

INTERNATIONAL CIVIL AVIATION ORGANIZATION



**REPORT OF THE
NINETEENTH MEETING OF THE METEOROLOGICAL
INFORMATION EXCHANGE WORKING GROUP
(MET/IE WG/19)**

(Online, 22 – 24 March 2021)

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

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

INTRODUCTION

1.	Meeting	ii
2.	Attendance	ii
3.	Officers and Secretariat.....	ii
4.	Language and Documentation	ii
5.	Outcome from the meeting	ii

REPORT ON AGENDA ITEMS

1.	Organizational matters	1
2.	Review of follow-up from previous meetings	1
3.	Meteorological information exchange schemes.....	3
4.	Meteorological information exchange in digital form	4
5.	Quality control, monitoring and management of meteorological information exchange	6
6.	Guidance material related to meteorological information exchange	6
7.	Future work programme and terms of reference.....	7
8.	Any other business.....	8
9.	Next meeting	8

APPENDIX A – TASK LIST

APPENDIX B – TERMS OF REFERENCE AND WORK PLAN

APPENDIX C – LIST OF PARTICIPANTS

APPENDIX D – LIST OF PAPERS

INTRODUCTION

1. Meeting

1.1. The ICAO Asia and Pacific (APAC) Regional Office hosted the Nineteenth Meeting of the Meteorological Information Exchange Working Group (MET/IE WG/19) as a virtual meeting on 22 to 24 March 2021.

1.2. The final day of the meeting, 24 March 2021, included a conjoint session with the Eleventh Meeting of the Meteorological Services Working Group (MET/S WG/11) to jointly discuss agenda items of relevance to both the MET/IE WG and MET/S WG.

2. Attendance

2.1. One hundred and thirty-two (132) participants registered their attendance at the meeting from twenty-four (24) States/Special Administrative Regions and three (3) International Organizations, including: Australia, Bangladesh, Brunei Darussalam, Cambodia, China, Hong Kong China, Fiji, India, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, United States, Viet Nam, IATA, IFALPA and IFATCA. The list of participants is at **Appendix C** to this Report.

3. Officers and Secretariat

3.1. Mr. Tim Hailes, National Manager, Aviation Service Development, Bureau of Meteorology, Australia, presided as Co-Chairs of the meeting.

3.2. Mr. Peter Dunda, Regional Officer Aeronautical Meteorology and Environment, ICAO APAC Office, acted as Secretary for the meeting.

4. Language and Documentation

4.1. The working language of the meeting was English, inclusive of all documentation and this Report. The meeting considered seventeen (17) Working Papers (WPs), ten (10) Information Papers and one (1) Flimsy on the first two days of the meeting. The conjoint session between MET/IE WG/19 and MET/S WG/11 considered an additional two (2) WPs and two (2) IPs. The list of papers is at **Appendix D** to this Report.

5. Outcomes from the meeting

5.1. The Meeting recorded outcomes of its discussions 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, in accordance with 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; and

- 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 the following Draft Conclusion:

Draft Conclusion MET SG/25/xx: Updating Online Register of IWXXM Exchange Status

That, the MET SG requests States to provide timely updates to the online register regarding the latest status of AMHS capability for IWXXM exchange among ROCs and NOCs and availability of IWXXM MET reports to facilitates the Region-wide implementation of IWXXM exchange.

5.3. In addition, the meeting agreed to fourteen (14) new action items, including two (2) action items in the conjoint session, as indicated throughout the *Report on Agenda Items*, below, and presented in the *Task List* at the **Appendix A** to this Report.

REPORT ON AGENDA ITEMS

1. Agenda Item 1: Opening of the meeting and organizational matters

WP/01 – Provisional Agenda (Secretariat)

1.1. The meeting adopted the agenda as listed below:

MET/IE WG/19 (22 – 23 March 2021)

Agenda Item 1: Organizational matters

Agenda Item 2: Review of follow-up from previous meetings

Agenda Item 3: Meteorological information exchange schemes

Agenda Item 4: Meteorological information exchange in digital form

Agenda Item 5: Quality control, monitoring and management of meteorological information exchange

Agenda Item 6: Guidance material related to meteorological information exchange

Agenda Item 7: Future work programme and terms of reference

Agenda Item 8: Any other business

Agenda Item 9: Next meeting

MET/IE WG/19 and MET/S WG/11 (Conjoint session – 24 March 2021)

Agenda Item 1: Volcanic ash advisory centre (VAAC) backup tests

Agenda Item 2: SIGMET tests

2. Review of follow-up from previous meetings

WP/02 – Follow-up Action from MET/IE WG/18 (Secretariat)

2.1. Outcomes from the Eighteenth Meeting of the Meteorological Information Exchange Working Group (MET/IE WG/18) held in conjunction with the Tenth Meeting of the Meteorological Services Working Group (MET/S WG/10) included thirty-three (33) new action items in the Task List, which required follow-up action by members of the MET/IE WG, MET/S WG and/or the Secretariat. In addition, follow-up action on twenty (20) action items from previous meetings of the MET/IE WG was yet to be completed.

2.2. The meeting agreed to the proposed updates to the status of follow-up on action items in the MET/IE WG Task List, as presented in the Appendix A and Appendix B to WP/02, and proposed further updates to reflect the current status of follow-up on several of the action items. The consolidated updates to the status of follow-up on action items as agreed by the meeting is presented in the *Task List* at the **Appendix A** to this Report.

WP/03 – Follow-up Action from MET SG/24 (Secretariat)

2.3. Outcomes from the Twenty-Fourth Meeting of the Meteorology Sub-group (MET SG/24) included four (4) Draft Conclusions and one (1) Draft Decision, for further consideration by the APAC Air Navigation Planning and Implementation Regional Group (APANPIRG), six (6) Conclusions, for the attention of States or action by the ICAO, eight (8) Decisions, related to the internal working arrangements of the MET SG, and six (6) new actions for the MET SG Task List.

2.4. With the adoption of Decision MET SG/24-18: *Updates to terms of reference and work plan of and MET/R WG, MET/IE WG and MET/S WG*, MET SG 24 approved the updated terms of reference

and work plan of the MET/IE WG (as presented in MET/IE WG/19, WP/16 – *Review MET/IE WG Work Program and Terms of Reference*, at Appendix A).

2.5. To further support the work of MET SG, in relation to the MET SG/24's adoption of Conclusion MET SG/24-11: *IWXXM Exchange Approach*, the meeting proposed an action to update the ROBEX Handbook to ensure clarity of the guidance concerning the ROCs' responsibilities for the distribution of IWXXM formatted OPMET data.

2.6. In relation to the MET SG/24 outcomes concerning further development of the ROBEX Handbook, in order to support States with the process of coordinating on changes to the ROBEX scheme, the meeting also proposed an action to update the ROBEX Handbook to ensure the availability of the AFTN addresses for the designated APAC ROCs and RODBs.

2.7. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 01 and 02) at the **Appendix A** to this Report.

WP/04 – Follow-up Action from APANPIRG/31 (Secretariat)

2.8. Outcomes of most relevance to MET/IE WG/19 from APANPIRG/31 included one (1) Conclusions, which deals with matters that require the attention of States or actions by ICAO, and one (1) Decision, which deals with matters of concern only to the APANPIRG and its contributory bodies, as listed below:

- APANPIRG/31 Decision 31/16 – *Updates to Terms of Reference and Work Plan of MET SG*
- APANPIRG/31 Conclusion 31/18 – *Implementation of IWXXM*

2.9. As follow-up to APANPIRG/31 Decision 31/16 – *Updates to Terms of Reference and Work Plan of MET SG*, the meeting proposed to update the MET/IE WG terms of reference and work plan to reflect the requirement for quarterly coordination meetings for the Chairs of MET SG and its contributory working groups (including MET/IE WG).

2.10. To support States with follow-up to APANPIRG/31 Conclusion 31/18 – *Implementation of IWXXM*, the meeting proposed to update the MET/IE WG work plan to further 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).

2.11. In addition, the meeting noted that APANPIRG/31 did not adopt a specific Conclusion based on the MET SG/24 Draft Conclusion MET SG/24-02: *APAC Regional Air Navigation Plan (ANP), Volume III*. Rather, APANPIRG/31 suggested that MET SG should progress with its development of a proposal for amendment to the ANP, Volume III, to deal with the MET-specific requirements and to continue to coordinate this work, as necessary, with the other (APANPIRG) Sub-Groups. In view of the above, the meeting proposed to update the MET/IE WG work plan to further support MET SG with development of MET-specific requirements in the ANP, Volume III.

