



INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF
THE THIRD MEETING OF
ASIA/PAC OPMET MANAGEMENT TASK FORCE
(OPMET/M TF/3)

Bangkok, Thailand, 2-4 March 2005

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1. Introduction

1.1 The Third Meeting of the ASIA/PAC OPMET Management Task Force (OPMET/M TF/2) of the CNS/MET Sub-group of APANPIRG was held in Bangkok, Thailand from 2 to 4 March 2005.

2. Attendance

2.1 The meeting was attended by 19 experts from Australia, Hong Kong, China, India, Indonesia, Japan, Singapore, Thailand, Vietnam and one expert from IATA. The List of Participants is provided in Appendix A to the report.

3. Opening of the meeting

3.1 On behalf of Mr. Lalit B. Shah, Regional Director, ICAO Asia and Pacific Office, Mr. Dimitar Ivanov welcomed all participants to the ICAO Regional Office, Bangkok and provided a brief overview of the objectives and the working arrangements for the meeting.

3.2 Mr. Rick Houghton, National Manager, Defence Weather Services, Australia, opened the meeting and welcomed the new participants from India and Vietnam.

4. Officers and Secretariat

4.1 Mr. Rick Houghton, Rapporteur of the OPMET/M Task Force presided over the meeting.

4.2 Mr. Dimitar H. Ivanov, Regional Officer, Aeronautical Meteorology acted as Secretary of the meeting.

5. Agenda of the Meeting

5.1 The agenda adopted by the meeting was as follows:

- Agenda Item 1:**
- a) Adoption of provisional agenda and working arrangements for the meeting
 - b) Review of the TORs and work programme of the group

Agenda Item 2: Review:

- a) Current status of OPMET exchange in the Region
- b) Content and operation of regional OPMET Data Banks
- c) Inter-Regional exchange
- d) New requirements for OPMET information

Agenda Item 3: Review of regional guidance material on OPMET exchange

- a) ROBEX Handbook, edition 2004
- b) ASIA/PAC ICD, edition 2004

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- Agenda Item 4:** Development of procedures for monitoring and management of OPMET exchange:
- a) OPMET exchange monitoring;
 - b) OPMET bulletins update procedure;
 - c) SIGMET tests; and
 - d) OPMET data banks quality control procedures
- Agenda Item 5:** Transition to BUFR coded OPMET information
- Agenda Item 6:** Future Work Programme
- Agenda Item 7:** Any other business
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Agenda Item 1 b): Review of the TORs and work programme of the group

1.1 The meeting recalled that the 13th Meeting of APANPIRG held in Bangkok from 9 to 13 September 2002 established with its Decision 13/28 the ASIA/PAC OPMET Exchange Task Force (OPMET/E TF). The Meeting adopted Terms of Reference (TORs), Work Programme and composition of the task force. The first meeting of the TF was held from 19 to 21 February 2003 in Bangkok.

1.2 The 7th Meeting of the CNS/MET Sub-group of APANPIRG held in Bangkok from 15 to 21 July 2003 adopted Decision 7-10/26, by which the OPMET Exchange Task Force was renamed to ASIA/PAC OPMET Management Task Force (OPMET/M TF).

1.3 The second meeting of OPMET/M TF, Bangkok, 10 to 13 February 2004 reviewed and updated the TORs and the Work Programme of the group. Consequently, APANPIRG/15 meeting, Bangkok, 23-27 August 2004, adopted Decision 15/35 on the subject.

1.4 The group reviewed the TORs and Work Programme of the OPMET/M TF as endorsed by APANPIRG/15 and decided that no changes were necessary at this stage.

1.5 The group further reviewed the List of Action Items adopted by its second meeting. It was identified that a good progress has been made on most of the Action Items with 22 completed and 18 on-going or of permanent nature. The group agreed that the list should be rearranged to separate the completed and on-going tasks in separate sheets. It was also agreed to maintain the list of completed tasks in the report in order to keep track of the work being done by the group. Detailed information on the status of the tasks, together with the new tasks agreed by the meeting, is provided in Appendix B, *Revised list of Action Items by OPMET/M TF/3 meeting*.

1.6 The group appreciated some major achievements, such as the finalization and publication of the new editions of the ROBEX Handbook and the OPMET data banks ICD. Both documents were distributed in hard copy and CD-ROM to all ASIA/PAC and MID States in November 2004; they were also posted on the ICAO web site. In view of the completion of these important tasks, the group felt that in the future the focus of the work should be on developing monitoring and quality management procedures for the OPMET exchange and ensuring full availability of the required OPMET information from the region.

Agenda Item 2: Review:

- a) Current status of OPMET exchange in the Region**
- b) Content and operation of Regional OPMET Data Banks**
- c) Inter-Regional exchange**
- d) New requirements for OPMET information**

2.1 Current status of OPMET exchange in the RegionFollow up of APANPIRG conclusions/decisions

2.1.1 A summary of the activities after the OPMET/M TF/2 was presented by the Secretariat. The following activities were outlined:

- A List of ROBEX Focal Points was prepared for the new edition of the ROBEX Handbook.
- The 8th meeting of CNS/MET Sub-group, 12-16 July 2004, Bangkok formulated 2 draft decisions and 4 draft conclusions on OPMET issues which were consequently endorsed by APANPIRG/15 meeting, 23-27 August 2004, Bangkok.
- The Secretariat, assisted by the Task Force members and ROBEX centres, finalized the ROBEX Handbook, 12th edition and the ASIA/PAC OPMET Data Banks ICD, 3rd edition. As a follow up of APANPIRG Conclusion 15/36, 12th edition of the *ROBEX Handbook* and 3rd edition of the *ASIA/PAC ICD*, both documents have been published in hard copy and CD-ROM and distributed in November 2004 to all States in the region. They were also posted on the ICAO web site in pdf format.
- The AIREP survey was conducted as planned.
- SIGMET tests started on 18 January 2005 with a test for volcanic ash SIGMET.
- Several requests from IATA regarding availability of OPMET data from the region have been processed.
- The content of ROBEX bulletins from India was discussed with the India Meteorological Department during an ICAO MET mission to India in October 2004.

2.1.2 The meeting discussed the outstanding follow-up action on APANPIRG Conclusion 15/37, *Fostering the standardization of OPMET information in the Asia/Pacific region*. It was recalled that serious discrepancies in the format of METAR and TAF messages and bulletins was identified by OPMET/M TF/2 meeting based on a number of examples provided by RODB Singapore. It was agreed that a State letter should be sent by ICAO to all States in the Region emphasizing the need for full compliance with the format of the OPMET messages specified by WMO and ICAO. In this regard, the Secretariat requested the TF members to provide further examples of the existing discrepancies from various States in the Region. (**Action Item**)

2.1.3 Regarding the other APANPIRG conclusions/decisions related to the OPMET exchange, the meeting noted that:

- the follow up action on APANPIRG Conclusion 15/38, *New data type designators for bulletins containing special air-reports*, has been addressed to the WMO according to the working arrangements between ICAO and WMO.

- the follow up action on Conclusion 15/39, *Feasibility of extending the validity of TAF to 30 hours*, was not yet initiated.
- the follow-up action on Decision 15/40, *Planning for migration to BUFR-coded aeronautical meteorological messages*, was discussed under agenda item 5.

OPMET information from the Pacific

2.1.4 The group recalled the finding of the second meeting of OPMET/M TF that the OPMET data shortfalls were particularly significant for the Pacific Region. In order to identify the shortfalls and assist the OPMET/M TF in addressing this serious deficiency, a survey of the availability of METAR and TAF from the Pacific States was to be carried out with support from Fiji, Australia and the US.

2.1.5 Preliminary work has been carried out to determine which bulletins are being transmitted and whether they are transmitted on AFTN or GTS. From this work it appears that Washington is generating most missing FT and SA bulletins for the GTS using the WMO Pacific Area Designators PA (Pacific Area), PS (South Pacific Area) and PQ (Western Pacific Area), but the bulletins do not appear on the AFTN as part of the ROBEX exchange. The area grouping used in the WMO bulletins was not considered suitable by the task force, with the national structure being the preferred ROBEX bulletin method. However, for the Pacific area it was recognized that most of the States might not have the capability of creating their own bulletins. **Appendix C** presents preliminary information on the current situation with the bulletins from the Pacific States.

2.1.6 Following the preliminary work a letter and accompanying survey questionnaire was sent to all Pacific States in late January 2005. Once the responses have been collated, States would be advised of any necessary corrections to addressing of bulletins; this would be followed later with a test day involving the RODBs in order to check and adapt the exchange schemes. The final results on this survey should be reported at the fourth meeting of OPMET/M TF in early 2006.

AIREP survey

2.1.7 The meeting recalled that OPMET/M TF/2 meeting tasked a small sub-group, named AIREP Team, to carry out a survey on the AIREP exchange in the ASIA/PAC region in order to verify the current exchange procedures and to check the availability and the correctness of the AIREP bulletins.

2.1.8 The AIREP Team developed a survey questionnaire, which was circulated to all ROBEX centres involved in collection and dissemination of AIREP messages/bulletins. The survey was conducted over a 10-day sampling period (1st to 10th November 2004). During this period all ROBEX centres recorded the AIREP bulletins received/transmitted by their centre and forwarded this information to the AIREP team.

2.1.9 The core group of the AIREP Team, comprising experts from RODB Brisbane and Singapore, presented the final report of the survey, which contained a comprehensive analysis of the survey responses by 15 ROBEX centres. The full report is available on the ICAO web site at: www.icao.int/cgi/go_to_apac.pl?apac/meetings.htm (the report is contained in WP/8 for OPMET/M TF/3 meeting).

2.1.10 The main findings and recommendations by the AIREP team are as follows:

- The participation of ROBEX centres was very good and centres should be commended.
- Centres should review and check survey information to confirm accuracy of reported data.

- Centres should review survey information to determine if the distribution of their AIREP bulletins is adequate.
- Centres should review the survey information to determine if they require copies of other AIREP bulletins and advise generating centres to include in their distribution.
- Centres generating UA bulletins and not distributing via AFTN should be advised to do so.
- Centres should be advised to check current ROBEX procedures and requested not to re-distribute or re-generate UA bulletins received from other centres.
- Exchange procedures should be reviewed. Survey results show a fairly large number of AIREP bulletins exchanged over the GTS (WMO system). ARP generated by YBBN, RJTD and VHHH are exchanged regularly in the region over the AFTN.
- During the sample period of 10 days less than ten (<10) ARS were exchanged. Existing ARS procedures should be assessed for adequacy.

2.1.11 In order to assist centres to review and check their procedures copy of all data compiled during the AIREP sample period could be made available to requesting centres. In addition, a compact disk containing all survey information was provided to all attendees at the OPMET/M TF3 meeting.

2.1.12 The meeting expressed appreciation to the AIREP Team for conducting an excellent survey which revealed a number of issues related to the AIREP exchange. The meeting addressed in particular the following issues:

2.1.12.1 *The lack of special AIREP.* Only ten special AIREP messages were identified for the whole region during the 10-day trial period. Knowing the importance of special AIREP for the issuance of SIGMET, the meeting expressed concern of the extremely low availability of these reports. It was felt that an additional investigation should be carried out to find out the reasons. In this regard, the meeting requested the member from IATA to look at this issue and consult with airlines. **(Action Item)**

2.1.12.2 *Use of GTS instead of AFTN.* The meeting considered necessary to advise the centres that the dissemination of the UA bulletins to the WAFCs should be via AFTN. It was recalled that once the bulletins reach WAFCs, their further dissemination could be via the WMO GTS, since after that point the air reports are considered “basic” data.

2.1.12.3 *Irregularities in the AIREP exchange.* A lot of irregularities have been observed, such as, non-issuance, repetitions, retransmissions of bulletins, etc. In general, most of the centres did not follow the distribution lists provided in the ROBEX Handbook.

2.1.12.4 *Formatting errors.* A number of formatting errors in the AIREP messages have been found, the most common being: reporting of the position of aircraft by reporting points instead of latitude/longitude values; reporting wind direction in values not rounded to the nearest 10 degrees; inconsistencies in the WMO abbreviated headings of some bulletins.

2.1.13 The meeting felt that additional guidance should be provided to the ROBEX centres in order to improve the current situation with the AIREP exchange. Moreover, the rationale of exchanging AIREP through the ROBEX scheme, which was in addition to the AIREP exchange between the ACC and MWOs, and the WAFCs, as specified in the Annex 3, was discussed. In order to decide on the future requirements for the AIREP exchange, it was agreed that the States should be consulted whether the UA bulletins should be excluded from the ROBEX scheme. The meeting agreed that the Secretariat, assisted by the AIREP Team should make available the results of the survey to all centres concerned and should

consult them on the usability of the ROBEX AIREP exchange. The survey report should also be presented at the CNS/MET SG/9 meeting to be held in Bangkok in July 2005. **(Action Items)**

2.2 Content and Operation of the Regional OPMET Data Banks

2.2.1 Under this agenda item the representatives of the RODBs Bangkok, Brisbane, Singapore and Tokyo presented to the meeting information on the current status of the operation of their respective centres.

