex 3, Chapter 9).</p> <p>b) WAFS products for flight documentation. (ASIA/PAC FASID)</p>	Cambodia AP-MET-09	<p>Briefing and flight documentation not provided as required.</p> <p>WAFS products not available</p>	1999	Airlines do not receive the required flight documentation including WAFS forecasts.	<p>States to consider urgent action for installation of SADIS VSAT for receiving WAFS products and OPMET information.</p> <p>Action plan proposed by ICAO MET mission 2003</p> <p>A TC project proposal submitted to SSCA, Cambodia</p> <p>Cambodia expects to have SADIS FTP operational</p>	State’s MET authorities	End 2011	A

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Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action *
Table MET 1A).					in 2011 and may require training from a nearby State  Cambodia informed MET SG/17 that the Secure SADIS FTP system was installed but further action was required in relation to training of personnel to use the system.  [APANPIRG/25] Specific training necessary for the personnel to provide the WAFS products for flight documentation was expected to be addressed by Cambodia.  [APANPIRG/26] No update provided.			
MWO for Phnom Penh FIR and SIGMET  (Annex 3, Chapter 3 & 7; ASIA/PAC FASID Table MET 1B)	Cambodia AP-MET-11	Requirements for meteorological watch office (MWO) to be established at Phnom-Penh international airport have not been met.		MWO not established due to lack of trained personnel and technical facilities. No SIGMET service for Phnom Penh FIR	Establishment of MWO currently not feasible. SIGMET service is provided under bilateral agreement with China to meet requirements.  A TC project proposal submitted to SSCA, Cambodia  Cambodia is in process of establishing its own MWO with target date end of 2011.  [APANPIRG/25] Bilateral arrangement with China has successfully addressed part of the deficiency (SIGMET issuance).  [APANPIRG/26] No update provided.	SSCA, Cambodia	TBD  End 2011	A
Provision of SIGMET information  (Annex 3, Chapter 7; ASIA/PAC FASID Table MET 1B)	Lao PDR AP-MET-12	Requirements for issuance and dissemination of SIGMET have not been fully implemented.	2000	SIGMET frequently not available Reported by airlines	State’s MET authority to take urgent actions to implement the SIGMET procedures.  Lao PDR has established MWO in 2010 and started issuing SIGMET since March 2011. As a result of monitoring by RODB Bangkok, LAO PDR was advised to correct noted formatting problem and to issue SIGMET on a regular basis to meet requirements.  Lao PDR is expected to issue SIGMET regularly by	State’s MET authorities	End 2011	A

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Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action *
					<p>the end of 2011. This deficiency can be considered for removal after correcting the above problems.</p> <p>SIGMET monitoring by RODB Bangkok in February 2012 failed to identify the issuance of any SIGMET by Lao PDR, indicating that the deficiency is still to be properly rectified (ROBEX WG/11, 2.1.4 refers).</p> <p>[APANPIRG/25] Lao PDR did not successfully participate in each of the three 2013 SIGMET tests. Lao PDR established a special MET Improvement Task Force to address deficiencies and is expected to report back to ICAO in due course on the status of implementation of corrective action.</p> <p>[APANPIRG/26] No update provided.</p>			
<p>Provision of SIGMET information for Kathmandu FIR.</p> <p>(Annex 3, Chapter 7; ASIA/PAC FASID Table MET 1B)</p>	Nepal AP-MET-14	Requirements for issuance and dissemination of SIGMET have not been met.	2000	Not established due to lack of technical facilities. No SIGMET service for Kathmandu FIR	<p>Issuance of SIGMET currently not feasible.</p> <p>Action being taken to have SIGMET service provided under bilateral agreement with a neighbouring country to meet immediate requirement.</p> <p>Nepal is also planning to issue its own SIGMET.</p> <p>[APANPIRG/25] Nepal informed the RO of progress: now able to issue SIGMET when necessary; training was conducted by WMO (Nov 2013); SIGMET issuance in operation (July 2013); SIGMET information transmitted to ATS units and other CA units concerned; participated in 2013 SIGMET tests. Nepal expected to submit in writing an official report to the RO providing details of the corrective action taken.</p> <p>[APANPIRG/26] No update provided.</p>	MET Authority Nepal	2014	A
MWO for Pyongyang FIR	Democratic Peoples'	Requirements for meteorological	2008	MWO not established due to	MWO established in February 2009 as reported by	General Administration	2014	A