2.12. The proposed updates by the meeting to the MET/IE WG work plan as discussed above are presented in the *Terms of Reference* (Communication Strategies) and *Work Plan* (7.5 and 6.9) at the **Appendix B** to this Report.

3. Meteorological information exchange schemes

WP/05 – RODB Backup Test Result (Thailand)

3.1. The meeting reviewed results of the sixteenth real-time back-up exercise between IROG Bangkok and IROG Singapore in the event of IROG Singapore experiences technical problems, which was conducted on 22 September 2020. These tests provide confidence in ability to ensure continuity of the inter-regional dissemination of APAC OPMET data to WAFC London.

3.2. The meeting noted that 100% of METAR and TAF bulletins were exchanged in a timely manner for the third consecutive year, which indicates the highly effective nature of the back-up arrangement in place between IROG Bangkok and IROG Singapore. No changes to the backup procedure were requested.

WP/06 – ASIA/PAC Performance Indices (Thailand)

3.3. The meeting reviewed Performance Indices (PIs) of incoming OPMET data received from five RODBs, Bangkok, Brisbane, Nadi, Singapore, and Tokyo between 1-31 January 2021 as computed and analysed by the Regional OPMET Data Bank (RODB) Bangkok.

3.4. The meeting noted that the PIs indicate that OPMET from some States does not routinely arrive at all five of the designated APAC RODBs, as intended by the APAC ROBEX scheme. Recalling previous discussion and agreed action by the MET/IE WG/17 to ensure the dissemination of APAC OPMET bulletins to all APAC RODBs (action item 17/14, available at Appendix B to WP/02 – *Follow-up action from MET/IE WG/18*, refers), the meeting proposed an action to update the ROBEX Handbook in accordance with action item 17/14, and in particular, that Nadi RODB be included in each entry within ROBEX Handbook Tables A and B.

3.5. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 03) at the **Appendix A** to this Report.

WP/07 – New Space Weather Advisory Headers (Australia)

3.6. On 5 November 2020, the WMO updated the message headers (TTAAii CCCC) for space weather advisory information disseminated in traditional alphanumeric code (TAC)- and in ICAO Meteorological Information Exchange Model (IWXXM)-form to enable the use of separate headers for each space weather advisory impact type: GNSS, HF COM, Radiation and SATCOM.

3.7. The meeting adopted the proposal in WP/07 request the Secretariat to update the ROBEX Handbook to include the WMO message headers (TTAAii CCCC) for each type of space weather advisory information (GNSS, HF COM, Radiation and SATCOM) in both TAC- and IWXXM-form.

3.8. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 04) at the **Appendix A** to this Report.

IP/09 – Establishment of National OPMET Centre (NOC) and IWXXM Implementation in Vietnam (Vietnam and Thailand)

3.9. Vietnam NOC has been established and is in last step to become operational. With supportive collaboration of Bangkok ROC, Vietnam NOC will be integrated into Bangkok ROC/RODB framework. This will efficiently improve international OPMET data exchange regarding Vietnam's OPMET data, supporting international flight operations to/from Vietnam, at the same time facilitate Vietnam's IWXXM implementation to be aligned with APAC region.

4. Meteorological information exchange in digital form

WP/08 – IWXXM Translation Services for the South Pacific (New Zealand)

4.1. As of 25 February 2021, New Zealand has been translating METAR, SPECI and TAF from TAC to IWXXM on behalf of eleven (11) South Pacific States. In order to then disseminate the OPMET internationally, ROC Wellington requires the ROBEX scheme bulletins for the South Pacific METARs and TAFs to be reorganised to separate out the OPMET requiring TAC to IWXXM translation.

4.2. In order to support the effective exchange of OPMET in bulletins containing METAR, SPECI and TAF translated from TAC- to IWXXM-form by New Zealand on behalf of eleven (11) South Pacific States, the meeting adopted the proposal requesting the Secretariat update the ROBEX Handbook to include the necessary consequential changes to OPMET bulletins described in WP/08 (SAPS31 NFFN, SAPS32 NWWW, SAPS33 NTAA, SANG31 YBBN, FTSP31 NFFN, FTSP32 NWWW, FTSP33 NTAA, FTNG31 YBBN) and presented in Attachment A to WP/08 and to include information on the (KWBC) bulletins containing Pago Pago METAR and TAF.

4.3. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 05) at the **Appendix A** to this Report.

WP/09 – Online Register of IWXXM Exchange Status (Australia and Hong Kong, China)

4.4. MET/IE WG/18, Action Item 14: *ROBEX Handbook updates – IWXXM-related data*, required the MET/IE WG to investigate the development of an online repository for ROBEX data in which States would share and maintain up to date information on the IWXXM-capabilities of the ROBEX scheme and the AMHS addresses to support the required dissemination of IWXXM messages. WP/09 presented the proposed online register of current IWXXM exchange status.

4.5. In accordance with MET SG/24, Conclusion MET SG/24-12: *Development of Online Register of the status of IWXXM Exchange*, and Decision MET SG/24-15: *Updates to ROBEX Handbook* (which approved the inclusion in the ROBEX Handbook of a link to the online register for IWXXM-exchange-capability), the meeting proposed an action to update the ROBEX Handbook to include a link to the online register of APAC IWXXM exchange status. The meeting also discussed the merits of different technical approaches to the Online Register, including the use of the current Google Sheet and a Github solution, and agreed to continue with the current solution.

4.6. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 06) at the **Appendix A** to this Report.

4.7. Furthermore, the meeting recognized that, in order for the online register of APAC IWXXM exchange status to be an effective tool for facilitating States' implementation of IWXXM exchange, the register should contain up to date information provided by all APAC States. To this end, the meeting supported the following Draft Conclusion for further consideration by MET SG/25:

Draft Conclusion MET SG/25/xx: Updating Online Register of IWXXM Exchange Status

That, the MET SG requests States to provide timely updates to the online register regarding the latest status of AMHS capability for IWXXM exchange among ROCs and NOCs and availability of IWXXM MET reports to facilitates the Region-wide implementation of IWXXM exchange.

WP/10 – The Instruction of the SWA Exchange Test of CRC-China (China)

4.8. This paper describes the Space Weather Advisory exchange test situation and result of CRC-China.

4.9. The meeting noted that the ROBEX Handbook, Appendix I, provides contact details for States' designated ROBEX Focal Points and that this should be the first point of contact in a State for communication on matters to facilitate the exchange of OPMET information (including in IWXXM form) between the ROCs. The *Online Register of the status of IWXXM Exchange* also provides a useful tool for understanding each States' support for the exchange of IWXXM information.

WP/17 – FAQ of IWXXM Implementation (Hong Kong China, the Chair of MET/IE WG and the Secretariat)

4.10. This paper presents a draft version of a Frequently Asked Questions (FAQs) resource to support IWXXM implementation in APAC Region.

4.11. In order to more thoroughly consider the merit in publishing the current draft FAQs, the meeting proposed an action to obtain additional feedback from States on the draft FAQs and present a proposal for MET SG/25 to possibly approve the publication of the FAQs (as either a standalone document or incorporated in another document) for use by States. ICAO made available a word version of the draft FAQs via the meeting website to enable States' to efficiently provide feedback.

4.12. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 07) at the **Appendix A** to this Report.

IP/02 – Implementation of IWXXM in Australia (Australia)

4.13. This paper provides a brief update on the implementation ICAO Meteorological Information Exchange Model (IWXXM) format information in Australia.

IP/03 – Status and Plans for IWXXM in Mongolia (Mongolia)

4.14. This paper provides brief overview of the status and plans for the implementation of MET bulletins exchange through ICAO Meteorological Information Exchange Model (IWXXM) format information in Mongolia.

IP/04 – Status of IWXXM implementation in Singapore (Singapore)

4.15. This paper presents an update on Singapore's status in the implementation of the ICAO Meteorological Information Exchange Model (IWXXM).

IP/05 – Updated Plans for IWXXM in Japan (Japan)

4.16. This paper provides information on current status and plans on the implementation of ICAO Meteorological Information Exchange Model (IWXXM) format in Japan.

