INTERNATIONAL CIVIL AVIATION ORGANISATION

REPORT OF THE TWENTY-SECOND MEETING OF THE METEOROLOGICAL INFORMATION EXCHANGE WORKING GROUP (MET/IE WG/22)

(Bangkok, Thailand, 18 – 21 March 2024)

The views expressed in this Report are those of the Meeting and not the Organisation.

Approved by the Meeting and published by the ICAO Asia and Pacific Office, Bangkok

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HISTORY OF THE MEETING

1. Dates and venue

1.1. The ICAO Asia and Pacific (APAC) Regional Office hosted the Twenty-Second Meeting of the Meteorological Information Exchange Working Group (MET/IE WG/22) in Bangkok, Thailand, from 18 to 21 March 2024.

1.2. The Meeting included a joint session with the Eleventh Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/11) on 20 March 2024 to discuss agenda items of interest to both groups jointly.

2. Attendance

2.1. Sixty-five (65) participants attended the Meeting from twenty-two (22) States/Special Administrative Regions, including Australia, Bhutan, Brunei Darussalam, Cambodia, China, Hong Kong China, Macao China, Fiji, India, Indonesia, Japan, Lao PDR, Malaysia, New Zealand, Pakistan, Philippines, Republic of Korea, Singapore, Thailand, United States, Viet Nam, and ICAO. The list of participants is in **Appendix A**.

[Editorial note: The list of participants that attended ACSICG/11 is available on the following ICAO website: https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx]

3. Officers and Secretariat

3.1. The Meeting chair was Mr Tim Hailes, National Manager, Transport Customer Engagement, Bureau of Meteorology, Australia. Mr Marco Mang-Hin Kok, Acting Senior Scientific Officer, Hong Kong Observatory, assisted him in the role of Vice Chair of the Meeting. The Secretary for the Meeting was Mr Peter Dunda, Regional Officer Aeronautical Meteorology and Environment, ICAO APAC Office.

4. Language and Documentation

4.1. The working language of the meeting was English, including all documentation and this report. The Meeting considered twenty-seven (27) Working Papers (WPs), five (5) Information Papers (IPs) and two (2) Flimsies in the first two days of the Meeting and an additional five (5) WPs and eight (8) Information Papers in the joint sessions between MET/IE WG/22 and ACSICG/11 on the third day. The list of papers is in **Appendix B**.

5. Outcomes

Draft Conclusions, Draft Decisions and Decisions

5.1. The Meeting recorded outcomes in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

a) **Draft Conclusions:** formulated by the MET/IE WG for further consideration by the Meteorology Sub-group (MET SG), deal with matters of a technical nature and of regional applicability that, according to the MET SG's terms of reference, require the attention of States, or action by the ICAO, following established APANPIRG procedures;
b) **Draft Decisions:** formulated by the MET/IE WG for further consideration by the MET SG, relate solely to matters dealing with the internal working arrangements of APANPIRG and its contributory bodies;
c) **Decisions:** adopted by the MET/IE WG relate solely to matters dealing with the internal

working arrangements of the MET/IE WG.

5.2. The Meeting formulated two (2) Draft Conclusions and zero (0) Draft Decisions and adopted zero (0) Decisions, as indicated throughout the Report on Agenda Items below and presented in **Appendix C**:

- **Draft Conclusion MET/IE WG/22-01:** Availability and Timeliness of TAC and IWXXM Meteorological Information
- **Draft Conclusion MET/IE WG/22-02:** Review of APAC Region IWXXM Implementation Status/Readiness *[Editorial note: Draft Conclusion ACSICG/11/02 also refers: https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx]*

Action Items

5.3. Additionally, the Meeting recorded seventeen (17) new action items as indicated throughout the Report on Agenda Items below and presented in the List of Actions in **Appendix D**.

— END OF SECTION —

REPORT ON AGENDA ITEMS

1. Organisational matters

WP/01 – PROVISIONAL AGENDA (Secretariat)

1.1. The Meeting adopted the agenda as listed below:

Agenda Item 1: Organisational matters
Agenda Item 2: Review of follow-up action from previous meetings
Agenda Item 3: Quality control, monitoring and management of meteorological information exchange
Agenda Item 4: Meteorological information exchange in IWXXM form
Agenda Item 5: Meteorological information exchange in SWIM
Agenda Item 6: Guidance material related to meteorological information exchange
Agenda Item 7: Future work program and terms of reference
Agenda Item 8 (new): Joint Session of MET/IE WG/22 and ACSICG/11
Agenda Item 9 (new): Any other business
Agenda Item 10 (new): Next meeting

1.2. The meeting noted that the Secretariat and Chairs should consider how to incorporate the joint session (MET/IE WG and ACSICG) in the agenda for the next meeting. **[ACTION MET/IE WG/22-01]**

2. Review of follow-up from previous meetings

WP/02 – FOLLOW-UP ACTION FROM MET/IE WG/21 (Secretariat)

2.1. The Meeting reviewed the follow-up status of the MET/IE WG List of Actions, which included seventeen (17) new action items agreed upon at the MET/IE WG/21 meeting and twenty-five (25) unresolved action items from previous MET/IE WG meetings. The meeting proposed updates to the follow-up status of the MET/IE WG List of Actions, including closing off at least twenty-three (23) action items, as presented in **Appendix D**.

2.2. Concerning Action Item MET/IE WG/20-13, the meeting noted that the status was IN PROGRESS, and the proposed quarterly meetings of the MET/IE WG (core) members had not been convened in the previous twelve months. Considering the critical need for progress on the MET/IE WG work plan, the meeting requested that the Chairs and Secretary ensure progress on this action item.

2.3. Concerning Action Item MET/IE WG/21-04, the meeting noted that Singapore and Thailand had completed investigating the feasibility and possible timeline for conducting an IROG back-up exercise for IWXXM data and considered the status was COMPLETED. As the next step, the meeting requested that Singapore and Thailand provide an update on conducting an IROG back-up exercise for IWXXM data at the next MET/IE WG meeting. **[ACTION MET/IE WG/22-02]**

2.4. Concerning Action Item MET/IE WG/20-06, the meeting noted that, as requested, Thailand had used the latest ROBEX data provided by the Secretariat (rather than the published ROBEX Handbook) as the benchmark for OPMET monitoring and considered the status was COMPLETED. To ensure the same process is adopted for future monitoring, the meeting requested that the Secretariat reflect the above procedure in the next proposed update to the ROBEX Handbook. **[ACTION MET/IE WG/22-03]**

WP/03 – FOLLOW-UP ACTION FROM MET SG/27 (Secretariat)

2.5. The meeting reviewed the MET SG/27 outcomes, which included two (2) Draft Conclusions and one (1) Draft Decision for further consideration by the APAC Air Navigation Planning and Implementation Regional Group (APANPIRG) and two (2) Conclusions and two (2) Decisions dealing with matters under the MET SG's terms of reference. In addition, MET SG/27 recorded thirteen (13) new action items in the MET SG List of Actions. Full details are in WP/03.

2.6. Concerning Action Items MET SG/25-12 and 25-13, in which shared responsibility was attributed to MET/IE WG and MET/S WG, the meeting agreed that the proposed actions to update the ICAO Doc 9766 and coordinate space weather exercises were not within the scope of the MET/IE WG. Furthermore, considering that the MET/S WG was dissolved with Decision MET SG/27-07, the meeting proposed removing MET/S WG from the MET SG List of Actions and assigning the responsibility to the Secretariat, as presented in **Appendix E**.

2.7. Concerning Action Items MET SG/27-02 and 27-08, the meeting noted that proposed updates to the ROBEX Handbook would be presented in MET/IE WG/22, WP/19. Therefore, the meeting proposed updating the status to IN PROGRESS, as presented in **Appendix E**.

2.8. The meeting was invited to provide suggested topics for MET Seminar. The Secretariat and Chairs could consider a presentation on the new provisions for information services to facilitate implementation of the Annex 3 amendment.

WP/04 – FOLLOW-UP ACTION FROM APANPIRG/34 (Secretariat)

2.9. The meeting reviewed the APANPIRG/34 outcomes relevant to the MET/IE WG, which included three (3) Conclusions dealing with matters that require the attention of States or actions by the ICAO and one (1) Decision dealing with matters of concern only to the APANPIRG and its contributory bodies. Full details are in WP/04.

2.10. The meeting that APANPIRG/34 adopted the following Conclusions based on Draft Conclusions formulated by the MET SG:

- Conclusion 34/12 – *IWXXM version compatibility* [Draft Conclusion MET SG/27-01]
- Conclusion 34/13 – *Global Dissemination of IWXXM* [Draft Conclusion MET SG/27-03]

2.11. Concerning Conclusion 34/13, the Secretariat informed the meeting that the ICAO APAC Office would issue a State letter to request the ICAO APAC States to take the proposed regional action and an internal communication to request the ICAO headquarters to coordinate the proposed inter-regional action.

2.12. In addition, the meeting noted that APANPIRG/34 recommended that the identification, assessment and reporting of air navigation deficiencies should include consideration of the implementation of IWXXM [Ref: APANPIRG/34, Report on Agenda Item 3.5, para. 3.5.11, and Report on Agenda Item 4, para. 4.14].

2.13. To this end, the meeting noted that APANPIRG/34 considered removing the deficiency AP-MET-14, concerning the issuance and dissemination of SIGMET information for Kathmandu FIR, from the Open List subject to confirmation of the regular dissemination of the Kathmandu FIR SIGMET information in the IWXXM form (in addition to the TAC form) [Ref: APANPIRG/34, Report on Agenda Item 3.5, para. 3.5.9, and Report on Agenda Item 4, para. 4.11].

WP/05 – STATUS OF ANNEX 3 AMENDMENT PROPOSALS ARISING FROM THE FIFTH

MEETING OF THE METEOROLOGY PANEL (METP/5) ON MIE-RELATED ISSUES (Secretariat)

2.14. The meeting noted updates on the proposed amendments to ICAO Annex 3 — *Meteorological Service for International Air Navigation*, arising from the fifth meeting of the ICAO Meteorology Panel (METP/5) and the proposed amendment to Annex 3 arising from the second meeting of the ICAO Information Management Panel (IMP/2), which were previously presented in WP/16 to MET/IE WG/21.

2.15. Following the State and International Organization consultation process, the ICAO Air Navigation Commission (ANC) agreed that the proposed amendments arising from METP/5 needed to be further refined and reviewed by the ANC in 2024, which resulted in delaying the expected applicability date from November 2024 to (most likely) November 2025.

2.16. The proposed amendment to Annex 3 arising from the IMP/2, concerning the inclusion of a generic recommended practice for the supply of meteorological information via SWIM-enabled information services, was endorsed by the ANC and approved by the ICAO Council as the 81st amendment to ICAO Annex 3 and will become applicable on 28 November 2024.

2.17. The meeting noted the following applicability dates for the amendments to Annex 3:

- **Amendment 81** – 28 November 2024 (source: IMP/2): including a new Recommended Practice for providing meteorological information via SWIM-enabled information service.

- **Amendment 82** – November 2025*: proposals arising from METP/5.

2.18. Concerning Amendment 81, the meeting noted that ICAO are yet to specify details of any SWIM-enabled meteorological information services.

3. Quality control, monitoring and management of meteorological information exchange

WP/06 – DEFICIENCIES RELATED TO NON-PROVISION OF QUALITY METEOROLOGICAL INFORMATION IN IWXXM FORM (Ad Hoc Group on Deficiencies)

3.1. As discussed in WP/04 above, the meeting recalled that APANPIRG/34 recommended that the MET SG include consideration of the implementation of IWXXM when identifying, assessing and reporting air navigation deficiencies.

3.2. The meeting noted that the designated ad hoc group proposed an assessment of the IWXXM messages collected during the annual ICAO SIGMET tests and APAC RODB OPMET monitoring activities. The meeting discussed the existing performances indices (availability, regularity and compliance) and agreed to replace these with availability and timeliness. Additional criteria could include the IWXXM version and IWXXM validation statistics.

3.3. The meeting considered that, when deciding the criteria for identifying possible deficiencies in the dissemination of meteorological observations and forecasts for aerodromes in IWXXM form, it would be unnecessary to have different thresholds for the aerodromes that are and those that are not listed in the ANP AOP tables (as applied in the MET/IE WG work program to the OPMET performance indices targets).

* *Note: subject to review by the ANC in 2024.*

3.4. The meeting also considered the minimum availability and timeliness criteria for meteorological information in the IWXXM form and consulted criteria used in the European region. It was agreed that a threshold of ninety-five per cent (95%) to identify possible deficiencies. Additional criteria should be that the IWXXM messages are well formed and, where translated from TAC, properly translated. The meeting considered that consequential updates to the ROBEX Handbook would be required to facilitate the next OPMET monitoring activity and requested the ad hoc group on PIs [Ref: MET/IE WG/21 action item 07] to develop the proposed updates for review and possible approval by MET SG/28. **[ACTION MET/IE WG/22-04]**

3.5. Following the discussion above, the meeting formulated the following Draft Conclusion:

<table>
<tr><td colspan="2">Draft Conclusion MET/IE WG/22-01: Availability and Timeliness of TAC and IWXXM Meteorological Information</td></tr>
<tr><td>What: The annual OPMET monitoring activity of TAC and IWXXM information should monitor availability and timeliness of TAF and METAR messages (instead of availability, compliance and reliability), highlighting any statistics less than 95%.

Further, the MET Deficiency Identification Guide should be updated to:
• Reflect the requirement for IWXXM OPMET information dissemination
• Reflect the requirement for successful translation (where applicable)
• Identify METAR and TAF that have availability and timeliness scores of less than 95% during the monitoring period.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To support the adoption of IWXXM format meteorological information by aviation, the information must be consistently available, with quality content and sufficient timeliness to support aviation safety and efficiency.</td><td>Follow-up:
☒Required from MET SG</td></tr>
<tr><td>When: By MET SG/28</td><td>Status: To be adopted by Subgroup</td></tr>
<tr><td colspan="2">Who: MET SG Ad hoc group on deficiencies</td></tr>
</table>

WP/07 – ROC BRISBANE ISSUE WITH PRODUCTION OF RRA METAR BULLETINS (Australia)

3.6. The meeting noted an issue (reported by ROC Beijing) where the combined effect of late METAR issuance and a software error resulted in ROC Brisbane not disseminating the associated METAR bulletins to other ROCs, APAC RODBs and NOCs and other communications or meteorological offices in its area of responsibility as required. Furthermore, the ROC's analysis of the software error indicated the issue had existed for decades without being identified.

3.7. Although the ROC Brisbane has since developed a fix for the issue on its test system, given the strict software governance arrangements in the ROC, a quick fix for the operational system was impossible. Therefore, the issue may not be fully rectified before Q3 2024.

3.8. The meeting noted Australia's plan to rectify the above issue. Given the impact on the availability and timeliness of meteorological information for international aviation, the meeting requested Australia investigate quick resolution and to provide an update on the issue one month before MET SG/28 for inclusion in the MET/IE WG report to MET SG. **[ACTION MET/IE WG/22-05]**

WP/08 – Asia/Pacific Performance Indices (Thailand)

3.9. The meeting noted results of APAC OPMET monitoring conducted by the five APAC RODBs: Bangkok, Brisbane, Nadi, Singapore, and Tokyo, from 1-30 November 2023, and reported in the Performance Indices (PIs) produced by RODB Bangkok.

3.10. The monitoring was applied to OPMET in TAC and IWXXM form; however, only RODBs Bangkok and Singapore could provide data in IWXXM form to analyse and produce PIs.

3.11. The meeting noted the regional average of the three PIs (availability, compliance and regularity) for the OPMET disseminated in TAC form and received at five RODBs, as shown below:

Availability Index (AI)					
NOV 2023	RODB				
	NFFN	**RJTD**	**VTBB**	**WSSS**	**YBBN**
SA	0.05	0.96	0.96	0.96	0.96
FT	0.03	0.90	0.90	0.91	0.90

Compliance Index (CI)					
NOV 2023	RODB				
	NFFN	**RJTD**	**VTBB**	**WSSS**	**YBBN**
SA	0.03	0.89	0.89	0.89	0.89
FT	0.03	0.76	0.76	0.77	0.77

Regularity Index (RI)					
NOV 2023	RODB				
	NFFN	**RJTD**	**VTBB**	**WSSS**	**YBBN**
SA	0.04	0.89	0.90	0.89	0.89
FT	0.03	0.86	0.89	0.88	0.87

3.12. The meeting noted that local data extraction issues were attributed to the outlying, very low PIs in the data from RODB Nadi.

3.13. The meeting also noted the low PIs for OPMET disseminated in TAC form from individual aerodrome locations, as detailed in WP/08 and summarised below:

Availability index = 0 (nil report)
- METAR (SA) = 10 of 317 aerodromes (3.15%)
- TAF (FT) = 18 of 315 aerodromes (5.71%)

Availability index < 0.9
- METAR (SA) = 1 of 317 aerodromes (0.31%)
- TAF (FT) = 9 of 315 aerodromes (2.86%)

Compliance index < 0.9
- METAR (SA) = 47 of 317 aerodromes (14.83%)
- TAF (FT) = 22 of 315 aerodromes (6.98%)

3.14. The meeting noted the PIs for the OPMET disseminated in IWXXM form and received at the RODBs, as detailed in Appendix B of WP/08 and summarised below:

Availability index > 0 (report received)
- METAR (LA) = 221 of 317 aerodromes (69.71%)
- TAF (LT) = 202 of 315 aerodromes (64.13%)

3.15. There are 221 of 317 (69.71%) LA bulletins and 202 of 315 (64.13%) LT bulletins available at RODB Bangkok and RODB Singapore, respectively.

3.16. The meeting noted that RODB Bangkok's OPMET Statistics web application, used to produce the OPMET PIs, is available for States to perform monitoring on request, e.g., to validate corrective actions.

WP/09 – Analysis of IWXXM-Specific Statistics Results (Thailand)

3.17. The meeting noted IWXXM-specific statistics collected at RODB Bangkok from 1-30 November 2023 to analyse IWXXM validation, as detailed in Appendices A to D of WP/09.

3.18. As requested in MET/IE WG/21 action item 08, RODB Bangkok investigated the issue of validating IWXXM v2021-2 messages and found that most of the received IWXXM v2021-2 messages did not pass validation due to reference of AIXM profiles in the schema location where some AIXM data types were missing from the profiles. In IWXXM v3.0, validation issues were caused by the following:

- Missing required id attribute in several elements;
- Invalid attribute included in the element, for example, nil= "true";
- Incorrect element names; and
- Known issues that affect operational versions, which are described in https://github.com/wmo-im/iwxxm/wiki/Confirmed-Issues-That-May-Affect-Operational-Versions.

3.19. Australia thanked Thailand and Hong Kong, China for advising of an issue with its IWXXM data and that a fix to the issue had been deployed. Thailand confirmed that the issue had been resolved.

3.20. The meeting noted that the statistics show the IWXXM package version of the data analysed, but it would be more useful to indicate the IWXXM product version.

WP/10 – Review the Performance Indices (PIs) used in APAC OPMET Monitoring (Thailand and Ad Hoc group on PIs)

3.21. The meeting noted a review by the ad hoc group of the OPMET performance indices (PIs) used in APAC OPMET monitoring, as detailed in WP/10.

3.22. The review included PIs for availability and timeliness for METAR and TAF in TAC (SA and FT) and IWXXM (LA and LT) forms.

3.23. The meeting noted the low PIs for OPMET disseminated in TAC and IWXXM form from individual aerodrome locations, as detailed in WP/10 and summarised below:

Availability index = 0 (nil report)
- METAR (SA) = 12 of 317 aerodromes (3.79%)
- METAR (LA) = 186 of 317 aerodromes (58.69%)
- TAF (FT) = 24 of 315 aerodromes (7.62%)
- TAF (LT) = 190 of 315 aerodromes (60.32%)

Availability index < 0.9
- METAR (SA) = 1 of 317 aerodromes (0.32%)
- METAR (LA) = 1 of 317 aerodromes (0.32%)
- TAF (FT) = 10 of 315 aerodromes (3.17%)

- TAF (LT) = 0 of 315 aerodromes (0.00%)

Timeliness index = 0

- METAR (SA) = 5 of 305 aerodromes (1.64%)
- METAR (LA) = 3 of 131 aerodromes (2.29%)
- TAF (FT) = 44 of 291 aerodromes (15.12%)
- TAF (LT) = 0 of 125 aerodromes (0.00%)

Timeliness index < 0.9

- METAR (SA) = 93 of 305 aerodromes (30.49%)
- METAR (LA) = 42 of 131 aerodromes (32.06%)
- TAF (FT) = 27 of 291 aerodromes (9.28%)
- TAF (LT) = 9 of 125 aerodromes (7.20%)

3.24. The meeting also noted statistics on METAR (LA)/TAF (LT) bulletins for 131/125 aerodromes available at Bangkok RODB indicated 86/80 (65.65%/64.00%) in IWXXM Version 3.0 and 45/45 (34.35%/36.00%) in IWXXM in Version 2021-2.

3.25. The meeting supported using PIs for availability and timeliness for regular OPMET monitoring in the APAC region (Draft Conclusion MET/IE WG/22-01 refers).

WP/17 – Review of SIGMET Test 2023 (Singapore)

3.26. The meeting noted results from the APAC WS SIGMET Test conducted on 22 November 2023, as detailed in WP/17.

3.27. Of the twenty-nine States listed in the Asia/Pacific SIGMET Guide, twenty-six States participated in the WS SIGMET Test 2023. The three States/MWOs from which WS SIGMET test messages were not received were Afghanistan/Kabul (OAKB), DPR Korea/Sunan (ZKPY), and Nauru/Nauru (ANYN). The meeting noted that, to date, Afghanistan has not participated in an APAC WS SIGMET Test.

3.28. The meeting noted that the States' SIGMET test participation rate in 2023 was 90%, representing continuing improvement compared to 2022 (86%) and 2021 (79%). The reception of WS SIGMET test messages by the five Asia/Pacific RODBs and ROC London is shown below:

WS SIGMET Test 2023	RODB Bangkok	RODB Brisbane	RODB Singapore	RODB Tokyo	RODB Nadi	ROC London	Total
Number of Reception	46 of 49	47 of 49	48 of 49	49 of 49	42 of 49	48 of 49	280 of 294
Percentage of Reception	94%	96%	98%	100%	86%	98%	95%

Table 1: Asia Pacific RODBs' and ROC London's Reception of WS Test SIGMET

3.29. In addition to the WS SIGMET test messages disseminated in TAC form, the meeting noted that SIGMET test messages in IWXXM form were received from MWOs Bangkok, Brisbane, Hong Kong China, Honiara, Melbourne, Nadi, Port Moresby, Singapore, Tahiti, Taibei, Tokyo and Wellington.

3.30. The meeting noted that issues persisted in the WS SIGMET test 2023 concerning incorrect use of the priority indicator and formatting errors in the text of the test messages.

WP/18 – Results of SIGMET Tests 2023 – TC and VA (Japan)

3.31. The meeting noted results from the APAC SIGMET Tests for tropical cyclones and volcanic ash conducted on 8 and 15 November 2023, as detailed in WP/18.

3.32. Of the fifty (50) SIGMET test bulletins expected during the WC SIGMET test, thirty-nine (39) were received. The overall availability of WC test bulletins was 78.0%, the same result as in 2022 (78.0%). The meeting noted the reduction was associated with States' participation outside the APAC region. It recalled incomplete action agreed to review the non-APAC MWO participation [Ref: MET/IE WG action item 20-15].

3.33. Of the fifty-five (55) SIGMET test bulletins expected during the WV SIGMET test, forty-eight (48) were received. The overall availability of WC test bulletins was 81.8%, lower than in 2022 (87.3%). MWO Nadi did not participate in the WV SIGMET test due to the occurrence of an active TC in the Fiji region on 15 November.

3.34. As with the WS SIGMET test, the meeting noted three States from which the WC and WV SIGMET test messages were not received: Afghanistan, Kabul (OAKB); DPR Korea, Sunan (ZKPY); and Nauru, Nauru (ANYN).

3.35. In addition to the WS SIGMET test messages disseminated in TAC form, the meeting noted that SIGMET test messages in IWXXM form were received from MWOs Bangkok, Brisbane, Hong Kong China, Honiara, Melbourne, Nadi, Port Moresby, Singapore, Tahiti, Taibei, Tokyo and Wellington.

3.36. The meeting noted that some WC and WV test bulletins were duplicated, some WC and WV test bulletins were not received by all RODBs in the ASIA/PAC region, and some States issued SIGMET and advisory test messages in the IWXXM form. Still, many States are not ready to issue a test message in the IWXXM form yet.

WP/25 – IWXXM Exchange Issues with SIGMET Tests (Hong Kong, China)

3.37. The meeting noted issues in the dissemination of SIGMET test messages in IWXXM form encountered during ICAO Asia and Pacific (APAC) SIGMET tests in 2023 and considered suggested improvements for conducting SIGMET tests for IWXXM formatted SIGMETs.

3.38. While all test SIGMET messages in TAC format could be sent successfully to the five designated Regional OPMET Data Banks (RODBs) or two World Area Forecast Centres (WAFCs) in ICAO Asia and Pacific (APAC) SIGMET tests 2023, an MWO received Non-Delivery Reports (NDRs) when disseminating the SIGMET test messages in IWXXM format during the tests.

3.39. Likely, not all TAC forwarding settings used in RODBs and ROCs along the dissemination path were applicable and available for IWXXM messages, which might have resulted in the direct dissemination of IWXXM messages not being successfully sent from MWO to all the destinations as designated in the SIGMET test procedures, unlike TAC messages.

3.40. The designated destinations (RODBs and WAFCs) for the SIGMET tests might not be applicable for IWXXM formatted SIGMET exchange in daily operations, as MWOs should disseminate the IWXXM messages through ROCs or NOCs instead of sending them directly to RODBs and WAFCs. The above highlights a discrepancy between the testing procedures and the actual live operation in the dissemination of the IWXXM SIGMET message.

3.41. The test procedures in the ICAO APAC REGIONAL SIGMET TEST PROCEDURES, in particular the designated destinations for SIGMET test messages, would require review and revision to address the above-identified issues to ensure it is aligned with the operational procedures for IWXXM SIGMET dissemination, i.e., (i) MWOs sending IWXXM formatted SIGMET to ROCs only and (ii) ROCs forwarding them to RODBs.