2.2.2 RODB Bangkok informed of some changes in the catalogue of bulletins. The meeting noted that some SPECI (SP) bulletins have been included in the catalogue. It was suggested in this regard, that SP bulletins should not be regarded as separate items in the catalogue since their content is changeable. Therefore, the users should not be expected to make separate requests for SP bulletins and the RODB reply of an SA request should include a SPECI message if more recent than the last METAR. RODB Bangkok noted this discussion and would rearrange their catalogue of bulletins accordingly.

2.2.3 Another change in the RODB Bangkok was the introduction of a new request procedure for two or more data types for the same location/bulletin. It was clarified that this request format was specific for RODB Bangkok and as such it should be included in Appendix A to the ICD document for Bangkok only.

2.2.4 RODB Singapore informed of changes in the bulletins from Indonesia and some new airports added in the bulletin FCSR31.

2.2.5 RODB Tokyo presented a recent reception statistics of request bulletins. There were an average of 460 requests per day for METAR and TAF. It was identified that some of the received RQ bulletins were with wrong format. The most common errors were the omission of important characters in the request message, such as comma (,) symbol or the equal (=) mark at end of the message. RODB Tokyo expressed concern of the high number of the wrongly formatted requests, which were about 15 – 20% of all request messages. Most of them are rejected by the RODB.

2.2.6 The meeting agreed that the problem raised by RODB Tokyo was a serious one. Some RODBs could correct automatically or manually wrongly formatted requests, but it was felt that the users should be notified that they should follow the formats specified in the ICD document. In this regard, the meeting requested the member from IATA to assist in improving the quality of the request messages by advising the airline users on the correct format of the request messages. It was suggested that in order to increase the awareness of the airline users of the formats and contents of the RODBs, IATA should provide a link to the electronic version of the ICD document via some IATA web site. **(Action Item)**

2.2.7 RODB Tokyo advised also on the changes of the WMO bulletin headings for the METAR bulletins from Japan introduced in February 2005 (SAFE changed to SAJP, to comply better with the WMO geographical designators), and some changes in the bulletins content. The meeting was also informed that the next update of RODB Tokyo will take place in October 2005.

2.2.8 RODB Brisbane presented the structure of the Australian Flight Information Centre (AusFIC) to which the data bank belonged. The operation of the data bank was part of the National Aeronautical Information Processing System (NAIPS). The users of this system could access the required OPMET information by a number of means, including Internet. The meeting was informed of the plans to replace and update the existing facilities of AusFIC and that the replacement of AFTN by an AMHS was scheduled for 2006. Brisbane centre planned to introduce important changes/improvements in their ROBEX functionalities by the end of 2005, such as:

- Automatic Request/Reply formats to comply with ICAO guidance;
- Error messages to comply with ICAO guidance; Stored bulletins will be available for automatic retrieval using most up to date information; “SP” information in SAAU bulletins to be removed – generation of SPECI bulletin to be investigated; SIGMET bulletins headers will be changed to comply with ICAO guidance.

2.2.9 After presenting the information from four out of five RODBs in the region (RODB Nadi was not presented at the meeting), the meeting concluded that all RODBs have been operating satisfactorily during the period since the OPEMT/M TF/2 in February 2004. It was identified that there was a tendency towards standardizing the procedures and improving the availability of the OPMET information from the region. The meeting requested the Secretariat to introduce all reported changes in the ROBEX handbook and the ICD document and update the ICAO web site accordingly. (**Action Item**)

2.3 Inter-Regional Exchange

2.3.1 Under this agenda item, the representatives of the centre serving as Inter-regional OPMET Gateways (IROG) informed the meeting of the current status of the inter-regional OPMET exchange.

2.3.2 At present Bangkok IROG relays all ASIA/PAC bulletins to MID Region (OEJDJPYX) and receives/stores all required OPMET bulletins from MID Region. The lists of METAR and TAF bulletins received from MID Region are shown in **Appendix D** to the report. The meeting was informed that currently there was no RODB in the MID Region, however, RODB Vienna has been designated to serve as a data bank for this region. In this regard, the Secretariat was requested to coordinate with the ICAO Office, Paris whether the current inter-regional exchange between ASIA/PAC and MID was considered satisfactory. (**Action Item**)

2.3.3 As regards the OPMET exchange between ASIA/PAC and AFI Region, the meeting was informed that currently Bangkok IROG was not exchanging any OPMET bulletins with any AFI centre. In order to clarify the situation, the meeting requested the Secretariat to carry out consultations with the ICAO Offices in Dakar and Nairobi. (**Action Item**)

2.3.4 The exchange between ASIA/PAC and NAM regions has been carried out by Tokyo IROG. The meeting was informed that all ASIA/PAC OPMET bulletins requested by the United States has been relayed by Tokyo to Washington. **Appendix D** to the report contains also a summary of the OPMET bulletin switching to the United States based on the traffic during the first ten days of February 2005.

2.3.5 The representative of IROG Brisbane informed that no direct exchange was carried out between ASIA/PAC and SAM regions. The OPMET information from SAM region could be obtained by request via the Washington data bank. It was necessary to investigate whether direct exchange with SAM region was operationally required and what would be the technical and financial implications if such exchange was to be established.

2.3.6 The meeting was also informed of the establishment of back-up procedure for the OPMET exchange between EUR and ASIA/PAC, as shown in **Appendix E** to the report. As a follow-up of the task assigned by OPMET/M TF/1 meeting, RODB Singapore and RODB Bangkok have developed this procedure for hand-over the transmission of the ASIA/PAC bulletins to IROG London (respectively, to SADIS Gateway) in the event of Singapore RODB having a failure in their telecommunication network/system. The procedure involves five steps to be undertaken by the two RODBs and the actions and responsibilities of the centres are very well described in a document, prepared by Singapore and Bangkok.

2.3.7 The meeting commended the two RODBs/IROGs for developing a very important procedure to ensure the continuity of the OPMET exchange with Europe and the availability of the ASIA/PAC OPMET data on SADIS. It was proposed that the procedure document be included as Appendix to the ASIA/PAC ICD. The Secretariat would inform the ICAO Office, Paris and IROG London of the establishment of the back-up procedure. It was also proposed that RODB Singapore and Bangkok, in coordination with the Secretariat and IROG London should perform some real-time tests of the procedure in order to check its operability. **(Action Item)**

2.3.8 After the discussion on this agenda item, the meeting concluded that the current inter-regional exchange with EUR, MID and NAM regions was satisfactory. It was necessary to clarify the situation with the exchange between ASIA/PAC and AFI and ASIA/PAC and SAM regions. The Secretariat would coordinate with the corresponding ICAO Offices in these regions and advise the group at its fourth meeting in 2006. **(Action Item)**

2.4 New requirements for OPMET information

2.4.1 Under this agenda item IATA presented results from a recent survey of the availability of METAR and TAF in the EUR region (as per the availability at the German Weather Service – DWD) and on SADIS. This survey was intended at identifying existing shortfalls or discrepancies in the OPMET exchange against the IATA requirements stated in SADIS User Guide, Annex 1. The survey results were presented separately for the AOP and non-AOP aerodromes in ASIA/PAC region.

2.4.2 In reviewing the results of IATA survey, the group took into consideration the following conditions:

- It was recognized that the SADIS User Guide Annex 1 contained all aerodromes, for which distribution of OPMET data was required by IATA;
- The SADISOPSG had agreed that, as a minimum, all OPMET data for aerodromes listed in regional AOP tables, should be available on the SADIS and ISCS broadcasts.
- It was also recalled that the APANPIRG concluded that efforts should be undertaken to include all OPMET data from the ASIA/PAC AOP aerodromes into the regular ROBEX exchange.

2.4.3 IATA expressed appreciation of the fact that since the first meeting of the OPMET/M TF the availability of OPMET data from the ASIA/PAC region on SADIS and ISCS has noticeably improved. Nevertheless, there were a number of shortfalls yet to be resolved. The results of the recent monitoring indicated that:

- there are 198 aerodromes listed in the AOP table of the Asia-Pacific-Region;
- for 27 aerodromes IATA couldn't find any OPMET data;
- 130 aerodromes do show a satisfactory coverage of OPMET data availability;
- 41 aerodromes do not fully fulfill the basic IATA requirements for OPMET data;
- in summary, 68 aerodromes have to be considered for further investigation.

2.4.4 Regarding the non-AOP aerodromes, IATA pointed out that:

- there are 88 non-AOP aerodromes listed in the SUG Annex 1 for the Asia/Pacific Region;
- for 25 of them IATA couldn't find any OPMET data;
- 28 aerodromes do show a satisfactory coverage of OPMET data availability;

- 35 aerodromes do not fully fulfil the basic IATA requirements for OPMET data.
- in summary, 60 aerodromes have to be considered for further investigation.

2.4.5 The meeting agreed that, the results of the IATA monitoring, though carried out over a very limited time period, could be used when addressing the OPMET data availability issues, since they were outlining the areas of main concern. These were the areas, where IATA found no data at all (27 AOP aerodromes and 25 non-AOP), as well as the areas with partial availability of OPMET data. The meeting agreed that further verification of these shortfalls should be carried out through monitoring exercises by all RODBs in coordination with the Secretariat. (**Action Item**)

2.4.6 The meeting discussed several possible reasons for the OPMET shortfalls observed by IATA. For instance, OPMET data from the PAC region was disseminated via ISCS, rather than SADIS, which could lead to non-availability of this data in EUR region. In this regard, the Secretariat was requested to check whether the OPMET information disseminated via SADIS and ISCS was identical. (**Action Item**)

2.4.7 The meeting expressed appreciation to IATA for providing to the group a very useful feed-back on the OPMET data availability and invited the IATA expert to continue the monitoring of the ASIA/PAC OPMET data.

2.4.8 The observer from Viet Nam advised that the four non-AOP aerodromes in Viet Nam listed in the SUG Annex 1, for which IATA survey showed non-availability of OPMET data, were not producing any METAR or TAF for international exchange. Therefore, it was requested that these aerodromes should be removed from the SUG Annex 1. It was explained that Viet Nam should inform the Regional Office officially on this subject, and then the Regional Office would advise the SADISOPSG, which was maintaining the SUG, of the requested removal. (**Action item**)

2.4.9 Regarding the missing TAF for the two international airports in Cambodia, Phnom Penh (VDPP) and Siem Reap (VDSR), the meeting was informed that the TAF service would be introduced in April 2005. In order to assist Cambodia in preparation of TAF, the aeronautical meteorological service of Viet Nam would provide to Phnom Penh regularly “draft TAF” and Viet Nam was also providing training for the Cambodian forecasters. VDPP and VDSR TAF would be included in FTAS31 VTBB bulletin compiled by Bangkok ROBEX centre. The meeting commended Viet Nam for providing a valuable assistance to Cambodia in resolving the long-standing deficiency of lacking TAF service for their international aerodromes.

2.4.10 Indonesia presented information on the changes of the location indicators for the Indonesian aerodromes and FIRs. It was noted in particular that the new FIR structure of the Indonesian airspace will become applicable on 25 April 2005 and the new location indicators of the two FIRs will be: WAAF for Ujung Pandang ACC/FIC (formerly WAAZ), and WIIF for Jakarta ACC/FIC (formerly WIIZ).

Agenda Item 3: Review of regional guidance material on OPMET exchange

- a) ROBEX Handbook, edition 2004; and**
- b) ASIA/PAC ICD , edition 2004**

3.1 ROBEX Handbook

3.1.1 The meeting recalled that the 12th edition of ROBEX Handbook was published by the ICAO Office, Bangkok in November 2004. The Handbook was distributed in hard copy and CD-ROM to all States in ASIA/PAC Region. Copies of the Handbook were also sent for distribution in the MID ICAO Region and for information to all other ICAO Regional Offices. The Handbook was also made available on the ICAO web site in pdf format.

3.1.2 The meeting discussed the need for updating and amending the ROBEX Handbook in order to keep it as a valuable and useful document for the RODBs, ROBEX centres and other aviation users. The following areas for improvement were identified:

3.1.2.1 Review of Chapter 9, AIREP Exchange, based on the report of the AIREP survey carried out by the AIREP Team. The main question was whether the AIREP exchange should continue to be included in the ROBEX scheme, or it could be carried out outside the scheme based on the global Annex 3 provisions. The meeting felt that, since this issue was beyond the group's expertise, it should be further discussed by the CNS/MET SG. Therefore, the revision of Chapter 9 of the Handbook should be carried out after the CNS/MET SG/9 in July 2005.