IP/06 – The Progress of IWXXM in China (China)

4.17. This paper introduces the progress and the current situation of the IWXXM capability in China.

IP/07 – Status and Plans for Implementation of IWXXM in Thailand (Thailand)

4.18. This paper presents a brief overview of the status and plans for the implementation of OPMET exchange in IWXXM in Thailand.

IP/08 – Update on IWXXM Implementation in Hong Kong, China (Hong Kong, China)

4.19. The paper presents the recent update and lesson learnt on implementation of OPMET exchange in ICAO Meteorological Information Exchange Model (IWXXM) in Hong Kong, China, including the monitoring of IWXXM report dissemination, statistics of translation and validation services, updated AMHS dissemination paths and observations in AMHS message heading.

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

WP/11 – ASIA/PAC Inter-regional OPMET Gateway backup exercise between IROG Singapore and IROG Bangkok (Singapore)

5.1. This paper presents the results of the third IROG backup exercise between IROG Singapore and IROG Bangkok as part of the IROGs' maintenance of business continuity during unforeseen events in the Region.

5.2. The meeting noted the results of the exercise, which indicated 100% of the METAR and TAF data being routed in a timely manner and validated the effectiveness and functionality of the process and procedures for handover and takeover of responsibility for IROG Bangkok by IROG Singapore.

6. Guidance material related to meteorological information exchange

WP/12 – ROBEX Handbook Updates (Secretariat)

6.1. This paper presents proposals to update the Regional OPMET Bulletin Exchange (ROBEX) Handbook for review and further input from the meeting.

6.2. In order to make available to States the latest approved updates to the ROBEX Handbook without delay, the meeting agreed to an action for the Secretariat to publish the MET SG/24-approved updates to the ROBEX Handbook as presented at Appendix 10 to the MET/SG/24 Report, including the corrections to AFTN addresses provided by Fiji and presented at Appendix A to WP/12.

6.3. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 08) at the **Appendix A** to this Report.

WP/13 – Updates to ROBEX Handbook (Japan)

6.4. Updates to the ROBEX Handbook are necessary to reflect the inclusion in the ROBEX scheme of Hanamaki Airport (RJSI), changes to aerodrome names at Kitakyushu Airport (RJFR) and New Ishigaki Airport (ROIG), the actual filing time and start of validity of TAF in Japan and the actual available time of METAR in Japan.

6.5. In view of the above, the meeting agreed to request the Secretariat update the ROBEX Handbook to include the changes to data in Appendix A, Appendix B and Appendix I of the ROBEX Handbook, as presented by Japan in WP/13.

6.6. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 09) at the **Appendix A** to this Report.

WP/14 – Update to ROBEX Handbook (Republic of Korea)

6.7. Updates to the ROBEX Handbook are necessary to reflect the actual official observation time of the METAR bulletins in Republic of Korea.

6.8. In view of the above, the meeting agreed to include in the MET/IE WG work plan an activity to propose updates to the ROBEX Handbook to include the changes to data in Appendix A of the ROBEX Handbook, as presented by Republic of Korea in WP/14.

6.9. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 10) at the **Appendix A** to this Report.

WP/15 – A New International Airport (VVVD) to join ROBEX Network for International OPMET Data Exchange (Vietnam)

6.10. Updates to the ROBEX Handbook are necessary to reflect the inclusion in the ROBEX scheme of Van Don International Airport (VVVD) in Vietnam.

6.11. In view of the above, the meeting agreed to an action to propose updates to the ROBEX Handbook to include the OPMET exchange information for Van Don International Airport (VVVD), as advised by Viet Nam in WP/15.

6.12. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 11) at the **Appendix A** to this Report.

Flimsy/01 – Update to ROBEX Handbook for Dissemination of Space Weather Advisories (Australia)

6.13. Australia presented a Flimsy which proposed an update to the ROBEX Handbook to incorporate a Space Weather Advisory dissemination scheme.

6.14. The meeting agreed to an action to propose updates to the ROBEX Handbook to include the Space Weather Advisory dissemination scheme.

6.15. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19* (Action Item 12) at the **Appendix A** to this Report.

7. Future work programme and terms of reference

WP/16 – Review MET/IE WG Work Program and Terms of Reference (Secretariat)

7.1. This paper presents the terms of reference and work program of the Meteorological Information Exchange Working Group (MET/IE WG) and invites the meeting to review and propose updates as necessary to the terms of reference and work programme of the MET/IE WG for possible approval by the Meteorology Subgroup (MET SG).

7.2. Based on the outcomes of the discussion on the agenda items, the meeting proposed several updates to the MET/IE WG terms of reference and work plan as highlighted at the **Appendix B** to this Report.

8. Any other business*IP/10 – Update on SWIM Regional Coordination (IATA on behalf of SWIM Task Force)*

8.1. This paper provides a brief on key SWIM activities being undertaken in Asia & Pacific Region including topics discussed in the SWIM Task Force/4 meeting in November 2020.

9. Next meeting

9.1. The meeting proposed the following (tentative) dates for the next meeting of the MET/IE WG:

21 to 23 March 2022 – MET/IE WG/20

23 March 2022 – conjoint session of MET/IE WG/20 and MET/S WG/12

REPORT ON AGENDA ITEMS

MET/IE WG/19 and MET/S WG/11 Conjoint Session

1. Volcanic ash advisory centre (VAAC) back-up tests

IP/C01 – VAAC Darwin and Wellington Backup Test (New Zealand)

1.1. VAAC Wellington and VAAC Darwin conducted a scheduled mutual VAAC back-up test on 18 December 2020. The test demonstrated the routine back-up arrangements for the VAACs including the requirements of VAAC Wellington to enable issuance of the VAA message with the VAAC Darwin VAA bulletin header, FVAU04 ADRM (as agreed by the METP, WG-MOG IAVW work stream).

1.2. A lower than expected number of VAA users participated in the test by confirming receipt of the back-up test VAA messages. Therefore, the VAACs recommended a review of the AFTN address list used for dissemination of the VAA messages (as presented in Attachment A to IP/C01).

1.3. In order to increase the participation of end users, i.e., confirming receipt of the VAA sent by VAAC Wellington and VAAC Darwin, in future back-up tests, the meeting requested that ICAO distribute via State letter a request to user States to ensure the relevant operational units participate in the tests and provide the VAACs with their current, valid AFTN addresses for receipt of the VAA messages. The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19 and MET/S WG/11 conjoint session* (Action Item 01) at the **Appendix A** to this Report.

2. SIGMET tests

WP/C01 – Review of WS SIGMET Test 2020 (Singapore)

2.1. The WS SIGMET test focal point presented an analysis of results from the ICAO APAC WS SIGMET test conducted on 16 December 2020.

2.2. Fiji informed the meeting that, due to the activation of emergency operations at MWO Nadi in response to severe tropical cyclone Yasa, Fiji did not participate in the SIGMET test. The meeting noted that, for the special case of non-issuance of (WC/WV) SIGMET test message, the SIGMET test procedures (para. 3.6) state that the MWO should notify the SIGMET test focal point in order to be excluded, accordingly, from the analysis of the SIGMET test messages.

2.3. The meeting agreed that in the above case, the non-issuance of the WS SIGMET test message by Nadi MWO (on 16 December 2020) should likewise be excluded from the analysis of the SIGMET test messages and, therefore, should not signify a SIGMET deficiency.

2.4. SIGMET test messages were not received from six (6) of the twenty-nine (29) expected participant States, namely: Afghanistan, DPR Korea, Papua New Guinea, Maldives and Nauru. The rate of State participation was 79% in 2020, compared with 83% in 2019.

2.5. Taking into account the discussion above, SIGMET test messages were received from forty-eight (48) of the fifty-four (53) expected participant MWOs. The overall level of receipt of expected SIGMET test messages was 89% in 2020, compared with 91% in 2019.

2.6. The average rate of reception of the available SIGMET test messages at the five APAC RODBs and ROC London was 96% in 2020, which was the same level as 2019.

2.7. RODB Brisbane informed the meeting that it did receive the SIGMET test messages from United States, which was contrary to the SIGMET test summary table it sent to the focal point indicating non-receipt of the WS SIGMET test messages from Honolulu, Anchorage and Kansas City MWOs, United States.

2.8. The meeting noted that the above issue did not significantly impact the analysis of the SIGMET test results and, therefore, in this instance would be of no real consequence to follow-up activities concerning the identification of SIGMET deficiencies.