3.42. Given the discussion above, the meeting agreed to report the problem to the ad hoc group on the SIGMET Guide to propose an update for the SIGMET test procedures in time for review by MET SG/28. **[ACTION MET/IE WG/22-06]**

WP/11 – Asia/PAC Inter-Regional OPMET Gateway Back-up Exercise between IROG Bangkok and IROG Singapore (Thailand)

3.43. The meeting noted the results of the eighteenth real-time back-up exercise conducted by IROG Singapore and IROG Bangkok on 15 September 2023, as detailed in WP/11. IROG Singapore received 579, while IROG Bangkok received 579 and transmitted 579 (100.00%) of METAR and TAF bulletins to IROG London during the test. In addition, IROG Bangkok received and relayed METAR and TAF bulletins, with an average transit time of 0.02 and 0.04 minutes, respectively.

WP/16 – Asia/PAC Inter-Regional OPMET Gateway Back-up Exercise between IROG Singapore and IROG Bangkok (Singapore)

3.44. The meeting noted the results of the sixth IROG back-up exercise between IROG Singapore and IROG Bangkok. IROG Singapore successfully routed 557 out of 557 (100%) METAR bulletins and 89 out of 89 (100%) TAF bulletins to MID/AFI during the exercise.

3.45. The exercise validated the dissemination process for notification between IROG Singapore and IROG Bangkok. The procedures for handover and takeover of responsibility are also tested to be functional in the event IROG Bangkok experiences technical problems.

WP/21 – Monitoring and Updates of Regular Exchange in China (China)

3.46. The meeting noted the status of the regular exchange of OPMET Bulletins from Thailand, Australia, Sri Lanka, Indonesia, Malaysia and India to Beijing ROC, which indicated that METAR bulletins were not being received as expected regularly from Sri Lanka, Indonesia and India. The meeting noted that Indonesia and India would follow up with China for issues on regular OPMET exchange.

IP/02 – APAC VAAC Back-up (Australia, Japan, New Zealand)

3.47. The meeting noted recent back-up tests conducted by the APAC VAACs Darwin, Tokyo and Wellington, issues encountered, system and procedural changes, and tentative dates for upcoming back-up tests.

4. Meteorological information exchange in IWXXM form

4.1. The meeting discussed the following papers: WP/12, WP/13, IP/03, IP/04 and IP/05 in the Joint Session under Agenda Item 8 (below).

WP/15 – Provision of additional aviation observations in IWXXM format (Australia)

4.2. The meeting noted how Australia provides access to IWXXM format METAR/SPECI observations for weather stations not contained within the ROBEX handbook. However, an issue was

identified when Australia attempted to create IWXXM for these non-aerodrome observations (beyond Annex 3 requirements).

4.3. IWXXM METAR/SPECI observations can only use locations included as an AirportHeliport element in AIXM. Therefore, Australia cannot fully provide all METAR/SPECI observations to the aviation industry in TAC form and IWXXM form.

4.4. The meeting noted similar issues in other States and agreed it would be beneficial for IWXXM and future SWIM services to support creation and dissemination of non-aerodrome meteorological information to the aviation industry. Therefore, the meeting requested the Secretariat and Chair to forward the outcomes of its discussion to the MET Panel for further consideration. [**ACTION MET/IE WG/22-07**]

5. Meteorological information exchange in SWIM

WP/14 – Key activities being progressed by METP WG-MIE (Australia)

5.1. The meeting noted a summary of activities being undertaken by ICAO METP WG-MIE, as detailed in WP/14, including Amendments to ICAO Annex 3, Enabling MET-SWIM Information Services, Information Service Definition and Information Service Overview, MET-SWIM Documentation, Transition from OPMET exchange to MET-SWIM, Notification of changes to IWXXM, Updates to the IWXXM Guidelines, and Other General Outcomes.

WP/26 – Proposed business functionality of APAC Common SWIM Information Services and the information to be exchanged (SWIM TF Task Lead)

5.2. The meeting noted updates on the work of the SWIM TF Task 6 team to identify the catalogue of basic data elements to be exchanged via APAC SWIM and propose business functionality to be supported by APAC Common SWIM Information Services for addressing the operational needs in APAC.

5.3. Concerning the reference to the new requirement for Quantitative Volcanic Ash (QVA), the meeting noted that supporting SWIM services would be required for the expected applicability of the QVA provisions in November 2025.

5.4. The meeting noted the need of harmonisation of the suggested APAC Common SWIM MET Information Services with the relevant global development. The meeting suggested including an introduction on the high-level functional capabilities of SWIM MET information services being developed by MET Panel, such as aerodrome observation information service, aerodrome forecast information service and quantitative volcanic ash concentration information service, in the APAC SWIM Implementation Guidance Documents being developed by SWIM TF.

Flimsy/01 – Latest development regarding WMO WIS2 and ICAO SWIM interoperability (Australia and Hong Kong China)

5.5. The meeting noted developments regarding WMO WIS2 and ICAO SWIM interoperability, including the following:

- Publishing of aviation information is one way (i.e. WIS2 to SWIM)
- Responsibility for the WIS2 node, Gateway, and SWIM message broker functions has yet to be identified

- Authorised access may be required to collect published aviation information on the WIS2 node, depending on the mutual agreement among the operators of the WIS2 node, Gateway and SWIM message broker.

6. Guidance material related to meteorological information exchange

6.1. The meeting discussed WP/27 in the Joint Session under Agenda Item 8 (below).

WP/19 – ROBEX Handbook updates (Secretariat)

6.2. The meeting noted proposals for updates to the Regional OPMET Bulletin Exchange (ROBEX) Handbook, Sixteenth Edition, as detailed in WP/19. The proposed updates were previously discussed at MET SG/27 (WP/09 and Action items MET SG/27-02 and 27-08 refer).

6.3. The proposed updates included changes to the aerodromes listed in the METAR and TAF bulletins in Table A and Table B to realign with the aerodromes where meteorological service is required, as set out in the APAC Regional Air Navigation Plan (ANP), Volume II, Table MET II-2.

6.4. The proposed updates include (1) the use of italics to indicate aerodromes not listed in the APAC ANP, Volume I, Table AOP 1-1, and (2) inclusion in the ROBEX Handbook Tables A and B, METAR and TAF bulletins, of aerodromes which were listed in the METAR bulletins but not the TAF bulletins, and vice-versa. In addition, the updates included aerodromes where meteorological service is required, according to the APAC ANP and the aerodromes were not yet included in the ROBEX Handbook Tables A and B, METAR and TAF bulletins.

6.5. The meeting noted the Secretariat did not make WP/19 available for review before the meeting. As a result, the meeting could not approve the proposed updates in addition to those already approved at MET SG/27, and, therefore, additional time would be needed to complete the review process.

6.6. The meeting requested that the secretariat incorporate other corrections provided by members within one week after the meeting and then ensure the Sixteenth Edition of the ROBEX Handbook is published within two weeks after the meeting. **[ACTION MET/IE WG/22-08]**

[Editorial note: corrections were accepted in the 16th Edition from Australia (i.e., updated focal point information), China (i.e., delete ZUXC; add ZBAD, ZUTF; change TAF bulletin for ZBSJ, ZWSH), Indonesia (i.e., add WAHI and WIMN; delete WAYY; amend availability for WITT, WADY and WAQQ; amend aerodrome name for WIEE Padang Pariaman, WADL PRAYA/Zainuddin Abdul Madjid and WAHS SEMARANG/Jenderal Ahmad Yani International), Pakistan (i.e., delete OPGD); Thailand (i.e., delete VDSR); and Vietnam (i.e., amend TAF validity for VVCR and VVTS); corrections were received but considered for further review and possible inclusion in the 17th Edition from Indonesia (i.e., delete WAKK); and Singapore (i.e., remove (RSAF) from WSAP, PAYA LEBAR (RSAF))]

6.7. The meeting noted the need to progress with publishing the proposed version (ROBEX Handbook 16th Edition, see: **Appendix F** of this Report). Any new proposed updates, including those which had been pending from agreed action at previous meetings, will be submitted for review and approval at the next meeting of the MET SG.

6.8. The meeting considered the need for better governance of the ROBEX Handbook maintenance and update process. The Secretariat should ensure the proposed updates to the ROBEX Handbook are available for consideration one month before meetings of the MET/IE WG and MET SG. Then, the approved updates are published two weeks later. The meeting agreed to reflect the above process in the MET/IE WG work plan.

6.9. The meeting noted that new proposals to update the ROBEX Handbook information should be developed and presented in time for review by the next MET SG or MET/IE WG meeting. The meeting also noted the need to review the membership of the ROBEX Handbook focal points and clarify the purpose of these contacts. **[ACTION MET/IE WG/22-09]**

6.10. On another matter, the meeting noted that the proposed amendment to Annex 3 would require dissemination of the VONA via the AFS. Therefore, the meeting requested an ad hoc group (Australia, Japan, New Zealand) to develop proposed updates to the ROBEX Handbook to facilitate the dissemination of VONA. **[ACTION MET/IE WG/22-10]**

WP/23 – ROBEX Handbook update: ROC's responsibilities for IWXXM exchange (Hong Kong China and Australia)

6.11. The meeting noted the proposed update to the ROBEX Handbook to ensure clarity of the guidance concerning the ROCs' responsibilities for the distribution of IWXXM formatted OPMET data (as specified in Conclusion MET SG/24: *IWXXM Exchange Approach* and requested in MET/IE WG/19 action item 01).

6.12. The meeting supported the proposed update detailed and presented in the Appendix of WP/23. It also requested that Australia, Hong Kong China and the Secretariat include the changes with the proposed updates to be presented for review and approval at MET SG/28. **[ACTION MET/IE WG/22-11]**

WP/24 – ROBEX Handbook update: METNO guidance (Hong Kong China and Australia)

6.13. The meeting noted the proposed update to the ROBEX Handbook for METNO guidance related to the timing of METNO message issuance and example of METNO message (as requested in MET/IE WG/21 action item 15).

6.14. The meeting supported the proposed update as detailed in WP/24 and requested Australia, Hong Kong China and New Zealand to include within the changes, distribution to IROG partners in other regions, further refinements on the contents regarding the METNO focal points (ensuring clear distinction to the purpose of the ROBEX focal points) and METNO message header to be presented for review and approval at MET SG/28. **[ACTION MET/IE WG/22-12]**

WP/22 – Facilitating the availability of Inter-Regional OPMET (China)

6.15. The meeting noted issues concerning the availability of inter-regional OPMET and frequent requests to RODBs for OPMET via RQM reports.

6.16. The meeting noted that routine requests for OPMET data should be arranged by efficiently implementing a predetermined, regular OPMET exchange. Therefore, the ROC could contact the corresponding relevant IROG to arrange the required regular reception of OPMET messages from other regions.

Flimsy/02 – Review performance indices and monitoring (Chair MET/IE WG)

6.17. The meeting noted outcomes from the breakout meeting session to review performance indices and monitoring, including a proposal to facilitate the identification of deficiencies in IWXXM dissemination, as detailed in Flimsy/02 and reproduced below:

Future Capability:

Proposed performance indices include availability, timeliness, and other IWXXM exchange metadata.

Element	TAC Monitoring	IWXXM Monitoring			
	All RODBs	RODB BANGKOK	All RODBs - Initial capability	All RODBs - Desirable capability	All RODBs - Ideal capability
Availability	Y	Y	Y	Y	Y
Successful Validation		Y			Y
Valid Translation		Y			Y
Timeliness	Y	Y		Y	Y
IWXXM Version		Y			Y
IWXXM Extension		Y			Y

Proposal:

- The deficiency ad hoc group would consider the following:
  - to determine the validity of the IWXXM, the group will consider whether IWXXM is
    - available,
    - successfully passes validation and
    - contains valid translation data (where relevant)
  - Timeliness

- MET SG will consider the above proposal (and associated thresholds) before implementation. (Draft Conclusion MET/IE WG/22-01 refers).

7. Future work program and terms of reference

WP/20 – Review MET/IE WG work program and terms of reference (Secretariat)

7.1. The Meeting reviewed the MET/IE WG terms of reference and work plan document, previously reviewed by MET SG/27, and proposed updates for MET SG/28 review. The proposed updates are presented in **Appendix G** of this Report.

8. Joint Session of MET/IE WG/22 and ACSICG/11

8.1. The ACSICG/11 meeting report, working/information papers (WP/IPs), and other documents are available on the following ICAO website:

https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx.

ACSICG/11 WP/06 – AFTN/AMHS Connection between APAC Region and Other Regions (Secretariat)

8.2. The paper summarised the status of AFTN/AMHS connection between APAC region and other regions (Europe, Mideast, Africa, North America, and South America) with reference to the information contained in ASIA/PAC ROUTING DIRECTORY and the COM Charts by EUROCONTROL AMC, which was reproduced from WP/16 of ACSICG/10. The meeting noted that the connection between Beijing and Kuwait, and between Doha and Singapore have been initiated, but suspended for some time due to unexpected factors.

ACSICG/11 IP/05 – Upgraded US to Europe Connectivity (United States)

8.3. The paper presented FAA's efforts, obstacles, and current status of replacing its current Time-Division Multiplexing (TDM) circuits to European partners with an IP network. In recognition of the coming obsolescence of TDM circuits, the FAA worked with its own service provider to procure a Multi-Protocol Label Switching (MPLS) Virtual Private Network (VPN) that would replace the current TDM circuits and shared the current progress. The meeting noted that the implementation of MPLS service between the U.S. and the U.K. will allow for additional alternate routing of the U.K.-Singapore AMHS traffic with sufficient bandwidth to carry XML based messages in the future.

ACSICG/11 WP/05 – AMHS readiness status for supporting IWXXM Traffic (Secretariat)

8.4. The paper summarised the AMHS readiness status for supporting IWXXM Traffic of the States/Administrations in APAC Region, including States/Administrations that have no AMHS in operations, to facilitate the relevant Meteorological authorities/organisations with the dissemination of IWXXM messages accordingly. As of CNS SG/27, there were 14 States/Administrations provided their status on AMHS readiness and experience for supporting IWXXM Traffic with details. Although there has been a significant increase in the AMHS readiness for supporting IWXXM Traffic, the reporting gap was still identified, States/Administrations are urged to inform ICAO APAC Regional Office on their readiness and implementation progress/plan of AMHS with FTBP as soon as possible.

8.5. The meeting updated the AMHS Readiness Table for Supporting IWXXM Traffic, provided in **Appendix H** to the Report.

ACSICG/11 WP/11 – Review of APAC IWXXM Implementation Status (Singapore)

8.6. The paper recapitulated the timeline/ roadmap and Air Traffic Service (ATS) Message Handling System (AMHS) requirements for the implementation of ICAO Meteorological Information Exchange Model (IWXXM) for the Asia and Pacific (APAC) Region. Currently, the distribution of TAC data internationally is proposed to be no longer required from 2029. Hence, APAC Region is required for full implementation of IWXXM data exchange by 2029. The paper also presented possible challenges faced by States/Administrations to implement IWXXM and to review IWXXM implementation status to gauge the readiness of APAC Region for full implementation of IWXXM data exchange.

8.7. To review IWXXM implement status to gauge the readiness of APAC Region for full implementation of IWXXM data exchange, the following Draft Conclusion was proposed and adopted by the meeting:

<table>
<tr><td colspan="2">Draft Conclusion MET/IE WG/22-02 [ACSICG/11-02] – Review of APAC Region IWXXM Implementation Status/ Readiness</td></tr>
<tr><td>What: States / Administrations provide ICAO an update on the status and readiness dates for the following:
(a) AMHS with FTBP/IHE and configuration for single body part;
(b) AMHS connection(s) will have sufficient capacity to support IWXXM exchange;
(c) when operational IWXXM information will available; and
(d) commencement of operational exchange of IWXXM with their Regional OPMET Centre (ROC), and where applicable their respective Inter-regional OPMET Gateway.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: As per Amendment 79 to Annex 3 (applicable November 2020), States/ Administrations are required to exchange meteorological information in IWXXM form.</td><td>Follow-up: ☒ Required from States</td></tr>
</table>

When: 22-Mar-24	Status: Draft to be adopted by Sub group.
Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:	

[Draft Conclusion ACSICG/11/02 also refers: icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx]

ACSICG/11 IP/04 – FAA IWXXM Implementation Status (United States)

8.8. The FAA is currently developing an AMHS SWIM Gateway (ASG) that will be implemented as an enhancement to the FAA's operational AMHS to support international exchange of XML-formatted messages encoded using the ICAO Meteorological Information Exchange Model (IWXXM). The effort and status of the ASG have been summarised in the paper. The meeting noted that it is anticipated that ASG development will be complete by Q3/2024, followed by internal testing and then external test with international partners. Operational implementation is dependent upon data production/consumption by the National Weather Service (NWS).

ACSICG/11 IP/09 – PCAA Readiness for ICAO IWXXM Implementation and AMHS Transition to SWIM (Pakistan)

8.9. The paper presented Pakistan's readiness of AMHS to support IWXXM and AMHS transition to SWIM. The meeting noted that PCAA has initiated the implementation of exchange of data in XML format to support the implementation of SWIM enable data sharing (IWXXM, AIXM and FIXM). The agreement has been reached with OEM of AMHS for the exchange of meteorological data in IWXXM. Furthermore, PCAA has already replaced Karachi-Mumbai AFTN data link with AMHS / X-400 link to support the exchange of IWXXM data. Steps to replace the existing legacy Karachi-Beijing AFTN data link with new X-400/AMHS over TCP / IP/MPLS link have been initiated.

ACSICG/11 IP/16 – AMHS & IWXXM Implementation Status (Fiji)

8.10. The paper presented the update for Fiji to implement AMHS system to enable international exchange of the ICAO Meteorological Information Exchange Model (IWXXM) data for ROBEX IWXXM with the five (5) Regional OPMET Data Bank (RODB) in the Asia/Pacific region. The AMHS & IWXXM is expected to be commissioned in December 2024 to enable the Nadi RODB to exchange ROBEX IWXXM format and perform the TAC to IWXXM translation.

ACSICG/11 IP/03 – AMHS Operation and Support of XML-Based Messages (United States)

8.11. The paper presented the current AMHS operation and its capability to support XML-based messages. AMHS and its AFTN/AMHS address header based on ASCII is a critical address to allow messages to be distributed globally and compatible with ATC automation systems. The paper analysed the future of AMHS operational requirements and AMHS to support future data distribution. The meeting was informed that AMHS is a critical element in routing messages to their intended users using globally adopted and ICAO-sanctioned AFTN addressing. Any system that plans to succeed/replace AMHS would likely need to support similar elements of AFTN address functionality.

MET/IE WG/22 WP/12 – Latest Development of IWXXM and Publication Plan (Hong Kong, China)

8.12. The meeting noted the latest developments of IWXXM and the IWXXM publication plan related to the proposed amendment to ICAO Annex 3 arising from METP/5. Given that the applicability date of the proposed amendment was delayed and expected to be in November 2025, the approval and publication of the corresponding changes to IWXXM will also be delayed.

8.13. The meeting noted that IWXXM Version 2023-1 is a maintenance release that fixed several issues in Version 2021-2 (published in November 2021), as detailed in WP/12. The changes in individual packages across IWXXM versions are indicated in the IWXXM package compatibility table[†]. The meeting noted that, in the compatibility table, if the version number of an IWXXM package has not changed or only the patched number[‡] has changed, the schemas for the package are fundamentally the same.

8.14. The meeting noted that to address the proposed amendment to ICAO Annex 3 arising from METP/5, as detailed in WP/12, the next version of IWXXM for WMO Fast Track approval procedures can be submitted by mid-2025. However, to facilitate implementing the Quantitative Volcanic Ash Concentration Information (QVA) service in IWXXM form, the WMO Task Team on Aviation Data (TT-AvData) decided to publish a release candidate of the upcoming version, IWXXM 2025-2RC1, for public consultation and WAFC trials from March to September 2024.

8.15. The meeting noted that ICAO METP WG-MIE and WMO Task Team on Aviation Data (TT-AvData) are working together to establish a formal communications process aligned with AIRAC cycles for future versions and releases of IWXXM to ensure that there is improved awareness of new IWXXM releases. WMO TT-AvData has been requested to set up a subscription service to notify users (ANSPs, MSPs, airlines) of changes to IWXXM. The meeting noted the significant number of IWXXM versions in use and backward compatibility and deprecation issues that may require policy-related action. The Chair advised that this work is being progressed within the METP WG-MIE. The meeting also noted the benefits of a notification service to increase awareness of the new releases of IWXXM.

MET/IE WG/22 WP/27 – RELEASE OF IWXXM GUIDELINES VERSION 5 (Australia)

8.16. The meeting noted that the METP WG MIE approved the updated ICAO document *Guidelines for the Implementation of OPMET data exchange using IWXXM*, Version 5, to assist States with implementing IWXXM. The document has been published on the ICAO APAC Office e-Documents web page, https://www.icao.int/APAC/Pages/eDocs.aspx, for at least five years. The meeting requested the Secretariat to consider publishing the Guidelines on the CNS section of the ICAO APAC Office eDocuments webpage to increase awareness of the guidelines and ensure only the latest version is accessible to the communications experts. **[ACTION MET/IE WG/22-13]**

8.17. The meeting noted that *Appendix A: AMHS Profile Information to Support IWXXM Exchange* and *Appendix B: Sample Tests for National OPMET Centres to Conduct when Introducing IWXXM* of the above document should be useful for establishing communication systems when implementing IWXXM.

MET/IE WG/22 WP/13 – Enabling the Reliable and Global Exchange of IWXXM (Australia and Hong Kong, China)

8.18. The meeting noted that intra- and inter-regional IWXXM exchange needed to be increased to support the required global availability of meteorological information in the IWXXM form. As indicated in the ICAO *Guidelines for the Implementation of OPMET Data Exchange using IWXXM*, IWXXM exchange depends on the availability of AMHS networks with FTBP and IHE.

8.19. Gaps in the network available and capable of exchanging IWXXM messages intra- and inter-regionally (i.e., between the National OPMET Centres (NOCs), Regional OPMET Centres

[†] Reference for the existing IWXXM versions: https://github.com/wmo-im/iwxxm/wiki/Package-Compatibility

[‡] IWXXM packages are identified by its version number in the form of MAJOR.MINOR.PATCH. See https://github.com/wmo-im/iwxxm/wiki/Common-approaches-accross-exchange-models#version-policy for details.

(ROCs) and Inter-regional OPMET Gateways (IROGs)), hinder the global availability of meteorological information in IWXXM form, inhibit system suppliers and users from switching to IWXXM and delay the realisation of benefits from the implementation of IWXXM.

8.20. The meeting noted discussions on the above issues at MET/IE WG/21, MET SG/27 and CNS SG/27 had resulted in APANPIRG/34 adopting Conclusion APANPIRG/34/13: *Global Dissemination of IWXXM*. Conclusion APANPIRG/34/13 requested the (APANPIRG) Subgroups, APAC States, ICAO APAC Office and ICAO PIRGs to expedite the implementation of network circuits and communication services necessary to enable the required global dissemination of meteorological information in IWXXM form.

8.21. Conclusion APANPIRG/34/13 specified the need to support IWXXM exchange intra-regionally and inter-regionally between IROGs in the ICAO APAC and AFI, MID, NAM and SAM Regions by establishing AMHS circuits with FTBP and IHE, including back-up paths for redundancy purposes.

8.22. As detailed in WP/13, the meeting noted that AMC Charts for the APAC region (December 2023) showed gaps in the International Messaging Network's reported capability to support the IWXXM exchange. In addition, information from the ICAO EUR Region indicated that only twenty-five per cent (25%) approx. of the OPMET exchanged globally was available in IWXXM form.

8.23. The meeting further noted that inter-regional IWXXM exchange requires at least one capable route between two regions, and for a reliable service, at least two routes should be available. The meeting noted that, for the APAC region, inter-regional IWXXM exchange, with back-up procedures in place, is only operational between APAC and EUR, as indicated in the Online Register of APAC IWXXM Exchange Status.

8.24. Although inter-regional AMHS circuits were reported as being available for most of the Region pairs listed in the AMC Charts (above), the meeting noted several reasons, as detailed in WP/13, for not enabling IWXXM exchange over inter-regionally AMHS-capable circuits.

8.25. The meeting also noted that the standard alternate routing applied for primary link failures in communication centres worldwide will only work for IWXXM messages if the alternate/secondary link is AMHS with FTBP capable. The meeting agreed that a group of operational communications experts (comprising members from AUS, FJI, HKG, SGP and USA) will develop educational material to manage the distribution of IWXXM information when primary AMHS link failure occurs. **[ACTION MET/IE WG/22-14]** *[Editorial note: ACSICG/11 action item 11-2 also refers: https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx]*

8.26. To support the expedited implementation of capable primary and, where relevant, secondary networks to support the exchange of IWXXM, the meeting considered the benefits of developing a checklist of steps to facilitate operational IWXXM exchange as a reference for States and members of the meeting.

8.27. The meeting agreed that a group of communications and meteorology experts (members from Australia, Fiji, Hong Kong China and Singapore) should develop a checklist of steps to facilitate operational IWXXM exchange. **[ACTION MET/IE WG/22-15]** *[Editorial note: ACSICG/11 action item 11-3 also refers: https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx]*

Draft Checklist items:

- P1 AMHS connection/s available to States offering neighbouring Regional OPMET Centres (ROCs) and where relevant Inter-regional OPMET Gateways
- P3 to P1 connection at each end of the link to support IWXXM exchange

- FTBP/IHE and configuration for a single body part enabled
- sufficient capacity of the link to support the IWXXM exchange
- IWXXM being generated
- Agreement to operationally exchange IWXXM

8.28. The meeting anticipated that the checklist could form part of the educational material supporting IWXXM implementation and be included in the ICAO State letter associated with Draft Conclusion MET/IE WG/22-02 [ACSICG/11-02].

MET/IE WG/22 IP/03 – Status and plans for IWXXM implementation in the Republic of Korea (Republic of Korea)

8.29. The meeting noted the status and plans for IWXXM implementation in the Republic of Korea. The meteorological service provider implemented IWXXM version 3.0 on 5 November 2020 and, since 20 December 2023, has implemented version 2023-1 in a pre-operational phase. The Civil Aviation Authority for communication has established the AMHS-capable connection, and the meteorological service provider plans to test the AMHS connections to other NOCs and ROCs, after which the Republic of Korea will update the Online Register of APAC IWXXM Exchange Status.