3.1.2.2 The meeting noted that Chapter 12 of the ROBEX Handbook, *Management of OPMET exchange under the ROBEX scheme*, was yet to be developed. It was recognized that the quality control (QC) of the OPMET bulletins to be performed by the ROBEX centres and the RODBs was one of the most important parts of Chapter 12. It was proposed in this regard to form an OPMET QC Team to collect information of the existing quality control procedures and prepare a draft text for Chapter 12 to be ready for OPMET/M TF/4 meeting in 2006. The establishment of the QC Team was further discussed under agenda item 4d). (**Action Item**)

3.1.2.3 It was noted that Appendix G, *Exchange of OPMET data between the MID, ASIA and AFI regions*, has been included in the 12th edition without changes because no updates were received from the other regions concerned by the time of publication. Representatives of RODBs and IROGs were invited to provide any new information and to activate their contacts with the IROGs of other regions in order to ensure actualization of the information regarding the inter-regional exchange in the ROBEX Handbook. This task should be coordinated by the Secretariat and the new version of Appendix G should be finalized in time for the OPMET/M TF/4 meeting in March 2006. (**Action Item**)

3.1.3 The meeting requested the Secretariat to introduce a "Record of amendments" sheet in the beginning of both the ROBEX Handbook and the ICD, as well as the revision date in the web version of the documents, in order to facilitate tracking the changes. (**Action Item**)

3.2 ASIA/PAC ICD, edition 2004

3.2.1 The 3rd edition of the ASIA/PAC OPMET Data Banks Interface Control Document (ICD) was published in hard copy and CD-ROM and distributed in November 2004 to all States in ASIA/PAC Region. Copies of the ICD were also sent for information to the other ICAO Regions. The ICD is available on the ICAO web site in pdf format.

3.2.2 The meeting noted that the ICD has been restructured to contain a “common part”, containing the description of standard interrogation procedures supported by all RODBs, and “appendices”, containing specific procedures and OPMET bulletin catalogue for each RODB.

3.2.3 The meeting addressed the following outstanding issues related to the ICD:

3.2.3.1 *Standard format of the reply message.* The group reviewed the standard reply message format included in the new edition of the ICD. It was recalled that this format had been introduced by the EUR OPMET Data Banks. It was identified that the ASIA/PAC RODBs did not use this format at present and that its usefulness was not clear. It was decided to keep the format in the ICD with the note, indicating that it is not compulsory. It should be further studied from both RODB’s and user’s point of view if the introduction of a unified standard reply format would carry any benefits.

3.2.3.2 *Standard format of the RODB’s OPMET Data Catalogues.* The meeting noted that during the finalization of the ICD it was proposed to harmonize the format of the OPMET Data Catalogues included in the respective appendices for each RODB. For the 3rd edition (2004), only Bangkok and Singapore adopted a common format of the catalogue. The other RODBs were encouraged to adopt the same format and rearrange their catalogues. (**Action Item**)

3.2.3.3 *Syntax of request/reply procedure for FK and FV bulletins.* The meeting reviewed a request from the EUR BMG group regarding the format of the request/reply messages for tropical cyclone advisories (FK) and volcanic ash advisories (FV). It was assumed that the users would not know the exact bulletin headers for these bulletins, therefore, the suggestion was to use dummy CCCC location indicator. In this case, the request syntax would be “RQM/FVXXXX” and “RQM/FKXXXX”. The meeting agreed in principle that the use of such syntax was feasible and recognized that, RODB Bangkok had already supported requests with this format; RODB Singapore and Brisbane could introduce this request format later this year, while RODB Tokyo needed further investigation on the subject. It was agreed that (**Action Item**):

- The Secretariat will inform EUR BMG of the above discussion;
- The RODBs should pursue the implementation of the proposed format;
- The Secretariat, in coordination with the RODBs, should collect information for all valid FK and FV bulletin headers in ASIA/PAV Region and introduce a new table in the ROBEX Handbook for these OPMET data types.

3.2.3.4 *ASIA/PAC OPMET Catalogue.* The main outstanding task regarding the ICD was the development of the unified ASIA/PAC OPMET Catalogue, which would become **Appendix F** of the ICD. The 3rd edition of the ICD has already included the basic principles for creating the Catalogue. A major step in progressing with the Catalogue was the development of the ROBEX Database by RODB Brisbane.

3.2.4 The expert from Australia presented the **ROBEX Database** developed by means of Microsoft Access. The database contains detailed information related to all ROBEX bulletins and all centres and aerodromes participating in the ROBEX exchange. It was a query-driven application that allowed for a variety of searches and generation of different tables and reports. The ROBEX database was provided to all participants on a CD-ROM.

3.2.5 The meeting expressed appreciation to Australia for the tremendous work done in creating a very useful tool for managing the OPMET exchange in the region. It was envisaged that the Database would be used by all ROBEX Centres and RODBs, as well as by the ICAO Secretariat, together with the main regional guidance documents, the ROBEX Handbook and the ICD. The Database would also be very instrumental in compiling the unified ASIA/PAC OPMET Catalogue.

3.2.6 The meeting agreed that all members should test the ROBEX Database at their respective centres and provide feed-back to Brisbane regarding any corrections/improvements desired. It was decided that the Database should be presented at the CNS/MET SG/9 meeting in July 2005. Therefore, all comments and suggestions should reach Brisbane by early June. (**Action Item**)

Agenda Item 4: Development of procedures for monitoring and management of OPMET exchange

- a) OPMET exchange monitoring**
- b) OPMET bulletins update procedure**
- c) SIGMET tests; and**
- d) OPMET Data Banks quality control procedures**

4.1 OPMET Exchange Monitoring

4.1.1 The meeting recalled that the OPMET/E TF/1 meeting agreed that OPMET monitoring procedures, similar to those used in the EUR Region, should be developed in the ASIA/PAC RODBs and informed on the progress of this task, as follows:

4.1.1.1 Singapore has been working to develop a framework to monitor the availability and regularity of the OPMET data. The approach adopted by Singapore was both to upgrade the existing front-end message management/data visualization system to do some of the monitoring tasks, and to develop in-house further application to achieve the OPMET monitoring goals.

4.1.1.2 The front-end message management/data visualization system was upgraded in September 2004 by including a function allowing to extract archived reports based on various criteria such as WMO abbreviated headings, receipt times etc. This upgrade made it straightforward to compute availability indices for SA, FC and FT bulletins. However, further analysis of data was necessary to calculate the regularity index.

4.1.1.3 It was informed that Singapore planned to carry out a monitoring exercise including calculation of both the availability and regularity indices, as defined in the SADISOPSG/8, IP5. The result of the exercise would be presented at the CNS/MET SG/9 meeting in July 2005.

4.1.1.4 Bangkok OPMET data bank has introduced a monitoring procedure for daily monitoring the exchanges of all required OPMET message types: SA, SP, FT, FC, WS, WC, WV, FK, FV and UA. The current monitoring procedure contains 4 analysing and storing tasks as follows:

- Daily result of OPMET information monitoring as an MS Excel file;
- Daily incoming messages as a text file;
- Summary of daily incoming messages as a printout/text file; and
- Summary of daily request messages as a printout/text file.

4.1.1.5 By using the above monitoring, Bangkok has identified some typical errors in the current OPMET exchange, and provided examples, such as:

- Frequent changes in the content of bulletins and the order of stations for SACI31, SACI32 and SACI41 bulletins;
- TAF bulletins received from VABB often contain geographical designators “AS31” or “AS32” instead of “IN31” or “IN32”.

4.1.6 The meeting expressed appreciation to the experts from Singapore and Bangkok RODBs, for pursuing the OPMET monitoring development. The meeting reinstated its previous views that the monitoring of the OPMET exchange should be harmonized and performed routinely by all RODBs in the region. In this regard, it was decided that the quality control Team (QC Team) should also undertake the task of designing the monitoring procedures and performance indicators for the ASIA/PAC region. **(Action Item)**

4.2 OPMET bulletins update procedure

4.2.1 The meeting recalled that OPMET/M TF/2 meeting was of the opinion that the direct implementation of the EUR procedure for bulletin updates would not be appropriate for ASIA/PAC Region due to the different structure and working methods of the OPMET/M TF comparing with the EUR BMG. It was proposed that a simplified procedure should be used with the ICAO Regional Office acting as the main coordinator of any changes in the ASIA/PAC OPMET bulletins.

4.2.2 It was recognized that any update procedure to be utilized, should ensure that an advanced notice to the States and ROBEX centres concerned, would be distributed well in advance in order to allow the centres to introduce any changes necessary to their data handling systems. In this regard, a lead time period of two months (or two AIRAC cycles, as defined in the EUR procedure) was considered appropriate.

4.2.3 The meeting reviewed a recent case of introducing changes to the OPMET bulletins from Japan and agreed that it was handled very efficiently by correspondence with the ROBEX focal points. It was appreciated that the originator of the changes, the JMA, provided the information to ICAO Secretariat well in advance before the applicability date, so that the Secretariat could inform all other ICAO Regional Offices.

4.2.4 The meeting considered also the introduction of a notification of the AFTN users by means of a standard METNO message. The header of the METNO bulletin should be similar to the one used in the EUR region: NOXX99 CCCC YYGGgg, where XX is the geographical designator and CCCC is the location indicator of the originating centre. An example of METNO message is given in **Appendix F** to the report. The members were invited to study the feasibility of introducing the notification via AFTN for the OPMET bulletin changes and inform the Rapporteur of the group and the Secretariat by 1 May 2005. If agreed, the procedure of issuing METNO message would be included in the ROBEX Handbook. **(Action Item)**

4.3 SIGMET Tests

4.3.1 The meeting recalled APANPIRG Conclusion 15/42, *Conducting SIGMET tests in the Asia/Pacific region*, which called for ICAO to invite all States in the Region to participate in the ASIA/PAC SIGMET tests. The following action has been undertaken:

4.3.1.1 ICAO Office, Bangkok sent State letter, *Follow-up of the APANPIRG Conclusion 15/42 -- Conducting SIGMET tests in the Asia/Pacific region*, dated 7 December 2004, notifying the schedule and the procedure of the first regional SIGMET tests as follows:

- test for SIGMET for volcanic ash - 18 January 2005, start time (time of issuance of the triggering volcanic ash advisory by the VAACs concerned) 0200UTC;
- test for SIGMET for tropical cyclones – 18 February 2005, start time (time of issuance of the triggering tropical cyclone advisory by the TCACs concerned) 0200 UTC.

4.3.1.2 The RODBs were requested to record the reception of the test SIGMETs and the corresponding time and to provide a summary table to the Rapporteur of the VA/TC Implementation Task Force with a copy to the Regional Office. Four RODBs in the Region sent the summary of the reception of the tests to Japan. Information on the received bulletins during the first VA and TC SIGMET tests are shown in **Appendix G** and **H** to the report respectively.

4.3.1.3 The meeting agreed that the first two tests proved to be extremely useful in revealing some deficiencies in the issuance and distribution of SIGMET by the MWOs in the region. The preliminary analysis of the test data prepared by the Rapporteur of the VA/TC Implementation TF showed that:

- The number of the test SIGMET received was significantly lower than expected from the ROBEX Handbook;
- SIGMET bulletins with wrong WMO heading (e.g. WS instead of WV) were issued by some MWOs;
- Not all the issued test SIGMETs reached all RODBs.

4.3.1.4 The meeting was informed by the Secretariat that the feed-back regarding the usefulness of the SIGMET tests was very positive. The problems identified helped the centres to fix some communication and formatting issues. Therefore, it was necessary to continue with periodic tests and to make the results available to all participating and non-participating States in order to ensure a significant improvement of the availability of the safety-related SIGMET for VA and TC. The next step in the test exercise was to present the results at the CNS/MET SG/9 in July 2005 and to send advice to States how to rectify the identified deficiencies. (**Action Item**)

4.3.1.5 The meeting reviewed *Draft SIGMET Test Procedures for WS SIGMET* prepared by the SIGMET Team of the task force, as presented in **Appendix I**.

4.3.1.6 It was recalled that the results of a SIGMET survey conducted by the Secretariat in 2003 and 2004 indicated serious problems within the ASIA/PAC Region in the exchange of SIGMET. The reason could be caused by inadequate communications, incorrect addressing of messages or it could be non-issuance of SIGMET by some MWOs designated by the States. In order to identify the reasons and assist the States in elimination of the SIGMET shortfalls, it was proposed to conduct WS SIGMET Tests similar to those already conducted for VA and TC SIGMET.