WP/C02 – Results of SIGMET Tests 2020 – WC and WV (Japan)

2.9. The WC/WV SIGMET test focal point presented an analysis of results from the ICAO APAC WC/WV SIGMET tests conducted on 02/09 December 2020.

2.10. WC SIGMET test messages were received from forty (40) of the forty-nine (49) expected participant MWOs. The overall level of receipt of expected SIGMET test messages was 82% in 2020, compared with 72% in 2019.

2.11. WV SIGMET test messages were received from fifty-one (51) of the fifty-six (56) expected participant MWOs. The overall level of receipt of expected SIGMET test messages was 91% in 2020, compared with 85% in 2019.

2.12. Some WC/WV SIGMET test and VAA test messages demonstrated the incorrect use of the message priority indicator GG (for SIGMET and VAA, it should be FF) and typographical errors. Some WC/WV test messages were disseminated in duplicate, with identical or different Date Time Group (DTG).

2.13. RODB Brisbane informed the meeting that it did receive the SIGMET test messages from Indonesia and United States, which was contrary to the SIGMET test summary table it sent to the focal point indicating non-receipt of the WC SIGMET test message from MWO Makassar, Indonesia, and non-receipt of the WV SIGMET test messages from Honolulu, Anchorage and Kansas City MWOs, United States.

2.14. The meeting noted that the above issue did not significantly impact the analysis of the SIGMET test results and, therefore, in this instance would be of no real consequence to follow-up activities concerning the identification of SIGMET deficiencies.

2.15. In relation to the problem with dissemination of the tropical cyclone advisory test message reported by TCAC Tokyo, the meeting discussed the backup arrangements for TCACs and noted that the WMO Tropical Cyclone Operational Plans formal backup procedures existed between TCWC Nadi and TCWC Wellington, which included TCAC functions, whereas Australia and Japan have established internal back-up arrangements for their TCACs.

2.16. To further assist States with the analysis of their performance in the SIGMET tests, the meeting recommended an investigation of possible improvements to the template for the SIGMET test summary table. The proposed improvements should enable a more detailed analysis of the SIGMET tests, including analysis of more than one WC and/or WV SIGMET test message issued by the same MWO for the same FIR (which receives TCA and/or VAA from more than one TCAC and/or VAAC). The proposed actions as discussed above are presented in the *Task List – MET/IE WG/19 and MET/S WG/11 conjoint session* (Action Item 02) at the **Appendix A** to this Report.

IP/C02 – The SIGMET Test Results of MWOs in China (China)

2.17. China informed the meeting that it was following up on issues it attributed to the impact of the COVID-19 pandemic and internal operational problems, which affected the ability of two of its designated MWOs to participate successfully in the WC and WV SIGMET tests. MWO Beijing (ZBAA) could not send the WC SIGMET test message as expected and MWO Shenyang (ZYTXX) sent the WV SIGMET test message outside of the designated time frame for the test.

2.18. The meeting acknowledged the measures presented by China to improve the participation of its MWOs in the regional SIGMET tests. The meeting also recalled that States are enabled (through the ICAO provisions at Annex 3, Appendix 2, Table A2-2) to issue SIGMET test messages, as necessary, e.g., to test their systems. When doing so, the meeting recommended that States should consider requesting the support of one or more RODBs to assist with monitoring the receipt of the test message/s.

MET/IE WG/19
Appendix A to the Report

TASK LIST – MET/IE WG/19 and MET/S WG/11 conjoint session

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/REMARKS
01	State letter request to user States to ensure the relevant operational units participate in the VAAC back-up tests and provide the VAACs with their current, valid AFTN addresses for receipt of the VAA messages. [Ref: para. 1.1.-1.3., MET/IE WG/19 and MET/S WG/11 conjoint session]	Before next scheduled test	Australia, New Zealand, Secretariat	To commence
02	Investigate possible improvements to the template for the SIGMET test summary table to enable a more detailed analysis of the SIGMET tests, including analysis of more than one WC and/or WV SIGMET test message issued by the same MWO (which receives TCA and/or VAA from more than one TCAC and/or VAAC). [Ref: para. 2.16., MET/IE WG/19 and MET/S WG/11 conjoint session]	Before next scheduled test	SIGMET test Focal Points, Secretariat	To commence

TASK LIST – MET/IE WG/19

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	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.]	May 2021	WG	To commence
02	Propose updates to the ROBEX Handbook: to ensure the availability of the AFTN addresses for the designated APAC ROCs [ref: para. 2.6.]	May 2021	WG	To commence
03	Propose appropriate updates to the ROBEX scheme and ROBEX Handbook: to include the requirement for ROBEX centres to send OPMET bulletins to all RODBs (Including updates to Tables A and B) [ref: para. 3.5.]	May 2021	WG	To commence
04	Propose updates to the ROBEX Handbook: to include the WMO message headers (TTAAii CCCC) for each type of space weather advisory information (GNSS, HF COM, Radiation and SATCOM) in Traditional Alphanumerical Code (TAC)- and ICAO Meteorological Information Exchange Model (IWXXM)-form [ref: para. 3.8.]	May 2021	Secretariat	To commence
05	Propose updates to the ROBEX Handbook: to include the necessary consequential changes to OPMET bulletins described in WP/08 (SAPS31 NFFN, SAPS32 NWWW, SAPS33 NTAA, SANG31 YBBN, FTSP31 NFFN, FTSP32 NWWW, FTSP33 NTAA, FTNG31 YBBN) and presented in Attachment A to WP/08 and to include information on the (KWBC) bulletins containing Pago Pago METAR and TAF [ref: para. 4.3.]	May 2021	Secretariat	To commence
06	Propose updates to the ROBEX Handbook: to include a link to the online register provided by the APAC ROCs for IWXXM-exchange-capability (in accordance with MET SG/24, Decision MET SG/24-15: <i>Updates to ROBEX Handbook</i> , and Conclusion MET SG/24-12: <i>Development of Online Register of the status of IWXXM Exchange</i>) [ref: para. 4.6.]	May 2021	Marco, Tim	To commence
07	a) Provide additional feedback on the draft “ FAQs of IWXXM implementation ” (MET/IE WG/19, WP/17); and b) Present a proposal for MET SG/25 to possibly approve the publication of the FAQs (as either a standalone document or incorporated in another document) for use by States [ref: para. 4.11.]	a) Apr 2021 b) May 2021	a) WG members, b) Marco, Tim, Secretariat, IATA	To commence
08	Publish the MET SG/24-approved updates to the ROBEX Handbook: as presented at Appendix 10 to the MET/SG/24 Report, including the corrections to AFTN addresses provided by Fiji and presented at Appendix A to MET/IE WP/19, WP/12 – <i>ROBEX Handbook Updates</i> [ref: para. 6.2.]	Mar 2021	Secretariat	To commence
09	Propose updates to the ROBEX Handbook: to include the changes to data in Appendix A, Appendix B and Appendix I of the ROBEX Handbook, as advised by Japan and presented in MET/IE WG/19, WP/13 – <i>Updates to ROBEX Handbook</i> . [ref: para. 6.5.]	May 2021	Secretariat	To commence
10	Propose updates to the ROBEX Handbook: to include the changes to data in Appendix A of the ROBEX Handbook, as advised by Republic of Korea and presented in MET/IE WG/19, WP/14 – <i>Update to ROBEX Handbook</i> . [ref: para. 6.8.]	May 2021	Secretariat	To commence

MET/IE WG/19
Appendix A to the Report

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/REMARKS
11	Propose updates to the ROBEX Handbook: to include the OPMET exchange information for Van Don International Airport (VVVD), as advised by Viet Nam and presented in MET/IE WG/19, WP/15 – <i>A new international airport (VVVD) to join ROBEX network for international OPMET data exchange.</i> [ref: para. 6.11.]	May 2021	Viet Nam and Secretariat	To commence
12	Propose updates to the ROBEX Handbook: to include the Space Weather Advisory dissemination scheme (MET/IE WG/19, Flimsy/01) [ref: para. 6.14.]	May 2021	Secretariat	To commence

