International Civil Aviation Organization

WORKING PAPER (WP/16)

ICAO ASIA AND PACIFIC (APAC)
THIRTIETH MEETING OF THE METEOROLOGY SUB-GROUP (MET SG/30)

Bangkok, Thailand, 20 - 24 July 2026

Agenda Item 5: Planning and Monitoring

PROPOSED IMPROVEMENTS TO THE APAC ANP MET INFORMATION

(Presented by New Zealand)

SUMMARY

This paper proposes improvements to the MET information contained within the Asia-Pacific Air Navigation Plan, to reflect Annex 3 *Meteorological Services for International Air Navigation* requirements and the status of implementation of both volcanic ash advisory centre and State volcano observatory services.

1. INTRODUCTION

1.1 The Asia-Pacific Air Navigation Plan (APAC ANP) contains, across three volumes, information on the aerodrome and air navigation facilities and services (including those of a meteorological nature) and implementation planning guidance for air navigation systems and their modernisation.

1.2 There is a long-standing task within the APAC region to update Volume III of the APAC ANP, containing implementation planning guidance for air navigation systems and their modernisation.

2. DISCUSSION

Improvement of Information on Aerodrome Meteorological Service Provision

2.1 APAC ANP Volume II Table MET II-2 provides information on the meteorological services provided at APAC AOP aerodromes. The Table includes information on the requirement for the “state of the runway”, which is no longer included as an optional element in the METAR template contained within ICAO *Procedures for Air Navigation Services – Meteorology* (PANS-MET, Doc 10157).

2.2 Table MET II-2 could include further information on meteorological services at aerodromes that would be of interest to users, such as provision of aerodrome warnings and wind shear warnings. Inclusion of this information would further support the awareness and monitoring of the implementation of these meteorological services in the APAC region.

2.3 A proposed update to Table MET II-2 is provided in **Appendix A**, removing the state of the runway column, and including new columns for the provision of wind shear and aerodrome

warning information. It is also proposed to remove the "use" column, as that information is already provided in Table AOP I-1, for each aerodrome and so is therefore not necessary to repeat in Table MET II-2.

Improvement of Information on Volcanic Hazard Information Service Provision

2.4 APAC ANP Volume I paragraphs 2.3 and 2.4 indicate that, for volcanic ash advisory centres (VAACs) and State volcano observatories (SVOs), the status of implementation of volcanic ash advisories (VAAs) and volcano observatory notices for aviation (VONAs), respectively, are contained within Volume III. This is not the case.

2.5 VAACs have fully implemented VAAs for many years and are now in the process of implementing quantitative volcanic ash concentration information (QVA). The *Handbook on the International Airways Volcano Watch*[1] (Doc 9766) contains information on VAA provision (including headers and backup arrangements) along with expected QVA implementation dates. Doc 9766 is freely available, and it would be a more useful reference than APAC ANP Volume III. A proposal to update this reference is provided in **Appendix B**, along with proposed text change for APAC ANP Volume I paragraph 2.3 to reflect the new location of implementation information.

2.6 For SVOs, the implementation of VONA has only become a Recommended Practice since November 2025 (despite being a suggested template for some time). As SVOs increasingly become regular contributors of aviation information, it is more appropriate to contain such information in Volume II of the APAC ANP, due to its dynamic nature, in the same way that Meteorological Watch Offices and their SIGMET information is included in APAC ANP Volume II. It is therefore proposed to update and relocate Table MET I-1 to APAC ANP Volume II, renaming it as Table MET II-4. An updated format for this Table provided in **Appendix C**, along with proposed text change for APAC ANP Volume I paragraph 2.4 to reflect the new location of SVO designation and VONA implementation information.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) consider any further improvements to the Tables in Appendices to this paper; and

c) agree an action to progress the changes to the APAC ANP MET tables.

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[1] An update to Doc 9766 is expected to be published imminently, with updated information on QVA implementation dates, along with expanded guidance for both QVA and VONA provision and use.

APPENDIX A – Proposed Update to Table MET II-2

Deletions in ~~red strikeout~~ and additions in grey highlight.