4.3.1.7 The meeting agreed with the proposed draft WS SIGMET test procedure, which would be presented to CNS/MET SG/9 meeting for approval. A date for the first ASIA/PAC WS SIGMET Test should be proposed after the SG meeting in July 2005. (**Action Item**)

4.4 OPMET Data Banks quality control procedures

4.4.1 Singapore provided details on the current quality control and correction procedures carried out at RODB Singapore. The front-end Message Switch and Data Management System (MESSIR-COMM Computer System) can be configured to validate messages based on pre-defined rules. Messages that fail are routed to the correction queue for further action. The System is currently configured to validate the following:

- WMO Header (TTAAii CCCC) errors – based on the pre-defined TTAAii CCCC setup;
- Duplication checks on heading and text, in order to discard identical messages;

- YYGGgg check for late METARs. If the observation time of a METAR is older than the configurable period (Max Late), this message will be rejected and routed to the correction queue.

4.4.2 Obvious typographical errors, such as a missing space in the header, are further scanned and corrected on-screen and re-submitted for automatic validation by the system. Correction is only done on the most obvious errors. It is planned that some of these common errors to be incorporated in the automatic correction in the future.

4.4.3 The meeting expressed concern of the large number of bulletin header errors that were being identified by all centres. For instance, Singapore has been dealing with 40 to 50 errors per day. Most of the centres were handling these errors manually which was a considerable workload. Therefore, the meeting agreed that quality control procedures should be harmonized and automated to the extent possible.

4.4.4 The meeting agreed that a QC Team should be set up to study the problem and report to the OPMET/M TF/4 meeting in March 2006. The QC Team will comprise members from all RODBs: Bangkok, Brisbane, Nadi, Singapore and Tokyo with the member from Singapore acting as coordinator of the Team. (**Action Item**)

Agenda Item 5: Transition to BUFR coded OPMET information

5.1 The meeting recalled that the Fourteenth WMO Congress held in Geneva, 5 to 23 May 2003, endorsed a plan for migration from the traditional alphanumeric codes (TACs) to the so-called table-driven code formats (TDCFs), i.e. BUFR and CREX code forms. The migration plan would allow the use of table-driven codes in parallel with alphanumeric codes as of the year 2007, and would require the exclusive use of table-driven codes around the year 2015.

5.2 The 15th meeting of APANPIRG, 23 – 27 August 2004, Bangkok discussed the need for regional planning of the transition from traditional alphanumeric codes (TAC) to the so called table-driven code formats (TDCF). The meeting adopted Decision 15/40, *Planning for migration to BUFR-coded aeronautical meteorological messages*, by which the OPMET/M TF and the ATN Transition TF were tasked to pursue matters related to the BUFR Transition.

5.3 The meeting was informed that a BUFR Transition Assessment Task Force was established in the EUR Region in order to provide evaluation of all aspects related to the BUFR transition, including a cost-benefit analysis. The report of the EUR BUFR/T Assessment TF was reviewed and the group felt that this report addressed the whole complex of issues, so that it would be a very useful material for the further planning of the transition. The executive summary of this report is provided in **Appendix J** to the report.

5.4 The meeting agreed that a joint meeting with the ATN Transition Task Force of APANPIRG should be carried out in early 2006 in order to discuss the regional plan for the transition to BUFR coded OPMET information. The group was advised by the Secretariat that the next meeting of the ATN/T TF would be held in April 2005 in Shanghai, China. The Secretariat would present at this meeting a working paper on the subject with the proposal from OPMET/M TF/3 for conducting a partly conjoint meeting in February/March 2006. (**Action Item**)

Agenda Item 6: Future Work Programme

6.1 Based on the discussions on the different agenda items, the list of action items was updated by the meeting with corresponding target dates and responsibilities as shown in **Appendix B** to the report. The list of action items was split in three parts, completed tasks, outstanding tasks and new tasks. However, the meeting requested the Secretariat to improve the format of the list so that in the future there would be only one list that the group would refer to.

6.2 It was expected that during the period between the meetings the group should continue working actively by correspondence. It was agreed that the Rapporteur should present the report of this third meeting of the task force at the 9th meeting of the CNS/MET Sub-group to be held from 11 to 15 July 2005 in Bangkok.

6.3 The group agreed that its fourth meeting would be held in February or March 2006 in the ICAO Regional Office, Bangkok, jointly with the meeting of the ATN Transition TF of APANPIRG. The exact dates for the meeting were to be coordinated with the ATN/T TF at its 7th meeting from 18 to 22 April 2005 in Shanghai.

Agenda Item 7: Any other business

7.1 Under this agenda item the meeting discussed proposals for harmonization of the FASID MET Tables related to the OPMET exchange with the similar tables in other documents: ROBEX Handbook, ASIA/PAC ICD and SADIS User Guide.

7.2 The meeting recalled that the regional provisions on the OPMET exchange were contained in the ASIA/PAC Basic ANP, Part VI, Meteorology, para. 5, *Exchange of operational meteorological information*. The information about ROBEX centres was included in FASID Tables 4A and 4B, and for the RODBs, in Table 4C. In addition to ROBEX exchange, FASID Table MET 2A specified requirements for bi-lateral exchanges of METAR, SPECI and TAF through individual AFTN addressing. FASID Table MET 2B specified requirements for exchange of SIGMET.

7.3 The meeting recognized that all FASID Tables related to ROBEX and other OPMET exchanges needed significant updates. In particular:

- FASID Tables MET 4A and 4B should be combined in one table since the former METAR Collection Centres (MCC) and TAF Collection Centres (TCC) have been replaced by ROBEX Centres.
- Table 4C should be reformatted.
- The need for keeping FASID Tables 2A and 2B in the ANP should be assessed.

7.4 Discussion on FASID Tables MET 2A and 2B

7.4.1 It was recalled that these tables have been introduced long time ago, under completely different communication capabilities for exchange of aeronautical information, i.e., before the establishment of the RODBs and before the introduction of the satellite broadcasts SADIS and ISCS. The AFTN capacity at that time was a very important limitation factor. However, with the current much higher AFTN capacity, the promulgation of all required OPMET information (with no distinction between regular/non-regular) through the ROBEX exchange was easily achievable.

7.4.2 It was recalled that APANPIRG had already decided that all METAR and TAF from all ASIA/PAC AOP aerodromes should be included in the ROBEX exchange.

7.4.3 In their current format FASID Tables MET 2A and 2B were very difficult to update, since the update procedure would involve all States in the region and many States outside the region. On the other hand, the usefulness of these tables for the users was questionable. There was a duplication of effort in maintaining the tables in view of the fact that the user requirements for METAR and TAF were formulated in the SADIS User Guide Annex 1. These requirements were reviewed and updated annually by the SADISOPSG and this updating mechanism for the OPMET exchange requirements seemed to work better than the FASID amendment procedures.

7.4.4 Some of the requirements in the tables were in contradiction with Annex 3; for instance, FASID Table MET 2B provided an option for dissemination of VA and TC SIGMET without outlook part; FASID Table MET 2A covered bi-lateral TAF dissemination, for which there was no provision in Annex 3.

7.4.5 The meeting recognized that FASID Tables 2A and 2B could be useful for other ICAO regions, however, in the ASIA/PAC region the ROBEX scheme and related guidance material provided comprehensive information on the OPMET exchange, therefore, FASID Tables MET 2A and MET 2B were not so important and, in fact, very rarely referred to by the users or States.

7.4.6 The meeting discussed the possibility that the two tables could be either replaced by a table similar to SUG Annex 1, or completely abolished. It was recognized that in order to maintain the MET parts of the FASIDs for all ICAO regions in a harmonized manner, any amendments and changes to Tables MET 2A and 2B should be coordinated with the other ICAO regions and ICAO Headquarters.

7.4.7 Based on the above discussion, the meeting requested the Secretariat, in coordination with the Rapporteur of the TF and all members, to prepare a draft proposal for amendment/replacement or deletion of the FASID Tables related to the OPMET exchange for discussion by the CNS/MET SG/9 in July 2005. The first draft should be distributed to the TF members not later than 1 June 2005. (**Action Item**)

7.5 Other issues

7.5.1 The meeting was advised by the observer from India that India had the technical capability of hosting a OPMET Data Bank, which would serve the users, especially in the Western part of ASIA region. It was informed that the communication facilities of the India Meteorological Department have been upgraded recently and all types of meteorological information, both alphanumeric and graphical could be made available.

7.5.2 The meeting appreciated the proposal from India, however, it was recognized that there were already five Regional OPMET Data Banks designated for ASIA/PAC and this has already been considered as quite large number. It was recalled that the COM/MET Divisional Meeting, 1982 recognised in recognizing the need for uniform and cost-effective planning of the OPMET exchange, agreed upon 13 principles for the planning of OPMET data exchanges. The establishment of a limited number of international OPMET data banks to facilitate the exchange were amongst those principles.

7.5.3 In view of the above, the Secretariat advised that the establishment of an additional RODB would face very strong opposition by APANPIRG and the users. It was possible, however, that information on the content and procedures for interrogation to the national OPMET data bank of India could be published as an appendix to the ASIA/PAC ICD. This would allow the users to use this national data bank in a similar way as the RODBs. If in the future the ROBEX structure, including the number and location of RODBs was to be reviewed, the proposal from India would be given due consideration.

**Third Meeting of ASIA/PAC OPMET Management Task Force
of CNS/MET Sub-Group of APANPIRG (OPMET M TF/3)
Bangkok, Thailand, 2-4 March 2005**

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Bangkok, Thailand, 2-4 March 2005**

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Appendix B – Part I

**List of Action Items
(OPMET/M TF/3 Meeting, 2 – 4 March 2005)**

PART I – Completed Action Items adopted by OPMET/M TF/1&2

Action Item ID	Paragraph from the Report	Action	Status	Target Date	TF Member (s)
2.1	2.1.6	Consultation with ATN Transition TF on the possible impact on OPMET Data exchange; report to OPMET/E TF/2	Closed (superseded by action item by OPMET/M TF/3)	Permanent task	Secretariat (RO/CNS)
3.1	3.2	Provide the Secretariat with updated information on the AIREP exchange in ASIA/PAC	Completed	July 2004	AIREP Team
3.2	3.3	Preparation of a draft proposal for the re-composition of the ROBEX scheme based on the current MCC and TCC centres	Completed	15 April 2003 to be reported to CNS/MET SG/7 July 2003	Secretariat
3.3	3.4	Introduction of the new terminology to the ROBEX Handbook and other relevant documents	Completed	April 2003 to be reported to CNS/MET SG/7 July 2003	Secretariat
3.4	3.5	Coordination of the ROBEX Tables with the ROBEX centres	Completed	Tables sent to States before 30 April 2003 Replies from States before 15 June 2003	Secretariat All Members

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Action Item ID	Paragraph from the Report	Action	Status	Target Date	TF Member (s)
3.5	3.6 (1)	Australian METAR and TAF bulletins to be rearranged to include all required international aerodromes	Completed	March 2004	Australia
3.10	3.14	Deletion of obsolete EUR AFTN addresses from the distribution lists of ROBEX centres	Completed (Distribution lists for FTSR31, FTSR32 & FCSR31)	July 2004	Singapore ROBEX Centre
3.11	3.14, 3.15, 3.16	Designation of inter-regional OPMET Gateways as single contact points for other regions	Completed	Continuous implementation	Singapore Bangkok Tokyo Secretariat
3.12	3.17	RODB Bangkok to provide back-up to RODB Singapore as IROG for EUR	Completed	April 2004	Bangkok Singapore Secretariat
3.13	3.19	ASIA/PAC RODBs to handle all OPMET data types	Completed	31 May 2003	All RODBs
3.16	3.23	Study of the possibilities of the RODBs to provide ftp and Internet access to OPMET related information.	Completed Ongoing	31 March – web place for the OPMET/E TF February 2005	Australia Other RODBs
4.1	4.2	Proposal for transforming the Task Force into a “Management Group”	Completed	CNS.MET SG/7 Meeting July 2003.	Secretariat

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Action Item ID	Paragraph from the Report	Action	Status	Target Date	TF Member (s)
4.2	4.3	NO messages generated in EUR to be distributed to ASIA/PAC	Completed	ASAP	Rapporteur of BMG
4.3	4.7	Introduction of the EUR monitoring procedure by RODB Bangkok on a trial basis; provision of relevant software by UK	Completed	First 24-hour trial – AIRAC date 2 May 2003	Bangkok UK Secretariat
5.1	5.1	Preparation of the new edition of the ROBEX Handbook	Completed	Submission of the first draft to the ROBEX centres for review, comments and proposals – 30 April 2003	Secretariat
				- Responses by the ROBEX centres – 15 June 2003	ROBEX centres
			Completed	- Final draft to be presented at the CNS/MET SG/8 Meeting, July 2004	Secretariat
5.2	5.3	Singapore RODB to provide Secreatariat with information on the current availability of EUR OPMET data	Completed	30 April	Singapore