OUTSTANDING TASK LIST – 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	RESPONSIBILITY	STATUS/REMARKS
Terms of Reference and Work Program				
01	Terms of Reference and Work Program – online coordination: Make use of regular online coordination meetings to facilitate progress on follow-up on the action items in the Task List/s [ref: para. 2.3. and 7.3.]	As necessary	Secretariat and WG Chairs and members	IN PROGRESS 13 August 2020, 10 December 2020 Work in progress
02	Terms of Reference and Work Program – meeting documentation deadlines: Propose updates to the terms of reference documents to reflect the desirable deadlines, as adopted by the MET SG, for submission and publication of meeting papers and reports (i.e., submit papers >=28-days before the meeting, publish papers >=14-days before the meeting and publish reports <=21-days after the meeting) [ref: para. 2.4. and 11.5.]	At MET SG/24	Secretariat and WG Chairs	COMPLETED Ref: MET/IE WG and MET/S WG, 3. Communication Strategies
03	Terms of Reference updates – MET/IE WG: Include the proposed updates (at para. 5.1-5.4 of the report) in the terms of reference document for inclusion in the meeting report for further review and approval by MET SG/24 [ref: para. 5.5.]	Before MET SG/24	Secretariat	COMPLETED Ref: MET/IE WG, 1. Membership and 2. Description
04	Terms of Reference updates – MET/S WG: Include the proposed updates (at para. 11.1-11.3 of the report) in the terms of reference document for inclusion in the meeting report for further review and approval by MET SG/24 [ref: para. 11.4.]	Before MET SG/24	Secretariat	COMPLETED Ref: MET/S WG, 1. Membership and 2. Description
05	Work Program – MET/IE WG: Update the work program document to reflect the outcomes of the meeting discussions and for inclusion in the meeting report for further review and approval by MET SG/24 [ref: para. 5.6.]	Before MET SG/24	Secretariat and MET/IE WG	COMPLETED Work in progress
06	Work Program – MET/S WG: Update the work program document to reflect the outcomes of the meeting discussions and for inclusion in the meeting report for further review and approval by MET SG/24 [ref: para. 11.6.]	Before MET SG/24	Secretariat and MET/S WG	COMPLETED Work in progress
OPMET Monitoring				
07	OPMET performance indices – States’ follow-up: Inform States concerned of the locations with low performance indices and advise the States to take appropriate corrective actions; address the above communication also the Regional OPMET Centres (ROCs) responsible for the collection of OPMET messages from the originating stations [ref: para. 3.4. and 3.5.]	Sep 2020	Secretariat	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 1 and Activity 2
08	OPMET performance indices – RODBs’ review: Review and propose update/s to the MET/IE WG work program as necessary to ensure the APAC RODBs review the results of the OPMET monitoring activities prior to submission of the results to the MET/IE WG meetings [ref: para. 3.6.]	Before MET SG/24	MET/IE WG	COMPLETED Ref: MET/IE WG, 5. Work Plan, Activity 1 (1.4) and Activity 2 (2.3)
IWXXM implementation				

MET/IE WG/19
Appendix A to the Report

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/REMARKS
09	IWXXM implementation – registering testing activities: Proposal on how best to support APAC States with coordinating and sharing information on their IWXXM exchange testing activities [ref: para. 3.12.]	At IWXXM Webinar	MET/IE WG	COMPLETED Ref: MET/IE WG, 5. Work Plan, Activity 7 IWXXM Webinar Presentation #17
10	IWXXM implementation – survey: Respond to the online survey questionnaire at the link provided in WP/07 (and in State Letter Ref: T 4/3.2.5- AP155/20 (MET)) [ref: para. 3.26.]	7 Aug 2020	Meeting participants' States	COMPLETED Ref: MET/IE WG, 5. Work Plan, Activity 7 IWXXM Webinar Presentation #01
11	IWXXM implementation – FAQs: Prepare and publish an "FAQ"-type resource taking into consideration the IWXXM-related matters discussed in the meeting and the considerable information collated from previous IWXXM workshops and related activities [ref: para. 3.28.]	Before and (update) after IWXXM Webinar	Secretariat and MET/IE WG	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 7
Regional Guidance Materials				
12	ROBEX Handbook updates – Focal Points: Prepare the proposal to update the ROBEX Handbook based on the proposed updates to the Focal Point information (Appendix I), as presented in WP/08 and proposed by Australia, China and New Zealand [ref: para. 4.2.]	Before MET SG/24	Secretariat	COMPLETED Ref: MET/IE WG, 5. Work Plan, Activity 6
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.]	Before MET SG/24	MET/IE WG	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 6
14	ROBEX Handbook updates – IWXXM-related data: Investigate the development of an online repository for ROBEX data in which States would share and maintain up to date information on the IWXXM-capabilities of the ROBEX scheme and the AMHS addresses to support the required dissemination of IWXXM messages [ref: para. 4.6.]	Before MET SG/24	MET/IE WG	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.]	Before MET SG/24	MET/IE WG	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 6
16	ROBEX Handbook updates – METAR and TAF bulletins: Prepare the updates to the Appendices A and B, concerning Thailand and Australia, as presented in WP/09 and WP/15 [ref: para. 4.8.]	Before MET SG/24	Secretariat	COMPLETED Ref: MET/IE WG, 5. Work Plan, Activity 6
17	ROBEX Handbook updates – METNO procedures: Coordinate further development of the METNO procedures (wording and mechanisms) as proposed in WP/10, including the scheduled time for implementing OPMET Bulletin changes in the APAC Region, and develop the associated proposal to update the ROBEX Handbook [ref: para. 4.12.]	Before MET SG/24	Chair MET/IE WG and Secretariat	COMPLETED 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/24	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 APAC ANP and ROBEX Handbook [ref: para. 3.7.]	As necessary	Vietnam and Thailand	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 6
20	ANP and ROBEX Handbook updates – Indonesia new aerodromes: Determine any requirement (based on IP/09) to update the ICAO APAC ANP and/or ROBEX Handbook [ref: para. 8.27.]	Before MET SG/24	Secretariat and Indonesia	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 6

MET/IE WG/19
Appendix A to the Report

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/REMARKS
21	ANP updates – State Volcano Observatories: Designate an ad-hoc group consisting of the Secretariat and members from the VAACs and RODBs to identify the APAC States with active or potential active volcanoes, which do not have a designated State volcano observatory listed in the APAC ANP, Vol I, Table MET I-1; conduct the necessary coordination to facilitate the States concerned with the designation of a State volcano observatory and listing it in the APAC ANP; coordinate the action above with the development of a comprehensive proposal for amendment of the ANP to reflect APAC States’ current requirements for State volcano observatories [ref: para. 4.17., 8.3. and 8.4.]	Before MET SG/24	MET/S WG and Secretariat	SUPERCEDED by MET/S WG activities Ref: MET/IE WG, 5. Work Plan, Activity 6
22	SIGMET Guide updates – MWOs in Australia: Incorporate the required changes related to MWOs in Australia in the APAC Regional SIGMET Guide, Appendices C, D and E, and in the legacy FASID Table MET 3A and 3B information, as proposed in WP/12 [ref: para. 4.22.]	Before MET SG/24	Secretariat	COMPLETED Ref: MET/S WG, 5. Work Plan, Activity 4
23	SIGMET pamphlets – requirements for updates: Consider the States’ requirements for, and the viability of producing further updated versions of the SIGMET pamphlets; remove the outdated SIGMET pamphlets from the ICAO APAC Office website [ref: para. 7.5. and 7.6.]	Before MET SG/24	MET/S WG and Secretariat	COMPLETED Ref: MET/S WG, 5. Work Plan, Activity 4
SIGMET test				
24	SIGMET test – notification to States: Disseminate the invitation letter to States two-months in advance of the annual SIGMET test and a follow-up reminder email message approx. two-weeks prior to the first day of the test; request Sri Lanka to provide ICAO with the appropriate contact details to ensure the SIGMET test invitation is received by the participating MWO [ref: para. 6.2. and 6.13.]	Prior to SIGMET test	Secretariat	COMPLETED Ref: MET/IE WG, 5. Work Plan, Activity 3 Invitation letter [Ref.: T 4/7.5-AP218/20(MET), 04 Nov 2020] Reminder Email [02 Dec 2020]
25	SIGMET test results – corrective action plan: Develop an action plan to assist States concerned with rectification of the (WP/14 and WP/27) identified SIGMET-related errors and deficiencies; the action plan referred should utilize the (Annex 3) SIGMET “TEST” provision to conduct state-specific SIGMET test to assess whether the corrective actions have been successful [ref: para. 6.3., 6.6. and 6.11.]	Before MET SG/24	MET/IE WG in conjunction with MET/S WG	COMPLETED Ref: MET/IE WG, 5. Work Plan, Activity 3 AND Ref: MET/S WG, 5. Work Plan, Activity 3 [Ref.: T 4/7.5 - AP226/20 and AP227/20 (MET), 10 Nov 2020]
26	SIGMET test results – follow-up with States: Inform, by ICAO State letter, the States concerned of the SIGMET-related errors and deficiencies identified by the annual SIGMET test as presented in WP/14 and WP/27 and urge the States concerned to take the proposed corrective actions; inform Fiji, by ICAO State letter, of the incomplete data provided by RODB Nadi to the SIGMET test focal point in Singapore and lack of participation in the OPMET monitoring activities [ref: para. 6.4., 6.9. and 6.14.]	Before MET SG/24	Secretariat	COMPLETED Ref: MET/IE WG, 5. Work Plan, Activity 3 AND Ref: MET/S WG, 5. Work Plan, Activity 3 [Ref.: T 4/7.5 - AP226/20 and AP227/20 (MET), 10 Nov 2020]
27	SIGMET test results – corrective action plan: Support Mongolia with conducting a follow-up SIGMET test to facilitate rectification of the SIGMET-related dissemination deficiency as identified in the SIGMET test results in WP/27 and share with the MET/IE WG and MET/S WG the results of Mongolia’s follow-up SIGMET test [ref: para. 6.10.]	Before MET SG/24	Singapore	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 3 AND Ref: MET/S WG, 5. Work Plan, Activity 3