MET/IE WG/22 IP/04 – Status and plans for implementation of IWXXM in Thailand (Thailand)

8.30. The meeting noted the status and plans for implementing IWXXM in Thailand.

MET/IE WG/22 IP/05 – Progress and plans of IWXXM implementation and application in China (China)

8.31. The meeting noted progress and plans for implementing and applying IWXXM in China.

Presentation – AMHS/SWIM gateway progress and FF-ICE migration plans (SWAMWAY)

8.32. SWAMWAY presented progress on the AMHS/SWIM Gateway and plans for FF-ICE migration. *[Editorial note: Discussion of the presentation is available in the Report of the ACSICG/11: https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx]*

Future MET/IE WG and ACSICG joint meeting sessions

8.33. The meeting participants noted the value of conducting the joint session and supported future joint meeting sessions. There was also some discussion about the duration of the joint session, and the meeting agreed that the Secretariat and Chairs should consider this matter further and possibly prioritise the materials presented and discussed in the joint session. **[ACTION MET/IE WG/22-16]**

9. Any other business

9.1. The meeting noted disappointment that many meeting papers were not available in accordance with the terms of reference of the MET/IE WG. Moving forward, the meeting agreed that States should expect routine meeting papers to be available in accordance with the terms of reference. Where a paper is submitted late the acceptance of the paper will be at the discretion of the Chairs following consultation with the author. Further, the meeting agreed to review the timeliness of papers at future meetings [**ACTION MET/IE WG/22-17**]

10. Next Meeting

10.1. The Meeting proposed the following tentative dates for the next Meeting of the MET/IE WG:

- 31 Mar-03 April* 2025 (aligned with the ACSICG)

  *[*Editorial note: In discussion after the meeting concluded, the Secretariat and Chairs of MET/IE WG and ACSICG revised the proposed dates for the next meeting as follows: 24-28 March 2025]*

— END OF SECTION —

APPENDIX A — List of participants

MET/IE WG/22

NAME	TITLE/ORGANIZATION	E-MAIL
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Mr. Yous Sakeda	Chief of Aeronautical Meteorological Bureau, ASD Department	sakeda.yous@gmail.com;
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Ms. Xiao Zhang	Engineer, North China Regional Air Traffic Management bureau of CAAC	932976278@qq.com;
Ms. Juan Zou	Meteorologist, Air Traffic Management Bureau. CAAC	zoujuan@atmb.net.cn;
Ms. Shan CAO	Senior Engineer, Aviation Meteorological Centre, ATMB, CAAC	caoshansh@163.com;
HONG KONG CHINA (2)		
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ACSICG/11 participants in the joint session Ref: https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx

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APPENDIX B — List of papers

MET/IE WG/22

Number	Agenda	Subject	Presented by
		WORKING PAPERS	
WP/01	1	Provisional Agenda	Secretariat
WP/02	2	Follow-Up Action from MET/IE WG/21	Secretariat
WP/03	2	Follow-Up Action from MET SG/27	Secretariat
WP/04	2	Follow-Up Action from APANPIRG/34	Secretariat
WP/05	2	Status of Annex 3 Amendment Proposals Arising from the Fifth Meeting of the Meteorology Panel (METP/5) on MIE-Related Issues	Secretariat
WP/06	3	Deficiencies Related to Non-Provision of Quality Meteorological Information in IWXXM Form	Ad Hoc Group on Deficiencies
WP/07	3	ROC Brisbane Issue with Production of RRA METAR Bulletins	Australia
WP/08	3	Asia/Pacific Performance Indices	Thailand
WP/09	3	Analysis of IWXXM-Specific Statistics Results	Thailand
WP/10	3	Review the Performance Indices (PIs) Used in APAC OPMET Monitoring	Thailand and PI Ad Hoc group
WP/11	3	Asia/PAC Inter-Regional OPMET Gateway Back-Up Exercise between IROG Bangkok and IROG Singapore	Thailand
WP/12	4	Latest Development of IWXXM and Publication Plan	Hong Kong, China
WP/13	4	Enabling the Reliable and Global Exchange of IWXXM	Hong Kong, China
WP/14	5	Key Activities Being Progressed by METP WG-MIE	Australia
WP/15	4	Provision of Additional Aviation Observations in IWXXM Format	Australia
WP/16	3	ASIA/PAC Inter-Regional OPMET Gateway Backup Exercise Between IROG Singapore and IROG Bangkok	Singapore
WP/17	3	Review of SIGMET Test 2023	Singapore
WP/18	3	Results of SIGMET Tests 2023 – TC and VA	Japan
WP/19	6	ROBEX Handbook Updates	Secretariat
WP/20	7	Review MET/IE WG Work Program and Terms of Reference	Secretariat
WP/21	3	Monitoring and Updates of Regular Exchange in China	China
WP/22	6	Facilitating the Availability of Inter-Regional OPMET	China
WP/23	6	ROBEX Handbook Update – ROC's Responsibilities for IWXXM Exchange	Hong Kong China and Australia
WP/24	6	ROBEX Handbook Update - METNO Guidance	Hong Kong China and Australia
WP/25	3	IWXXM Exchange Issues with SIGMET Tests	Hong Kong, China
WP/26	5	Proposed Business Functionality of APAC Common SWIM Information Services and the Information to Be Exchanged	SWIM TF Task Lead
WP/27	6	Release Of IWXXM Guidelines Version 5	Australia
		INFORMATION PAPERS	

Number	Agenda	Subject	Presented by
IP/01	1	Meeting Bulletin	Secretariat
IP/02	3	APAC VAAC Back-up	Australia, Japan, New Zealand
IP/03	4	Status and Plans for IWXXM Implementation in the Republic of Korea	Republic of Korea
IP/04	4	Status and Plans for Implementation of IWXXM in Thailand	Thailand
IP/05	4	Progress and Plans of IWXXM Implementation and Application in China	China
		FLIMSY	
Flimsy/01	5	Latest development regarding WMO WIS2 and ICAO SWIM Interoperability	Australia
Flimsy/02	3	Review Performance Indices and Monitoring	Chair MET/IE WG

ACSICG/11 papers discussed in the joint session
(Ref: https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx)

Number	Subject	Presented by
	WORKING PAPERS	
WP/05	Upgraded US to Europe Connectivity	Secretariat
WP/06	AFTN/AMHS Connection between APAC Region and Other Regions	Secretariat
WP/11	Review of APAC IWXXM Implementation Status	Singapore
	INFORMATION PAPERS	
IP/03	AMHS Operation and Support of XML-Based Messages	United States
IP/04	FAA IWXXM Implementation Status	United States
IP/05	Upgraded US to Europe Connectivity	United States
IP/09	PCAA Readiness for ICAO IWXXM Implementation and AMHS Transition to SWIM	Pakistan
IP/16	AMHS & IWXXM Implementation Status	Fiji

— END OF SECTION —

APPENDIX C — Draft Conclusions, Draft Decisions and Decisions

Draft Conclusion MET/IE WG/22-01: Availability and Timeliness of TAC and IWXXM Meteorological Information	
What: The annual OPMET monitoring activity of TAC and IWXXM information should monitor availability and timeliness of TAF and METAR messages (instead of availability, compliance and reliability), highlighting any statistics less than 95%. Further, the MET Deficiency Identification Guide should be updated to: • Reflect the requirement for IWXXM OPMET information dissemination • Reflect the requirement for successful translation (where applicable) • Identify METAR and TAF that have availability and timeliness scores of less than 95% during the monitoring period.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To support the adoption of IWXXM format meteorological information by aviation, the information must be consistently available, with quality content and sufficient timeliness to support aviation safety and efficiency.	Follow-up: ☒Required from MET SG
When: By MET SG/28	Status: To be adopted by Subgroup
Who: MET SG Ad hoc group on deficiencies	

Draft Conclusion MET/IE WG/22-02: Review of APAC Region IWXXM Implementation Status/ Readiness	
What: States / Administrations provide ICAO an update on the status and readiness dates for the following: a) AMHS with FTBP/IHE and configuration for single body part; b) AMHS connection(s) will have sufficient capacity to support IWXXM exchange; c) when operational IWXXM information will available; and d) commencement of operational exchange of IWXXM with their Regional OPMET Centre (ROC), and where applicable their respective Inter-regional OPMET Gateway.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: As per Amendment 79 to Annex 3 (applicable November 2020), States/ Administrations are required to exchange meteorological information in IWXXM form.	Follow-up: ☒Required from MET SG
When: 22-Mar-24	Status: To be adopted by Subgroup
Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:	

[Draft Conclusion ACSICG/11/02 also refers: https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx**]**

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APPENDIX D — List of Actions (MET/IE WG)

MET/IE WG – LIST OF ACTIONS

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

New action items recorded by MET/IE WG/22

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/ REMARKS
MET/IE WG/22 **01**	**MET/IE WG meeting – agenda** Consider incorporating the joint session (MET/IE WG and ACSICG) in the MET/IE WG meeting agenda. [Ref: Report of MET/IE WG/22, para. 1.2.]	3 months before MET/IE WG/23	Secretariat and Chairs	**TO COMMENCE**
MET/IE WG/22 **02**	**IROG backup exercise – IWXXM data** Provide an update on conducting an IROG backup exercise for IWXXM data. [Ref: Report of MET/IE WG/22, para. 2.3.]	1 month before MET/IE WG/23	Singapore and Thailand	**TO COMMENCE**
MET/IE WG/22 **03**	**ROBEX Handbook updates – procedure for OPMET monitoring** Include the procedure for obtaining the latest ROBEX data, i.e., from the Secretariat (rather than from the published ROBEX Handbook) for use as the benchmark for OPMET monitoring, in the next proposed update to the ROBEX Handbook. [Ref: Report of MET/IE WG/22, para. 2.4.]	1 month before MET SG/28	Secretariat	**TO COMMENCE**
MET/IE WG/22 **04**	**ROBEX Handbook updates – criteria for IWXXM monitoring** Develop consequential updates to the ROBEX Handbook to facilitate OPMET monitoring to identify IWXXM dissemination that does not meet availability and timeliness thresholds of ninety-five per cent (95%) and additional criteria to ensure the messages are well-formed and (where translated from TAC) properly translated. [Ref: Report of MET/IE WG/22, para. 3.4.]	1 month before MET SG/28	Ad hoc group on Performance Indicators (PIs) [Ref: MET/IE WG/21 action item 07]	**TO COMMENCE**
MET/IE WG/22 **05**	**METAR bulletin dissemination – resolving the issue at ROC Brisbane** Investigate a quick resolution to the METAR bulletin dissemination issue at ROC Brisbane (as presented in MET/IE WG/22 WP/07) and provide an update for inclusion in the MET/IE WG report to MET SG. [Ref: Report of MET/IE WG/22, para. 3.8.]	1 month before MET SG/28	Australia	**TO COMMENCE**
MET/IE WG/22 **06**	**SIGMET Guide updates – SIGMET test procedures for IWXXM** a) Report the problem concerning the dissemination of SIGMET test messages in IWXXM form (as presented in MET/IE WG/22 WP/25) to the ad hoc group on the SIGMET Guide, and b) propose an appropriate update to the SIGMET test procedures in the SIGMET Guide to address the IWXXM test message issues. [Ref: Report of MET/IE WG/22, para. 3.42.]	a) Apr 2024, b) 1 month before MET SG/28	a) Secretariat, and b) ad hoc group on the SIGMET Guide	**TO COMMENCE**
MET/IE WG/22 **07**	**IWXXM dissemination – issues for non-ROBEX locations** Forward the MET/IE WG/22 discussion outcomes concerning the issue of disseminating METAR/SPECI in the IWXXM form for weather stations not listed in the ROBEX handbook (as presented in MET/IE WG/22 WP/15) to the MET Panel for further consideration. [Ref: Report of MET/IE WG/22, para. 4.4.]	April 2024	Secretariat and Chair	**TO COMMENCE**
MET/IE WG/22 **08**	**ROBEX Handbook updates – publishing the Sixteenth Edition** a) Incorporate corrections to the proposed ROBEX Handbook updates (as presented in MET/IE WG/22 WP/19) as provided by MET/IE WG/22 members, and b) publish the Sixteenth Edition of the ROBEX Handbook. [Ref: Report of MET/IE WG/22, para. 6.6.]	a) 29 Mar 2024, b) 5 Apr 2024	a) Secretariat and MET/IE WG/22, b) Secretariat	**COMPLETED** ~~**TO COMMENCE**~~
MET/IE WG/22 **09**	**ROBEX Handbook updates – focal points** Review the membership of the ROBEX Handbook focal points and clarify the purpose of these contacts; propose appropriate updates to the ROBEX Handbook. [Ref: Report of MET/IE WG/22, para. 6.10.]	1 month before MET SG/28	Secretariat	**TO COMMENCE**
MET/IE WG/22 **10**	**ROBEX Handbook updates – VONA dissemination** Develop proposed updates to the ROBEX Handbook to facilitate the dissemination of VONA via the AFS, as required by the proposed amendment to Annex 3. [Ref: Report of MET/IE WG/22, para. 6.11.]	1 month before MET SG/28	Ad hoc group (NZL, AUS, JPN)	**TO COMMENCE**
MET/IE WG/22 **11**	**ROBEX Handbook updates – ROC IWXXM exchange** Include the changes concerning ROC responsibilities for IWXXM exchange (as presented in MET/IE WG/22 WP/23) with the next proposed updates to the ROBEX Handbook. [Ref: Report of MET/IE WG/22, para. 6.13.]	1 month before MET SG/28	Secretariat, AUS and HKG	**TO COMMENCE**

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/ REMARKS
MET/IE WG/22 **12**	**ROBEX Handbook updates – METNO guidance** Include within the proposed changes (as presented in MET/IE WG/22 WP/24), distribution to IROG partners in other regions, further refinements on the contents regarding the METNO focal points (ensuring clear distinction to the purpose of the ROBEX focal points) and METNO message header with the next proposed updates to the ROBEX Handbook. [Ref: Report of MET/IE WG/22, para. 6.15.]	1 month before MET SG/28	HKG, NZL and AUS	**TO COMMENCE**
MET/IE WG/22 **13**	**IWXXM Guidelines document – availability on ICAO APAC website** Consider publishing the *Guidelines for the Implementation of OPMET data exchange using IWXXM*, Version 5, on the CNS section of the ICAO APAC Office eDocuments webpage. [Ref: Report of MET/IE WG/22, para. 8.16.]	April 2024	Secretariat	**TO COMMENCE**
MET/IE WG/22 **14**	**IWXXM distribution – guidance when primary AMHS fails** Develop educational material on managing the distribution of IWXXM information when primary AMHS link failure occurs. [Ref: Report of MET/IE WG/22, para. 8.25.]	1 month before MET/IE WG/23	Ad hoc group (AUS, FJI, HKG, SGP and USA)	**TO COMMENCE**
MET/IE WG/22 **15**	**IWXXM operational exchange – checklist** Develop a checklist of steps required to facilitate operational IWXXM exchange. [Ref: Report of MET/IE WG/22, para. 8.27.]	1 month before MET/IE WG/23	Ad hoc group (AUS, FJI, HKG and SGP)	**TO COMMENCE**
MET/IE WG/22 **16**	**MET/IE WG and ACSICG joint session – duration and discussion** Consider the duration of and prioritise the materials presented and discussed in the joint session (MET/IE WG and ACSICG) at future meetings. [Ref: Report of MET/IE WG/22, para. 8.33.]	3 months before MET/IE WG/23	Secretariat and Chairs	**TO COMMENCE**
MET/IE WG/22 **17**	**MET/IE WG meeting – timeliness of papers** Review the timeliness of availability and submission of papers at future MET/IE WG meetings [Ref: Report of MET/IE WG/22, para. 9.1.]	MET/IE WG/23	Secretariat and Chairs	**TO COMMENCE**

Unresolved action items recorded by MET/IE WG/21

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/ REMARKS
MET/IE WG/21 **01**	Amend the MET/IE WG meeting agenda as follows: a) Remove the agenda item titled "Meteorological information exchange schemes"; and b) Add a new agenda item on "SWIM". [Ref: MET/IE WG/21 Report, para 3.1] Ref: MET/IE WG/22, provisional agenda	MET SG/27	Secretariat and Chairs	**COMPLETED** ~~**TO COMMENCE**~~
MET/IE WG/21 **02**	The meeting requested IROGs to provide updates for each of the interregional circuits in the IWXXM online register. [Ref: MET/IE WG/21 Report, para 4.13] Ref: MET/IE WG/22, WP/13	MET SG/27	APAC IROGs	**IN PROGRESS** ~~**TO COMMENCE**~~
MET/IE WG/21 **03**	Publish the link to the online register of APAC IWXXM exchange status on the ICAO APAC Office, "eDocuments", website. [Ref: MET/IE WG/21 Report, para 4.16]	MET SG/27	Secretariat	**COMPLETED** ~~**TO COMMENCE**~~
MET/IE WG/21 **04**	Investigate the feasibility and possible timeline for conducting an IROG backup exercise for IWXXM data. [Ref: MET/IE WG/21 Report, para 5.3] Ref: MET/IE WG/22, action item 22-02; update to be provided at the next MET/IE WG meeting	MET/IE WG/22	Singapore and Thailand	**COMPLETED** ~~**TO COMMENCE**~~
MET/IE WG/21 **05**	Submit a paper to the ACSICG proposing action to facilitate the establishment of redundant paths (primary circuit and backup paths) in consultation with the counterpart in other Regions to support the reliable implementation of Annex 3 IWXXM provisions globally. [Ref: MET/IE WG/21 Report, para 5.7] Ref: ACSICG/10, WP/17 Ref: Draft Conclusion ACSICG/10/05 - GLOBAL DISSEMINATION OF IWXXM Ref: MET SG/27, WP/25 – OUTCOMES OF CNS SG/27	ACSICG/ 10	Secretariat and Chairs	**COMPLETED** ~~**TO COMMENCE**~~

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/ REMARKS
MET/IE WG/21 **06**	Submit a paper to the ACSICG proposing a conjoint meeting session of the MET/IE WG and ACSICG in 2024. [Ref: MET/IE WG/21 Report, para 5.7] Ref: ACSICG/10, WP/17	ACSICG/ 10	Secretariat and Chairs	**COMPLETED ~~TO COMMENCE~~**
MET/IE WG/21 **07**	Review the Performance Indices (PIs) used in APAC OPMET monitoring, and consider monitoring the timeliness of IWXXM messages. [Ref: MET/IE WG/21 Report, para 5.10, and MET/IE WG/20 action item 05] Ref: MET/IE WG/22, WP/10	MET/IE WG/22	Ad hoc group: Thailand (lead), Secretariat, Chairs, New Zealand, Hong Kong China and Australia	**COMPLETED ~~TO COMMENCE~~**
MET/IE WG/21 **08**	Provide the MET/IE WG with further advice on the problems identified in APAC OPMET monitoring in validating IWXXM v2021-2 form. [Ref: MET/IE WG/21 Report, para 5.14] Ref: MET/IE WG/22, WP/09	MET/IE WG/22	Thailand	**COMPLETED ~~TO COMMENCE~~**
MET/IE WG/21 **09**	Include the following updates in the ROBEX Handbook, Fifteenth Edition: a) Remove the requirement to indicate the RODB responsible for storing the METAR and TAF bulletins in bold text in Appendix A and B; b) Correct the references to IWXXM TAF bulletins from "LC" to "LT" in para. 13.3.1.1 and Appendix D, para. 2.1.1; and c) Include updates in Appendices A and B to reflect the changes to the METAR and TAF bulletins SAPK31 and FTPK31, as requested by Pakistan by email to ICAO. [Ref: MET/IE WG/21 Report, para 6.3] Ref: ROBEX HB 15th Ed.	ASAP	Secretariat	**COMPLETED ~~TO COMMENCE~~**
MET/IE WG/21 **10**	Include the updates to Appendix A of the ROBEX Handbook, Fifteenth Edition, as proposed by China and presented in Appendix F of the MET/IE WG/21 Report. [Ref: MET/IE WG/21 Report, para 6.8] Ref: ROBEX HB 15th Ed.	ASAP	Secretariat	**COMPLETED ~~TO COMMENCE~~**
MET/IE WG/21 **11**	Include the aerodrome updates in the ROBEX Handbook, Fifteenth Edition, as proposed by New Zealand and presented in Appendix F of the MET/IE WG/21 Report. [Ref: MET/IE WG/21 Report, para 6.11] Ref: ROBEX HB 15th Ed.	ASAP	Secretariat	**COMPLETED ~~TO COMMENCE~~**
MET/IE WG/21 **12**	Incorporate the changes to Table B format (as proposed by New Zealand in MET/IE WG/21, WP/12, and subject to the minor change suggested by the Meeting) in the proposal for updates to follow the publication of the ROBEX Handbook, Fifteenth Edition. [Ref: MET/IE WG/21 Report, para 6.11]	MET/IE WG/22	Secretariat	**TO COMMENCE**
MET/IE WG/21 **13**	Include the proposed updates in the ROBEX HANDBOOK, Fifteenth Edition, as proposed by Hong Kong, China and presented in Appendix F of the MET/IE WG/21 Report. [Ref: MET/IE WG/21 Report, para 6.12-6.14] Ref: ROBEX HB 15th Ed.	ASAP	Secretariat	**COMPLETED ~~TO COMMENCE~~**
MET/IE WG/21 **14**	Include the proposed updates in the ROBEX HANDBOOK, Fifteenth Edition, as proposed by Thailand and presented in Appendix F of the MET/IE WG/21 Report. [Ref: MET/IE WG/21 Report, para 6.15-6.17] Ref: ROBEX HB 15th Ed.	ASAP	Secretariat	**COMPLETED ~~TO COMMENCE~~**

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/ REMARKS
MET/IE WG/21 **15**	Keep abreast of the METP developments on METNO procedures and develop a proposal to improve the METNO procedure in the APAC ROBEX Handbook. [Ref: MET/IE WG/21 Report, para 6.19] MET/IE WG/20-09: Develop updates to the ROBEX Handbook, Appendix E – *Procedure and Format of METNO bulletin for APAC ROBEX Bulletins* to clarify the procedures concerning the general area designator in the METNO Header (in paragraph 2.2.) and the responsibilities for issuing METNO messages. *[Ref: Report of MET/IE WG/20, para. 6.4.]* Ref: MET/IE WG/22, WP/24	MET SG/27	Secretariat, Chair, Vice Chair and METNO focal points and invited the RODBs Secretariat and ROBEX Focal Points from Australia, Hong Kong, China, Japan and Singapore	**COMPLETED ~~TO COMMENCE~~**
MET/IE WG/21 **16**	Contact the listed members that were not in attendance at MET/IE WG/21 to confirm their membership status on the MET/IE WG [Ref: MET/IE WG/21 Report, para 7.2]	MET SG/27	Secretariat	**TO COMMENCE**
MET/IE WG/21 **17**	Include the IWXXM-specific statistics, such as IWXXM versions, in future SIGMET test results. [Ref: MET/IE WG/21 and MET/S WG/13 Conjoint Session Report, para 2.12] Ref: MET/IE WG/22, WP/09	MET/IE WG/22	Thailand, in coordination with the SIGMET test focal points (Japan and Singapore)	**COMPLETED ~~TO COMMENCE~~**

Unresolved action items recorded by MET/IE WG/20

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/ REMARKS
MET/IE WG/20 **01**	Follow up with Australia on opportunities to combine the ICAO APAC 2022 Webinar on Space Weather and Australia and New Zealand's 2022 Space Weather Exercise. *[Ref: Report of MET/IE WG/20, para. 2.10.]*	Before MET SG/27	Secretariat, in coordination with participants from Australia	**COMPLETED ~~IN PROGRESS~~**
MET/IE WG/20 **02**	Coordinate the consequential amendments to the **(a)** ANP (Volume II, Table MET II-2 – Aerodrome Meteorological Offices) and the **(b)** ROBEX Handbook to reflect the requirements for MET service at QUANG NINH/Van Don International Airport (ICAO location indicator VVVD). *[Ref: Report of MET/IE WG/20, para. 3.5.]* **(a)** Ref: MET SG/27, WP/14 - Review of the APAC ANP **(b)** Ref: ROBEX HB 15th Ed.	Before MET SG/27	Secretariat~~, in coordination with participants from Vietnam~~	**(a) IN PROGRESS** ANP PfA pending circulation by the Secretariat; **(b) COMPLETED**
MET/IE WG/20 **03**	Provide contact details for IROG Jeddah (Saudi Arabia) and IROG Johannesburg (South Africa) to the members from Thailand to discuss their support for IWXXM and AMHS/FTBP and the timing for the testing and implementation of the inter-regional IWXXM exchange. *[Ref: Report of MET/IE WG/20, para. 4.15.]*	Before MET SG/27	Secretariat, in coordination with participants from Thailand	**IN PROGRESS**
MET/IE WG/20 **05**	Invite interested WG members to form an ad hoc group to review the Performance Indices (PIs) used in APAC OPMET monitoring. *[Ref: Report of MET/IE WG/20, para. 5.13.]*	Before MET/IE WG/22	Secretariat and Chair MET/IE WG and designated ad hoc group, including Members from Thailand and New Zealand, Hong Kong China	**~~IN PROGRESS~~ COMPLETED**
MET/IE WG/20 **06**	Use as the benchmark for OPMET monitoring the latest available ROBEX data provided by the Secretariat (rather than by the published ROBEX Handbook). *[Ref: Report of MET/IE WG/20, para. 5.15.]* Ref: MET/IE WG/22, action item 22-03; update the ROBEX Handbook to reflect the above procedure	Before MET/IE WG/22	Thailand, in coordination with the Secretariat	**COMPLETED ~~IN PROGRESS~~**