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Action Item ID	Paragraph from the Report	Action	Status	Target Date	TF Member (s)
5.3	5.4	Preparation of the new edition of the Asia/Pacific Regional ICD for OPMET Data Bank Access Procedures	Completed	July 2004	Secretariat RODBs

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List of Action Items

(OPMET/M TF/2 Meeting, 10 – 13 February 2004)

Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
PART I. Operational issues						
2004-2	<u>1.2 Procedures</u>		1.			
		Inclusion all RODB addresses in distribution lists for all bulletins	List to be provided after verification All ROBEX centres informed on RODBs addresses	Completed	May 2004	1. Australian member 2. All RODBs, Secretariat
		Deletion of obsolete EUR AFTN addresses (avoid duplication)	1. Letter to ROBEX Centres 2. Checking and removing duplications	Deleted obsolete EUR AFTN addresses in FT & FC bulletins July 2004	May 2004	1. Secretariat 2. RODBs/ ROBEX centres Singapore Australia
2004-3	<u>1.3 Standardize formats</u>	Use of BBB group	Detailed explanation in ROBEX Handbook	Completed	April 2004	Secretariat
		Changes METAR & TAF Amd 73	1. Coordinate with the HQ and inform TF members 2. Conclusion for APANPIRG/15 State letter		1. March 2004 2. July 2004 3. August 2004	Secretariat; TF

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
		SIGMET Headers	Prepare a new ROBEX Table	Completed	April 2004	Secretariat
		AFTN Address Brisbane RODB	Provide one address for use by all centres concerned	Completed	May 2004	TF member from Australia
2. Studies necessary for improvement/optimization						
2004-4	2.1 AIREP	Study: - current situation with collection/dissemination; - current use of AIREP by Met Offices; - proposals from States for improvement.	1. Prepare a questionnaire and send to all States concerned 2. Prepare proposal for amendment of ROBEX scheme as necessary	Completed Report TF3	July 2004	AIREP Team: Singapore & Australia – chair, assisted by RODBs & ROBEX
3. Regional Guidance documents						
2004-6	<u>3.1 ROBEX handbook</u>	Editorial changes proposed at the meeting	All changes agreed to be introduced by Secretariat	Completed	May 2004	Secretariat
		Add information on procedures for splitting the long bulletins	Include information in Appendix F	Completed	May 2004	Secretariat
		Clarify provision about filing times, obs. times & DTG SPECI	Consult with the HQ	Completed	May 2004	Secretariat
		New table short TAF	Prepare table	Completed	May 2004	Secretariat
		New table SIGMET	Prepare table	Completed	May 2004	Secretariat

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
		Update MID Region ROBEX tables	Information to be provided by the MID Region	Completed	May 2004	Secretariat
		Final draft – all ROBEX centres (incl MID)	Send to TF members for coordination; Present at CNS/MET SG/8	Completed	June 2004	Secretariat
2004-7	<u>3.2 ICD</u>					
		Standardize the ICD with a “common” part and appendices	Remove ‘common’ part from current Appendices – describe differences for RODB’s only	Completed	May 2004	Secretariat in coordination with RODBs
		Final draft	Send to TF members for coordination; Present at CNS/MET SG/8	Completed	July 2004	Secretariat, RODBs
2004-8	<u>3.3 DB & Catalogue</u>	Distribute DB from Brisbane to RODBs and ICAO	Finalize DB distribute to RODBs	Completed CD at TF3	April 2004	Australia
4. Quality Management Procedures						
2004-9	<u>4.1 Monitoring exercises</u>	Present monitoring results at CNS/MET SG/8	Bangkok to prepare a paper for CNS/MET SG/8 showing result of monitoring	Completed	July 2004	Bangkok RODB
6. Administrative						
2004-13	<u>6.1 Improving efficiency of the TF</u>	Focal point ROBEX centres	Rapporteur to write State letter requesting nomination of focal person	Completed	April 2004	Rapporteur, Secretariat
2004-13	<u>6.1 Improving efficiency of the TF</u>	Use of WEB site - Report TF Discussion Group	Investigate possibility of discussion email/web group	Completed		Rapporteur

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
		Reporting CNS/MET SG/8	Report to be prepared and presented	Completed	July 2004	Rapporteur
		Include Indonesia as a member of the group	Present proposal to CNS/MET SG/8	Completed	July 2004	Secretariat
	<u>6.2 Composition of the TF</u>	Invite India to join the group	Send invitation letter	Completed	December 2004	Secretariat

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List of Action Items
(OPMET/M TF/3 Meeting, 2 – 4 March 2005)

PART II – Outstanding Action Items adopted by OPMET/M TF/1&2

Action Item ID	Paragraph from the Report	Action	Status	Target Date	TF Member(s)
3.6	3.6 (2), 4.12	Survey of the availability of METAR and TAF from the Pacific States (based on FASID Table MET 1A and SUG Annex 1)	Ongoing IP presented for TF3 meeting	July 2004	Fiji Australia United States
3.7	3.9	Harmonization of the format and content of OPMET related Tables in different documents; change of format of FASID Tables MET 4A and 4B	Ongoing	July 2004	Secretariat
3.8	3.10	Change of OPMET bulletin structure from multinational to national	Ongoing.	2005	Secretariat, Rapporteur, ROBEX centres
3.14	3.20	Introduction of mirroring of Databank's content (first phase)	Ongoing	31 December 2004	Bangkok Singapore Tokyo
3.15	3.21	Further standardization of access procedure to the ASIA/PAC RODBs	Ongoing	Along with action item 5.3	All RODBs Secretariat Rapporteur
3.16	3.23	Study of the possibilities of the RODBs to provide ftp and Internet access to OPMET related information.	Completed Ongoing	31 March – web place for the OPMET/E TF February 2005	Australia Other RODBs
4.1/1	4.2	Preparation of a modified OPMET update procedure for ASIA/PAC based on the EUR procedure	Ongoing	July 2004	Secretariat
7.1	7.2	Resolving operational problems with OPMET bulletins	Ongoing	Permanent Task	Rapporteur Secretariat

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**List of Action Items
(OPMET/M TF/2 Meeting, 10 – 13 February 2004)**

Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
PART 1. Operational Issues						
2004-1	<u>1.1 Data Management</u>	OPMET DATA Shortfalls - ASIA OPMET Shortfalls - PAC Data shortfalls - MID data shortfalls	Prepare list of missing OPMET data by Region and inform States	Ongoing	July 2004	TF members and ROBEX centres
		New Bulletins - Indonesia - Papua New Guinea - East Timor - Others	States planning for new bulletins to inform Secretariat when ready	Ongoing Problems PNG, Nauru, Honiara, East Timor non-receipt of regular data	All new bulls to be introduced not later than 1 Jan 2005	TF members, Secretariat
		Filing time of TAF by Japan	Japan to correct the procedure for filing time for the TAFs in accordance with Annex 3 and ASIA/PAC ANP		To be advised	Japan
2004-2	<u>1.2 Procedures</u>					
		Consultation with US on the way to send ASIA/PAC OPMET data to US	Coordination by RODBs concerned		May 2004	RODB Tokyo, Brisbane, Nadi
		How to handle Irregular METARs/TAFs	Require information on the availability of METAR and TAF during the day	Ongoing	July 2004	Secretariat

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
2004-3	<u>1.3 Standardize formats</u>					
		Clarification PIREP – Japan	Remove “PIREP” from SPECIAL AIREP messages		-	TF member from Japan
2. Studies necessary for improvement/optimization						
2004-4	<u>2.1 AIREP</u>					
2004-5	<u>2.2 SIGMET and advisories</u>	- Continue survey on the SIGMET headings; - Survey advisories headings; - Survey dissemination schemes used by MWO	- Finalize SIGMET table for ROBEX - Prepare proposal for optimization of dissemination schemes - Proposal for SIGMET tests	Ongoing WP TF3	April 2004 Rest of the task – TF/3 meeting	SIGMET Team: Rapporteur – Chair, assisted by all RODBs
3. Regional Guidance documents						
2004-6	<u>3.1 ROBEX handbook</u>					
2004-7	<u>3.2 ICD</u>	Update information for RODB Nadi	Nadi RODB to provided updated information		April 2004	Nadi RODB
		Decide standardized ‘reply’ message	Decide is it necessary, is it possible, software changes required.	Ongoing	May 2004	Secretariat in coordination with RODBs
2004-8	<u>3.3 DB & Catalogue</u>					
		- Complete DB OPMET data from ASIA/PAC & MID - Add Available OPMET from other Regions	RODBs to update data	Updated the SIN DB Catalogue September 2004	June 2004	RODBs Singapore RODB

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
		Use of DB on trial basis.	- RODBs to trial use of DB - OPMET/M TF/3 to review and prepare proposals for further use	Ongoing	February 2005	RODBs Secretariat DB to be checked & trailed following TF2 meeting
4. Quality Management Procedures						
2004-9	<u>4.1 Monitoring exercises</u>	Continue monitoring trials against - ROBEX Tables - FASID Tables (ASIA/PAC, MID) - SUG Annex 1	RODBs to perform monitoring exercises as appropriate; RODBs to share data sets and monitoring results	Ongoing	2004	All RODBs Sampling process implemented
		Decide performance indices & presentation styles	Paper for TF/3 meeting		End of 2004	RODBs to coordinate and decide
		Exchange operational data sets	Send data on CD or via FTP		May 2004	Brisbane RODB to coordinate
		Standardize monitoring procedures	Exchange information via e-mail and prepare proposal for TF/3 meeting		Late 2004	RODBs; TF members
2004-10	<u>4.2 ROBEX update procedures</u>	Revise APANPIRG conclusion regarding the use of EUR OPMET procedure	Revisit the EUR procedure and amend it according to the regional practice		July 2004	Secretariat

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
2004-11	<u>4.3 SIGMET monitoring procedures</u>	Develop procedure for SIGMET monitoring	To be developed base on the SIGMET study by the SIGMET Team	Ongoing WP presented to TF3 Meeting		SIGMET Team
5. Liaison with other groups						
2004-12	<u>5.1 Groups</u>	- ATN/T Task Force - MID CNS/MET SG - MID Bulletin Management Group - BMG - US NWS - Other ICAO Regions	- MID pass to Secretariat resolution of meeting - Request for Rapporteur to attend meeting - Send report - Send report - Send report	- Ongoing - Unable to attend		Rapporteur, Secretariat

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**List of Action Items
(OPMETM TF Meeting, 24 March 2005)**

PART III – New Action Items adopted by OPMETM TF3

Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
PART I Operational Issues						
05-1 (p. 2.4.5)	<u>Data Management</u>	OPMET DATA Availability - ASIA OPMET Shortfalls - PAC Data shortfalls	Follow-up the reported shortfalls by IATA		July 2005	TF members and ROBEX centres; Secretariat to coordinate
05-2 (p. 2.4.6)		- Check if the content of OPMET information on SADIS and ISCS is identical	Coordinate with SADISOPSG and Provider States		June 2005	Secretariat
05-3 (p.2.4.7)		OPMET data from Viet Nam	Advise of availability		July 2005	Viet Nam
05-4 (p.2.3.2, 2.3.3)		Improve the inter-regional exchange	Coordinate with ICAO Paris the exchange between ASIA/PAC and MID; Coordinate with ICAO Dakar and Nairobi the exchange between ASIA/PAC and AFI; Coordinate with ICAO Lima the exchange between ASIA/PAC and SAM		End of 2005	Rapporteur, Secretariat

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
05-5 (p.3.2.3.3)	<u>Procedures</u>	Request format for FK and FV bulletins	RODBs to introduce request format with dummy CCCC identifier		End of 2005	RODBs
05-6 (p.4.2.4)		Bulletin changes notification via AFTN	Introduce METNO bulletin		Next meeting	All ROBEX centres in coordination with Secretariat
2005-7 (p. 2.1.2)	<u>Standardize formats</u>	METAR and TAF format	TF Members to provide examples of wrongly formatted messages		1 May 2005	All members
2005-8 (p.2.2.6)		Format of request message to RODBs	Users to be informed of the format; IATA to provide web link to the ICD		-July 2005	IATA
2Studies necessary for improvement/optimization						
2005-9 (p.2.1.14)	<u>AIREP</u>	Follow-up the AIREP survey	- Send AIREP report to all ROBEX Centres – receive feed-back - Present the survey report at CNS/MET SG/9 - Decide on AIREP exchange in ROBEX		1 May 2005 July 2005 Next meeting	AIREP Team and Secretariat
2005-10 (p.4.3.1.5)	<u>SIGMET and advisories</u>	Follow-up SIGMET tests	Present results of the VA and TC tests at CNS/MET SG/9; Advise States with identified deficiencies		July 2005	SIGMET Team, Secretariat