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and SIGMET  (Annex 3, Chapter 3 & 7; ASIA/PAC FASID Table MET 1B)	Republic of Korea AP-MET-16	watch office (MWO) to be established at Pyongyang international airport have not been met.		lack of trained personnel and lack of resources. No SIGMET service for Pyongyang FIR Reported by RO mission	State.  DPRK is subsequently producing SIGMET on a regular basis and is routing SIGMET to RO DB Tokyo.  It is required for Sunan MWO to participate the APAC SIGMET test in November 2011.  This deficiency can be removed if SIGMET is continued to be issued regularly for another six months.  DPRK informed RO that SIGMET were issued in May 2013; RO to coordinate confirmation of receipt of SIGMETs at required offices.  [APANPIRG/25] DPRK to submit official report to RO providing details of corrective action taken. Validation would necessarily require SIGMET monitoring to confirm receipt at required offices. Test SIGMETs were not received from DPRK in 2013; assistance to be coordinated by ROBEX WG to resolve the communication issues.  [APANPIRG/26] No update provided.	of Civil Aviation (GACA) DPRK		
Volcanic activity information to be provided to ATS units, MWOs, and VAAC  (Annex 3, 3.6 and 4.8)	Tonga AP-MET-17	Information on volcanic activity not provided regularly to ATS units, MWOs, and VAAC	2008	Reported by TCB CAEMSA-SP technical expert	Agreement drafted for the dissemination of volcanic ash information from MLSNRKT to MTKT for distribution to ACCs, MWOs and VAACs (under consideration)  Tonga submitted official report to RO (10 May 2013) advising that MOU between the Ministry of Infrastructure (MOI) and the Ministry of Lands, Environment, Climate Change and Natural Resources (MLECCNR) signed 9 May 2013 for coordination procedures of the dissemination of detection of volcanic ash information to the appropriate ACC, VAAC and MWO.	Ministry of Transport of the Kingdom of Tonga (MTKT) Ministry of Lands, Survey and Natural Resources of the Kingdom of Tonga (MLSNRKT)	2014	U

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Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action *
					[APANPIRG/25] ICAO to validate the action taken (with assistance from VAAC Wellington) and then inform APANPIRG on the status of the deficiency for possible removal from the Open List.  [APANPIRG/26] Future volcanic ash exercises in the APAC region would facilitate the validation of action taken with respect to provision of information on volcanic ash.			
Briefing and flight documentation  (Annex 3, Chapter 9, Appendix 2 & 8)	Kiribati AP-MET-18  Nauru AP-MET-19  Solomon Islands AP-MET-20	WAFS products not accessed and therefore not available for inclusion in flight briefings and documentation	2008	Reported by TCB CAEMSA-SP Technical Expert	WAFS Internet File Service (WIFS) allows for the retrieval of WAFS forecasts for flight briefings and documentation (versus more expensive satellite dish) – available for operations since May 2010  Will seek donor ship for installation and training on WIFS as part of CAEMSA-SP Phase II  [APANPIRG/26] Solomon Islands advised that with the assistance from the WMO and Australia (Bureau of Met), Solomon Islands is now ready to take back these responsibilities – then these deficiencies will be addressed.	MET Services, TCB, Donor, ISCS Provider State	2012	U
Provision of meteorological observations  (Annex 3, 4.3.1, 4.5, 4.6)	Nauru AP-MET-21	No METAR/SPECI observing programme in place (no calibrated and maintained equipment available)	2008	Reported by TCB CAEMSA-SP Technical Expert	Automatic observing station needed as well as maintenance programme  Will seek donor for observing system and maintenance contract and/or training as part of CAEMSA-SP Phase II  [APANPIRG/26] No update provided.	MET Service, TCB, Donor	2012	U
Provision of SIGMET information  (Annex 3, Chapter 7)	Papua New Guinea AP-MET-22  Solomon Islands AP-MET-23	Lack of SIGMET issued for the Port Moresby, Honiara, and Nauru FIRs.	9/09/2011	IATA emphasized the importance of having hazards reported in this large sub-regional area that straddles the equator and	ICAO: States concerned are urged to take urgent action to seek assistance from a State in a position to do so to provide the service until such time the States concerned can provide their own SIGMET.  SIGMET monitoring over a period of 2 months in August and September 2012 indicated that no SIGMET was received (MET SG/17, 8.4.3 & 13.9			U

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Identification		Deficiencies			Corrective action			
Requirements	States/ facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action *
	Nauru AP-MET-24			deemed this situation unsafe and unacceptable to airline operations.	refers). [APANPIRG/25] Arrangement for issuance of SIGMET by PNG on behalf of Solomon Is. and Nauru has not been successful. APANPIRG/24 Conclusion 24/51 to further investigate and assess the feasibility of bilateral agreements for the provision of SIGMET. PNG did not participate in 2013 SIGMET tests. A recent analysis of the meteorological services provided in PNG (conducted by PNG, Australia and the ICAO) produced a number of recommendations for actions that would strengthen services and help rectify MET deficiencies. Future volcanic ash exercises in the APAC region would facilitate provision of SIGMET for volcanic ash in States concerned.  [APANPIRG/26] Solomon Islands advised that with the assistance from the WMO and Australia (Bureau of Met), Solomon Islands is now ready to take back these responsibilities – then these deficiencies will be addressed.			