MET/IE WG/19
Appendix A to the Report

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/REMARKS
28	SIGMET test results – corrective action plan: Investigate the reason for the reduced reception of SIGMET test messages at Regional OPMET Centre (ROC) London compared to APAC RODB's and share the results with MET/S for potential corrective action [ref: para. 6.12.]	Before MET SG/24	MET/IE WG	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 3 AND Ref: MET/S WG, 5. Work Plan, Activity 3
SIGMET Coordination activities				
29	SIGMET Coordination activities – integration and expansion: Consider the proposals presented in WP/19 and the results of the SIGMET coordination project presented in WP/20 when developing the work program on coordinating the next steps to promote integration and expansion of SIGMET coordination activities in the APAC Region [ref: para. 8.8. and 8.11.]	Before MET SG/24	MET/S WG	COMPLETED Ref: MET/S WG, 5. Work Plan, Activity 8
Other				
30	VAAC back-up test procedures – review and update: Refer to the pertinent information from IP/08 and determine appropriate action for the next review and update of the VAAC back-up test procedures [ref: para. 8.25.]	Before MET SG/24	MET/IE WG and MET/S WG	IN PROGRESS Ref: MET/IE WG, 5. Work Plan, Activity 4
31	Special air-reports – promoting issuance of: Continue to coordinate the required follow-up action (outstanding action item no. 8) concerning promoting the issuance of special air-reports; publicise by way of State letter (and/or other channels) the importance of exchanging special air-reports between airlines, ATS units and MWOs (and aerodrome meteorological offices) [ref: para. 7.2. and 8.21.]	Before MET SG/24	Secretariat	CLOSED MET/S to resolve via Action 31 Not in MET/IE WG or MET/S WG Work Program [Action Item MET/R WG 9/1]
32	Air navigation deficiencies – resolution of: Continue to support States, as necessary, such as Nepal, with developing and implementing their corrective action plans for the resolution of air navigation deficiencies [ref: para. 9.4.]	Before MET SG/24	Secretariat	CLOSED MET/S to resolve via Action 32 Ref: MET/S WG, 5. Work Plan, Activity 6
33	WAFS and SADIS – preparation for proposed changes: Develop appropriate actions in the work program to facilitate States' awareness of and planning for the proposed (WP/25) WAFS and SADIS changes in November 2023 [ref: para. 10.5.]	Before MET SG/24	MET/S WG	CLOSED MET/S to resolve via Action 33 Not in MET/IE WG or MET/S WG Work Program

OUTSTANDING TASK LIST – MET/IE WG/17

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	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. <i>[Report of MET/IE WG/17, para. 3.1 – 3.4, refers]</i>	TBA	Cambodia and Secretariat	TO COMMENCE Action should be completed before handover of SIGMET service
17/2	Update the ICAO APAC Office website to clearly indicate to users which of the legacy FASID documents are replaced by the tables in the ANP. <i>[Report of MET/IE WG/17, para. 3.5, refers]</i>		Secretariat	Superseded by action item 18 IN PROGRESS

MET/IE WG/19
Appendix A to the Report

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	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 APAC ANP, including AOP and MET tables. <i>[Report of MET/IE WG/17, para. 3.6 – 3.8, refers]</i>	17 Jun 2019	China and Secretariat	TO COMMENCE Action should be completed before commencement of new OPMET service
17/4	Coordinate a proposal to update the ROBEX Handbook to enable the regular exchange of several international OPMET bulletins to the ROBEX Centre Beijing and present it for further review and possible endorsement by MET/SG/23. <i>[Report of MET/IE WG/17, para. 3.9 – 3.12, refers]</i>	17 Jun 2019	China	TO COMMENCE
17/5	Submit a paper to MET/SG/23 providing guidance on the applicability of each IWXXM version to support States’ implementation of the Annex 3 IWXXM provisions. <i>[Report of MET/IE WG/17, para. 4.9 – 4.11, refers]</i>	17 Jun 2019	Hong Kong, China	Redundant – Ref: IWXXM Guidelines doc. and ICAO Doc. 10003 TO COMMENCE
17/10	Liaise with the SADIS Provider concerning obtaining OPMET availability statistics on SADIS for future meetings of the MET/IE WG. <i>[Report of MET/IE WG/17, para. 4.21, refers]</i>	Next meeting MET/IE WG	Secretariat	IN PROGRESS
17/11	Present a consolidated proposal for updates to the ROBEX Handbook, to reflect the establishment of an NOC (within the ROBEX scheme) in Vietnam, for further review and possible endorsement by MET/SG/23. <i>[Report of MET/IE WG/17, para. 5.9 – 5.10, refers]</i>	17 Jun 2019	Vietnam, Thailand and Secretariat	IN PROGRESS
17/12	Propose any necessary updates to the ROBEX Handbook to reflect the actual requirements for OPMET information. <i>[Report of MET/IE WG/17, para. 5.11 – 5.13, refers]</i>	17 Jun 2019	States with low PIs for OPMET	IN PROGRESS
17/13	In conjunction with the outstanding action item 16/5: (a) Prepare a checklist to assist States in systematically addressing the OPMET issues at locations with low PIs in the monitoring data; and (b) Provide the checklist as guidance to the States concerned. <i>[Report of MET/IE WG/17, para. 5.11 – 5.14, refers]</i>	Next meeting MET/IE WG	Secretariat and Thailand	IN PROGRESS
17/14	In order to ensure availability of OPMET bulletins at all RODBs: (a) Propose appropriate updates to the ROBEX scheme and ROBEX Handbook to include the requirement for ROBEX centres to send OPMET bulletins to all RODBs; and (b) Requested all ROBEX centres to send their associated OPMET bulletins to all RODBs. <i>[Report of MET/IE WG/17, para. 5.11 – 5.17, refers]</i>	17 Jun 2019	MET/IE WG	IN PROGRESS
17/16	Coordinate the requirements for all additional, new updates to the ROBEX Handbook and consolidate these into an update proposal for further review and possible adoption by MET/SG/23. <i>[Report of MET/IE WG/17, para. 6.5, refers]</i>	17 Jun 2019	Secretariat	IN PROGRESS Related to action items: 17/3, 17/4, 17/11, 17/12 and 17/14
17/17	Upload the <i>Guidelines for the Implementation of OPMET Data Exchange using IWXXM</i> (Second Edition – 2018) on the ICAO APAC Office website and publicize the document with relevant National units. <i>[Report of MET/IE WG/17, para. 6.6 – 6.7, refers]</i>	17 Jun 2019	Secretariat and MET/IE WG	Superseded by Guidelines doc. 4 th Edition on APAC website IN PROGRESS
17/19	Review the reminder email in the VAAC back-up procedures and revise the contents, as necessary, to ensure the recipients are able to clearly and easily identify and understand the required actions. <i>[Report of conjoint session of MET/IE WG/17 and MET/S WG/9, para. 1.3 – 1.4, refers]</i>	Next VAA C back-up test	VAAC back-up test organizer/s	Superseded by action item 30 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). <i>[Report of conjoint session of MET/IE WG/17 and MET/S WG/9, para. 2.24, refers]</i>	17 Jun 2019	Secretariat and Australia	IN PROGRESS