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
2005-11 (p.4.3.1.8)		Conduct tests for WS SIGMET	Present the draft procedures at CNS/MET SG/9 and coordinate date		July 2005	SIGMET Team
3Regional Guidance documents						
2005-12 (p. 2.2.9)	<u>ROBEX Handbook</u>	Update ROBEX Handbook	Update with the information received during the meeting		June 2005	Secretariat
2005-13 (p. 3.1.2.2, 4.1.6, 4.4.4)		Finalize the chapter on OPMET Management	Develop QC procedures; Develop monitoring procedures		Next meeting	QC Team (all RODBs, Rapporteur – Singapore)
2005-14 (p.3.1.2.3)		Review and update Appendix G	Coordinate with the Regions concerned		End of 2005	Secretariat
2005-15 (p. 3.1.3)		Introduce “Record of Amendments” page	Develop page and include in the updated version on web		June 2005	Secretariat
2005-16 (p.2.2.9)	<u>ICD</u>	Update ICD	Update with the information received during the meeting		June 2005	Secretariat
2005-17 (p.3.2.3.3)		Format of RODB’s OPMET catalogues	Standardize all OPMET catalogues		End of 2005	RODBs
2005-18 (p.2.3.7)		Introduce Back-up procedures	Add an appendix in the ICD with the back-up arrangements between SIN and BKK		June 2005	Secretariat, RODB Bangkok and Singapore

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Item No.	Field	Description	Action	Status	Target Date	To be done by
1	2	3	4	5	6	7
2005-19 (p.3.2.6)	<u>3ROBEX DB & Catalogue</u>	Development of the ROBEX Database (MS Access application)	- Members to test the beta-version and provide feed-back to Brisbane; - Database to be presented at CNS/MET SG/9		1 June 2005 July 2005	All Members
2005-20 (p.3.2.6)	<u>3FASID</u>	Harmonize OPMET information in different documents	Prepare amendment proposals for OPMET related FASID Tables for consideration by CNS/MET SG/9		July 2005	Secretariat in coordination with all Members
5Liaison with other groups						
2005-21 (p.5.4)	<u>5Groups</u>	ATN/T Task Force	Coordinate with the ATN/T TF (or its successor) a joint meeting in 2006 to discuss BUFR transition issues		April 2005	Rapporteur, Secretariat
		Other ICAO Regions	Send report		April 2005	Secretariat
6Administrative						
	<u>6Composition of the TF</u>	New members	Advice CNS/MET SG/9 on the participation of India and Viet Nam in the work of the TF		July 2005	Secretariat

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**METAR and TAF bulletins currently exchanged by the PAC States
Via AFTN and GTS
(preliminary survey)**

Name Of the aerodrome	Use	ICAO Loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB	GTS SA Bulletin	GTS FT Bulletin
AMERICAN SAMOA (United States)							
PAGO PAGO/Pago Pago Intl	RS	NSTU	-	FTPS31 NFFN	NADI	SAPA32 KWBC	FTPA32 KWBC
AUSTRALIA							
ADELAIDE/Adelaide	RS	YPAD	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
ALICE SPRINGS/Alice Springs	AS	YBAS	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
AMBERLEY		<i>YAMB</i>	<i>SAAU32 YBBN</i>	<i>FCAU31 YBBN</i>	<i>BRISBANE</i>		
AVALON		<i>YMAV</i>	<i>SAAU32 YBBN</i>	<i>FTAU32 YBBN</i>	<i>BRISBANE</i>	<i>SAAU31 AMMC</i>	<i>FCAU31 AMMC</i>
BRISBANE/Brisbane	RS	YBBN	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
BROOME/Broome	AS	YBRM	SAAU32 YBBN	<i>FCAU31 YBBN</i>	BRISBANE	SAAU31 AMMC	FCAU31 AMMC
CAIRNS/Cairns	RS	YBCS	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
CANBERRA		<i>YSCB</i>	<i>SAAU32 YBBN</i>	<i>FTAU32 YBBN</i>	<i>BRISBANE</i>	<i>SAAU31 AMMC</i>	<i>FTAU32 AMMC</i>
CHRISTMAS I./Christmas I.	RS	YPXM	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FCAU31 AMMC
COCOS I./Cocos I.	RS	YPCC	SAAU31 YBBN	FTAU32 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
COOLANGATTA		<i>YBCG</i>	<i>SAAU32 YBBN</i>	<i>FTAU32 YBBN</i>	<i>BRISBANE</i>	<i>SAAU31 AMMC</i>	<i>FTAU31 AMMC</i>
CURTIN-DERBY		<i>YCIN</i>	<i>SAAU32 YBBN</i>	<i>FCAU31 YBBN</i>	<i>BRISBANE</i>		
DARWIN/Darwin	RS	YPDN	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
DUBBO/Dubbo	AS	YS DU	SAAU32 YBBN	<i>FCAU31 YBBN</i>	BRISBANE	SAAU31 AMMC	FCAU31 AMMC
FORREST		<i>YFRT</i>	<i>SAAU32 YBBN</i>	<i>FCAU31 YBBN</i>	<i>BRISBANE</i>		
GOVE		<i>YPGV</i>	<i>SAAU32 YBBN</i>	<i>FCAU31 YBBN</i>	<i>BRISBANE</i>		
HAMILTON I.		<i>YBHM</i>	<i>SAAU32 YBBN</i>	<i>FCAU31 YBBN</i>	<i>BRISBANE</i>		

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Name Of the aerodrome	Use	ICAO Loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB	GTS SA Bulletin	GTS FT Bulletin
HOBART/Hobart	RS	YMHB	SAAU32 YBBN	FCAU31 YBBN	BRISBANE	SAAU31 AMMC	FCAU31 AMMC
KALGOORLIE		YPKG	SAAU32 YBBN	FTAU32 YBBN	BRISBANE		
KUNUNURRA		YPKU	SAAU31 YBBN	FCAU31 YBBN	BRISBANE		
LAUNCESTON		YMLT	SAAU32 YBBN	FCAU31 YBBN	BRISBANE		
LEARMONTH/Learmonth	AS	YPLM	SAAU31 YBBN	FTAU32 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
MELBOURNE/Melbourne Intl	RS	YMML	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
MOUNT ISA		YBMA	SAAU32 YBBN	FCAU31 YBBN	BRISBANE		
NORFOLK I./Norfolk I.	RS	YSNF	SAAU32 YBBN	FCAU31 YBBN	BRISBANE	SAAU31 AMMC	FCAU31 AMMC
PEARCE		YPEA	SAAU32 YBBN	FTAU32 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
PERTH/Perth Intl	RS	YPPH	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
PORT HEDLAND/Port Hedland	RS	YPPD	SAAU32 YBBN	FTAU32 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
RICHMOND		YSRI	SAAU32 YBBN	FTAU32 YBBN	BRISBANE	SAAU31 AMMC	FCAU31 AMMC
ROCKHAMPTON/Rockhampton	AS	YBRK	SAAU32 YBBN	FTAU32YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
SYDNEY/Kingsford Smith Intl	RS	YSSY	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
TINDAL/Tindal	AS	YPTN	SAAU31 YBBN	FTAU31 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
TOWNSVILLE/Townsville	RS	YBTL	SAAU31 YBBN	FTAU32 YBBN	BRISBANE	SAAU31 AMMC	FTAU31 AMMC
WILLIAMTOWN		YWLM	SAAU32 YBBN	FTAU32 YBBN	BRISBANE		
COOK ISLANDS							
AVARUA/Rarotonga Intl	RS	NCRG	-	FTNZ32 NZKL			FCPS31 KWBC FTPA32 KWBC
							FCPS31 NFFN
FIJI							
NADI/Nadi Intl	RS	NFFN	-	FTPS31 NFFN	NADI		FCPS31 NFFN FTPA32 KWBC
SUVA/Nausori	RS	NFSU	-	-			FCPS31 NFFN

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Name Of the aerodrome	Use	ICAO Loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB	GTS SA Bulletin	GTS FT Bulletin
<i>NAOUSORI/NAOUSORI INTL</i>		<i>NFNA</i>					<i>FCPS31 NFFN</i>
FRENCH POLYNESIA							
RANGIROA/Rangiroa	AS	NTTG	-	-			
TAHITI/Faaa	RS	NTAA	-	FTNZ32 NZKL		SAPF20 NTAA	FTPA32 KWBC FTPF21 NTAA
GUAM (United States)							
GUAM I./Agana NAS	RS	PGUM	-	FTPQ31 PGUM		SAPA31 KWBC	FTPQ31 PGUM FTPA31 KWBC
GUAM I./Anderson AFB	AS	PGUA	-	-		SAPA31 KWBC	FTPQ31 KWBC FTPA31 KWBC
JOHNSTON I. (United States)							
JOHNSTON I./Johnston Atoll	RS	PJON	-	-		SAPA31 KWBC	FTPA31 KWBC
KIRIBATI							
KIRITIMATI/Christmas I.	RS	PLCH	-	-		SAPA31 KWBC	FTPA31 KWBC
TARAWA/Bonriki Intl	RS	NGTA	-	-			FTPA32 KWBC
MARSHALL ISLANDS							
MAJURO ATOLL/Marshall I. Intl	RS	PKMJ	-	-		SAPA31 PHFO	FTPA31 KWBC
<i>KWAJALEIN ATOLL/BUCHOLZ AAF, KIRIBATI</i>		<i>PKWA</i>				<i>SAPA31 KWBC</i>	<i>FTPA31 KWBC</i>
MICRONESIA, FEDERATED STATES OF							

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Name Of the aerodrome	Use	ICAO Loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB	GTS SA Bulletin	GTS FT Bulletin
KOSRAE I.		PTSA				SAPA31 KWBC	FTPA31 KWBC
MOEN/Truk Intl	RS	PTKK	-	-		SAPA31 KWBC	FTPA31 KWBC FTPQ31 PGUM
PONAPE I./Ponape	RS	PTPN	-	-		SAPA31 KWBC	FTPA31KWBC FTPQ31 PGUM
YAP I./Yap Intl	RS	PTYA	-	-		SAPA31 KWBC	FTPA31 KWBC FTPQ31 PGUM
NAURU							
NAURU I./Nauru	RS	ANAU	-	-		SAPA31 KWBC	FTPA31 KWBC
NEW CALEDONIA (France)							
NOUMEA/La Tontouta	RS	NWWW	-	FTPS31 NFFN	NADI	SANC20 NWBB	FTPA32 KWBC
							FTNC20 NWCC FCNC20 NWCC
NEW ZEALAND							
AUCKLAND/Auckland Intl	RS	NZAA	SANZ31 NZKL	FTNZ31 NZKL	BRISBANE	SAPA01 EGGY	
CHRISTCHURCH/Christchurch Intl	RS	NZCH	SANZ31 NZKL	FTNZ31 NZKL	BRISBANE	SAPA01 EGGY	
WELLINGTON/Wellington Intl	RS	NZWN	SANZ31 NZKL	FTNZ31 NZKL	BRISBANE	SAPA01 EGGY	
NIUE (New Zealand)							
ALOFI/Niue Intl	RS	NIUE	-	-			FCPS31 NFFN
NORTHERN MARIANA ISLANDS (United States)							
ROTA/Rota Intl	RS	PGRO	-	-		SAPA31 KWBC	FTPA31 KWBC FTPQ31 PGUM

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Name Of the aerodrome	Use	ICAO Loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB	GTS SA Bulletin	GTS FT Bulletin
SAIPAN I. (OBYAN)/Saipan I. (Obyan) Intl	RS	PGSN	-	-		SAPA31 KWBC	FTP31 KWBC FTPQ31 PGUM
PALAU							
KOROR/Koror	RS	PTRO	-	-		SAPA31 KWBC	FTP31 KWBC FTPQ31 PGUM
PAPUA NEW GUINEA							
<i>DARU</i>		<i>AYDU</i>					
<i>GOROKA</i>		<i>AYGA</i>					
KIETA/Kieta	RS	<i>AYKT</i>	-	-			
<i>MADANG</i>		<i>AYMD</i>					
<i>MOMOTE</i>		<i>AYMO</i>					<i>SANG31 AMMC</i>
<i>MOUNT HAGEN</i>		<i>AYMH</i>					
<i>NADZAB</i>		<i>AYNZ</i>					
PORT MORESBY/Jacksons	RS	AYPY	SAPW31 AYPY	FTAU32 YBBN		SAPA31 KWBC	FTNG31 AMMC FTP31 KWBC
VANIMO/Vanimo	RS	AYVN					
<i>WEWAK</i>		<i>AYWK</i>					
SAMOA							
APIA/Faleolo Intl	RS	NSAP	-	-		SAPA32 KWBC	FTP32 KWBC
SOLOMON ISLANDS							
HONIARA/Henderson	RS	AGGH	-	-		SAPA31 KWBC	FTP31 KWBC

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Name Of the aerodrome	Use	ICAO Loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB	GTS SA Bulletin	GTS FT Bulletin
TIMOR							
DILI		WPDL					SATE31 AMMC
TONGA							
TONGATAPU/Fua'amotu Intl	RS	NFTF	-	-			FTPA32 KWBC FCPS31 NFFN
VAVA'U/Vava'u	RS	NFTV	-	-			
TUVALU							
FUNAFUTI/Funafuti Intl	RS	NGFU	-	-			FTPA32 KWBC
VANUATU							
PORT-VILA/Bauerfield	RS	NVVV	-	-			FTPA32 KWBC
SANTO/Pekoa	RS	NVSS	-	-			
WALLIS ISLANDS (France)							
WALLIS/Hififo	RS	NLWW	-	-			FTPA32 KWBC FCPS31 NFFN

NOTE:

BOLD ITALICS – additional SADIS User Guide Annex 1 aerodromes not listed on AOP tables

Inter-regional OPMET exchange – current status

Note: This appendix contains only information presented at the OPMET/M TF/3 meeting and does not represent the full set of OPMET data exchanged between ASIA/PAC and all other ICAO regions.