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/ REMARKS
MET/IE WG/20 **09**	Develop updates to the ROBEX Handbook, Appendix E – *Procedure and Format of METNO bulletin for APAC ROBEX Bulletins* to clarify the procedures concerning the general area designator in the METNO Header (in paragraph 2.2.) and the responsibilities for issuing METNO messages. *[Ref: Report of MET/IE WG/20, para. 6.4.]*	Before MET SG/27	Secretariat and ROBEX Focal Points from Australia, Hong Kong, China, Japan and Singapore	**SUPERSEDED** by MET/IE WG/21-15 ~~**IN PROGRESS**~~ (related to work underway by METP WG-MIE)
MET/IE WG/20 **10**	Coordinate with Indonesia to: a) Validate the proposed updates in WP/08, which concerned aerodrome names that were not reflected in the ANP, Table AOP I-1 – *International Aerodromes Required in the APAC Regions*; and b) Include the validated proposals in the next update of the ROBEX Handbook. *[Ref: Report of MET/IE WG/20, para. 6.9.]* Ref: MET SG/27, WP/14 - Review of the APAC ANP	Next ROBEX Handbook update	Secretariat, in coordination with participants from Indonesia	**IN PROGRESS** ANP PfA pending circulation by the Secretariat
MET/IE WG/20 **12**	Document the steps States should take to: a) Effect changes to the ROBEX scheme; and b) Notify States of changes to MET service. *[Ref: Report of MET/IE WG/20, para. 6.15.]*	Before MET SG/27	Secretariat	**IN PROGRESS**
MET/IE WG/20 **13**	Convene a quarterly meeting of the MET/IE WG (core) members to progress updates to the work plan and terms of reference, including assigning specific dates and responsibilities (incl. identifying a lead and supporting resources for activities) and merging Activities 1 and 2 in the work plan. After the Secretariat and Chairs of MET SG and WGs have prepared the integrated reporting template. *[Ref: Report of MET/IE WG/20, para. 7.5.]*	Before MET SG/27	Chair MET/IE WG and Secretariat	**IN PROGRESS**
MET/IE WG/20 **14**	Coordinate a proposal to supplement the VAAC Backup Test Procedures in the Appendices of the APAC Regional SIGMET Guide with information on the backup arrangement with VAACs Washington and Montreal. *[Ref: Report of Conjoint Session of MET/IE WG/20 and MET/S WG/12, para. 1.4.]* Ref: MET SG/27	Before MET/IE WG/22	Members from VAAC Darwin	**COMPLETED** ~~**IN PROGRESS**~~
MET/IE WG/20 **15**	Concerning the inclusion of MWOs not located in the APAC Region, perform a cross-check of the ICAO APAC SIGMET Test Procedures against the legacy FASID Tables MET 3A – *Tropical Cyclone Advisory Centres* and 3B – *Volcanic Ash Advisory Centres.* *[Ref: Report of Conjoint Session of MET/IE WG/20 and MET/S WG/12, para. 2.17.]*	Before MET SG/27	Secretariat	**IN PROGRESS**
MET/IE WG/20 **17**	Follow up with Myanmar on the appropriate addressing of letters from ICAO inviting participation in SIGMET tests. *[Ref: Report of Conjoint Session of MET/IE WG/20 and MET/S WG/12, para. 2.23.]*	Before MET SG/27	Secretariat, in coordination with participants from Myanmar	**IN PROGRESS**
MET/IE WG/20 **18**	Submit a paper to MET SG requesting States to provide up to date contact information for letters from ICAO requesting the States to participate in SIGMET tests. *[Ref: Report of Conjoint Session of MET/IE WG/20 and MET/S WG/12, para. 2.24.]* Ref: MET SG/27, WP/23	Before MET SG/27	Secretariat	**COMPLETED** ~~**TO COMMENCE**~~

Unresolved action items recorded by MET/IE WG/19

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILTY	STATUS/ REMARKS
01	**Propose updates to the ROBEX Handbook:** to ensure clarity of the guidance concerning the ROCs' responsibilities for the distribution of IWXXM formatted OPMET data [ref: para. 2.5.] Ref: MET/IE WG/22, WP/23	Before MET SG/27	WG	**COMPLETED** ~~**TO COMMENCE**~~

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILTY	STATUS/ REMARKS
05	**Propose updates to the ROBEX Handbook**: to include information on the (KWBC) bulletins containing Pago Pago METAR and TAF [ref: para. 4.3.] Ref: MET SG/27, WP/09 - ROBEX HB UPDATES	Before MET SG/27	Secretariat	**IN PROGRESS**

Unresolved action items recorded by MET/IE WG/18 and MET/S WG/10

The following action items are applicable to one or both of the MET/IE WG and MET/S WG

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILTY	STATUS/ REMARKS
13	**ROBEX Handbook updates – Update process:** Propose options for a more streamlined process for updating the ROBEX Handbook data, such as through the development of a more dynamic, online repository for ROBEX data [ref: para. 4.4.] Ref: closed due to inaction and no clear solution provided	Before MET SG/27	MET/IE WG	**CLOSED** ~~**IN PROGRESS**~~ Ref: MET/IE WG, 5. Work Plan, Activity 6
15	**ROBEX Handbook updates – IWXXM-related flexibility:** Propose updates, as necessary, to reflect APAC States' requirement for flexibility of the ROBEX scheme structure during the transition to Region-wide implementation of IWXXM exchange [ref: para. 4.7.] Ref: MET/IE WG/22, WP/23	Before MET SG/27	MET/IE WG	**COMPLETED** ~~**IN PROGRESS**~~ Ref: MET/IE WG, 5. Work Plan, Activity 6
18	**ROBEX Handbook and SIGMET Guide updates – Legacy FASID information:** Prepare the consequential updates of the required information from the legacy FASID Tables relating to meteorology, apart from Table MET 1A, Table MET 1B and Table MET 3C, and the existing ICAO APAC regional guidance documentation, according to the proposal in WP/11 and the Draft Decision [ref: para. 4.16.]	Before MET SG/27	Secretariat ~~and States~~	**IN PROGRESS** Ref: MET/IE WG, 5. Work Plan, Activity 6
19	**ANP and ROBEX Handbook updates – Vietnam NOC:** Coordinate on the implementation of the Vietnam NOC, including development of proposed updates to the **(a)** APAC ANP and **(b)** ROBEX Handbook [ref: para. 3.7.] **(a)** Ref: MET SG/27, WP/14 - Review of the APAC ANP **(b)** Ref: ROBEX HB 15th Ed.	Before MET SG/27	Vietnam and Thailand	**(a) IN PROGRESS** Ref: MET/IE WG, 5. Work Plan, Activity 6 **(b) COMPLETED**
20	**ANP and ROBEX Handbook updates – Indonesia new aerodromes:** Determine any requirement (based on IP/09) to update the ICAO APAC **(a)** ANP and/or **(b)** ROBEX Handbook [ref: para. 8.27.] **(a)** Ref: MET SG/27, WP/14 - Review of the APAC ANP **(b)** Ref: MET SG/27, WP/09 - ROBEX HB UPDATES	Before MET SG/27	Secretariat and Indonesia	**IN PROGRESS** Ref: MET/IE WG, 5. Work Plan, Activity 6

Unresolved action items recorded by MET/IE WG/17

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILTY	STATUS/ REMARKS
17/1	Coordinate all necessary notifications concerning the planned handover of the provision of SIGMET service valid for Phnom Penh FIR from MWO Chengdu to MWO Phnom Penh, including the following: (a) changes to the routing of the SIGMET and advisory information at the responsible VAAC, TCAC and the RODBs; and (b) updates to the ANP, including the legacy FASID tables, and the Regional SIGMET Guide. *[Report of MET/IE WG/17, para. 3.1 – 3.4, refers]*	Before MET SG/27	~~Cambodia and~~ Secretariat	**(a) COMPLETED (b) IN PROGRESS**

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILTY	STATUS/ REMARKS
17/3	Coordinate all necessary notifications concerning the planned provision by China of OPMET information for the new Beijing Daxing International Airport, from 15 August 2019, including the following: **(a)** updates to the ROBEX Handbook and notification to States via "METNO"; ~~and~~ **(b)** updates to the ICAO Doc. 7910; and **(c)** APAC ANP, including AOP and MET tables. *[Report of MET/IE WG/17, para. 3.6 – 3.8, refers]* **(b)** Ref: ICAO Doc. 7910 – (ZBAD) BEIJING/DAXING	Before MET SG/27	China and Secretariat	**(a)** and **(c) IN PROGRESS** **(b) COMPLETED**
17/10	Liaise with the SADIS Provider concerning obtaining OPMET availability statistics on SADIS for future meetings of the MET/IE WG. Propose appropriate actions to apply the statistics to improve OPMET availability. *[Report of MET/IE WG/17, para. 4.21, refers]*	Before MET SG/27	Secretariat	**IN PROGRESS**
17/20	Propose updates to all required APAC documentation regarding the originating address of Australian WV SIGMETs (i.e., YMMC, rather than AMMC). *[Report of conjoint session of MET/IE WG/17 and MET/S WG/9, para. 2.24, refers]*	Before MET SG/27	Secretariat ~~and Australia~~	**IN PROGRESS** ANP Table MET II-1 pending update

Unresolved action items recorded by ROBEX WG/13

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILTY	STATUS/ REMARKS
13/7	Investigate feasibility of including provisions in the regional guidance material related to the issuance of routine TAF at intervals of three (3) hours; present draft material to MET SG/21 [Ref: ROBEX WG/13 Decision 13/7].	Before MET SG/27	Secretariat and ROBEX WG	**IN PROGRESS** Coordinate necessary follow-up through the ICAO ANP working group [Ref: MET/IE WG/16 Report para. 2.9].

— END OF SECTION —

APPENDIX E — List of Actions (MET SG)

MET SG – LIST OF ACTIONS

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

New action items recorded by MET SG/27

MET SG – LIST OF ACTIONS				
Action No.	**Detailed description of actions**	**Responsibility**	**Target date**	**Status**
27/01	***MET Deficiencies related to IWXXM implementation*:** Seek further advice from APANPIRG concerning identifying air navigation deficiencies in other States due to the lack of implementation of the Annex 3 standards for disseminating meteorological information in the IWXXM form. [Ref: Report of MET SG/27, para. 3.9.] Ref: APANPIRG/34, Report on Agenda Item 3.5, para. 3.5.11	Secretariat	Dec 2023	**COMPLETED** ~~**TO COMMENCE**~~
27/02	**Updates to the ICAO APAC ROBEX Handbook:** Coordinate with all the States concerned (ref: MET SG/27, WP/09 and WP/14) to incorporate the proposed updates in the ROBEX Handbook, Sixteenth Edition [ACTION MET SG/27-02] [Ref: Report of MET SG/27, para. 4.4.] Ref: MET/IE WG22, WP/19	Secretariat	Dec 2023	**IN PROGRESS** ~~**TO COMMENCE**~~
27/03	**Update to Regional SIGMET Guide:** Include the proposed example on guidance on SIGMET for volcanic ash crossing FIR boundaries, Appendix A of WP/10, in the next update of the APAC Regional SIGMET Guide. [Ref: Report of MET SG/27, para. 4.7.]	Secretariat	Dec 2023	**TO COMMENCE**
27/04	**Volcanic ash advisory and SIGMET examples:** Review and revise the volcanic ash advisory and SIGMET examples in WP/10, Appendix B, when the OBS (or EST) VA CLD on the Volcanic Ash Advisory (VAA) indicates "VA NOT IDENTIFIABLE FM SATELLITE DATA", to ensure consistency between the SIGMET and advisory information. [Ref: Report of MET SG/27, para. 4.8.]	Ad hoc group in collaboration with the VAACs	Jul 2024 (MET SG/28)	**TO COMMENCE**
27/05	**Document of cases of SIGMET coordination:** Identify common SIGMET coordination practices from the document of cases of SIGMET coordination in WP/11 and develop further the document to separate the procedural information, which could potentially be used to supplement to the Asia/Pacific Regional SIGMET Guide. [Ref: Report of MET SG/27, para. 4.16.]	Ad hoc group	Jul 2024 (MET SG/28)	**TO COMMENCE**
27/06	**Document on use cases and user requirements for SWIM-based MET information services supporting ATFM in the APAC region:** Present the document on use cases and user requirements for SWIM-based MET information services supporting ATFM in the APAC region to the ATM/SG/11 for review and feedback. [Ref: Report of MET SG/27, para. 4.17.]	Ad hoc group	Oct 2023 (ATM/SG/11)	**COMPLETED**
27/07	**Update of VAAC backup procedures in APAC Regional SIGMET Guide:** Include the proposed updates for the example in Appendix A of WP/10 and the proposal in WP/13 in the eleventh edition of the Asia/Pacific Regional SIGMET guide. [Ref: Report of MET SG/27, para. 4.22.]	Secretariat	Dec 2023	**TO COMMENCE**
27/08	**Siem Reap Angkor International Airport (VDSA) – ROBEX Handbook update:** Coordinate the necessary updates to incorporate VDSA in the ROBEX Handbook. [Ref: Report of MET SG/27, para. 5.2.]	Secretariat ~~and Cambodia~~	Dec 2023	**IN PROGRESS** ~~**TO COMMENCE**~~

MET SG – LIST OF ACTIONS				
Action No.	**Detailed description of actions**	**Responsibility**	**Target date**	**Status**
	Ref: MET/IE WG22, WP/19			
27/09	**Siem Reap Angkor International Airport (VDSA) – METNO process:** Notify the update to the ROBEX system by following the METNO process. [Ref: Report of MET SG/27, para. 5.3.]	Responsible NOC	Dec 2023	**TO COMMENCE**
27/10	**Proposal for amendment of the APAC Air Navigation Plan:** Compile a proposal for amendment and to the ANP incorporating amendments in WP/14 and paragraph 5.5. of the Report of MET SG/27 and seek confirmation from the States concerned before circulating the proposal for amendment to States and Organizations for comments and Regional agreement. [Ref: Report of MET SG/27, para. 5.6.]	Secretariat	Dec 2023	**TO COMMENCE**
27/11	**MET deficiencies review of 2022 SIGMET test:** Utilise the proposed actions in WP/17, Appendix A, when advising States of SIGMET corrective actions. [Ref: Report of MET SG/27, para. 5.9.]	Secretariat	Dec 2023	**TO COMMENCE**
27/12	**Proposed amendment to ICAO Annex 3:** Survey States on their needs for implementation support for the proposed amendment to ICAO Annex 3. [Ref: Report of MET SG/27, para. 5.17.]	Secretariat	Dec 2023	**TO COMMENCE**
27/13	**APAC SIGMET coordination activities** ~~**Proposed amendment to ICAO Annex 3:**~~ Update the online repository with the new SIGMET coordination activities between China and adjacent countries. [Ref: Report of MET SG/27, para. 6.6.]	Ad hoc group	Dec 2023	**TO COMMENCE**

Unresolved action items recorded by MET SG/26

MET SG – LIST OF ACTIONS				
Action No.	**Detailed description of actions**	**Responsibility**	**Target date**	**Status**
26/04	**APANPIRG AN Deficiencies – requirements for WAFS forecasts:** Provide technical assistance to help the States concerned understand and determine the requirements for WAFS forecasts. [Ref: Report of MET SG/26, para. 3.2.] Ref: MET SG/27, WP/07 – Review APANPIRG Air Navigation Deficiencies	Secretariat	Nov 2022	**IN PROGRESS**
26/07	**APAC ANP, Volume III amendment – examples from other ICAO Regions:** Consider examples of Volume III adopted by other ICAO Regions in the MET work plan on a proposal for amendment of MET-specific material in the APAC ANP, Volume III. [Ref: Report of MET SG/26, para. 5.8.] Ref: MET SG/27, WP/14 – Review of the Asia/Pacific Air Navigation Plan	Secretariat and MET/R WG	Nov 2022	**IN PROGRESS**
26/08	**APAC ANP, Volume II amendment – Nepal:** Initiate an appropriate proposal for amendment of the ANP Volume II, to reflect the requirements for aerodrome meteorological offices in Nepal. [Ref: Report of MET SG/26, para. 5.9.] Ref: MET SG/27, WP/14 – Review of the Asia/Pacific Air Navigation Plan	Secretariat and Nepal	Nov 2022	**IN PROGRESS**

Unresolved action items recorded by MET SG/25

MET SG – LIST OF ACTIONS				
Action No.	**Detailed description of actions**	**Responsibility**	**Target date**	**Status**
25/06	**Finalise the proposals for amendment of the APAC ANP (Vol I and II) and ROBEX Handbook** as agreed in previous meetings to ensure accuracy of the requirements specifications against which the OPMET monitoring is analysed [Ref: para. 4.6.-4.7.] Ref: MET SG/27, WP/14 – Review of the Asia/Pacific Air Navigation Plan, and WP/09 – Updates to the ICAO APAC ROBEX Handbook	Secretariat	Nov 2021	**IN PROGRESS**
25/07	**Finalise a proposal for amendment of the APAC ANP (Table MET II-1) and consequential amendment to the APAC Regional SIGMET Guide** as necessary to ensure the correct use of FIR indicator for Port Moresby [Ref: para. 4.12.-4.14.] Ref: MET SG/27, WP/14 – Review of the Asia/Pacific Air Navigation Plan, and APAC Regional SIGMET Guide, Tenth Edition, uploaded to the ICAO APAC website: https://www.icao.int/APAC/Pages/eDocs.aspx	Secretariat	Nov 2021	**IN PROGRESS** ANP amendment pending; SIGMET Guide amended, 9th Ed.
25/09	**Review SIGMET Guide** as necessary to guide MWOs to handle cases when VAAC would not hand over to the neighbouring VAAC even if the ash cloud is expected to cross the AoR [Ref: para. 4.12.-4.14.]	~~MET/S~~ Ad hoc group	Mar 2023	**TO COMMENCE**
25/12	**Provide updates to the contact lists in the ICAO Doc 9766-AN/968 (Handbook on the International Airways Volcano Watch (IAVW))** to the ICAO METP [Ref: para. 5.15.]	MET SG, Secretariat ~~MET/S WG, MET/IE WG~~	Mar 2022	**TO COMMENCE**
25/13	**Coordinate possible SWX advisory exercise/s and training workshop/s** with the appropriate body under METP for [Ref: para. 5.28.] Ref: ICAO APAC webinar on space weather information service (TBD Ref: Secretariat to coordinate with Australia [MET/IE WG/20 - ACTION 01] Ref: MET/R WG new deliverable #7 to promote user education on SWX service.	Secretariat ~~MET/S WG, MET/IE WG~~	Nov 2021	**IN PROGRESS**

— END OF SECTION —

APPENDIX F — Proposed updates in the ROBEX Handbook, 16th Edition

LIST OF UPDATES IN THE ICAO APAC ROBEX HANDBOOK, 16TH EDITION, APRIL 2024

SECTION	REFERENCES	UPDATES
APPENDIX A/TABLE A - Collection and Dissemination of METAR (SA) Bulletins	**MET SG/27, Action items 27/02 and 27/08 and WP/09;** MET SG/25, Action item 25/07; MET/IE WG/20, Action item 20/10; MET/IE WG/19, Action item 19/05; MET/IE WG/18-MET/S WG/10, Action item 20; **MET/IE WG/22, Action item 22-08**	**In [Bul. No.] SAAE32**: **Remove italics** in the font for the following [CCCC][Aerodrome]: VDSV, SIHANOUK; **Add** the following [CCCC][Aerodrome][Bul. Time]: VDSA, SIEM REAP/Siem Reap Angkor Intl, HH+00/30; **Delete** the following [CCCC][Aerodrome][Bul. Time]: VDSR, SIEM REAP, HH+00/30; **In [Bul. No.] SATH31**: **Add italics** in the font for the following [CCCC][Aerodrome]: VTPH, PRACHUAP KHIRI KHAN/Hua Hin; **In [Bul. No.] SATH33**: **Remove italics** in the font for the following [CCCC][Aerodrome]: VTUK, KHON KAEN; VTUU, UBON RATCHATHANI; **In [Bul. No.] SACI31**: **Add** the following [CCCC][Aerodrome][Bul. Time]: ZBAD, BEIJING/DAXING, HH+00/30; **Delete** the following [CCCC][Aerodrome][Bul. Time]: ZBSJ, SHIJIAZHUANG/Zhengding, HH+00; ZWSH, KASHI/Kashi, HH+00; **In [Bul. No.] SACI32**: **Add** the following [CCCC][Aerodrome][Bul. Time]: ZUTF, CHENGDU/Tianfu, HH+00; ZBSJ, SHIJIAZHUANG/Zhengding, HH+00; ZWSH, KASHI/Kashi, HH+00; **In [Bul. No.] SAAU31**: **Remove italics** in the font for the following [CCCC][Aerodrome]: YSCB, CANBERRA; YBCG, GOLD COAST; **In [Bul. No.] SAAU32**: **Remove italics** in the font for the following [CCCC][Aerodrome]: YMAV, AVALON; YCFS, COFFS HARBOUR; YPKG, KALGOORLIE-BOULDER; YMLT, LAUNCESTON; YPLM, LEARMONTH; YLHI, LORD HOWE ISLAND; **In [Bul. No.] SAAU33**: **Remove italics** in the font for the following [CCCC][Aerodrome]: YGEL, GERALDTON; YHID, HORN ISLAND; **In [Bul. No.] SAAU36**: **Remove italics** in the font for the following [CCCC][Aerodrome]: YWLM, WILLIAMTOWN; **In ROC [Name][CCCC] Brisbane YBBN**: **Add** the following: [BUL No.] SATM31 [CCCC] WPDL [Aerodrome] DILI/Presidente Nicolau Lobato Intl [Bul. Time] HH+00/30 [DISSEMINATION TO RODB/ROC / AFTN Address] BANGKOK/VTBBYPYX, BRISBANE/YBBBYPYX, NADI/NFFNYPYX, SINGAPORE/WSZZYPYX, TOKYO/RJTDYPYX, Beijing/ZBBBYPYX, Hong Kong/VHZZYPYX, Incheon/RKSIYPYS, Jakarta/WIZZYPYX, Manila/RPLLYPYX, Mumbai/VABBYPYX, Wellington/NZZZYPYX]; **In [Bul. No.] SAIN32**: **Add italics** in the font for the following [CCCC][Aerodrome]: VEBN, VARANASI; **Add** the following [CCCC][Aerodrome][Bul. Time]: VIBN, VARANASI/Lal Bahadur Shastri, HH+00/30; **In [Bul. No.] SAHK31**: **Remove italics** in the font for the following [CCCC][Aerodrome]: RPLB, SUBIC BAY, Subic Bay Intl; RPMZ, ZAMBOANGA/Intl; **In [Bul. No.] SAID31**: **Amend** the name for the following [CCCC][Aerodrome]: WAAA, MAKASSAR /Sultan Hasanuddin; WIMM, MEDAN/Kualanamu;

SECTION	REFERENCES	UPDATES
		WADD, BALI/I Gusti Ngurah; **Delete** [Available] 2200-1700 for [CCCC][Aerodrome] WIHH, JAKARTA/Halimperdana Kusuma **In [Bul. No.] SAID32**: **Amend** the name for the following [CCCC][Aerodrome]: WIDN, TANJUNG PINANG/Raja Haji Fisabilillah Int'l; WIEE, PADANG PARIAMAN/Minangkabau international; WALL, BALIKPAPAN/Sultan Aji Muhammad Sulaiman Sepinggan; WADL, PRAYA/Zainuddin Abdul Madjid; **Remove italics** in the font for the following [CCCC][Aerodrome]: WADL, PRAYA/Zainuddin Abdul Madjid; **Amend** [Available] 0000-1200 for [CCCC][Aerodrome] WIDN, TANJUNG PINANG/Raja Haji Fisabilillah Int'l; **Add** the following [CCCC][Aerodrome][Bul. Time][Available]: WITT, BANDA ACEH/Sultan Iskandar Muda, HH+00/30, 2300-1500; WAHI, KULON PROGO/Internasional Yogyakarta, HH+00/30; **In [Bul. No.] SAID33**: **Delete** [CCCC][Aerodrome][Bul. Time][Available] WAYY, TIMIKA/Moses Kilangin, HH+00/30, 2100-0800; **Add** [Available] 2300-1700 for [CCCC][Aerodrome] WAHS, SEMARANG/Ahmad Yani; **Remove italics** in the font for the following [CCCC][Aerodrome]: WAHS, SEMARANG/Ahmad Yani; WILL, BANDAR; **Amend** [Available] 2200-1200 for [CCCC][Aerodrome] WAQQ, TARAKAN/Juwata; **Add** the following [CCCC][Aerodrome][Bul. Time][Available]: WADY, BANYUWANGI/Banyuwangi, HH+00/30, 2300-1100; WIMN, SIBORONGBORONG/Raja Sisingamangaraja XII, HH+00/30, 0100-0800; **In [Bul. No.] SABW31**: **Remove italics** in the font for the following [CCCC][Aerodrome]: VGSY, OSMANI INTERNATIONAL AIRPORT, SYLHET; **In [Bul. No.] SAMS31**: **Add** [CCCC][Aerodrome][BUL No.] WMSA, SUBANG/Sultan Abdul Aziz Shah, HH+00/30; **Add** [CCCC][Aerodrome][BUL No.] WSAP, PAYA LEBAR (RSAF), HH+00/30; **In [Bul. No.] SAMS38**: **Add** [CCCC][Aerodrome][BUL No.] WMKJ, JOHOR BAHRU/Sultan Ismail, HH+00; **Remove italics** in the font for the following [CCCC][Aerodrome]: WBGR, MIRI; WBGS, SIBU; WBKL, LABUAN; WBKS, SANDAKAN; WBKW, TAWAU; WMKD, KUANTAN; WMKM, MALACCA; **In [Bul. No.] SAPS31**: **Remove italics** in the font for the following [CCCC][Aerodrome]: NFNA, NAUSORI/Intl; **In [Bul. No.] SAJP38**: **Remove italics** in the font for the following [CCCC][Aerodrome]: RJCK, KUSHIRO; RJFM, MIYAZAKI; ROIG, NEW ISHIGAKI; RJNS, SHIZUOKA; RJSA, AOMORI; RJSF, FUKUSHIMA; RJOM, MATSUYAMA; RJEC, ASAHIKAWA; RJSK, AKITA; RJFR, KITAKYUSHU; RJFS, SAGA; RJSI, HANAMAKI; **In [Bul. No.] SANZ32**: **Remove italics** in the font for the following [CCCC][Aerodrome]: NZQN, QUEENSTOWN
APPENDIX B/TABLE B - Collection and Dissemination of TAF (FT) Bulletins	**MET SG/27, Action items 27/02 and 27/08 and WP/09;** MET SG/25, Action item 25/07; MET/IE WG/20, Action item 20/10; MET/IE WG/19, Action item 19/05;	**In the table heading**: **Add** the heading "BUL No." in column 2 under "TAF Bulletin" **In [Bul. No.] FTAE32**: **Remove italics** in the font for the following [CCCC][Aerodrome]: VDSV, SIHANOUK;