MET/IE WG/19
Appendix A to the Report

OUTSTANDING TASK LIST – MET/IE WG/16

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	STATUS/REMARKS
16/4	Review the usage of the request-reply service provided and, where appropriate, arrange for the routine provision of OPMET bulletins as an alternative to the usage of the request-reply service for routine access to the stored OPMET data [Report of MET/IE WG/16, para. 5.8, refers].	Mar 2019	APAC RODBs	IN PROGRESS
16/5	Notify States concerned (as indicated in MET/IE WG/16, WP/06) of the requirement for appropriate corrective action to ensure the ongoing availability and compliance of the required OPMET data. Include reference to the corresponding ROBEX Centre contacts to assist States with identifying any distribution errors [Report of MET/IE WG/16, para. 5.10, refers].	Jun 2018	Secretariat	Superseded by MET/IE WG work plan Activity 1 and Activity 2 IN PROGRESS
16/7	Coordinate with IATA the ongoing provision of OPMET monitoring information to assist the work programme and future meetings of the MET/IE WG [Report of MET/IE WG/16, para. 5.13, refers].	Jun 2018	Secretariat	Superseded by MET/IE WG work plan Activity 1 and Activity 2 IN PROGRESS
16/10	Notify States/Organizations of the availability of the current version of the ROBEX Handbook at the ICAO APAC Office website [Report of MET/IE WG/16, para. 6.6, refers].	Jun 2018	Secretariat	Superseded by MET/IE WG work plan Activity 1 and Activity 2 IN PROGRESS
16/14	Promote, within the appropriate forum/s of the Pacific Meteorological Council (PMC), the need for MWOs in the Pacific Island States to participate in the Regional SIGMET tests [Report of MET/IE WG/16 and MET/S WG/8 conjoint session, paragraph 2.11 refers].	Aug 2018	Secretariat and Chair PIAWS Panel	COMPLETE IN PROGRESS

OUTSTANDING TASK LIST – ROBEX WG/13

ACTION ITEM	DESCRIPTION	BY DATE	RESPONSIBILITY	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].	June 2017	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].

**ICAO ASIA AND PACIFIC METEOROLOGICAL INFORMATION EXCHANGE
WORKING GROUP (MET/IE WG)**

TERMS OF REFERENCE AND WORK PLAN

TERMS OF REFERENCE

I. MEMBERSHIP
<p>The MET/IE WG is made up of experts from the following bodies:</p> <ul style="list-style-type: none"> • 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 (PLAWS) Panel; and • International Air Transport Association (IATA).

State or Org./Name	Title/Organization	Contact information
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MET/IE WG/19
Appendix B to the Report

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2. DESCRIPTION	
Objective	Increase OPMET availability and reliability 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: <ul style="list-style-type: none"> 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) Report on deficiencies in the format and dissemination of OPMET messages;

MET/IE WG/19
Appendix B to the Report

	<ul style="list-style-type: none"> 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 and SIGMET tests; h) Provide support for the APAC Volcanic Ash 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; and k) 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.
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3. COMMUNICATION STRATEGIES				
Description	Target Audience	Delivery Method	Frequency / Date	Responsibility
Interim Work Program Progress Report	MET/IE WG Members	Web-conference E-mail	Quarterly/as determined by Chair	Chair and Secretariat
MET Chairs Coordination Meeting	Chairs of MET SG and its contributory working groups	Web-conference E-mail	reflect the requirement for an annual (quarterly) schedule of c	Chair 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 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 and Secretariat

WORK PROGRAM

Activity	Time Frame	Responsibility	Status
Activity 1: Availability of OPMET information	Ongoing	MET/IE WG	
Activity 2: Timeliness, compliance and regularity of OPMET exchange	Ongoing	MET/IE WG	
Activity 3: SIGMET and Advisory Tests	Ongoing	MET/IE WG	
Activity 4: VAAC Backup Tests	Ongoing	MET/IE WG	
Activity 5: IROG Backup Tests	Ongoing		
Activity 6: Regional guidance material related to data exchange	Ongoing	MET/IE WG	
Activity 7: IWXXM implementation	2020 1 -2024 3	MET/IE WG	
Activity 8: MET information exchange scheme	2020 1 -2026	MET/IE WG	
Activity 9: MET information in SWIM	2020 1 -2026		

MET/IE WG/19
Appendix B to the Report

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	
Activity 1.4: Assess TAC OPMET monitoring results and share results with RODBs	RODB Bangkok	1.3	Annually Oct/Nov	
Activity 1.5: Prepare paper reporting results and deficiencies to MET/IE WG meeting.	IATA and RODB Bangkok	1.4	Annually Feb	
Activity 1.6: Report summary of OPMET availability results to MET SG	Secretariat and Chair	1.5	Annually May	
Activity 1.7: Advise States of OPMET deficiencies and corrective actions.	Secretariat	1.6	Annually Jun	
Activity 1.8: 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 2: Timeliness, compliance and regularity of OPMET exchange				
Activity 2.1: Monitor and collate OPMET data.	RODBs and IATA	-	Annually Dec	
Activity 2.2: Score RODB OPMET reception against PI thresholds.	RODB Bangkok	-	Annually Jan	
Activity 2.3: Analyse data and share results with RODBs	RODB Bangkok	2.2	Annually Jan	
Activity 2.4: Prepare paper report results to MET/IE WG meeting and identify corrective actions	RODB Bangkok	2.3	Annually Feb	
Activity 2.5: Report summary of OPMET timeliness, compliance and regularity results to METSG	Chair	2.4	Annually May	
Activity 2.6: Inform States of non-compliance and corrective actions	Secretariat	2.5	Annually Jun	
Activity 2.7: Provide support for States to rectify deficiencies if requested.	RODBs	2.6	As required	
Milestone 2: Achieve 95% (90%) or greater OPMET timeliness, compliance and regularity for AOP (non-AOP) aerodromes at RODBs, SADIS and WIFS.	MET/IE WG	2.7	Annually Jun	
Activity 3: SIGMET and Advisory Tests				
Activity 3.1: Review SIGMET Test procedures	MET/IE WG	-	Annually Aug	
Activity 3.2: State Letter regarding SIGMET Tests	Secretariat	3.1	Annually Sep	

MET/IE WG/19
Appendix B to the Report

5. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
Activity 3.3: Email States regarding SIGMET Tests	Secretariat	3.2	Annually	Last Wed in Oct
Activity 3.4: Conduct and collate data for WC SIGMET Tests	RODBs	3.2	Annually	2 nd Wed in Nov
Activity 3.5: Conduct and collate data for WV SIGMET Tests	RODBs	3.2	Annually	3 rd Wed in Nov
Activity 3.6: Conduct and collate data for WS SIGMET Tests	RODBs	3.2	Annually	4 th Wed in Nov
Activity 3.7: Analyse test data	RODB Singapore and Tokyo	3.4 - 3.6	Annually Jan	
Activity 3.8: Assess SIGMET test results to identify corrective actions from Nov tests	RODB Singapore and Tokyo	3.4 - 3.6	Annually Feb	
Activity 3.9: Report to MET/IE WG	RODB Singapore and Tokyo	3.8	Annually Mar	
Activity 3.10: Report on SIGMET Test Results to MET SG.	Chair	3.9	Annually May	
Activity 3.11: Advise States of SIGMET deficiencies	Secretariat	3.9	Annually Jun	
Milestone 3: Improved issuance and compliance of SIGMETs	MET/IE WG	3.11	Annually Jun	
Activity 4: VAAC Back-up Tests				
Activity 4.1: Review and Update VAAC Back-up Test procedures	MET/IE WG and VAACs		Annually	2 months prior to test
Activity 4.2: Issue Notice of VAAC Back-up Tests	Secretariat/VAACs	4.1	Annually Aug	
Activity 4.3: Conduct VAAC Back-up Test between Darwin and Tokyo	VAACs	4.2	Annually Oct – TBC	
Activity 4.4: Conduct VAAC Back-up Test between Darwin and Wellington	VAACs	4.2	Annually Oct – TBC	
Activity 4.5: Collect test results and send to VAAC Provider State members	RODBs	4.3	Annually Oct – TBC	
Activity 4.6: Analyse Test results	VAAC Back-up Focal Points Members	4.5	Annually Nov	
Activity 4.7: Report to MET/IE WG	VAAC Back-up Focal Points Members	4.6	Annually Feb	
Activity 4.8: Report to MET SG.	Chair	4.7	Annually May	
Activity 4.9: Advise relevant States, VAACs and RODBs of any deficiencies.	Secretariat	4.7	Annually Jun	
Milestone 4: VAAC Back-up Tests conducted, analysed and report complete.	VAAC Back-up Focal Points Members	4.8	Annually Jun	
Activity 5: IROG Back-up Tests				