A) MID-to-ASIA/PAC exchange (Bangkok IROG)

MID METAR bulletins (SA) received by IROG Bangkok

AW31 ORBS HH50 (MISSING)
ORBS ORMM

BN31 OBBI HH00
OBBI OEDF OEDR OTBD OKBK

BN32 OBBI HH00
OMAA OMSJ OOMS OMRK OMFJ OMAL OMDB

IR31 OIII HH00
OIII OIZH OIMM OIFM OISS OIKB OIAW OIKK OITT

IR32 OIII HH00
OAKN OAKB OITR OIAA OIGG OICC OIBK OIYY

ME31 OLBA HH00 (“LB31 OLBA” in ROBEX Handbook 2004)
OLBA OSDI OJAM OJAI OSAP OSLK OJAQ

SD31 OEJD HH00
OEJN OEMA OERK OERY OYSN OEDF OYAA OEDR OEAB

SD20 OEJD HH00
OEAB OEAH OEBA OEBH OEGN OEGS OEGT OEHL OEKB OEKK OEKM
OEMH OEMK OENG OEPA OERF OERR OESH OESK OETB OETF OETR OEWD
OEJN OEMA OERK OERY OEDM OEKJ

MID TAF bulletins (FT) received by IROG Bangkok

BN31 OBBI 0300 0900 1500 2100
OBBI OEDR OEDF OTBD OKBK

BN32 OBBI 0300 0900 1500 2100
OMAA OMAL OMDB OOMS OMFJ OMRK OOSA OMSJ

IR31 OIII 0400 1000 1600 2200
OIII OIFM OISS OIZH OIKB OIMM OIAW OIKK OITT OITR OIIE OIZC

ME31 OLBA 0400 1000 1600 2200

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OLBA OJAM OJAI ORBS ORMM OSDI OSAP OSLK OJAQ

SD31 OEJD 0400 1000 1600 2200
OEJN OEMA OERK OEDR OYSN OYAA OEDF

SD22 OEJD 0400 1000 1600 2200
OEJN OEMA OERK OEDF OEDR OYSN

SD40 OEJD 0400 1000 1600 2200
OEAB OEBA OEBH OEGN OEKM OENG OEWD OESH OEYN
OEWJ OEAH OEGS OEGT OEHL OEPA OEKK OERF OERR
OERY OEDM OESK OETB OETR OEJB OETF OEKJ

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B) ASIA/PAC-to-NAM exchange (IROG Tokyo)

Region	WMO Header		Sent bulletins to the United States
Japan	FCJP30	RJTD	280
	FCJP31	RJTD	360
	FCJP32	RJTD	648
	FTJP30	RJTD	104
	FTJP31	RJTD	129
	FTJP32	RJTD	294
	SAJP51	RJTD	859
	FTKO51	RJTD	449
	SAKO51	RJTD	240
	FTRA51	RJTD	160
	FTCI51	RJTD	121
	SACI51	RJTD	240
	UAFE31	RJTD	240
	UAFE41	RJTD	24
	UAFE51	RJTD	15
Australia	FCAU31	AMMC	107
	SAAU31	AMMC	449
	FKAU01	ADRM	4
	FKAU05	ADRM	34
China	FTCI31	ZBBB	50
	FTCI32	ZBBB	50
	FTCI41	ZBBB	78
	SACI31	ZBBB	261
	SACI32	ZBBB	272
	SACI41	ZBBB	299
Hong Kong, China	FCHK31	VHHH	104
	FTHK31	VHHH	68
	SAHK31	VHHH	624

Date; 1st to 10 February 2005

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Region	WMO Header		Sent bulletins to the United States
India	FTAS32	VABB	60
	SAIN32	VIDP	610
Indonesia	FTID31	WADD	6
Iran	SAIR31	OIII	341
Malaysia	SAMS32	WMKK	832
Mongolia	FCMO31	ZMUB	158
	FTMO31	ZMUB	79
	SAMO31	ZMUB	825
Russian Fed.	SARA10	TKUR	411
Saudi Arabia	SASD31	OEJD	637
Singapore	FTSR31	WSSS	55
	FTSR32	WSSS	43
	SASR31	WSAP	196
	SASR31	WSSS	483

Date; 1st to 10 February 2005

Backup procedures between Bangkok and Singapore RODB

Title: Provision of routing of ASIA/PAC OPMET Bulletins to EUR by Bangkok RODB (Backup procedures between Bangkok and Singapore RODB)	Doc No: 1/04/04
	Rev No : 00
Prepared by : Bangkok & Singapore RODB	Date : 1 Apr 04
	Page: 1 of 13

1 PURPOSE

- 1.1 To layout the procedures for dissemination of Asia/Pac OPMET Bulletins to WAFC, London by Bangkok RODB in the event of Singapore RODB had a failure in their telecommunication network/system.

2 SCOPE

- 2.1 The procedure covers the backup plan in support of the OPMET exchange between EUR and ASIA/PAC.

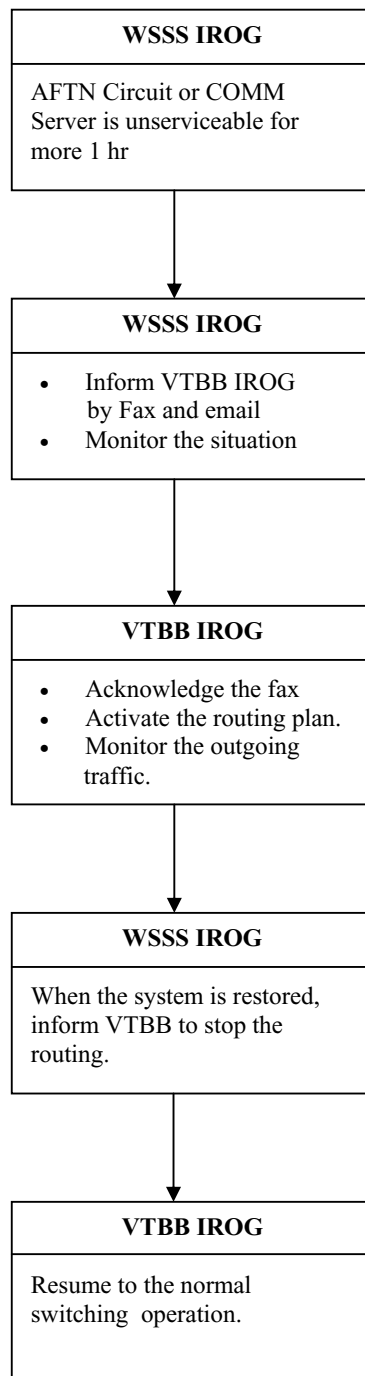
3 PROCEDURES

- 3.1 Singapore ROBD provides the Asia/Pac OPMET bulletins information to enable Bangkok ROBD to establish the backup distribution arrangement. Both RODBs are responsible to update the predefined distribution lists as and when required.
- 3.2 To activate the backup plan, both RODBs will communication through facsimile and email.
- 3.3 Both RODBs will provide the contact points information and update periodically if required.
- 3.4 Both RODBs will review the backup procedures and identify areas for improvement.
- 3.5 The ICAO Regional Secretariat will co-ordinate the requirement for specific or additional procedures to be included in the plan during the OPMET Management TF meeting.

4 APPENDICES

- Appendix 1: Procedures to activate the backup plan. (in flowchart format)
- Appendix 2: Sample of Request Message sent by Singapore RODB to activate the backup relaying
- Appendix 3: Sample of Reply Message sent by Bangkok RODB
- Appendix 4: Sample of Request Messages to cease the routing of AP OPMET sent by Singapore RODB
- Appendix 5: Sample of Reply Messages to cease the routing sent by Bangkok RODB
- Appendix 6: Asia/Pac TAF & METAR Messages for distribution to WAFC, London

Appendix 1: Procedures to activate the backup plan (in flowchart format)



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Appendix 2: Sample of Request Message sent by Singapore RODB to activate
the backup relaying

From : Shift Supervisor
Main Met Office
Meteorological Services Division
Room 048-016, 4th storey, South Finger
Terminal 2, Changi Airport
Singapore 819643.



To : Aeronautical Network Manager
Aeronautical Network Management Department.
Aeronautical Radio of Thailand.
102 Ngamduplee Tungmahamek Sathorn Bangkok Thailand .
Bangkok 10120
Tel : 662 2859084
Fax : 662 2873131

Dear Sir,

Request of Backup to Singapore IROG for Routing of Asia/Pac OPMET Bulletins to EUR

Due to Singapore AFTN circuit/COMM Server is unserviceable for the past one hour, please active the routing of AP OPMET to WAFC, London until further notice.

We will keep you posted on the outcome.

Thank you.

[Name]
Shift Supervisor
Main Met Office, Changi Airport
Meteorological Services Division
National Environment Agency
Tel : 65-5422837
Fax : 65-5422915

Appendix 3: Sample of Reply Message sent by Bangkok RODB

Aeronautical Radio of Thailand



From : Aeronautical Network Manager
Aeronautical Network Management Department.
Aeronautical Radio of Thailand.
102 Ngamduplee Tungmahamek Sathorn Bangkok Thailand .
Bangkok 10120

To : Shift Supervisor
Main Met Office
Meteorological Services Division
Room 048-016, 4th storey, South Finger
Terminal 2, Changi Airport
Singapore 819643.

Dear Sir,

From your request of Backup Singapore IROG for Routing of Asia/Pac OPMET Bulletins to EUR. We will operate within 5mins.

Please inform us again when back to normal.

Best regards.

[Name]

Aeronautical Network Manager
Aeronautical Network Management Department.
Aeronautical Radio of Thailand.
102 Ngamduplee Tungmahamek Sathorn Bangkok Thailand .
Bangkok 10120
Tel : 662 2859084
Fax : 662 2873131

Appendix 4: Sample of Request Messages to cease the routing of AP OPMET
sent by Singapore RODB

From : Shift Supervisor
Main Met Office
Meteorological Services Division
Room 048-016, 4th storey, South Finger
Terminal 2, Changi Airport
Singapore 819643.



To : Aeronautical Network Manager
Aeronautical Network Management Department.
Aeronautical Radio of Thailand.
102 Ngamduplee Tungmahamek Sathorn Bangkok Thailand .
Bangkok 10120
Tel : 662 2859084
Fax : 662 2873131

Dear Sir,

Request to Cease the Routing of Asia/Pac OPMET Bulletins to EUR

Singapore AFTN circuit/COMM Server is now back to normal, appreciated it if you could kindly stop the routing of AP OPMET to WAFC, London with immediate effect. Thank you for your time.

Best Regards.

[Name]
Shift Supervisor
Main Met Office, Changi Airport
Meteorological Services Division
National Environment Agency
Tel : 65-5422837
Fax : 65-5422915

Appendix 5: Sample of Reply Fax Messages to cease the routing sent by
Bangkok RODB

Aeronautical Radio of Thailand



From : Aeronautical Network Manager
Aeronautical Network Management Department.
Aeronautical Radio of Thailand.
102 Ngamduplee Tungmahamek Sathorn Bangkok Thailand .
Bangkok 10120

To : Shift Supervisor
Main Met Office
Meteorological Services Division
Room 048-016, 4th storey, South Finger
Terminal 2, Changi Airport
Singapore 819643.

Dear Sir,

From your request to Cease the Routing of Asia/Pac OPMET Bulletins to EUR

Bangkok stop the routing of AP OPMET to WAFC, London.

Best Regards.