SECTION	REFERENCES	UPDATES
	MET/IE WG/18-MET/S WG/10, Action item 20; **MET/IE WG/22, Action item 22-08**	**Add** the following [CCCC][Aerodrome][TAF validity]: VDSA, SIEM REAP/Siem Reap Angkor Intl, 18(24); **Delete** the following [CCCC][Aerodrome][TAF validity]: VDSR, SIEM REAP, 18(24); **In [Bul. No.] FTAE34**: **Amend** [TAF validity] 24 for [CCCC][Aerodrome] VVCR, KHANH HOA/Cam Ranh Int'l; **Amend** [TAF validity] 30 for [CCCC][Aerodrome] VVTS, HO CHI MINH/Tan Son Nhat; **In [Bul. No.] FTTH31**: **Add italics** in the font for the following [CCCC][Aerodrome]: VTPH, PRACHUAP KHIRI KHAN/Hua Hin; **In [Bul. No.] FTTH33**: **Remove italics** in the font for the following [CCCC][Aerodrome]: VTUK, KHON KAEN; VTUU, UBON RATCHATHANI; **In [Bul. No.] FTCI31**: **Add** the following [CCCC][Aerodrome][TAF validity]: ZBAD, BEIJING/DAXING, 24; **Delete** the following [CCCC][Aerodrome][TAF validity]: ZBSJ, SHIJIAZHUANG/Zhengding, 24; ZWSH, KASHI/Kashi, 24 (30); **In [Bul. No.] FTCI32**: **Add** the following [CCCC][Aerodrome][TAF validity]: ZUTF, CHENGDU/Tianfu, 24; ZBSJ, SHIJIAZHUANG/Zhengding, 24; ZWSH, KASHI/Kashi, 24 (30); **In [Bul. No.] FTAU31**: **Remove italics** in the font for the following [CCCC][Aerodrome]: YSCB, CANBERRA; YBCG, GOLD COAST; **In [Bul. No.] FTAU32**: **Remove italics** in the font for the following [CCCC][Aerodrome]: YMAV, AVALON; YCFS, COFFS HARBOUR; YPKG, KALGOORLIE-BOULDER; YMLT, LAUNCESTON; YPLM, LEARMONTH; YLHI, LORD HOWE ISLAND; **In [Bul. No.] FTAU33**: **Remove italics** in the font for the following [CCCC][Aerodrome]: YGEL, GERALDTON; YHID, HORN ISLAND; **In [Bul. No.] FTAU36**: **Remove italics** in the font for the following [CCCC][Aerodrome]: YWLM, WILLIAMTOWN; **In [BUL No.] FTTM31**: **Remove italics** in the font for the following [CCCC][Aerodrome]: WPDL, DILI/Presidente Nicolau Lobato Intl; **In [Bul. No.] FTHK33**: **Remove italics** in the font for the following [CCCC][Aerodrome]: RPLB, SUBIC BAY, Subic Bay Intl; RPMZ, ZAMBOANGA/Intl; **Between ROC [Name][CCCC] Incheon, RKSI and Karachi, OPKC**: **Add** ROC [Name][CCCC)] Jakarta, WIII; TAF Bulletin **FTID32** with the following [CCCC][Aerodrome]: WAMM, MANADO/Sam Ratulangi; WIBB, PEKANBARU/Sultan Syarif Kasim II; WIDN, TANJUNG PINANG/Raja Haji Fisabilillah Int'l; WIEE, PADANG PARIAMAN/Minangkabau international; WIOO, PONTIANAK/Supadio; WIPP, PALEMBANG/Sultan Mahmud Badaruddin II; WAOO, BANJARMASIN/Syamsuddin Noor; WALL, BALIKPAPAN/Sultan Aji Muhammad Sulaiman Sepinggan; WADL, PRAYA/Zainuddin Abdul Madjid; WITT, BANDA ACEH/Sultan Iskandar Muda; WAHI, KULON PROGO/Internasional Yogyakarta; with the following [Filing time][Start of validity]: 0535, 0600; 1135, 1200; 1735, 1800; 2335, 0000;

SECTION	REFERENCES	UPDATES
		[TAF validity] 24; Dissemination [RODB/ROC][AFTN address]: BANGKOK, VTBBYPYX; BRISBANE, YBBBYPYX; NADI, NFFNYPYX; SINGAPORE, WSZZYPYM; TOKYO, RJTDYPYX; Beijing, ZBBBYPYX; Hong Kong, VHZZYPYX; Kuala Lumpur, WMZZYPYR; Wellington/NZZZYPYX **Add** ROC [Name][CCCC] Jakarta, WIII; TAF Bulletin **FTID33** with the following [CCCC][Aerodrome]: WAJJ, JAYAPURA/Sentani; WAPP, AMBON/Pattimura; WAHS, SEMARANG/Ahmad Yani; WILL, BANDAR LAMPUNG/Radin Inten II; WATT, KUPANG/El Tari; WAQQ, TARAKAN/Juwata; WADY, BANYUWANGI/Banyuwangi WIMN, SIBORONGBORONG/Raja Sisingamangaraja XII; with the following [Filing time][Start of validity]: 0535, 0600; 1135, 1200; 1735, 1800; 2335, 0000; [TAF validity] 24; Dissemination [RODB/ROC][AFTN address]: BANGKOK, VTBBYPYX; BRISBANE, YBBBYPYX; NADI, NFFNYPYX; SINGAPORE, WSZZYPYM; TOKYO, RJTDYPYX; Beijing, ZBBBYPYX; Hong Kong, VHZZYPYX; Kuala Lumpur, WMZZYPYR; Wellington/NZZZYPYX **In [Bul. No.] FTIN32**: **Add italics** in the font for the following [CCCC][Aerodrome]: VEBN, VARANASI; **Add** the following [CCCC][Aerodrome][TAF validity]: VIBN, VARANASI/Lal Bahadur Shastri, 30; **In [Bul. No.] FTSB31**: **Add** the following [CCCC][Aerodrome][TAF validity]: VCCH, HINGURAKGODA/MINNERIYA, 30; **In [Bul. No.] FTBW31**: **Remove italics** in the font for the following [CCCC][Aerodrome]: VGSY, OSMANI INTERNATIONAL AIRPORT, SYLHET; **In [Bul. No.] FTAS31**: **Add** the following [CCCC][Aerodrome][TAF validity]: VQPR, PARO/Intl., 30; **In [Bul. No.] FTPS31**: **Add** the following [CCCC][Aerodrome][TAF validity]: NGFU, FUNAFUTI/Intl, 24; **Remove italics** in the font for the following [CCCC][Aerodrome]: NFNA, NAUSOR/Intl; **In [Bul. No.] FTSR31**: **Amend** the name for the following [CCCC][Aerodrome]: WAAA, MAKASSAR /Sultan Hasanuddin; WIMM, MEDAN/Kualanamu; WADD, BALI/I Gusti Ngurah; **In [Bul. No.] FTSR32**: **Remove italics** in the font for the following [CCCC][Aerodrome]: WMKM, MALACCA; WMSA, SUBANG/Sultan Abdul Aziz Shah; **Add** the following [CCCC][Aerodrome][TAF validity]: WMKD, KUANTAN; **In [Bul. No.] FTSR33**: **Remove italics** in the font for the following [CCCC][Aerodrome]: WBGR, MIRI; WBGS, SIBU; WBKL, LABUAN (RMAF);

SECTION	REFERENCES	UPDATES
		WBKS, SANDAKAN; WBKW, TAWAU; **In [Bul. No.] FTJP38**: **Remove italics** in the font for the following [CCCC][Aerodrome]: RJSA, AOMORI; RJSF, FUKUSHIMA; RJSK, AKITA; RJOM, MATSUYAMA; RJNS, SHIZUOKA; RJEC, ASAHIKAWA; RJCK, KUSHIRO; RJFM, MIYAZAKI; ROIG, NEW ISHIGAKI; RJFR, KITAKYUSHU; RJFS, SAGA; RJSI, HANAMAKI; **In [Bul. No.] FTNZ31**: **Correct** the typo in the note as follows: ** For validities starting at 0300, 0900, 1500 and 2100, all TAFs will have a validity 3 hours ~~shorted~~ shorter than indicated.*
APPENDIX I — ROBEX FOCAL POINTS	**MET/IE WG/22, Action item 22-08**	**For Australia:** **Delete** details for Mr. Pierre Kemmers; **Add** details for Mr. Warren Young.

APPENDIX A - Collection and Dissemination of METAR (SA) Bulletins
Table A : METAR

Explanation of Table

Col.1: Name and ICAO location indicator of the ROC compiling the bulletin.

Col.2: Description of the METAR Bulletin

Col.3: Official observation time of the bulletin

Col.4: Time when bulletin available
Note: O/R indicates Bulletin available on request and NR indicates no report is available

Col.5: Dissemination of the bulletin to other ROCs and RODBs

Notes: *1 Aerodromes not listed in Table AOP 1-1 indicated in italics*

2 METAR included in VOLMET broadcasts are listed in APAC, ANP, VOL II, Table MET II-3, VOLMET Broadcasts

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		METAR Bulletin			Bul. Time	Available	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome			RODB/ROC	AFTN Address
ASIA/PAC REGION								

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		**METAR Bulletin**			**Bul. Time**	**Available**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**			**RODB/ROC**	**AFTN Address**
Bangkok	**VTBB**	**SAAE31**	VTBD	BANGKOK/Don Mueang Intl Airport	HH+00/30		BANGKOK	VTBBYPYX
			VTBS	BANGKOK/Suvarnabhumi Intl Airport	HH+00/30		BRISBANE	YBBBYPYX
			VTBU	RAYONG/U-Taphao Intl Airport	HH+00/30		NADI	NFFNYPYX
			VTCC	CHIANG MAI/Chiang Mai Intl. Airport	HH+00/30		SINGAPORE	WSZZYPYM
			VTSP	PHUKET/Phuket Intl Airport	HH+00/30		TOKYO	RJTDYPYX
			VTSS	SONGKHLA/Hat Yai Intl Airport	HH+00/30		Beijing	ZBBBYPYX
							Colombo	VCCCYPYX
							Delhi	VIDPYPYX
							Hong Kong	VHZZYPYX
							Incheon	RKSIYPYX
							Jakarta	WIZZMCMC
							Kolkata	VECCYPYX
							Kuala Lumpur	WMZZYPYR
							Mumbai	VABBYPYX
		SAAE32	VDPP	PHNOM PENH	HH+00/30		BANGKOK	VTBBYPYX
			~~VDSR~~	~~SIEM REAP~~	~~HH+00/30~~		BRISBANE	YBBBYPYX
			VDSV	SIHANOUK	HH+00/30		NADI	NFFNYPYX
			VDSA	SIEM REAP/Siem Reap Angkor Intl	~~HH+00/30~~		SINGAPORE	WSZZYPYM
			VLVT	VIENTIANE (Wattay)	HH+00/30		TOKYO	RJTDYPYX
			VYMD	MANDALAY INTERNATIONAL	HH+00/30		Beijing	ZBBBYPYX
			VYNT	NAYPYITAW INTERNATIONAL	HH+00/30		Colombo	VCCCYPYX
			VYYY	YANGON INTERNATIONAL	HH+00/30		Delhi	VIDPYPYX
							Hong Kong	VHZZYPYX
							Incheon	RKSIYPYX
							Jakarta	WIZZMCMC
							Kolkata	VECCYPYX
							Kuala Lumpur	WMZZYPYR
							Mumbai	VABYPYX
		SAAE33	VLLB	LUANG PRABANG	HH+00	2300-1400	BANGKOK	VTBBYPYX
			VLLN	*LUANG NAMTHA*	HH+00	2300-1400	BRISBANE	YBBBYPYX
			VLPS	PAKSE	HH+00	2300-1400	NADI	NFFNYPYX
			VLSK	SAVANNAKHET	HH+00	2300-1400	SINGAPORE	WSZZYPYM
							TOKYO	RJTDYPYX
							Beijing	ZBBBYPYX
		SAAE34	VVCI	CAT BI	HH+00/30		BANGKOK	VTBBYPYX
			VVCR	KHANH HOA/Cam Ranh	HH+00/30		NADI	NFFNYPYX
			VVCT	CAN THO	HH+00/30		BRISBANE	YBBBYPYX
			VVDN	DA NANG	HH+00/30		SINGAPORE	WSZZYPYM
			VVNB	HA NOI/Noi bai	HH+00/30		TOKYO	RJTDYPYX
			VVPB	HUE/Phu Bai	HH+00/30		Beijing	ZBBBYPYX
			VVPQ	KIEN GIANG/Phu Quoc	HH+00/30		Colombo	VCCCYPYX
			VVTS	HO CHI MINH/Tan Son Nhat	HH+00/30		Delhi	VIDPYPYX
			VVVD	Van Don Int'l	HH+00/30		Hong Kong	VHZZYPYX
							Incheon	RKSIYPYX
							Jakarta	WIZZMCMC
							Kolkata	VECCYPYX
							Kuala Lumpur	WMZZYPYR
							Mumbai	VABYPYX
		SATH31	*VTBO*	*TRAT/Khao Sming*	HH+00	2200-1100	BANGKOK	VTBBYPYX

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		**METAR Bulletin**			**Bul. Time**	**Available**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**			**RODB/ROC**	**AFTN Address**
			VTCH	*MAE HONG SON*	HH+00	2200-1100	BRISBANE	YBBBYPYX
			VTCL	*LAMPANG*	HH+00	2300-1300	NADI	NFFNYPYX
			VTCN	*NAN*	HH+00	2200-1300	SINGAPORE	WSZZYPYM
			VTCP	*PHRAE*	HH+00	2200-1100	TOKYO	RJTDYPYX
			VTCT	CHIANG RAI/Chiang Rai Intl Airport	HH+00		Beijing	ZBBBYPYX
			VTPB	*PHETCHABUN*	HH+00	2200-1100		
			VTPH	*PRACHUAP KHIRI KHAN/Hua Hin*	HH+00	2200-1100		
			VTPM	*TAK/Mae Sot*	HH+00	2200-1100		
			VTPO	*SUKHOTHAI*	HH+00	2200-1100		
			VTPP	PHITSANULOK	HH+00	2200-1500		
			VTPT	*TAK*	HH+00	2200-1100		
		SATH32	VTSB	SURAT TANI	HH+00	2200-1500	BANGKOK	VTBBYPYX
			VTSC	*NARATHIWAT*	HH+00	2200-1100	BRISBANE	YBBBYPYX
			VTSE	*CHUMPHON/Tab Gai*	HH+00	2300-1100	NADI	NFFNYPYX
			VTSF	*NAKHON SI THAMMARAT*	HH+00	2200-1500	SINGAPORE	WSZZYPYM
			VTSG	KRABI	HH+00		TOKYO	RJTDYPYX
			VTSM	SURAT THANI/Samui	HH+00	2200-1500	Beijing	ZBBBYPYX
			VTSR	*RANONG*	HH+00	2200-1100		
			VTST	*TRANG*	HH+00	2200-1300		
			VTSY	*BATONG*	HH+00	0000-1000		
		SATH33	*VTUD*	*UDON THANI*	HH+00	2200-1500	BANGKOK	VTBBYPYX
			VTUI	*SAKON NAKHON/Ban Khai*	HH+00	2200-1500	BRISBANE	YBBBYPYX
			VTUK	KHON KAEN	HH+00		NADI	NFFNYPYX
			VTUL	*LOEI*	HH+00	2200-1200	SINGAPORE	WSZZYPYM
			VTUO	*BURI RAM*	HH+00	2200-1300	TOKYO	RJTDYPYX
			VTUQ	*NAKHON RATCHASIMA*	HH+00	2200-1400	Beijing	ZBBBYPYX
			VTUU	UBON RATCHATHANI	HH+00			
			VTUV	*ROI ET*	HH+00	2200-1400		
			VTUW	*NAKHON PHANOM*	HH+00	2200-1400		
Beijing	**ZBBB**	**SACI31**	ZBAA	BEIJING/Capital	HH+00/30		BANGKOK	VTBBYPYX
			ZBAD	*BEIJING/Daxing*	HH+00/30		BRISBANE	YBBBYPYX
			~~*ZBSJ*~~	~~*SHIJIAZHUANG/Zhengding*~~	~~HH+00~~		NADI	NFFNYPYX
			ZBTJ	TIANJIN/Binhai	HH+00/30		SINGAPORE	WSZZYPYM
			ZBYN	TAIYUAN/Wusu	HH+00/30		TOKYO	RJTDYPYX
			ZGGG	GUANGZHOU/Baiyun	HH+00/30		Hong Kong	VHZZYPYX
			ZMCK	ULAANBAATAR/Chinggis Khaan	HH+00/30		Jakarta	WIZZMZBB
			ZSHC	HANGZHOU/Xiaoshan	HH+00/30		Karachi	OPZZYPYX
			ZSPD	SHANGHAI/Pudong	HH+00/30		Mumbai	VABBYPYX
			ZSSS	SHANGHAI/Hongqiao	HH+00/30		Incheon	RKSIYPYX
			~~ZWSH~~	~~KASHI/Kashi~~	~~HH+00~~		Ulaanbaatar	ZMUBYMYX
			ZWWW	URUMQI/Diwopu	HH+00/30			
			ZYTL	DALIAN/Zhoushuizi	HH+00/30			
			ZYTX	SHENYANG/Taoxian	HH+00/30			
		SACI32	ZGKL	GUILIN/Liangjiang	HH+00		BANGKOK	VTBBYPYX
			ZGNN	NANNING/Wuxu	HH+00		BRISBANE	YBBBYPYX
			ZGOW	*SHANTOU/Waisha*	HH+00		NADI	NFFNYPYX
			ZGSZ	SHENZHEN/Baoan	HH+00		SINGAPORE	WSZZYPYM
			ZLXY	XI'AN/Xianyang	HH+00		TOKYO	RJTDYPYX

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		**METAR Bulletin**			**Bul. Time**	**Available**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**			**RODB/ROC**	**AFTN Address**
			ZMUB	ULAANBAATAR / Buyant-Ukhaa	HH+00		Hong Kong	VHZZYPYX
			ZPPP	KUNMING/Wujiaba	HH+00		Jakarta	WIZZMZBB
			ZSAM	XIAMEN/Gaoqi	HH+00		Kuala Lumpur	WMZZYPYX
			ZSFZ	FUZHOU/Changle	HH+00		Incheon	RKSIYPYX
			ZSNB	*NINGBO/Lishe*	HH+00		Wellington	NZZZYPYX
			ZSQD	QINGDAO/Liuting	HH+00			
			ZUUU	CHENGDU/Shuangliu	HH+00			
			ZUTF	*CHENGDU/Tianfu*	HH+00			
			ZBSJ	*SHIJIAZHUANG/Zhengding*	HH+00			
			ZWSH	KASHI/Kashi	HH+00			
		SACI41	ZBHH	HOHHOT/Baita	HH+00		BANGKOK	VTBBYPYX
			ZGHA	CHANGSHA/Huanghua	HH+00		BRISBANE	YBBBYPYX
			ZHCC	*ZHENGZHOU/Xinzheng*	HH+00		NADI	NFFNYPYX
			ZHHH	WUHAN/Tianhe	HH+00		SINGAPORE	WSZZYPYM
			ZJHK	*HAIKOU/Meilan*	HH+00		TOKYO	RJTDYPYX
			ZJSY	SANYA/Phoenix	HH+00		Hong Kong	VHZZYPYX
			ZLLL	LANZHOU/Zhongchuan	HH+00		Jakarta	WIZZMZBB
			ZSNJ	NANJING/Lukou	HH+00		Karachi	OPZZYPYX
			ZSOF	HEFEI/Luogang	HH+00		Mumbai	VABBYPYX
			ZUCK	CHONGQING/Jiangbei	HH+00		Incheon	RKSIYPYX
			ZYCC	*CHANGCHUN/Longjia*	HH+00		Ulaanbaatar	ZMUBYMYX
			ZYHB	HARBIN/Taiping	HH+00		Wellington	NZZZYPYX
Brisbane	**YBBN**	**SAAU31**	YPAD	ADELAIDE/Adelaide Intl	HH+00/30		BANGKOK	VTBBYPYX
			YBBN	BRISBANE/Brisbane Intl	HH+00/30		BRISBANE	YBBBYPYX
			YBCS	CAIRNS/Cairns Intl	HH+00/30		NADI	NFFNYPYX
			YSCB	CANBERRA	HH+00/30		SINGAPORE	WSZZYPYX
			YPDN	DARWIN/Darwin Intl	HH+00/30		TOKYO	RJTDYPYX
			YBCG	GOLD COAST	HH+00/30		Beijing	ZBBBYPYX
			YMHB	HOBART	HH+00/30		Hong Kong	VHZZYPYX
			YMML	MELBOURNE/Melbourne Intl	HH+00/30		Incheon	RKSIYPYS
			YPPH	PERTH/Perth Intl	HH+00/30		Jakarta	WIZZYPYX
			YSSY	SYDNEY/Sydney (Kingsford Smith) Intl	HH+00/30		Manila	RPLLYPYX
							Mumbai	VABBYPYX
							Wellington	NZZZYPYX
		SAAU32	YBAS	ALICE SPRINGS	HH+00/30		BANGKOK	VTBBYPYX
			YMAV	AVALON	HH+00/30		BRISBANE	YBBBYPYX
			YBWW	Brisbane West Wellcamp	HH+00/30		NADI	NFFNYPYX
			YBRM	BROOME/Broome Intl	HH+00/30		SINGAPORE	WSZZYPYX
			YBLN	Busselton	HH+00/30		TOKYO	RJTDYPYX
			YPXM	CHRISTMAS ISLAND	HH+00/30		Beijing	ZBBBYPYX
			YPCC	COCOS (KEELING) ISLAND Intl	HH+00/30		Hong Kong	VHZZYPYX
			YCFS	COFFS HARBOUR	HH+00/30		Incheon	RKSIYPYS
			YPKG	KALGOORLIE-BOULDER	HH+00/30		Jakarta	WIZZYPYX
			YMLT	LAUNCESTON	HH+00/30		Manila	RPLLYPYX
			YPLM	LEARMONTH	HH+00/30		Mumbai	VABBYPYX
			YLHI	LORD HOWE ISLAND	HH+00/30		Wellington	NZZZYPYX

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		METAR Bulletin			Bul. Time	Available	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome			RODB/ROC	AFTN Address
			YSNF	NORFOLK ISLAND Intl	HH+00/30			
			YPPD	PORT HEDLAND	HH+00/30			
			YBRK	ROCKHAMPTON	HH+00/30			
			YBSU	SUNSHINE COAST AIRPORT	HH+00/30			
		SAAU33	YGEL	GERALDTON	HH+00/30		BANGKOK	VTBBYPYX
			YGLA	*GLADSTONE*	HH+00/30		BRISBANE	YBBBYPYX
			YHID	HORN ISLAND	HH+00/30		NADI	NFFNYPYX
			YPJT	*PERTH/Jandakot*	HH+00/30		SINGAPORE	WSZZYPYX
			YPWR	*WOOMERA*	HH+00/30		TOKYO	RJTDYPYX
			YSDU	*DUBBO*	HH+00/30		Beijing	ZBBBYPYX
			YSRI	*RICHMOND, NSW*	HH+00/30		Hong Kong	VHZZYPYX
			YSTW	*TAMWORTH*	HH+00/30		Incheon	RKSIYPYS
							Jakarta	WIZZYPYX
							Manila	RPLLYPYX
							Mumbai	VABBYPYX
							Wellington	NZZZYPYX
		SAAU34	*YBHM*	*HAMILTON ISLAND*	HH+00/30		BANGKOK	VTBBYPYX
			YBMA	*MOUNT ISA*	HH+00/30		BRISBANE	YBBBYPYX
							NADI	NFFNYPYX
							SINGAPORE	WSZZYPYX
							TOKYO	RJTDYPYX
							Hong Kong	VHZZYPYX
							Incheon	RKSIYPYS
							Jakarta	WIZZYPYX
							Wellington	NZZZYPYX
		SAAU35	*YCIN*	*CURTIN*	HH+00/30		BANGKOK	VTBBYPYX
			YFRT	*FORREST*	HH+00/30		BRISBANE	YBBBYPYX
			YPKU	*KUNUNURRA*	HH+00/30		NADI	NFFNYPYX
			YPGV	*GOVE*	HH+00/30		SINGAPORE	WSZZYPYX
							TOKYO	RJTDYPYX
							Hong Kong	VHZZYPYX
							Incheon	RKSIYPYS
							Jakarta	WIZZYPYX
							Wellington	NZZZYPYX
		SAAU36	*YAMB*	*AMBERLEY*	HH+00/30		BANGKOK	VTBBYPYX
			YPEA	*PEARCE*	HH+00/30		BRISBANE	YBBBYPYX
			YPTN	TINDAL	HH+00/30		NADI	NFFNYPYX
			YBTL	TOWNSVILLE/Townsville Intl	HH+00/30		SINGAPORE	WSZZYPYX
			YWLM	WILLIAMTOWN	HH+00/30		TOKYO	RJTDYPYX
							Beijing	ZBBBYPYX
							Hong Kong	VHZZYPYX
							Incheon	RKSIYPYS
							Jakarta	WIZZYPYX
							Manila	RPLLYPYX
							Mumbai	VABBYPYX
							Wellington	NZZZYPYX
		SATM31	WPDL	DILI/Presidente Nicolau Lobato Intl	HH+00/30		BANGKOK	VTBBYPYX

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		**METAR Bulletin**			**Bul. Time**	**Available**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**			**RODB/ROC**	**AFTN Address**
							BRISBANE	YBBBYPYX
							NADI	NFFNYPYX
							SINGAPORE	WSZZYPYX
							TOKYO	RJTDYPYX
							Beijing	ZBBBYPYX
							Hong Kong	VHZZYPYX
							Incheon	RKSIYPYS
							Jakarta	WIZZYPYX
							Manila	RPLLYPYX
							Mumbai	VABBYPYX
							Wellington	NZZZYPYX
		SANG31	AYPY	PORT MORESBY Intl	HH+00		BANGKOK	VTBBYPYX
			AYWK	*WEWAK*	HH+00	NR	BRISBANE	YBBBYPYX
			AYVN	VANIMO	HH+00	NR	NADI	NFFNYPYX
			AYNZ	*NADZAB*	HH+00	NR	SINGAPORE	WSZZYPYM
			AYMH	*MOUNT HAGEN*	HH+00	NR	TOKYO	RJTDYPYX
			AYGN	*GURNEY*	HH+00	NR	Beijing	ZBBBYPYX
			AYMO	*MOMOTE*	HH+00	NR	Hong Kong	VHZZYPYX
			ANYN	NAURU I.	HH+00		Jakarta	WIZZMIMI
			AGGH	HONIARA (HENDERSON)	HH+00		Wellington	NZZZYPYX
Colombo	**VCCC**	**SASB31**	VCBI	BANDARANAIKE INTL AP COLOMBO	HH+10		BANGKOK	VTBBYPYX
			VCRI	MATTALA RAJAPAKSA INTERNATIONAL AIRPORT	HH+10		BRISBANE	YBBBYPYX
			VCCH	HINGURAKGODA/MINNERIYA	HH+10		NADI	NFFNYPYX
							SINGAPORE	WSZZYPYM
		SAMV31	VRMG	GAN INTERNATIONAL AIRPORT	HH+10		TOKYO	RJTDYPYX
			VRMH	HANIMAADHOO INTERNATIONAL AIRPORT	HH+10		Beijing	ZBBBYPYX
			VRMM	MALE INTERNATIONAL AIRPORT	HH+10		Hong Kong	VHZZYPYX
							Kuala Lumpur	WMZZYPYR
							Mumbai	VABBYPYX
Delhi	**VIDP**	**SAIN32**	VIDP	DELHI/Indira Gandhi Intl	HH+00/30		BANGKOK	VTBBYPYX
			VILK	LUCKNOW	HH+00/30		BRISBANE	YBBBYPYX
			VIAR	AMRITSAR	HH+00/30		NADI	NFFNYPYX
			VEBN	*VARANASI*	HH+00/30		SINGAPORE	WSZZYPYM
			VIJP	JAIPUR	HH+00/30		TOKYO	RJTDYPYX
			VIBN	VARANASI/Lal Bahadur Shastri	HH+00/30		Beijing	ZBBBYPYX
							Kolkata	VECCYPYX
							Hong Kong	VHZZYPYX
							Karachi	OPZZYPYX
							Mumbai	VABBYPYX
Hong Kong	**VHHH**	**SAHK31**	VHHH	HONG KONG/Int	HH+00/30		BANGKOK	VTBBYPYX
			RCTP	TAIBEI CITY/Taibei Intl	HH+00/30		BRISBANE	YBBBYPYX
			RCKH	GAOXIONG	HH+00/30		NADI	NFFNYPYX
			RCSS	TABEI/Songshan	HH+00/30		SINGAPORE	WSZZYPYM
			RCMQ	*TAICHUNG/Qingquangang*	HH+00/30		TOKYO	RJTDYPYX
			RCNN	*TAINAN*	HH+00/30		Beijing	ZBBBYPYX