TABLE MET II-2 - AERODROME METEOROLOGICAL OFFICES
EXPLANATION OF THE TABLE

Column

1	Name of the State where meteorological service is required
2	Name of the aerodrome (listed in Tables AOP) where meteorological service is required *Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.*
3	ICAO location indicator of the aerodrome (listed in Tables AOP)
~~4~~	~~Designation of the aerodrome (listed in Tables AOP):~~ ~~RG – international general aviation, regular use~~ ~~RS – international scheduled air transport, regular use~~ ~~RNS – international non-scheduled air transport, regular use~~ ~~AS – international scheduled air transport, alternate use~~ ~~ANS – international non-scheduled air transport, alternate use~~
~~5~~4	Name of the aerodrome meteorological office responsible for the provision of meteorological service *Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.*
~~6~~5	ICAO location indicator of the responsible aerodrome meteorological office
~~7~~6	Requirement for METAR/SPECI from the aerodrome concerned, where: Y – Yes, required N – No, not required
~~8~~	~~Requirement for information on the state of the runway provided by the appropriate airport authority to be included as supplementary information in METAR/SPECI from the aerodrome concerned, where:~~ ~~Y – Yes, required~~ ~~N – No, not required~~
~~9~~7	Requirement for trend forecast to be appended to METAR/SPECI from the aerodrome concerned, where Y – Yes, required N – No, not required
~~10~~8	Requirement for TAF from the aerodrome concerned, where T – Requirement for 12/18/24-hour validity aerodrome forecasts in TAF code (12/18/24H) X – Requirement for 30-hour validity aerodrome forecasts in TAF code (30H) N – No, not required
~~11~~9	Requirement for ~~maximum and minimum temperature (expected to occur during the period of validity of the TAF) to be included in TAF from~~ the aerodrome concerned, where: Y – Yes, required N – No, not required
10	Requirement for wind shear warnings and/or alerts for the aerodrome concerned, where Y – Yes, required N – No, not required
11	Requirement for aerodrome warnings from the aerodrome concerned, where Y – Yes, required N – No, not required
12	Availability of METAR/SPECI and TAF from the aerodrome concerned, where: F – Full availability : OPMET information as listed issued for the aerodrome all through the 24-hour period P – Partial availability: OPMET information as listed not issued for the aerodrome for the entire 24-hour period

State	Aerodrome			Responsible aerodrome meteorological office			Observations, forecasts and warnings to be provided						METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	~~Use~~	Name	ICAO Location Indicator	METAR/SPECI	~~State of the runway~~	Trend forecast	TAF	Temperature Tx/Tn	Wind shear warning	Aerodrome warnings	
1	2	3	~~4~~	~~5~~4	~~6~~5	~~7~~6	~~8~~	~~9~~7	~~10~~8	~~11~~9	10	11	12

Example (based on current APAC ANP Vol II Table MET II-2 entries for New Zealand)

State	Aerodrome		Responsible aerodrome meteorological office							METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Name	ICAO Location Indicator	METAR/SPECI	Trend forecast	TAF	Temperature Tx/Tn	Wind shear warning	Aerodrome warnings	
1	2	3	4	5	6	7	8	9	10	11	12
New Zealand	AUCKLAND INTL	NZAA	KELBURN (MET OFFICE)	NZKL	Y	N	X	N	N	N	F
	CHRISTCHURCH INTL	NZCH	KELBURN (MET OFFICE)	NZKL	Y	N	X	N	N	N	F
	WELLINGTON INTL	NZWN	KELBURN (MET OFFICE)	NZKL	Y	N	X	N	N	N	F

APPENDIX B - Proposed Update to VAAC Services Implementation Reference

Deletions in ~~red strikeout~~ and additions in grey highlight.

2.3 Volcanic Ash Advisory Centres (VAACs) **Anchorage, Darwin, Tokyo, Toulouse, Washington** and **Wellington** have been designated to prepare volcanic ash advisory information and forecasts of quantitative volcanic ash concentration information for the Asia and Pacific Regions. The status of implementation of ~~volcanic ash advisory information~~ these services ~~is~~ are detailed in the *Handbook on the International Airways Volcano Watch* (Doc 9766) ~~Volume III~~.

APPENDIX C - Proposed Update to State Volcano Observatory Table

Deletions in ~~red strikeout~~ and additions in grey highlight.

APAC ANP Volume I Proposed Edits

2.4 Selected State volcano observatories have been designated ~~for notification of~~ to provide information on significant pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash in the atmosphere for the Asia and Pacific Regions ~~to their corresponding ACC/FIC, MWO and VAAC, as indicated at Table MET I-1~~. The designated State volcano observatories, along with the status of implementation of Volcano Observatory Notice for Aviation (VONA) ~~is~~ are detailed in Volume II~~I~~.

Editorial Note: Update Table MET I-1 as below, rename as Table MET II-4 and insert into APAC ANP Volume II (below Table MET II-3), with accompanying new text as indicated below. Update ANP APAC Volume I and II Table of Contents accordingly.

APAC ANP Volume II Proposed Edits

2. GENERAL REGIONAL REQUIREMENTS

[…]

2.13 In the Asia and Pacific Regions, State volcano observatories (SVOs) have been designated to monitor active or potentially active volcanoes within a State and to provide information on volcanic activity and/or volcanic ash in the atmosphere, as indicated at **Table MET II-4**.

[…]

TABLE MET II-4
STATE VOLCANO OBSERVATORIES

Explanation of the Table

Column

1 Name of the State responsible for the provision of a volcano observatory
2 Name of the volcano observatory
3 VONA provided via aeronautical fixed services, where
Y – Yes
N – No

State	Volcano observatory	VONA provision
1	**2**	**3**
…	…	…
New Zealand	Earth Sciences NZ	Y

Editorial note – New Zealand SVO details added as example only. Initial Table entry should reflect current SVO list, with VONA dissemination confirmation as provided separately to ICAO either via official State advice or via ROBEX scheme communications.