MET/IE WG/19
Appendix B to the Report

5. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
Activity 5.1: Investigate the feasibility and benefits of back-up arrangements of IROG Tokyo, Nadi and Brisbane	IROG Nadi, Tokyo and Brisbane	-	Nov 2020	
Activity 5.2: Review IROG Back-up Test procedures to include all IROG.	IROG Bangkok and Singapore	-	Apr 2019, Annually Feb	
Activity 5.3: Updated IROG Back-up Procedures in ROBEX Handbook.	Secretariat	5.2	Annually May	
Activity 5.4: Identify list of MET Bulletins to monitor.	IROG Bangkok and Singapore	-	Annually Jan/Feb	
Activity 5.5: Conduct IROG Back-up Test of Bangkok and analyse results	IROG Bangkok and Singapore	5.4	Annually Sept/Oct	
Activity 5.6: Conduct IROG Back-up Test of Singapore and analyse results	IROG Bangkok and Singapore	5.4	Annually Jan/Feb	
Activity 5.8: Report to MET/IE WG	IROG Bangkok and Singapore	5.7	Annually Mar	
Milestone 5: IROG Back-up Tests conducted, analysed and report complete.	IROG Bangkok and Singapore	5.7	Annually Mar	
Activity 6: Regional guidance material related to data exchange				
Activity 6.1: Review monitoring procedure in ROBEX Handbook and update as necessary.	All RODBs	-	Annually Apr	
Activity 6.2: Changes to RODB monitoring procedures and 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	WG		Nov 2021	
Activity 6.4: Define quality threshold for translated data	IATA, Chair WG		Nov 2021	
Activity 6.35: Advise Secretariat of changes to ROBEX Handbook.	All States	-	Annually Apr	
Activity 6.4: Incorporation of AMHS and Addressing in ROBEX Handbook.	Pierre and Marco		Sep 2020	
Activity 6.56: Complete update of ROBEX Handbook including Table MET 2A.	Secretariat	-	Annually May	
Activity 6.67: Review ANP Tables (initially MET II-2) and ensure all necessary aerodromes are contained in OPMET bulletins	WG	-	May Annually	
Activity 6.78: Seek MET/SG endorsement of the updated ROBEX Handbook.	Secretariat	-	Annually Jun	
Activity 6.9: Support MET SG with development of MET-specific requirements in the ANP, Volume III	WG		As required	
Milestone 6: RODB Monitoring procedures published in ROBEX Handbook	Secretariat	6.7	Annually Sep	
Activity 7: IWXXM Implementation				
Activity 7.1: Monitor migration to IWXXM.	WG	-	As required	
Activity 7.2: Conduct survey to determine status of IWXXM Implementation.	Secretariat		July 2020, May 2021	

MET/IE WG/19
Appendix B to the Report

5. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
Activity 7.3: Report to MET SG on APAC States' IWXXM implementation status and need/timing for another APAC IWXXM Workshop.	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 7.6: Conduct IWXXM tests and report to MET/IE WG and RODB Singapore on the status of the testing and implementation of digital OPMET exchange.	WG		Annually Mar	
Activity 7.7: Maintain a register of IWXXM tests conducted, detailing Met software, UAs and MTAs tested	RODB Singapore	7.5	As required	
Activity 7.8: Arrange provision for the next IWXXM Workshop in APAC	Secretariat/Chair, WG	7.2	Sep 2020	
Activity 7.9: Actively participate in the next APAC IWXXM Workshop	Secretariat/Chair, WG	7.7	Oct 2020	
Activity 7.10: Prepare information (e.g. issues, CONOPS) for MET/P WG-MIE	WG		As required	
Activity 7.11: Development and Publishing AMHS/FTBP network map	Pierre, Secretariat		Monthly	
Activity 7.12: State IWXXM status register	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 8: MET Information Exchange Structure				
Activity 8.1: Review ROBEX Scheme diagram.	All RODBs, Secretariat		May Annually	
Activity 8.2: Review the structure of the ROBEX exchange in light of the introduction of SWIM.	WG		Annually Feb	
Activity 8.3: Review use of the Request/Reply service	RODBs	-	May 2021	
Activity 8.4: Improve the efficiency of Request/Reply service	RODBs	8.3	Sep 2021	
Milestone 8: Improved efficiency and effectiveness of ROBEX Scheme	MET/IE WG	-	2021	
Activity 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	

MET/IE WG/19
Appendix B to the Report

5. WORK PLAN				
Activity / Milestone	Accountability	Predecessors	Date	Status
Milestone 9: Participated in the development of SWIM Meteorological services for APAC	MET/IE WG	-	2023	

MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/E-MAIL
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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/E-MAIL
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MET/IE WG/19
Appendix C to the Report

	STATE/NAME		TITLE/ORGANIZATION	TEL/FAX/E-MAIL
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MET/IE WG/19
Appendix C to the Report

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MET/IE WG/19
Appendix C to the Report

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LIST OF WORKING AND INFORMATION PAPERS

WORKING PAPERS			
Agenda Item	WP No.	Title	Presented by
1	WP/01	Provisional Agenda	Secretariat
2	WP/02	Follow-up Action from MET/IE WG/18	Secretariat
2	WP/03	Follow-up Action from MET SG/24	Secretariat
2	WP/04	Follow-up Action from APANPIRG/31	Secretariat
3	WP/05	RODB Backup Test Result	Thailand
3	WP/06	ASIA/PAC Performance Indices	Thailand
3	WP/07	New Space Weather Advisory Headers	Australia
4	WP/08	IWXXM Translation Services for the South Pacific	New Zealand
4	WP/09	Online Register of IWXXM Exchange Status	Australia and Hong Kong, China
4	WP/10	The Instruction of the SWA Exchange Test of CRC-China	China
5	WP/11	ASIA/PAC Inter-regional OPMET Gateway backup Exercise between IROG Singapore and IROG Bangkok	Singapore
6	WP/12	ROBEX Handbook Updates	Secretariat
6	WP/13	Updates to ROBEX Handbook	Japan
6	WP/14	Update to ROBEX Handbook	Republic of Korea
6	WP/15	A New International Airport (VVVD) to Join ROBEX Network for International OPMET Data Exchange	Vietnam
7	WP/16	Review MET/IE WG Work Program and Terms of Reference	Secretariat
4	WP/17	FAQ of IWXXM Implementation	Hong Kong China, the Chair of MET/IE WG and the Secretariat
<i>Conjoint session of MET/IE SG/19 and MET/S WG/11</i>			
2	WP/C01	Review of WS SIGMET Test 2020	Singapore
2	WP/C02	Results of SIGMET Tests 2020 – WC and WV	Japan

MET/IE WG/19
Appendix D to the Report

INFORMATION PAPERS			
Agenda Item	IP No.	Title	Presented by
1	IP/01	Meeting Bulletin	Secretariat
4	IP/02	Implementation of IWXXM in Australia	Australia
4	IP/03	Status and Plans for IWXXM in Mongolia	Mongolia
4	IP/04	Status of IWXXM implementation in Singapore	Singapore
4	IP/05	Updated Plans for IWXXM in Japan	Japan
4	IP/06	The Progress of IWXXM in China	China
4	IP/07	Status and Plans for Implementation of IWXXM in Thailand	Thailand
4	IP/08	Update on IWXXM Implementation in Hong Kong, China	Hong Kong, Chia
3	IP/09	Establishment of National OPMET Centre (NOC) and IWXXM Implementation in Vietnam	Vietnam and Thailand
8	IP/10	Update on SWIM Regional Coordination	IATA on behalf of SWIM Task Force

FLIMSY

6	Flimsy_01	Update to ROBEX Handbook for Dissemination of Space Weather Advisories	Australia
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Conjoint session of MET/IE SG/19 and MET/S WG/11

1	IP/C01	VAAC Darwin and Wellington Backup Test	New Zealand
2	IP/C02	The SIGMET Test Results of MWOS in China	China