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		**METAR Bulletin**			**Bul. Time**	**Available**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**			**RODB/ROC**	**AFTN Address**
			RCFN	*TAIDONG/Fengnian*	HH+00/30	2200-1200	Kuala Lumpur	WMZZYPYR
			VMMC	MACAO/Intl	HH+00/30		Incheon	RKSIYPYX
			RPLL	MANILA/Ninoy Aquino Intl	HH+00		Wellington	NZZZYPYX
			RPVM	LAPU-LAPU/Mactan-Cebu	HH+00			
			RPMD	DAVAO/Francisco Bangoy Intl	HH+00			
			RPLB	SUBIC BAY, Subic Bay Intl	HH+00			
			RPLI	LAOAG/Intl	HH+00	2100-1200, 1500, 1800		
			RPMZ	ZAMBOANGA/Intl	HH+00	2100-1200, 1500, 1800		
			RPLC	PAMPANGA/Clark Intl	HH+00			
			RPVP	PUERTO PRINCESA/Intl	HH+00	2100-1200, 1500, 1800		
Incheon	**RKSI**	**SAKO31**	RKSI	INCHEON	HH+00/30		BANGKOK	VTBBYPYX
			RKSS	GIMPO	HH+00		BRISBANE	YBBBYPYX
			RKPC	JEJU	HH+00		NADI	NFFNYPYX
			RKPK	GIMHAE	HH+00		SINGAPORE	WSZZYPYM
			RKTU	CHEONGJU	HH+00		TOKYO	RJTDYPYX
			RKNY	YANGYANG	HH+00		Beijing	ZBBBYPYX
			RKTN	DAEGU	HH+00		Hong Kong	VHZZYPYX
			RKJB	MUAN	HH+00		Singapore	WSZZYPYM
							Tokyo	RJTDYPYX
							Wellington	NZZZYPYX
							Mumbai	VABBYPYX
Jakarta	**WIII**	**SAID31**	WAAA	~~UJUNG PANDANG~~MAKASSAR /Sultan Hasanuddin	HH+00/30		BANGKOK	VTBBYPYX
			WABB	BIAK/Frans Kaisiepo	HH+00/30		BRISBANE	YBBBYPYX
			WIHH	JAKARTA/Halimperdana Kusuma	HH+00/30	~~2200-1700~~	NADI	NFFNYPYX
			WIII	JAKARTA/Soekarno Hatta (COMM CENTER)	HH+00/30		SINGAPORE	WSZZYPYM
			WIDD	BATAM/Hang Nadim	HH+00/30		TOKYO	RJTDYPYX
			WIMM	MEDAN/Kualanamu~~Polonia~~	HH+00/30		Beijing	ZBBBYPYX
			WADD	BALI/I Gusti Ngurah Rai	HH+00/30		Hong Kong	VHZZYPYX
			WARR	SURABAYA/Juanda	HH+00/30		Kuala Lumpur	WMZZYPYR
							Wellington	NZZZYPYX
		SAID32	WAMM	MANADO/Sam Ratulangi	HH+00/30		BANGKOK	VTBBYPYX
			WIBB	PEKANBARU/Sultan Syarif Kasim II	HH+00/30		BRISBANE	YBBBYPYX
			WIDN	TANJUNG PINANG/Raja Haji Fisabilillah Int'l~~Kijang~~	HH+00/30	~~2200-0500~~ 0000-1200	NADI	NFFNYPYX
			WIEE	PA~~N~~DANG PARIAMAN/Minangkabau international	HH+00/30		SINGAPORE	WSZZYPYM
			WIOO	PONTIANAK/Supadio	HH+00/30		TOKYO	RJTDYPYX
			WIPP	PALEMBANG/Sultan Mahmud Badaruddin II	HH+00/30		Beijing	ZBBBYPYX
			WAOO	BANJARMASIN/Syamsuddin Noor	HH+00/30		Hong Kong	VHZZYPYX
			WALL	BALIKPAPAN/Sultan Aji Muhammad Sulaiman Sepinggan	HH+00/30		Kuala Lumpur	WMZZYPYR
			WADL	PRAYA/Zainuddin Abdul Madjid	HH+00/30		Wellington	NZZZYPYX
			WITT	BANDA ACEH/Sultan Iskandar Muda	HH+00/30	2300-1500		
			WAHI	KULON PROGO/Internasional Yogyakarta	HH+00/30			
		SAID33	~~WAYY~~	~~TIMIKA/Moses Kilangin~~	~~HH+00/30~~	~~2100-0800~~	BANGKOK	VTBBYPYX
			WAJJ	JAYAPURA/Sentani	HH+00/30		BRISBANE	YBBBYPYX
			WAKK	MERAUKE/Mopah	HH+00/30	2200-0500	NADI	NFFNYPYX

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		**METAR Bulletin**			**Bul. Time**	**Available**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**			**RODB/ROC**	**AFTN Address**
			WAPP	AMBON/Pattimura	HH+00/30		SINGAPORE	WSZZYPYM
			WAHS	SEMARANG/Jenderal Ahmad Yani International	HH+00/30	2300-1700	TOKYO	RJTDYPYX
			WILL	BANDAR LAMPUNG/Radin Inten II	HH+00/30		Beijing	ZBBBYPYX
			WATT	KUPANG/El Tari	HH+00/30		Hong Kong	VHZZYPYX
			WAQQ	TARAKAN/Juwata	HH+00/30	2200-1200	Kuala Lumpur	WMZZYPYR
			WADY	BANYUWANGI/Banyuwangi	HH+00/30	2300-1100	Wellington	NZZZYPYX
			WIMN	SIBORONGBORONG/Raja Sisingamangaraja XII	HH+00/30	0100-0800		
Karachi	**OPKC**	**SAPK31**	OPKC	KARACHI/Jinnah Int'l	HH+00/30		BANGKOK	VTBBYPYX
			OPIS	Islamabad International Airport	HH+00/30		BRISBANE	YBBBYPYX
			OPLA	LAHORE/Allama Iqbal Int'l	HH+00/30		NADI	NFFNYPYX
			OPNH	NAWABSHAH	HH+00/30		SINGAPORE	WSZZYPYM
			OPGW	*New Gwadar International Airport*	HH+00/30		TOKYO	RJTDYPYX
			OPPS	PESHAWAR	HH+00/30		Abu Dhabi	OMZZYPYX
			OPSK	*SUKKUR*	HH+00/30		Bahrain	OBZZYPYX
			OPMT	Multan	HH+00/30		Beijing	ZBBBYPYX
			OPST	*Sialkot*	HH+00/30		Kolkata	VECCYPYX
			OPFA	Faisalabad	HH+00/30		Delhi	VIDDYPYX
							Hong Kong	VHZZYPYX
							Mumbai	VABBYPYX
							Tehran	OIZZYPYX
Kolkata	**VECC**	**SAIN33**	VECC	NETAJI SUBHASH CHANDRA BOSE INTERNATIONAL AIRPORT, KOLKATA	HH+00/30		BANGKOK	VTBBYPYX
			VEPT	PATNA	HH+00/30		BRISBANE	YBBBYPYX
			VEGY	GAYA	HH+00/30		NADI	NFFNYPYX
			VEGT	GUWAHATI	HH+00/30		SINGAPORE	WSZZYPYM
		SABW31	VGEG	M.A. HANNAN INTL. CHITTAGONG	HH+00/30		TOKYO	RJTDYPYX
			VGHS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT	HH+00/30		Beijing	ZBBBYPYX
			VGSY	OSMANI INTERNATIONAL AIRPORT,SYLHET	HH+00/30		Colombo	VCCCYPYX
		SAAS31	VNKT	KATHMANDU	HH+00/30		Delhi	VIDPYPYX
			VQPR	PARO/Intl.	HH+00/30		Hong Kong	VHZZYPYX
							Karachi	OPZZYPYX
							Mumbai	VABBYPYX
Kuala Lumpur	**WMKK**	**SAMS31**	WBGG	KUCHING/Intl	HH+00/30		BANGKOK	VTBBYPYX
			WBKK	KOTA KINABALU/Intl	HH+00/30		BRISBANE	YBBBYPYX
			WBSB	BRUNEI/Intl	HH+00/30		NADI	NFFNYPYX
			WMKK	SEPANG/KL International Airport	HH+00/30		SINGAPORE	WSZZYPYM
			WMKP	PENANG/Intl	HH+00/30		TOKYO	RJTDYPYX
			WSSS	SINGAPORE/Changi	HH+00/30		Beijing	ZBBBYPYX
			WSSL	SELETAR	HH+00/30		Colombo	VCCCYPYX
			WMSA	SUBANG/Sultan Abdul Aziz Shah	HH+00/30		Hong Kong	VHZZYPYX
			WSAP	PAYA LEBAR (RSAF)	HH+00/30		Jakarta	WIZZMBMB
							Manila	RPLLYPYX
							Mumbai	VABBYPYX
							Incheon	RKSIYPYX
							Wellington	NZZZYPYX

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		**METAR Bulletin**			**Bul. Time**	**Available**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**			**RODB/ROC**	**AFTN Address**
		SAMS38	*WBGB*	*BINTULU*	HH+00		BANGKOK	VTBBYPYX
			WBGR	MIRI	HH+00		BRISBANE	YBBBYPYX
			WBGS	SIBU	HH+00		NADI	NFFNYPYX
			WBKL	LABUAN	HH+00		SINGAPORE	WSZZYPYM
			WBKS	SANDAKAN	HH+00		TOKYO	RJTDYPYX
			WBKW	TAWAU	HH+00		Beijing	ZBBBYPYX
			WMKD	KUANTAN	HH+00		Colombo	VCCCYPYX
			WMKL	PULAU LANGKAWI/Intl	HH+00		Hong Kong	VHZZYPYX
			WMKM	MALACCA	HH+00		Jakarta	WIZZMBMB
			WMKJ	JOHOR BAHRU/Sultan Ismail	HH+00		Manila	RPLLYPYX
							Mumbai	VABBYPYX
							Incheon	RKSIYPYX
							Wellington	NZZZYPYX
Mumbai	**VABB**	**SAIN31**	VAAH	AHMEDABAD	HH+00/30		BANGKOK	VTBBYPYX
			VABB	MUMBAI/Chhatrapati Shivaji Intl.	HH+00/30		BRISBANE	YBBBYPYX
			VANP	NAGPUR	HH+00/30		NADI	NFFNYPYX
			VOMM	CHENNAI	HH+00/30		SINGAPORE	WSZZYPYM
			VOTR	TIRUCHCHIRAPPALLI	HH+00/30		TOKYO	RJTDYPYX
			VOTV	TRIVANDRUM	HH+00/30		Abu Dhabi	OMZZYPYX
			VOHS	HYDERABAD	HH+00/30		Bahrain	OBZZYPYX
			VOBL	BANGALORE INTL APT	HH+00/30		Beijing	ZBBBYPYX
			VOCL	CALICUT	HH+00/30		Colombo	VCCCYPYX
			VOCI	COCHIN INTERNATIONAL	HH+00/30		Delhi	VIDPYPYX
			VOCB	COIMBATORE	HH+00/30		Hong Kong	VHZZYPYX
			VOML	MANGALORE	HH+00/30		Karachi	OPZZYPYX
							Kolkata	VECCYPYX
							Tehran	OIZZYPYX
Nadi	**NFFN**	**SAPS31**	NCRG	RAROTONGA Intl.	HH+00		BANGKOK	VTBBYPYX
			NFFN	NADI/Intl	HH+00		BRISBANE	YBBBYPYX
			NFNA	NAUSORI/Intl	HH+00		NADI	NFFNYPYX
			NFTF	FUA'AMOTU INTL.	HH+00		SINGAPORE	WSZZYPYM
			NFTV	VAVA'U	HH+00		TOKYO	RJTDYPYX
			NGFU	FUNAFUTI/Intl	HH+00		Wellington	NZZZYPYX
			NGTA	TARAWA/Bonriki Intl	HH+00			
			NIUE	NIUE Intl	HH+00			
			NSFA	FALEOLO/Intl	HH+00			
			NVSS	SANTO/Pekoa	HH+00			
			NVVV	PORT VILA/Bauerfield	HH+00			
			PLCH	CHRISTMAS ISLAND	HH+00			
			NFTL	HA'APAI	HH+00			
		SAPS32	NLWW	WALLIS HIHIFO	HH+00			
			NWWW	NOUMEA LA TANTOUTA	HH+00			
		SAPS33	NTAA	TAHITI FAAA	HH+00			
Tokyo	**RJTD**	**SAJP31**	RJAA	NARITA Intl	HH+00		BANGKOK	VTBBYPYX
			RJBB	KANSAI Intl	HH+00		BRISBANE	YBBBYPYX

Table A : Collection and Dissemination of METAR (SA) Bulletins

1		2			3	4	5	
ROC		**METAR Bulletin**			**Bul. Time**	**Available**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**			**RODB/ROC**	**AFTN Address**
			RJCH	HAKODATE	HH+00	22:00-11:00	NADI	NFFNYPYX
			RJGG	CHUBU CENTRAIR Intl	HH+00		SINGAPORE	WSZZYPYM
			RJOO	OSAKA Intl	HH+00	20:00-11:00	TOKYO	RJTDYPYX
			RJSS	SENDAI	HH+00	21:00-12:00	Beijing	ZBBBYPYX
			RJTT	TOKYO Intl	HH+00		Guam	PGUMCOAX
			ROAH	NAHA	HH+00		Hong Kong	VHZZYPYX
							Incheon	RKSIYPYX
							London	EGZZMASI
							Wellington	NZZZYPYX
		SAJP32	RJCC	SAPPORO/New Chitose	HH+00		BANGKOK	VTBBYPYX
			RJFF	FUKUOKA	HH+00		BRISBANE	YBBBYPYX
			RJFK	KAGOSHIMA	HH+00	21:00-12:00	NADI	NFFNYPYX
			RJFU	NAGASAKI	HH+00	22:00-12:00	SINGAPORE	WSZZYPYM
			RJOA	HIROSHIMA	HH+00	22:00-13:00	TOKYO	RJTDYPYX
			RJFT	KUMAMOTO	HH+00	22:00-12:00	Beijing	ZBBBYPYX
			RJSN	NIIGATA	HH+00	22:00-12:00	Guam	PGUMCOAX
			RJFO	OITA	HH+00	22:00-13:00	Hong Kong	VHZZYPYX
			RJOB	OKAYAMA	HH+00	22:00-12:00	Incheon	RKSIYPYX
			RJOT	TAKAMATSU	HH+00	22:00-12:00	London	EGZZMASI
			RJNK	*KANAZAWA/Komatsu*	HH+00		Wellington	NZZZYPYX
			RJNT	*TOYAMA*	HH+00	22:00-12:00		
		SAJP38	RJCK	KUSHIRO	HH+00	22:00-11:00	BANGKOK	VTBBYPYX
			RJCM	*MEMANBETSU*	HH+00	23:00-11:00	BRISBANE	YBBBYPYX
			RJCB	*OBIHIRO*	HH+00	23:00-11:00	NADI	NFFNYPYX
			RJOC	*IZUMO*	HH+00	22:00-11:00	SINGAPORE	WSZZYPYM
			RJOH	*MIHO*	HH+00		TOKYO	RJTDYPYX
			RJOK	*KOCHI*	HH+00	22:00-11:00	Beijing	ZBBBYPYX
			RJFM	MIYAZAKI	HH+00	22:00-12:00	Brasilia	SBBRYZYX
			ROIG	NEW ISHIGAKI	HH+00	21:00-11:00	Hong Kong	VHZZYPYX
			RJNS	SHIZUOKA	HH+00	23:00-12:00	Incheon	RKSIYPYX
			RJSA	AOMORI	HH+00	22:00-12:00	London	EGZZMASI
			RJSF	FUKUSHIMA	HH+00	22:00-11:00	Rayong	VTBUYMYX
			RJOM	MATSUYAMA	HH+00	22:00-12:00		
			RJEC	ASAHIKAWA	HH+00	22:00-11:00		
			RJSK	AKITA	HH+00	22:00-12:00		
			RJAH	*HYAKURI*	HH+00			
			RJFR	KITAKYUSHU	HH+00			
			RJFS	SAGA	HH+00	22:00-14:00		
			RJSI	HANAMAKI	HH+00	23:00-10:00		
Wellington	**NZKL**	**SANZ31**	NZWN	WELLINGTON Intl	HH+00/30		BANGKOK	VTBBYPYX
			NZAA	AUCKLAND Intl	HH+00/30		BRISBANE	YBBBYPYX
			NZCH	CHRISTCHURCH Intl			NADI	NFFNYPYX
		SANZ32	NZQN	QUEENSTOWN	HH+00/30		SINGAPORE	WSZZYPYM
					HH+00/30		TOKYO	RJTDYPYX
							Beijing	ZBBBYPYX
							Hong Kong	VHZZYPYX
							Incheon	RKSIYPYX
							Jakarta	WIZZYPYX

APPENDIX B - Collection and Dissemination of TAF (FT) Bulletins

Table B : FT TAF

Explanation of the Table

Col. 1: Name and ICAO location indicator of the ROC compiling the bulletin

Col. 2: Description of the TAF Bulletin

Col. 3: Dissemination of the bulletin to other ROCs and RODBs

Notes: *1* *The TAF filing time should be not earlier than 1 hour before the start of the period of validity.*

2 *TAF that do not meet 24- and 30-hour IATA requirements are indicated in the TAF validity column with the required validity shown in parenthesis.*

3 *TAF included in VOLMET broadcasts are listed in APAC, ANP, VOL II, Table MET II-3, VOLMET Broadcasts.*

4 *Aerodromes not listed in Table AOP 1 are indicated in italics.*

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

Table B : Collection and Dissemination of TAF (FT) Bulletins									
1 ROC		2 TAF Bulletin						3 Dissemination	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of validity**	**TAF validity**	**RODB/ROC**	**AFTN address**
ASIA/PAC REGION									
Bangkok	**VTBB**	**FTAE31**	VTBD	BANGKOK/Don Mueang Intl Airport	0535	0600	30	BANGKOK	VTBBYPYX
			VTBS	BANGKOK/Suvarnabhumi Intl Airport	1135	1200	30	BRISBANE	YBBBYPYX
			VTBU	RAYONG/U-Tapao Intl	1735	1800	24	NADI	NFFNYPYX
			VTCC	CHIANG MAI/Chiang Mai Intl. Airport	2335	0000	30	SINGAPORE	WSZZYPYX
			VTSP	PHUKET/Phuket Intl			30	TOKYO	RJTDYPYX
			VTSS	SONGKHLA/Hat Yai Intl			24	Abu Dhabi	OMZZYPYX
								Bahrain	OBZZYPYX
								Beijing	ZBBBYPYX
								Beirut	OLLLYPYX
								Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Kuala Lumpur	WMZZYPYR
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Wellington	NZZZYPYX
		FTAE32	VDPP	PHNOM PENH	0535	0600	18 (24)	BANGKOK	VTBBYPYX
			~~VDSR~~	~~SIEM REAP~~	1135	1200	~~18 (24)~~	BRISBANE	YBBBYPYX

Table B : Collection and Dissemination of TAF (FT) Bulletins

1 ROC		2 TAF Bulletin						3 Dissemination	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of validity**	**TAF validity**	**RODB/ROC**	**AFTN address**
			VDSV	SIHANOUK	1735	1800	18 (24)	NADI	NFFNYPYX
			VDSA	SIEM REAP/Siem Reap Angkor Intl	2335	0000	18 (24)	SINGAPORE	WSZZYPYX
			VGHS	HAZRAT SHAHJALAL INTL APT			30	TOKYO	RJTDYPYX
			VLVT	VIENTIANE (Wattay)			24	Bahrain	OBZZYPYX
			VYMD	MANDALAY INTERNATIONAL*			24	Beijing	ZBBBYPYX
			VYNT	NAYPYITAW INTERNATIONAL			24	Beirut	OLLLYPYX
			VYYY	YANGON INTERNATIONAL			24	Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
				*Issued 0500/1100				Karachi	OPZZYPYX
								Kuala Lumpur	WMZZYPYR
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Wellington	NZZZYPYX
		FTAE33	VLLB	LUANG PRABANG	0535	0600	24	BANGKOK	VTBBYPYX
			VLLN	*LUANG NAMTHA*	1135	1200	24	BRISBANE	YBBBYPYX
			VLPS	PAKSE	2335	0000	24	NADI	NFFNYPYX
			VLSK	SAVANNAKHET			24	SINGAPORE	WSZZYPYX
								TOKYO	RJTDYPYX
								Bahrain	OBZZYPYX
								Beijing	ZBBBYPYX
								Beirut	OLLLYPYX
								Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Kuala Lumpur	WMZZYPYR
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Wellington	NZZZYPYX
		FTAE34	VVCI	CAT BI	0535	0600	24	BANGKOK	VTBBYPYX
			VVCR	KHANH HOA/Cam Ranh Int'l	1135	1200	~~30~~24	BRISBANE	YBBBYPYX
			VVCT	CAN THO/Can Tho Int'l	1735	1800	24	NADI	NFFNYPYX
			VVDN	DA NANG	2335	0000	24	SINGAPORE	WSZZYPYX
			VVNB	HA NOI/Noi Bai			24	TOKYO	RJTDYPYX
			VVPB	HUE/Phu Bai			24	Abu Dhabi	OMZZYPYX
			VVPQ	KIEN GIANG/Phu Quoc Int'l			24	Bahrain	OBZZYPYX
			VVTS	HO CHI MINH/Tan Son Nhat			~~24~~30	Beijing	ZBBBYPYX
			VVVD	Van Don Int'l			24	Beirut	OLLLYPYX
								Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Kuala Lumpur	WMZZYPYR
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Wellington	NZZZYPYX
		FTTH31	*VTBO*	*TRAT/Khao Sming*	0535	0600	24	BANGKOK	VTBBYPYX
			VTCH	*MAE HONG SON*	1135	1200	24	BRISBANE	YBBBYPYX
			VTCL	*LAMPANG*	1735	1800	24	NADI	NFFNYPYX
			VTCN	*NAN*	2335	0000	24	SINGAPORE	WSZZYPYX

Table B : Collection and Dissemination of TAF (FT) Bulletins

1 ROC		2 TAF Bulletin						3 Dissemination	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of validity**	**TAF validity**	**RODB/ROC**	**AFTN address**
			VTCP	*PHRAE*			24	TOKYO	RJTDYPYX
			VTCT	CHIANG RAI/Chiang Rai Intl Airport			30	Beijing	ZBBBYPYX
			VTPB	*PHETCHABUN*			24		
			VTPH	*PRACHUAP KHIRI KHAN/Hua Hin*			24		
			VTPM	*TAK/MAE SOT*			24		
			VTPO	*SUKHOTHAI*			24		
			VTPP	*PHITSANULOK*			24		
			VTPT	*TAK*			24		
		FTTH32	VTSB	SURAT THANI	0535	0600	24	BANGKOK	VTBBYPYX
			VTSC	*NARATHIWAT*	1135	1200	24	BRISBANE	YBBBYPYX
			VTSE	*CHUMPHON/Tab Gai*	1735	1800	24	NADI	NFFNYPYX
			VTSF	*NAKHON SI THAMMARAT*	2335	0000	24	SINGAPORE	WSZZYPYX
			VTSG	KRABI			24	TOKYO	RJTDYPYX
			VTSM	SURAT THANI/Samui			24	Beijing	ZBBBYPYX
			VTSR	*RANONG*			24		
			VTST	*TRANG*			24		
			VTSY	*BATONG*			24		
		FTTH33	*VTUD*	*UDON THANI*	0535	0600	24	BANGKOK	VTBBYPYX
			VTUI	*SAKON NAKHON/Ban Khai*	1135	1200	24	BRISBANE	YBBBYPYX
			VTUK	KHON KAEN	1735	1800	24	NADI	NFFNYPYX
			VTUL	*LOEI*	2335	0000	24	SINGAPORE	WSZZYPYX
			VTUO	*BURI RAM*			24	TOKYO	RJTDYPYX
			VTUQ	*NAKHON RATCHASIMA*			24	Beijing	ZBBBYPYX
			VTUU	UBON RATCHATHANI			24		
			VTUV	*ROI ET*			24		
			VTUW	*NAKHON PHANOM*			24		
Beijing	**ZBBB**	**FTCI31**	ZBAA	BEIJING/Capital	0535	0600	30	BANGKOK	VTBBYPYX
			ZBAD	*BEIJING/Daxing*	1135	1200	24	BRISBANE	YBBBYPYX
			~~*ZBSJ*~~	~~*SHIJIAZHUANG/Zhengding*~~	1735	1800	~~24~~	NADI	NFFNYPYX
			ZBTJ	TIANJIN/Binhai	2335	0000	24 (30)	SINGAPORE	WSZZYPYX
			ZBYN	TAIYUAN/Wusu			24	TOKYO	RJTDYPYX
			ZGGG	GUANGZHOU/Baiyun			30	Hong Kong	VHZZYPYX
			ZMCK	ULAANBAATAR/Chinggis Khaan			30	Karachi	OPZZYPYX
			ZSHC	HANGZHOU/Xiaoshan			24	Mumbai	VABBYPYX
			ZSPD	SHANGHAI/Pu Dong			30	Incheon	RKSIYPYX
			ZSSS	SHANGHAI/Hongqiao			24	Ulan Bator	ZMUBYMYX
			~~ZWSH~~	~~KASHI/Kashi~~			~~24 (30)~~	Wellington	NZZZYPYX
			ZWWW	URUMQI/Diwopu			24 (30)		
			ZYTL	DALIAN/Zhoushuizi			24		
			ZYTX	SHENYANG/Taoxian			24		
		FTCI32	ZGKL	GUILIN/Lianjiang	0535	0600	24	BANGKOK	VTBBYPYX
			ZGNN	NANNING/Wuxu	1135	1200	24	BRISBANE	YBBBYPYX
			ZGOW	*SHANTOU/Waisha*	1735	1800	24	NADI	NFFNYPYX
			ZGSZ	SHENZHEN/Baoan	2335	0000	24 (30)	SINGAPORE	WSZZYPYX
			ZLXY	XI'AN/Xianyang			24	TOKYO	RJTDYPYX
			ZMUB	ULAANBAATAR/Buyant-Ukhaa			30	Hong Kong	VHZZYPYX
			ZPPP	KUNMING/Wujiaba			24 (30)	Jakarta	WIZZYPYX
			ZSAM	XIAMEN/Gaoqi			24	Karachi	OPZZYPYX
			ZSFZ	FUZHOU/Changle			24	Kuala Lumpur	WMZZYPYR

Table B : Collection and Dissemination of TAF (FT) Bulletins									
1 ROC		2 TAF Bulletin						3 Dissemination	
Name	CCCC	BUL No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROC	AFTN address
			ZSNB	*NINGBO/Lishe*			24	Mumbai	VABBYPYX
			ZSQD	QINGDAO/Liuting			24	Wellington	NZZZYPYX
			ZUUU	CHENGDU/Shuangliu			24		
			ZUTF	*CHENGDU/Tianfu*			24		
			ZBSJ	*SHIJIAZHUANG/Zhengding*			24		
			ZWSH	KASHI/Kashi			24 (30)		
		FTCI41	ZBHH	HUHHOT/Baita	0535	0600	24	BANGKOK	VTBBYPYX
			ZGHA	CHANGSHA/Huanghua	1135	1200	24	BRISBANE	YBBBYPYX
			ZHCC	*ZHENGZHOU/Xinzheng*	1735	1800	24	NADI	NFFNYPYX
			ZHHH	WUHAN/Tianhe	2335	0000	24	SINGAPORE	WSZZYPYX
			ZJHK	*HAIKOU/Meilan*			24 (30)	TOKYO	RJTDYPYX
			ZJSY	SANYA/Phoenix			24	Hong Kong	VHZZYPYX
			ZLLL	LANZHOU/Zhongchuan			24	Jakarta	WIZZYPYX
			ZSNJ	NANJING/Lukou			24	Karachi	OPZZYPYX
			ZSOF	HEFEI/Luogang			24	Mumbai	VABBYPYX
			ZUCK	CHONGQING/Jiangbei			24	Incheon	RKSIYPYX
			ZYCC	*CHANGCHUN/Longjia*			24	Ulan Bator	ZMUBYMYX
			ZYHB	HARBIN/Taiping			24	Wellington	NZZZYPYX
Brisbane	**YBBN**	**FTAU31**	YPAD	ADELAIDE/Adelaide Intl	0235	0300	30	BANGKOK	VTBBYPYX
			YBBN	BRISBANE/Brisbane Intl	0535	0600	30	BRISBANE	YBBBYPYX
			YBCS	CAIRNS/Cairns Intl	0835	0900	24	NADI	NFFNYPYX
			YSCB	CANBERRA	1135	1200	24	SINGAPORE	WSZZYPYX
			YPDN	DARWIN/Darwin Intl	1435	1500	30	TOKYO	RJTDYPYX
			YBCG	GOLD COAST	1735	1800	24	Beijing	ZBBBYPYX
			YMHB	HOBART	2035	2100	24	Hong Kong	VHZZYPYX
			YMML	MELBOURNE/Melbourne Intl	2335	0000	30	Jakarta	WIZZYPYX
			YPPH	PERTH/Perth Intl			30	Manila	RPLLYPYX
			YSSY	SYDNEY/Sydney (Kingsford Smith) Intl			30	Mumbai	VABBYPYX
								Wellington	NZZZYPYX
		FTAU32	YBAS	ALICE SPRINGS	0535	0600	24	BANGKOK	VTBBYPYX
			YMAV	AVALON	1135	1200	24	BRISBANE	YBBBYPYX
			YBWW	Brisbane West Wellcamp	1735	1800	24	NADI	NFFNYPYX
			YBRM	BROOME/Broome Intl	2335	0000	24	SINGAPORE	WSZZYPYX
			YBLN	Busselton			24	TOKYO	RJTDYPYX
			YPXM	CHRISTMAS ISLAND			24	Beijing	ZBBBYPYX
			YPCC	COCOS (KEELING) ISLAND Intl			24	Hong Kong	VHZZYPYX
			YCFS	COFFS HARBOUR			24	Jakarta	WIZZYPYX
			YPKG	KALGOORLIE-BOULDER			24	Manila	RPLLYPYX
			YMLT	LAUNCESTON			24	Mumbai	VABBYPYX
			YPLM	LEARMONTH			24	Wellington	NZZZYPYX
			YLHI	LORD HOWE ISLAND			24		
			YSNF	NORFOLK ISLAND Intl			24		
			YPPD	PORT HEDLAND			24		
			YBRK	ROCKHAMPTON			24		
			YBSU	SUNSHINE COAST AIRPORT			24		
		FTAU33	*YSDU*	*DUBBO*	0535	0600	18	BANGKOK	VTBBYPYX
			YGEL	GERALDTON	1135	1200	18	BRISBANE	YBBBYPYX

Table B : Collection and Dissemination of TAF (FT) Bulletins									
1 ROC		2 TAF Bulletin						3 Dissemination	
Name	CCCC	BUL No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROC	AFTN address
			YGLA	*GLADSTONE*	1735	1800	18	NADI	NFFNYPYX
			YHID	HORN ISLAND	2335	0000	18	SINGAPORE	WSZZYPYX
			YPJT	*PERTH/Jandakot*			18	TOKYO	RJTDYPYX
			YSRI	*RICHMOND, NSW*			18	Beijing	ZBBBYPYX
			YSTW	*TAMWORTH*			18	Hong Kong	VHZZYPYX
			YPWR	*WOOMERA*			18	Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Wellington	NZZZYPYX
		FTAU34	*YBHM*	*HAMILTON ISLAND*	0500	0600	12	BANGKOK	VTBBYPYX
			YBMA	*MOUNT ISA*	1100	1200	12	BRISBANE	YBBBYPYX
					1700	1800		NADI	NFFNYPYX
					2300	0000		SINGAPORE	WSZZYPYX
								TOKYO	RJTDYPYX
								Beijing	ZBBBYPYX
								Hong Kong	VHZZYPYX
								Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Wellington	NZZZYPYX
		FTAU35	*YCIN*	*CURTIN*	0100	0200	12	BANGKOK	VTBBYPYX
			YFRT	*FORREST*	0700	0800	12	BRISBANE	YBBBYPYX
			YPGV	*GOVE*	1300	1400	12	NADI	NFFNYPYX
			YPKU	*KUNUNURRA*	1900	2000	12	SINGAPORE	WSZZYPYX
								TOKYO	RJTDYPYX
								Beijing	ZBBBYPYX
								Hong Kong	VHZZYPYX
								Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Wellington	NZZZYPYX
		FTAU36	*YAMB*	*AMBERLEY*	0235 (M-F)	0300 (M-F)	24	BANGKOK	VTBBYPYX
			YPEA	*PEARCE*	0535	0600	18	BRISBANE	YBBBYPYX
			YPTN	TINDAL	1135	1200	24	NADI	NFFNYPYX
			YBTL	TOWNSVILLE/Townsville Intl	1735	1800	24	SINGAPORE	WSZZYPYX
			YWLM	WILLIAMTOWN	2035 (M-F)	2100 (M-F)	24	TOKYO	RJTDYPYX
					2335	0000		Beijing	ZBBBYPYX
								Hong Kong	VHZZYPYX
								Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Wellington	NZZZYPYX
		FTTM31	WPDL	DILI/Presidente Nicolau Lobato Intl	0535	0600	12	BANGKOK	VTBBYPYX
					1135	1200		BRISBANE	YBBBYPYX
					1735	1800		NADI	NFFNYPYX
					2335	0000		SINGAPORE	WSZZYPYX
								TOKYO	RJTDYPYX
								Beijing	ZBBBYPYX

Table B : Collection and Dissemination of TAF (FT) Bulletins

1 ROC		2 TAF Bulletin						3 Dissemination	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of validity**	**TAF validity**	**RODB/ROC**	**AFTN address**
								Hong Kong	VHZZYPYX
								Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Wellington	NZZZYPYX
		FTNG31	AYPY	PORT MORESBY Intl	0535	0600	24	BANGKOK	VTBBYPYX
			AYWK	*WEWAK*	1135	1200	24	BRISBANE	YBBBYPYX
			AYVN	VANIMO	1735	1800	24	NADI	NFFNYPYX
			AYNZ	*NADZAB*	2335	0000	24	SINGAPORE	WSZZYPYX
			AYMH	*MOUNT HAGEN*			24	TOKYO	RJTDYPYX
			AYMO	*MOMOTE*			24	Beijing	ZBBBYPYX
			ANYN	NAURU I.			24	Hong Kong	VHZZYPYX
			AGGH	HONIARA (HENDERSON)			24	Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Wellington	NZZZYPYX
Hong Kong	**VHHH**	**FTHK31**	VHHH	HONG KONG/International	0235	0300	30	BANGKOK	VTBBYPYX
					0535	0600		BRISBANE	YBBBYPYX
					0835	0900		NADI	NFFNYPYX
					1135	1200		SINGAPORE	WSZZYPYX
					1435	1500		TOKYO	RJTDYPYX
					1735	1800		Beijing	ZBBBYPYX
					2035	2100		Mumbai	VABBYPYX
					2335	0000		Incheon	RKSIYPYX
								Wellington	NZZZYPYX
								London	EGZZMASI
		FTHK32	VMMC	MACAO/Intl	0535	0600	30	Washington	KWBCYMYX
			RCTP	TAIBEI CITY/Taibei Intl	1135	1200	30		
			RCKH	GAOXIONG	1735	1800	30		
			RPLL	MANILA/Ninoy Aquino Intl	2335	0000	30		
			RPVM	LAPU-LAPU/Mactan, Cebu			30		
			RPLC	PAMPANGA/Clark Intl			30		
		FTHK33	RCSS	TAIBEI/Songshan	0535	0600	24		
			RCMQ	*TAICHUNG/Qingquangang*	1135	1200	24		
			RCNN	*TAINAN*	1735	1800	24		
			RCFN	*TAIDONG/Fengnian*	2335	0000	24		
			RPMD	DAVAO/Francisco Bangoy Intl			24		
			RPLB	SUBIC BAY/Intl			24		
			RPLI	LAOAG/Intl			24		
			RPMZ	ZAMBOANGA/Intl			24		
			RPVP	PUERTO PRINCESA/Intl			24		
Incheon	**RKSI**	**FTKO31**	RKSI	INCHEON Intl	0535	0600	30	BANGKOK	VTBBYPYX
			RKSS	GIMPO Intl	1135	1200	30	BRISBANE	YBBBYPYX
			RKPC	JEJU Intl	1735	1800	30	NADI	NFFNYPYX
			RKPK	GIMHAE Intl	2335	0000	30	SINGAPORE	WSZZYPYX
			RKTU	CHEONGJU Intl			30	TOKYO	RJTDYPYX
			RKNY	YANGYANG Intl			30	Hong Kong	VHZZYPYX

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1 ROC		2 TAF Bulletin						3 Dissemination	
Name	CCCC	BUL No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROC	AFTN address
			RKTN	DAEGU INTL			30	Karachi	OPZZYPYX
			RKJB	MUAN Intl			30	Wellington	NZZZYPYX
Jakarta	**WIII**	**FTID32**	WAMM	MANADO/Sam Ratulangi	0535	0600	24	BANGKOK	VTBBYPYX
			WIBB	PEKANBARU/Sultan Syarif Kasim II	1135	1200	24	BRISBANE	YBBBYPYX
			WIDN	TANJUNG PINANG/Raja Haji Fisabilillah Int'l	1735	1800	24	NADI	NFFNYPYX
			WIEE	PADANG PARIAMAN/Minangkabau international	2335	0000	24	SINGAPORE	WSZZYPYM
			WIOO	PONTIANAK/Supadio			24	TOKYO	RJTDYPYX
			WIPP	PALEMBANG/Sultan Mahmud Badaruddin II			24	Beijing	ZBBBYPYX
			WAOO	BANJARMASIN/Syamsuddin Noor			24	Hong Kong	VHZZYPYX
			WALL	BALIKPAPAN/Sultan Aji Muhammad Sulaiman Sepinggan			24	Kuala Lumpur	WMZZYPYR
			WADL	PRAYA/Zainuddin Abdul Madjid			24	Wellington	NZZZYPYX
			WITT	BANDA ACEH/Sultan Iskandar Muda			24		
			WAHI	KULON PROGO/Internasional Yogyakarta			24		
		FTID33	WAJJ	JAYAPURA/Sentani	0535	0600	24		
			WAPP	AMBON/Pattimura	1135	1200	24		
			WAHS	SEMARANG/Jenderal Ahmad Yani International	1735	1800	24		
			WILL	BANDAR LAMPUNG/Radin Inten II	2335	0000	24		
			WATT	KUPANG/El Tari			24		
			WAQQ	TARAKAN/Juwata			24		
			WADY	BANYUWANGI/Banyuwangi			24		
			WIMN	SIBORONGBORONG/Raja Sisingamangaraja XII			24		
Karachi	**OPKC**	**FTPK31**	OPKC	KARACHI/Jinnah Intl	0535	0600	30	BANGKOK	VTBBYPYX
			OPIS	Islamabad International Airport	1135	1200	30	BRISBANE	YBBBYPYX
			OPLA	LAHORE/Allama Iqbal Int'l	1735	1800	30	NADI	NFFNYPYX
			OPNH	NAWABSHAH	2335	0000	30	SINGAPORE	WSZZYPYX
			OPPS	PESHAWAR			30	TOKYO	RJTDYPYX
			OPGW	*New Gwadar International Airport*			24	Abu Dhabi	OMZZYPYX
			OPSK	SUKKAR			24	Bahrain	OBZZYPYX
			OPMT	Multan			24	Beijing	ZBBBYPYX
			OPST	*Sialkot*			24	Beirut	OLLLYPYX
			OPFA	Faisalabad			24	Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Tehran	OIIIYPYX
Mumbai	**VABB**	**FTIN31**	VAAH	AHMEDABAD	0535	0600	30	BANGKOK	VTBBYPYX
			VABB	MUMBAI/Chhatrapati Shivaji Intl.	1135	1200	30	BRISBANE	YBBBYPYX
			VANP	NAGPUR	1735	1800	30	NADI	NFFNYPYX
			VOBL	BANGALORE INTL APT	2335	0000	30	SINGAPORE	WSZZYPYX
			VOCB	COIMBATORE			30	TOKYO	RJTDYPYX
			VOCI	COCHIN INTERNATIONAL AIRPORT			30	Abu Dhabi	OMZZYPYX
			VOCL	CALICUT			30	Bahrain	OBZZYPYX
			VOHS	HYDERABAD INTERNATIONAL AIRPORT			30	Beijing	ZBBBYPYX

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1 ROC		2 TAF Bulletin						3 Dissemination	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of validity**	**TAF validity**	**RODB/ROC**	**AFTN address**
			VOML	MANGALORE			30	Beirut	OLLLYPYX
			VOMM	CHENNAI			30	Hong Kong	VHZZYPYX
			VOTR	TIRUCHCHIRAPPALLI			30	Jeddah	OEJDYPYX
			VOTV	TRIVANDRUM			30	Karachi	OPZZYPYX
		FTIN32	VIDP	DELHI/Indira Gandhi Intl	0535	0600	30	Tehran	OIIIYPYX
			VEBN	*VARANASI*	1135	1200	30		
			VIAR	AMRITSAR	1735	1800	30		
			VIJP	JAIPUR	2335	0000	30		
			VILK	LUCKNOW			30		
			VIBN	VARANASI/Lal Bahadur Shastri			30		
		FTIN33	VECC	NETAJI SUBHASH CHANDRA BOSE INTERNATIONAL AIRPORT, KOLKATA	0535	0600	30		
			VEPT	PATNA	1135	1200	30		
			VEGY	GAYA	1735	1800	30		
			VEGT	GUWAHATI	2335	0000	30		
		FTSB31	VCBI	BANDARANAIKE INTL AP COLOMBO	0535	0600	30		
			VCRI	MATTALA RAJAPAKSA INTERNATIONAL AIRPORT	1135	1200	30		
			VCCH	HINGURAKGODA/MINNERIYA	1735	1800	30		
					2335	0000			
		FTMV31	VRMG	GAN INTERNATIONAL AIRPORT	0535	0600	30		
			VRMH	HANIMAADHOO INTERNATIONAL AIRPORT	1135	1200	30		
			VRMM	MALE INTERNATIONAL AIRPORT	1735	1800	30		
					2335	0000			
Kolkata	**VECC**	**FTBW31**	VGEG	M.A. HANNAN INTL. CHITTAGONG	0535	0600	30		
			VGHS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT	1135	1200	30		
			VGSY	OSMANI INTERNATIONAL AIRPORT,SYLHET	1735	1800	30		
					2335	0000			
		FTAS31	VNKT	KATHMANDU	0535	0600	30		
			VQPR	PARO/Intl.	1135	1200	30		
					1735	1800			
					2335	0000			
Nadi	**NFFN**	**FTPS31**	NCRG	RAROTONGA INTL.	0535	0600	24	BANGKOK	VTBBYPYX
			NFFN	NADI/Intl	1135	1200	24	BRISBANE	YBBBYPYX
			NFTF	FUA'AMOTU INTL.	1735	1800	24	NADI	NFFNYPYX
			NFTV	VAVA'U	2335	0000	24	SINGAPORE	WSZZYPYX
			NGFU	FUNAFUTI/Intl			24	TOKYO	RJTDYPYX
			NGTA	TARAWA/Bonriki Intl			24	Hong Kong	VHZZYPYX
			NIUE	NIUE Intl			24	Wellington	NZZZYPYX
			NVSS	SANTO/Pekoa			24		
			NVVV	PORT VILA/Bauerfield			24		
			PLCH	CHRISTMAS ISLAND			24		
			NFNA	NAUSOR/Intl			24		
			NSFA	FALEOLO/Intl			24		
		FTPS32	NLWW	WALLIS HIHIFO			24		

Table B : Collection and Dissemination of TAF (FT) Bulletins									
1 ROC		2 TAF Bulletin						3 Dissemination	
Name	CCCC	BUL No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROC	AFTN address
			NWWW	NOUMEA LA TANTOUTA			24		
		FTPS33	NTAA	TAHITI FAAA			24		
Singapore	WSSS	FTSR31	WSSS	SINGAPORE/Changi	0535	0600	30	BANGKOK	VTBBYPYX
			WSAP	PAYA LEBAR (RSAF)	1135	1200	30	BRISBANE	YBBBYPYX
			WSSL	SELETAR	1735	1800	30	NADI	NFFNYPYX
			WAAA	~~UJUNG PANDANG~~MAKASSAR /Sultan Hasanuddin (~~Comm Center~~)	2335	0000	30	SINGAPORE	WSZZYPYX
			WABB	BIAK/Frans Kaisiepo			30	TOKYO	RJTDYPYX
			WADD	BALI/I Gusti Ngurah Rai			24 (30)	Abu Dhabi	OMZZYPYX
			WARR	SURABAYA/Juanda			24	Bahrain	OBZZYPYX
			WIHH	JAKARTA/Halimperdana Kusuma			24	Beijing	ZBBBYPYX
			WIII	JAKARTA/Soekarno Hatta (COMM CENTER)			30	Beirut	OLLLYPYX
			WIMM	MEDAN/Kualanamu~~Polonia~~			24	Colombo	VCCCYPYX
								Hong Kong	VHZZYPYX
								Karachi	OPZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Wellington	NZZZYPYX
		FTSR32	WMKJ	JOHOR BAHRU/Sultan Ismail	0535	0600	24	BANGKOK	VTBBYPYX
			WMKK	SEPANG/KL International Airport	1135	1200	30	BRISBANE	YBBBYPYX
			WMKL	PULAU LANGKAWI/Intl	1735	1800	24	NADI	NFFNYPYX
			WMKM	MALACCA	2335	0000	24	SINGAPORE	WSZZYPYX
			WMKP	PENANG/Intl			24	TOKYO	RJTDYPYX
			WMSA	SUBANG/Sultan Abdul Aziz Shah			24 (30)	Beirut	OLLLYPYX
			WMKD	KUANTAN			24	Hong Kong	VHZZYPYX
								Manila	RPLLYMYX
								Mumbai	VABBYPYX
								Wellington	NZZZYPYX
		FTSR33	WBSB	BRUNEI/Intl	0535	0600	30		
			WBGB	*BINTULU*	1135	1200	24		
			WBGG	KUCHING/Intl	1735	1800	24		
			WBGR	MIRI	2335	0000	24		
			WBGS	SIBU			24		
			WBKK	KOTA KINABALU/Intl			24		
			WBKL	LABUAN (RMAF)			24		
			WBKS	SANDAKAN			24		
			WBKW	TAWAU			24		
Tokyo	RJTD	FTJP31	RJAA	NARITA Intl	0525	0600	30	BANGKOK	VTBBYPYX
			RJBB	KANSAI Intl	1125	1200	30	BRISBANE	YBBBYPYX
			RJCH	HAKODATE	1725	1800	30	NADI	NFFNYPYX
			RJGG	CHUBU CENTRAIR Intl	2325	0000	30	SINGAPORE	WSZZYPYX
			RJOO	OSAKA Intl			30	TOKYO	RJTDYPYX
			RJSS	SENDAI			30	Beijing	ZBBBYPYX
			RJTT	TOKYO Intl			30	Beirut	OLLLYPYX
			ROAH	NAHA			30	Brasilia	SBBRYZYX

Table B : Collection and Dissemination of TAF (FT) Bulletins									
1 ROC		2 TAF Bulletin						3 Dissemination	
Name	CCCC	BUL No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROC	AFTN address
								Colombo	VCBIYMYX
								Guam	PGUMCOAX
								Hong Kong	VHZZYPYX
								Karachi	OPZZYPYX
								London	EGZZMASI
								Mumbai	VABBYPYX
								Noumea	NWCCYMYX
								Rome	LIIBYMYX
								Saipan	PGSNYMYX
								Incheon	RKSIYPYX
								Washington	KWBCYMYX
								Wellington	NZZZYPYX
		FTJP32	RJCC	SAPPORO/New Chitose	0525	0600	30	BANGKOK	VTBBYPYX
			RJFF	FUKUOKA/Fukuoka	1125	1200	30	BRISBANE	YBBBYPYX
			RJFK	KAGOSHIMA	1725	1800	30	NADI	NFFNYPYX
			RJFO	OITA	2325	0000	30	SINGAPORE	WSZZYPYX
			RJFT	KUMAMOTO			30	TOKYO	RJTDYPYX
			RJFU	NAGASAKI			30	Beijing	ZBBBYPYX
			RJNK	*KANAZAWA/Komatsu*			30	Beirut	OLLLYPYX
			RJNT	*TOYAMA*			30	Brasilia	SBBRYZYX
			RJOA	HIROSHIMA			30	Colombo	VCBIYMYX
			RJOB	OKAYAMA			30	Guam	PGUMCOAX
			RJOT	TAKAMATSU			30	Hong Kong	VHZZYPYX
			RJSN	NIIGATA			30	Incheon	RKSIYPYX
								Karachi	OPZZYPYX
								London	EGZZMASI
								Mumbai	VABBYPYX
								Noumea	NWCCYMYX
								Saipan	PGSNYMYX
								Washington	KWBCYMYX
								Wellington	NZZZYPYX
		FTJP38	RJSA	AOMORI	0525	0600	30	BANGKOK	VTBBYPYX
			RJSF	FUKUSHIMA	1125	1200	30	BRISBANE	YBBBYPYX
			RJSK	AKITA	1725	1800	30	NADI	NFFNYPYX
			RJOM	MATSUYAMA	2325	0000	30	SINGAPORE	WSZZYPYX
			RJNS	SHIZUOKA			30	TOKYO	RJTDYPYX
			RJEC	ASAHIKAWA (civil)			30	Beijing	ZBBBYPYX
			RJAH	*HYAKURI*			30	Incheon	RKSIYPYX
			RJCM	*MEMANBETSU*			30		
			RJCK	KUSHIRO			30		
			RJCB	*OBIHIRO*			30		
			RJOC	*IZUMO*			30		
			RJOH	*MIHO*			30		
			RJOK	*KOCHI*			30		
			RJFM	MIYAZAKI			30		
			ROIG	NEW ISHIGAKI			30		
			RJFR	KITAKYUSHU			30		
			RJFS	SAGA			30		
			RJSI	HANAMAKI			30		
Wellington	**NZKL**	**FTNZ31**	NZAA	AUCKLAND Intl	0235	0300	30*	BANGKOK	VTBBYPYX

Table B : Collection and Dissemination of TAF (FT) Bulletins									
1 ROC		2 TAF Bulletin						3 Dissemination	
Name	CCCC	BUL No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROC	AFTN address
			NZCH	CHRISTCHURCH Intl	0535	0600	30*	BRISBANE	YBBBYPYX
			NZWN	WELLINGTON Intl	0835	0900	30*	NADI	NFFNYPYX
					1135	1200		SINGAPORE	WSZZYPYX
					1435	1500		TOKYO	RJTDYPYX
					1735	1800		Beijing	ZBBBYPYX
					2035	2100		Hong Kong	VHZZYPYX
					2335	0000			
				** For validities starting at 0300, 0900, 1500 and 2100, all TAFs will have a validity 3 hours ~~shorted~~ shorter than indicated.*					
		FTNZ32	NZQN	Queenstown	1130	1200	18		
					1730	1800			

APPENDIX I — ROBEX FOCAL POINTS

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

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…		

— END OF SECTION —

APPENDIX G — MET/IE WG Terms of Reference and Work Plan

(Note: Proposed updates are indicated with ~~strikethrough~~ and highlighted text)

TERMS OF REFERENCE

1. MEMBERSHIP
The MET/IE WG is made up of experts from the following bodies: • APAC Regional OPMET Data Banks (RODBs): Brisbane, Nadi, Tokyo, Singapore and Bangkok; • APAC Regional OPMET Centres (ROCs); • World Area Forecast Centres (WAFCs), London and Washington; • Secure Aviation Data Information Service (SADIS) and WAFS Internet File System (WIFS) Provider States, United Kingdom and United States; • APAC Volcanic Ash Advisory Centres (VAACs): Darwin, Tokyo and Wellington; • Designated focal points for SIGMET tests and regional OPMET bulletin exchange (ROBEX); • Pacific Islands Aviation Weather Services (PIAWS) Panel; and • International Air Transport Association (IATA).

State or Org./Name	**Title/Organization**	**Contact information**
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State or Org./Name	Title/Organization	Contact information
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REPUBLIC OF KOREA ~~Mr. Young-Lock KIM~~ Mr. Yeong-hun KIM (ROBEX)	Assistant Director, Aviation Meteorological Office (AMO) of Korea Meteorological Administration (KMA) ~~PO box 43, 272 Gonghang-ro~~ Rm No. 210, 444, Je2terminal-daero, Jung-gu, Incheon, ~~22382~~ REPUBLIC OF KOREA	Tel: +82 (32) ~~740 2840~~ 222 3008 Fax: +82 (32) 740 ~~2487~~ 2807 E-mail: ~~kyl99@korea.kr~~ av_pod@korea.kr; kyh13@korea.kr
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UNITED KINGDOM Ms. Karen Shorey (WAFC, SADIS)	International Aviation and SADIS Manager Met Office, FitzRoy Road, Exeter, EX1 3PB UNITED KINGDOM	Tel: Fax: Email: karen.shorey@metoffice.gov.uk
UNITED STATES ~~Mr. Pat MURPHY~~ Ms. Karen Shelton-Mur (WAFC, WIFS)	Federal Aviation Administration, Senior Meteorologist, Programme Lead International, FAA Headquarters, 800 Independence Ave, S.W., Washington, D.C. 20591 UNITED STATES	Tel: +1 (202) 267 ~~2788~~ 7985 Email: ~~michael.murphy@faa.gov~~ karen.shelton-mur@faa.gov
UNITED STATES Mr. Michael L. Graf	National Weather Service, SSMC-2 Station 13314 1325 East West Highway, Silver Spring MD 20910	Phone: +1 304-268-0691 Email: michael.graf@noaa.gov
VIETNAM (TBC)		
IATA (TBC)	(TBC)	Tel: Fax: Email:
ICAO (Secretariat) Mr. Peter DUNDA	Regional Officer Aeronautical Meteorology/Environment International Civil Aviation Organization 252/1, Vibhavadi Rangsit Road, Ladyao, Chatuchak, Bangkok 10900 THAILAND	Tel: +66 (2) 537-8189 Ext. 153 Fax: +66 (2) 537-8199 Email: PDunda@icao.int

2. DESCRIPTION	
Objective	Increase ~~OPMET~~ availability and ~~reliability~~ timeliness of Meteorological Information needed for flight planning (efficiency) and in-flight re-planning (safety) in support of the Global Air Navigation Plan (GANP) framework and the Aviation System Block Upgrade (ASBUs) methodology.
Benefits	Increase in safety and efficiency (time and fuel savings).
Functions of the group	Under guidance from the ICAO APAC Secretariat: a) Review the OPMET exchange schemes in the APAC and other regions and develop proposals for their optimization, taking into account the requirements by the aviation users and global OPMET exchange; b) Review and update of the procedures for inter-regional OPMET exchange and ensure the availability of the required APAC OPMET data for SADIS and WIFS; c) Monitoring the format and dissemination of OPMET messages; d) Monitor and participate in inter- and intra-regional trials of aeronautical meteorological information exchange in support of the implementation of IWXXM and SWIM; e) Conduct trials and develop standardized quality control, monitoring and management procedures related to exchange of IWXXM and TAC OPMET information; f) Participate in the implementation and promote awareness of the transition to digital exchange of OPMET (IWXXM) and System Wide Information Management (SWIM); g) Conduct regular regional ~~VAAC back-up~~, IROG back-up and SIGMET tests; h) Provide support for the APAC MET Exercises; i) Review and update the regional guidance material related to OPMET exchange, including relevant material on IWXXM, AMHS and SWIM;

	j) Liaise and consult with other appropriate bodies within ICAO and WMO dealing with communication and/or management aspects of the OPMET exchange; k) Coordinate and seek support from other enabling ICAO groups (e.g. SWIM TF, ACSICG, CRV OG, etc.) to support MET information exchange initiatives; and l) 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.

3. Communication Strategies				
Description	*Target Audience*	*Delivery Method*	*Frequency / Date*	*Responsibility*
Annual working group meeting	All APAC States	In person	Annual / March	Chair(s) and Secretariat
Interim Work Program Progress Report	MET/IE WG Members	Web-conference E-mail	Quarterly/as determined by Chair	Chair(s) and Secretariat
MET Chairs Coordination Meeting	Chairs of MET SG and its contributory working groups	Web-conference E-mail	Quarterly/as determined by MET SG Chairs	Chair(s) and Secretariat
~~Major Work Program Progress Report~~	~~MET/IE WG Members~~	~~Working Paper (MET/IE WG meeting)~~	~~Annually/published 14 days or more before the meeting~~	~~Chair and Secretariat~~
General correspondence	MET/IE WG Members	E-mail	As required	MET/IE WG Members
New, specific proposal for action (WP)	MET/IE WG Meeting	Working Paper (MET/IE WG meeting)	Annually/submitted 28-days or more before the meeting (published 14-days or more before the meeting)	MET/IE WG Members or States
New, specific information (IP)	MET/IE WG Meeting	Information Paper (MET/IE WG meeting)	Annually/submitted 28-days or more before the meeting (published 14-days or more before the meeting)	MET/IE WG Members or States
Working Group Meeting Report	MET/IE WG Members and all APAC States	MET/IE WG Meeting Report	Annually/published 21-days or less after the meeting	Chair(s) 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(s) and Secretariat

WORK PROGRAM

Activity	**Time Frame**	**Responsibility**	**Status**
~~Activity 1: Availability of OPMET information~~	~~Ongoing~~	~~MET/IE WG~~	
Activity 1 ~~2~~: Availability and Timeliness, ~~compliance and regularity~~ of OPMET exchange	Ongoing	MET/IE WG	
Activity 2 ~~3~~: SIGMET and Advisory Tests	Ongoing	MET/IE WG	
~~Activity 4: VAAC Backup Tests~~	~~Ongoing~~	~~MET/IE WG~~	
Activity 3 ~~5~~: IROG Backup Tests	Ongoing		
Activity 4 ~~6~~: Regional guidance material related to data exchange	Ongoing	MET/IE WG	
~~Activity 7: IWXXM implementation~~	~~20212023 20232026~~	~~MET/IE WG~~	
Activity 5 ~~8~~: MET information exchange scheme	Ongoing 2021-2026	MET/IE WG	
Activity 6 ~~9~~: MET information in SWIM	Ongoing 2021-2026		

5. WORK PLAN				
Activity / Milestone	**Accountability**	**~~Predecessors~~**	**Date**	**Status**
~~*Activity 1: Availability of OPMET information*~~				
~~Activity 1.1: Perform real time monitoring if required~~	~~IATA~~	~~-~~	~~If required~~	
~~Activity 1.2: Monitor and score SADIS/WIFS OPMET reception.~~	~~IATA~~	~~-~~	~~Annually Jan~~	
~~Activity 1.3: Capture OPMET monitoring,~~	~~RODBs~~	~~1.2~~	~~Annually Oct/Nov~~	

5. WORK PLAN				
Activity / Milestone	**Accountability**	**~~Predecessors~~**	**Date**	**Status**
~~Activity 1.4: Assess TAC OPMET monitoring results and share results with RODBs~~	~~RODB Bangkok~~	~~1.3~~	~~Annually Oct/Nov~~	
~~Activity 1.6: Prepare paper reporting results and deficiencies to MET/IE WG meeting.~~	~~IATA and RODB Bangkok~~	~~1.4~~	~~Annually Feb~~	
~~Activity 1.7: Report summary of OPMET availability results to MET SG~~	~~Secretariat and Chair~~	~~1.5~~	~~Annually May~~	
~~Activity 1.8: Advise States of OPMET deficiencies and corrective actions.~~	~~Secretariat~~	~~1.6~~	~~Annually Jun~~	
~~Activity 1.9: Actively engage States with corrective against deficiencies.~~	~~ROCs~~	~~1.7~~	~~As required~~	
~~**Milestone 1:** Achieve 95% (90%) or greater OPMET availability for AOP (non-AOP) aerodromes at RODBs and WAFS.~~	~~MET/IE WG~~	~~1.8~~	~~Annually Jun~~	
Activity 1 ~~2~~: ~~Performance indices of OPMET exchange~~ Availability and Timeliness of OPMET exchange				
Activity 1 ~~2~~.1: Monitor and collate OPMET data.	RODBs and IATA	-	Annually ~~Dec~~Nov	
Activity 1 ~~2~~.2: Score RODB OPMET reception (availability and timeliness) against 95% thresholds.	RODB Bangkok	-	Annually Jan	
Activity 1 ~~2~~.3: Analyse data and share results with RODBs	RODB Bangkok	~~2.2~~	Annually Jan	
Activity 1 ~~2~~.4: Prepare paper report results to MET/IE WG meeting ~~and identify corrective actions~~	RODB Bangkok	~~2.3~~	Annually Feb	
Activity 1 ~~2~~.5: Report summary of OPMET availability and timeliness~~, compliance and regularity~~ results to MET SG	Chair	~~2.4~~	Annually before MET SG	
Activity 1 ~~2~~.6: Inform States of non-compliance and corrective actions.	Secretariat	~~2.5~~	Annually Jun	
Activity 1 ~~2~~.7: Provide support for States to support corrective actions if requested.	RODBs	~~2.6~~	As required	
Milestone 1 ~~2~~: ~~Achieve 95% (90%) or greater~~ OPMET availability and timeliness~~, compliance and regularity~~ for ~~AOP (non-AOP) aerodromes~~ at ~~RODBs, SADIS and WIFS~~ are reported.	MET/IE WG	~~2.7~~	Annually Jun	
Activity 2 ~~3~~: SIGMET and Advisory Tests				
Activity 2 ~~3~~.1: Review SIGMET Test procedures	MET/IE WG	~~-~~	Annually Aug	
Activity 2 ~~3~~.2: State Letter regarding SIGMET Tests	Secretariat	~~3.1~~	Annually Sep	
Activity 2 ~~3~~.3: Email States regarding SIGMET Tests	Secretariat	~~3.2~~	Annually	Last Wed in Oct
Activity 2 ~~3~~.4: Conduct and collate data for ~~WC~~ TC SIGMET Tests	RODBs	~~3.2~~	Annually	2nd Wed in Nov
Activity 2 ~~3~~.5: Conduct and collate data for ~~WV~~ VA SIGMET Tests	RODBs	~~3.2~~	Annually	3rd Wed in Nov
Activity 2 ~~3~~.6: Conduct and collate data for ~~WS~~ other SIGMET Tests	RODBs	~~3.2~~	Annually	4th Wed in Nov
Activity 2 ~~3~~.7: Analyse test data	RODB Singapore and Tokyo	~~3.4 - 3.6~~	Annually Jan	
Activity 2.8 ~~3.9~~: Report to MET/IE WG	RODB Singapore and Tokyo	~~3.8~~	Annually Mar	
Activity 2.9 ~~3.10~~: Report on SIGMET Test Results to MET SG (via annual MET/IE WG report).	Chair	~~3.9~~	Annually May	
Activity 2.10 ~~3.11~~: Advise States of SIGMET corrective actions	Secretariat	~~3.9~~	Annually Jun	

5. WORK PLAN				
Activity / Milestone	**Accountability**	~~**Predecessors**~~	**Date**	**Status**
Milestone 2 ~~3~~: Improved issuance and compliance of SIGMETs	MET/IE WG	~~3.11~~	Annually ~~Jun~~ MET SG	
~~**Activity 4: VAAC Back-up Tests**~~				
~~Activity 4.1: Review and Update VAAC Back-up Test procedures~~	~~MET/IE WG and VAACs~~		~~Annually~~	
~~Activity 4.5: Collect test results and send to VAAC Provider State members~~	~~RODBs~~	~~4.3~~	~~Annually Oct – TBC~~	
~~**Milestone 4:** VAAC Back-up Tests conducted.~~	~~VAAC Back-up Focal Points Members~~	~~4.8~~	~~Annually Jun~~	
Activity 3 ~~5~~: IROG Back-up Tests				
~~Activity 5.1: Investigate the feasibility and benefits of back-up arrangements of IROG Tokyo, Nadi and Brisbane~~	~~IROG Nadi, Tokyo and Brisbane~~	~~-~~	~~Nov 2023~~	
~~Activity 5.2: Review IROG Back-up Test procedures to include all IROG.~~	~~IROG Bangkok and Singapore~~	~~-~~	~~Apr 2023, Annually Feb~~	
Activity 3.1 ~~5.3~~: Updated IROG Back-up Procedures in ROBEX Handbook to include IWXXM.	Secretariat	~~5.2~~	Annually May	
Activity 3.2 ~~5.4~~: Identify list of MET Bulletins to monitor.	IROG Bangkok and Singapore	~~-~~	Annually Jan/Feb	
Activity 3.3 ~~5.5~~: Conduct IROG Back-up Test of Bangkok and analyse results	IROG Bangkok and Singapore	~~5.4~~	Annually Sept/Oct	
Activity 3.4 ~~5.6~~: Conduct IROG Back-up Test of Singapore and analyse results	IROG Bangkok and Singapore	~~5.4~~	Annually Jan/Feb	
Activity 3.5 ~~5.8~~: Report to MET/IE WG	IROG Bangkok and Singapore	~~5.7~~	Annually Mar	
Milestone 3 ~~5~~: IROG Back-up Tests conducted, analysed and report complete.	IROG Bangkok and Singapore	~~5.7~~	Annually Mar	
Activity 4 ~~6~~: Regional guidance material related to data exchange				
Activity 4.1: Propose updates to the ROBEX Handbook	MET/IE WG and Secretariat		As required	
Activity 4.2: Draft updates to the ROBEX Handbook	Secretariat		Annually One month before the MET/IE WG and MET SG	
Activity 4.3: Publish updates to the ROBEX Handbook	Secretariat		Annually Two weeks after the MET/IE WG and MET SG	
~~Activity 6.1: Review OPMET exchange definitions as defined in ROBEX Handbook and update as necessary.~~	~~All RODBs~~	~~-~~	~~Annually Apr~~	
~~Activity 6.2: Implement updates to Appendix A and B in ROBEX Handbook.~~	~~Secretariat~~	~~6.1~~	~~Annually May~~	
~~Activity 6.3: Document roles for monitoring IWXXM performance in APAC~~	~~Thailand and Secretariat~~		~~Nov 2023~~	
~~Activity 6.4: Propose quality threshold for translated data following consultation with users~~	~~IATA, Chair WG~~		~~Nov 2023~~	
~~Activity 6.6: Complete update of ROBEX Handbook including Table MET 2A.~~	~~Secretariat~~	~~-~~	~~Annually May~~	
~~Activity 6.7: Review ANP Tables (initially MET II 2) and ensure all necessary aerodromes are contained in OPMET bulletins~~	~~WG~~	~~-~~	~~May Annually~~	
~~Activity 6.8: Seek MET/SG endorsement of the updated ROBEX Handbook.~~	~~Secretariat~~	~~-~~	~~Annually Jun~~	

5. WORK PLAN				
Activity / Milestone	**Accountability**	~~**Predecessors**~~	**Date**	**Status**
~~Activity 6.9. Support MET SG with development of MET specific requirements in the ANP, Volume III~~	~~WG~~		~~As required~~	
Milestone 4 ~~6~~: ROBEX Handbook remains relevant	Secretariat	~~6.7~~	Twice Annually ~~Sep~~	
~~**Activity 7: IWXXM Implementation**~~				
~~Activity 7.1: Monitor migration to IWXXM.~~	~~WG~~	~~-~~	~~As required~~	
~~Activity 7.3: Report to MET SG on APAC States' IWXXM implementation status.~~	~~Secretariat/Chair, WG~~	~~7.2~~	~~Next meeting MET SG~~	
~~Activity 7.4: Increase awareness of the requirement for States to exchange of OPMET data in IWXXM format and the impact of inability to do so.~~	~~WG~~		~~As required~~	
~~Activity 7.5: Support States with the planning and implementation of the dissemination of the required meteorological information in IWXXM form, in particular at the designated APAC Regional OPMET Centres (ROCs) and Regional OPMET Databanks (RODBs).~~	~~WG~~		~~As required~~	
~~Activity 7.10: Prepare information (e.g. issues, CONOPS) for MET/P WG MIE (possible MET/IE agenda items on issues on IWXXM and information service provision)~~	~~WG~~		~~As required~~	
~~Activity 7.12: Maintain IWXXM online register~~	~~Australia, Hong Kong, China and Secretariat~~		~~Monthly~~	
~~**Milestone 7:** Report to MET/IE WG and MET SG on IWXXM exchange and testing.~~	~~Secretariat and Chair~~	~~7.5, 7.6 and 7.8~~	~~Annually May~~	
Activity 5 ~~8~~: MET Information Exchange Scheme ~~Structure~~				
Activity 5 ~~8~~.1: Review ROBEX Scheme diagram.	All RODBs, Secretariat		May Annually	
Activity 5 ~~8~~.2: Review the structure of the ROBEX exchange in light of the introduction of SWIM.	WG		Annually Feb	
Activity 5.3: Maintain IWXXM online register	Australia, Hong Kong, China and Secretariat		Monthly	
~~Activity 8.3: Review use of the Request/Reply service~~	~~RODBs~~	~~-~~	~~May 2023~~	
~~Activity 8.4: Improve the efficiency of Request/Reply service~~	~~RODBs~~	~~8.3~~	~~Sep 2023~~	
Milestone 5 ~~8~~: Improved efficiency and effectiveness of ROBEX Scheme	MET/IE WG	-	~~2023~~	
Activity 6 ~~9~~: MET information in SWIM				
~~Activity 9.1: Assist in the definition of the APAC SWIM Met service catalogue~~	~~WG~~	~~-~~	~~As required~~	
~~Activity 9.2: Assist in the definition of the APAC SWIM Met data catalogue~~	~~WG~~	~~-~~	~~As required~~	
Activity 6.1 ~~9.3~~: Develop guidance to support States' implementation of MET information services	WG	-	As required	
Milestone 6 ~~9~~: MET-SWIM services implemented in APAC	MET/IE WG	-	2023~~4~~-2027	

— END OF SECTION —

APPENDIX H — AMHS Readiness Table for Supporting IWXXM Traffic

AMHS Readiness Report for Supporting IWXXM Traffic					
No.	**States/ Administration**	**Name of State (Administration)/ name of BBIS/BIS location where AMHS is installed:**	**AFTN/AMHS transition date/schedule**	**Readiness Status of AMHS for supporting File Transfer Body Part (FTBP), the Interpersonal Message (IPM) Heading Extension (IHE) to support for exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum 2MB:**	**Capacity status of the operational AFS links to support the exchange of the required meteorological information in both IWXXM GML form and TAC form:**
1	Australia	Airservices - Brisbane	Completed. AMHS exchange in place with USA, Fiji, New Zealand, Singapore and South Africa. AFTN still in place with Indonesia and PNG, migration to AMHS based on pending readiness both partners Several Pacific island nations connecting via FCO CADAS ATS Terminal, currently over AFTN. Airservices plans to migrate to AMHS P3 CADAS but will need to provide user training. All domestic users and data originators still on AFTN, no desire by external partners to migrate to AMHS, awaiting SWIM instead.	Full compliance and support since Nov 2020	Airservices has contracted a 2.0Mbps bandwidth using CRV Package C+ for Voice & AMHS services. Bandwidth on the leased line with South Africa / Johannesburg is also 2Mbps.
2	China	Beijing	AMHS deployed in 2008 which was upgraded to support ATN/IPS in 2013 and upgraded to support exchanging IWXXM in 2020.	support	CRV bandwidth is 3M. Minimally 64kbps for each AMHS connection..
3	Hong Kong China	Hong Kong China	December 2009	Support	2MB for CRV and 64kbps for IPLCs

AMHS Readiness Report for Supporting IWXXM Traffic					
No.	**States/ Administration**	**Name of State (Administration)/ name of BBIS/BIS location where AMHS is installed:**	**AFTN/AMHS transition date/schedule**	**Readiness Status of AMHS for supporting File Transfer Body Part (FTBP), the Interpersonal Message (IPM) Heading Extension (IHE) to support for exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum 2MB:**	**Capacity status of the operational AFS links to support the exchange of the required meteorological information in both IWXXM GML form and TAC form:**
4	Fiji	Fiji Airport/Air Traffic Management Centre	Completed. In June 2019, Fiji completed the transition of ATN BBIS to IPS for the AMHS service from Nadi to Salt Lake, USA & Brisbane, Australia over the CRV network. The local end User still operates on AFTN terminal and is converted to AMHS over the AFTN/AMHS Gateway.	The Comsoft AMHS System supports File Transfer Body Part (FTBP). Our system has the capability of exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum.	Nadi has contracted a 1.0Mbps bandwidth using CRV Package C+ for Voice & AMHS services. The total bandwidth usage for voice and data is 768K from the total 1.0Mbps. The bandwidth for AMHS is 64Kbps each to Brisbane & Salt Lake Center. It is noted in the ACSICG/7 WP04 presented by USA that 64Kbps is the minimum recommended required bandwidth for AMHS to exchange FTBP for IWXXM.
5	India	AAI/Mumbai Airport	AMHS is in operation since 2011. Note: 1. PO was awarded to Frequentis Comsoft on Jan-2023 for the replacement of existing AMHS System at Mumbai. 2. New AMHS System will be having DC at Mumbai & DR at Delhi. Subsequently second CRV connection will be implemented with at Delhi for DR AMHS Operation. 3. SDR (System Design Review) meeting with Frequentis Comsoft is planned in May 2023 4. Tentative timeline for commissioning of new AMHS System is Dec 2024.	Presently India is not able to exchange the required 4 MB messages and 2 MB FTBP attachments.	Indian Meteorological Department is in the process of upgradation of HPC & DB to support IWXXM.

AMHS Readiness Report for Supporting IWXXM Traffic					
No.	**States/ Administration**	**Name of State (Administration)/ name of BBIS/BIS location where AMHS is installed:**	**AFTN/AMHS transition date/schedule**	**Readiness Status of AMHS for supporting File Transfer Body Part (FTBP), the Interpersonal Message (IPM) Heading Extension (IHE) to support for exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum 2MB:**	**Capacity status of the operational AFS links to support the exchange of the required meteorological information in both IWXXM GML form and TAC form:**
6	Japan	Japan/Fukuoka	ATN BBIS router and AMHS installed at 2000. Connection tests with USA 2000 - 2004 and put into operational use in 2005 and over CRV in February 2019. Put into AMHS operation with Hong- Kong and Singapore in 2021. AMHS implementation with China in 2021 , Korea and Taipei in 2022.	Already support exchange of IWXXM messages based on FTBP in August 2015. It is possible to send , receive and transfer up to 2GB for the contents such as FTBP,IPM and IHE in AMHS,and the size of IWXXM suported system by Japan Meteorological Agency is 2MB	AFS links over CRV is a Package A, Bandwidth 2M.
7	Macao China	Macao China	Q4/2009	Support exchange of IWXXM messages based on FTBP.	To be determined
8	Maldives	Maldives / Velana International Airport (VRMM)	Contract awarded to replace existing AFTN system to an AMHS in 1Q2023. Installation and commissioning of AMHS to be completed by 3Q2023	AMHS supports FTBP	Discussion with PCCW for 128k bandwidth CRV package D
9	New Zealand	Airways – Christchurch	AMHS connections are in place with Australia, USA and the New Zealand	Support	Airways New Zealand has contracted a 1.0Mbps bandwidth using CRV Package C+ for Voice and AMHS services from Auckland and Christchurch.

AMHS Readiness Report for Supporting IWXXM Traffic					
No.	**States/ Administration**	**Name of State (Administration)/ name of BBIS/BIS location where AMHS is installed:**	**AFTN/AMHS transition date/schedule**	**Readiness Status of AMHS for supporting File Transfer Body Part (FTBP), the Interpersonal Message (IPM) Heading Extension (IHE) to support for exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum 2MB:**	**Capacity status of the operational AFS links to support the exchange of the required meteorological information in both IWXXM GML form and TAC form:**
10	Philippines	Philippines/ATMC Manila	Completed March 2018	Can support IHE and FTBP maximum 1MB (tested with Taipei on 13-May-20)	1MB Philippines has contracted 2Mbps bandwidth using CRV package “A” voice and data services.
11	Republic of Korea	Gimpo international airport	ATN/AMHS with China put into operational use in June, 2011. AMHS implementation with China and Japan over CRV will be in 4Q, 2022.	AMHS implementation for supporting FTBP and IHE will be in 4Q, 2022.	AFS links over CRV is a Package A, Bandwidth 2M.
12	Singapore	Singapore	March 2011	Yes	2MB for CRV and minimally 64kbps for IPLCs
13	Thailand	Thailand	BBIS/BIS Routers already implemented. AMHS has been implemented since July 2011. Connection with Bangladesh, Bhutan, Cambodia, China, India, Lao PDR, Myanmar, Singapore, Hong Kong China, and Malaysia implemented. Connection with SITA (SITA AMHS Gateway inter-connections) implemented. **Bangkok - Vietnam Circuit** IOT Test : Done POT Test: Planned for end of 3Q2021 **Bangkok - Rome Circuit** IOT Test: Planned for 3Q2021 POT Test: Planned for 4Q2021	Completed, the IWXXM exchange has been implemented since November 2020.	The capacity of links readied to support in both form.

AMHS Readiness Report for Supporting IWXXM Traffic					
No.	**States/ Administration**	**Name of State (Administration)/ name of BBIS/BIS location where AMHS is installed:**	**AFTN/AMHS transition date/schedule**	**Readiness Status of AMHS for supporting File Transfer Body Part (FTBP), the Interpersonal Message (IPM) Heading Extension (IHE) to support for exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum 2MB:**	**Capacity status of the operational AFS links to support the exchange of the required meteorological information in both IWXXM GML form and TAC form:**
14	USA	Federal Aviation Administration	Q4, 2020	Yes. FAA AMHS has FTBP capability. National Weather Service (NWS) projected to implement IWXXM by Q3, 2021	Yes. 2MB bandwidth over CRV

— END OF REPORT —