[Name]

Aeronautical Network Manager
Aeronautical Network Management Department.
Aeronautical Radio of Thailand.
102 Ngamduplee Tungmahamek Sathorn Bangkok Thailand .
Bangkok 10120
Tel : 662 2859084
Fax : 662 2873131

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Appendix 6: Asia/Pac TAF & METAR Messages for distribution to WAFC, London

Dissemination of Asia/Pac TAF Bulletins to the WAFC, London by IROG Singapore				
1			2	3
METAR Bulletin			Originator	DISSEMINATION TO
BUL Header	Filing Time	Station CCCC		AFTN Address
FTNZ31 NZKL	05/10/16/22	NZAA	NZKLYMYX	EGZZMASI
		NZWN		
		NZCH		
FTPK31 OPKC	04/10/16/22	OPKC	OPKCYZYX	EGZZMASI
		OPLA		
		OPNH		
		OPRN		
		OPPS		
		OAKB		
		OAKN		
FTJP31 RJTD	03/09/15/21	RJAA	RJAAYPYX	EGZZMASI
		RJBB		
		RJTT		
		RJOO		
		ROAH		
		RJCH		
		RJSS		
FTJP32 RJTD	03/09/15/21	RJFF	RJAAYPYX	EGZZMASI
		RJNN		
		RJCC		
		RJFK		
		RJSN		
		RJFU		
		RJFT		
		RJOA		
		RJOB		
		RJOT		
		RJFO		
		RJNT		
		RJNK		
FTKO31 RKSI	05/11/17/23	RKSI	RKSIYPYX	EGZZMASI
		RKSS		
		RKPC		
		RKPK		
		RKTU		
		RKNY		
		RKTN		
FTAS31 VABB	03/09/15/21	VAAH	VABBYMYX	EGZZMASI
		VABB		
		VANP		
		VECC		
		VIDP		
		VIJP		
		VILK		
FTAS32 VABB	03/09/15/21	VCBI	VABBYMYX	EGZZMASI
		VNKT		
		VOCI		

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		VOMM		
		VOTV		
FTIN31 VIDP	03/09/15/21	VIDP	VIDPYMYX	EGZZMASI
		VIJP		
		VILK		
FTIN32 VOTV	03/09/15/21	VOTV	VOTVYMYX	EGZZMASI
		VOCI		
		VOCL		
FTHK31 VHHH	04/10/16/22	VHHH	VHHHPYX	EGZZMASI
		RCTP		
		RCKH		
		RCSS		
		VMMC		
		RPLL		
		RPVM		
		RPLB		
		RPMD		
		RPLI		
		RPMZ		
FTAS31 VTBB	04/10/16/22	VTBD	VTBBYPYX	EGZZMASI
		VYYY		
		VGZR		
		VLVT		
		VVTS		
		VDPP		
FTAS32 VTBB	04/10/16/22	VTBU	VTBBYPYX	EGZZMASI
		VTCC		
		VTSS		
		VTSP		
		VVDN		
		VVNB		
		VYMD		
FTID31 WIII	04/10/16/22	WIII	WIIIMYF	EGZZMASI
FTVS31 VVTS	04/10/16/22	VVTS	VVTSYMYX	EGZZMASI
FTSR31 WSSS	04/10/16/22	WSSS	WSSSYPYX	EGZZMASI
		WSAP		
		WMKK		
		WMSA		
		WMKP		
		WMKJ		
		WIII		
		WIIH		
		WRRR		
		WRSJ		
FTSR32 WSSS	04/10/16/22	WBSB	WSSSYPYX	EGZZMASI
		WBKK		
		WBGG		
		WIMM		
FTAU31 YBBN	05/11/17/23	YSSY	YBBBZEZX	EGZZMASI
		YPAD		
		YBBN		

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		YMML		
		YBCS		
		YPPH		
		YPDN		
		YBAS		
		YPTN		
		YPXM		
FTAU32 YBBN	05/11/17/23	YSCB	YBBBZEZX	EGZZMASI
		YBCG		
		YMAV		
		YBRK		
		YPLM		
		YPKG		
		YPPD		
		YPEA		
		YPCC		
		YSRI		
		YBTL		
		YWLM		
FTCI 31 ZBBB	05/11/17/23	ZBAA	ZBBBYPYX	EGZZMASI
		ZBSJ		
		ZBTJ		
		ZBYN		
		ZGGG		
		ZSHC		
		ZSPD		
		ZSSS		
		ZWWW		
		ZYTL		
		ZYTX		
FTCI32 ZBBB	05/11/17/23	ZGKL	ZBBBYPYX	EGZZMASI
		ZGNN		
		ZGOW		
		ZGSZ		
		ZLXY		
		ZMUB		
		ZPPP		
		ZSAM		
		ZSQD		
		ZUUU		
FTTH31 VTBB	04/10/16/22	VTCT	VTBBYPYX	EGZZMASI
		VTCL		
		VTGN		
		VTCP		
		VTCH		
		VTMP		
		VTTP		
		VTPT		
		VTPO		
		VTBP		
		VTPH		
		VTCK		
		VTPI		
FTTH32 VTBB	04/10/16/22	VTSB	VTBBYPYX	EGZZMASI
		VTSM		
		VTSC		
		VTSK		
		VTST		
		VTSF		

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		VTSG		
		VTSE		
		VTSH		
		VTSR		
FTTH33 VTBB	04/10/16/22	VTUU	VTBBYPYX	EGZZMASI
		VTUD		
		VTUI		
		VTUJ		
		VTUK		
		VTUL		
		VTUO		
		VTUQ		
		VTUV		
		VTUW		

Dissemination of Asia/Pac METAR Bulletins to the WAFC, London by IROG Singapore				
1			2	3
METAR Bulletin			Originator	DISSEMINATION TO
BUL Header	Bulletin Time	Station CCCC		AFTN Address
SANZ31 NZKL	HH + 00	NZAA	NZKLYMYX	EGZZMASI
		NZWN		
		NZCH		
SAPK31 OPKC	HH + 59	OPKC	OPKCYZYX	EGZZMASI
		OPLA		
		OPNH		
		OPRN		
SAFE31 RJTD	HH + 00	RJAA	RJAAPYX	EGZZMASI
		RJBB		
		RJTT		
		RJOO		
		ROAH		
		RJNN		
SAFE32 RJTD	HH + 00	RJFF	RJAAPYX	EGZZMASI
		RJCC		
		RJFK		
		RJFU		
		RJCH		
SAKO31 RKS	HH + 00	RKSI	RKSIYPYX	EGZZMASI
	HH + 30	RKSS		
		RKPC		
		RKPK		
		RKTU		
		RKNY		
		RKTN		
SAAS31 VTBB	HH + 00	VTBD	VTBBYPYX	EGZZMASI
	HH + 30	VTBU		
		VTCC		
		VTSS		
		VTSP		

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		VLVT		
		VYYY		
		VVTS		
		VVNB		
		VVDN		
		VDPP		
		VYMD		
SAIN31 VABB	HH + 40	VAAH	VABBYMYX	EGZZMASI
		VABB		
		VANP		
		VOHY		
		VOTV		
		VOMM		
		VOTR		
SAIN32 VIDP	HH + 30	VIDP	VIDPYMYX	EGZZMASI
		VILK		
		VIAR		
		VIBN		
		VIJP		
SAHK31 VHHH	HH + 00	VHHH	VHHHPYX	EGZZMASI
		RCTP		
		RCKH		
		RPLL		
		RPVM		
		VMMC		
		RPMD		
		RPLB		
		RPLI		
		RPMZ		
SAID31 WIII	HH + 00	WIII	WIIIPYX	EGZZMASI
		WIIH		
		WIMM		
		WRSJ		
		WRRR		
		WAAA		
		WABB		
SAMS31 WMKK	HH + 00	WBGG	WMKKYMYX	EGZZMASI
	HH + 30	WBKK		
		WBSB		
		WMKK		
		WMKP		
		WSSS		
SAAU31 YBBN	HH + 00	YSSY	YBBBZEZX	EGZZMASI
		YMML		
		YBBN		
		YPAD		
		YBCS		
		YPDN		
		YPPH		
		YBAS		
		YPLM		
		YBTL		
		YPCC		
		YPXM		
		YPTN		
		YPKU		

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SACI 31 ZBBB	HH + 00	ZBAA	ZBBBYPYX	EGZZMASI
		ZBSJ		
		ZBTJ		
		ZBYN		
		ZGGG		
		ZSHC		
		ZSPD		
		ZSSS		
		ZWWW		
		ZYTL		
		ZYTX		
SACI32 ZBBB	HH + 00	ZGKL	ZBBBYPYX	EGZZMASI
		ZGNN		
		ZGOW		
		ZGSZ		
		ZLXY		
		ZMUB		
		ZPPP		
		ZSAM		
		ZSQD		
		ZUUU		
SAAE31 VECC	HH + 50	VECC	VTBBYPYX	EGZZMASI
		VEPT		
		VGEG		
		VGZR		
		VNKT		
SASB31 VCCC	HH + 10	VCBI	VCCCYPYX	EGZZMASI
		VRMM		

Format of METNO bulletin for EUR OPMET Catalogue data changes

FORMAT Content:

Priority	GG
Addressees of MOTNE Centres + ICAO European Office	DAAAYBYX EBZZYBYX EDZOYMYX EGZZWPXX EHBDYMYX EKZZMOMO LEMMYMYX LFLFYBYX LIIBYMYI LOWMMMXX LSSWYMYX LFPSYAYU
Origin	ddhmm EBBRYFYX
Abbreviated header	NOBX99 EBBR YYGGgg
Message Identifier + Product Description + AIRAC Date	METNO EUR OPMET YYMMDD
New Bulletin (NEWBUL) Delete Bulletin (DELBUL) Add Report to existing bulletin (ADDRPT) Remove Report from existing bulletin (RMVRPT) + Bulletin/Report key (TTAAii CCCC Station)(1) End of METNO	NEWBUL SABX31 EBBR EBLG DELBUL FTOS31 LOWM ADDRPT RMVRPT END

(1) The METNO Bulletin/Report reference only contains the Bulletin/Report index TTAAii CCCC₁ CCCC₂ where:

- TTAAii is the abbreviated header
- CCCC₁ the compiling centre
- CCCC₂ the Report | FIR location indicator.

The index refers to the modified record in the OPMET catalogue published on the FTP-server(s). The dates on the relevant records shall contain the AIRAC date in the line after the abbreviated header.

Example of a METNO message in AFTN format:

```
GG DAAAYBYX EBZZYBYX EDZOYMYX EGZZWPXX EHBDYMYX EKZZMOMO
LEMMYMYX LFLFYBYX LIIBYMYI LOWMMMXX LSSWYMYX LFPSYAYU
291420 EBBRYFYX
NOBX99 EBBR 291420
METNO EUR OPMET 980129
DELBUL SAFA41 EKCH EKV
NEWBUL SADN34 EKCH EKY
ADDRPT SABX31 EBBR EBLG
RMVRPT FCGR32 LGAT LGKL
END
```

ASIA/PAC SIGMET TEST Summary (Reception time at RODBs)

Name of RODB : Bangkok, Brisbane, Singapore and Tokyo
Date of Test : 2005/1/18
Target (VA or TC) : VA

VAA	Header			Received time(UTC)			
	TTAAii	CCCC	YYGGgg	Bangkok	Brisbane	Singapore	Tokyo
	FVAU02	ADRM	180201	-	2:01:00	2:01:08	2:01:41
	FVPS01	NZKL	180202	-	-	2:03:15	2:03:32
	FVFE01	RJTD	180200	-	-	-	2:00:29

SIGMET	Header						Received time(UTC)			
	TTAAii	CCCC	YYGGgg	No	MWO	FIR/UIR	Bangkok	Brisbane	Singapore	Tokyo
	-	-	-	1	WAAA	WAAA	-	-	2:28:52	-
	WVAU01	ADRM	180202	1	YPDM	YBBB	-	2:02:00	2:02:07	2:02:16*
	WVC133	ZBAA	180215	1	ZBAA	ZBPE	2:25:07*	2:24:00*	2:24:55	-
	WVC133	ZBAA	180315	2	ZBAA	ZBPE	3:14:44	3:14:00	3:14:37	-
	WVC133	ZBAA	180340	3	ZBAA	ZBPE	3:41:23*	3:41:00*	3:41:13	-
	WVC134	ZSSS	180206	1	ZSSS	ZSHA	2:15:07	2:15:00	2:14:50	-
	WVC135	ZGGG	180230	1	ZGGG	ZGZU	2:55:34	2:55:00	2:55:03	-
	WVC136	ZPPP	180205	1	ZPPP	ZPKM	2:07:45*	2:07:00*	2:07:32	-
	WSCI37	ZLLL	180205	1	ZLLL	ZLHW	-	2:10:00	-	2:10:07
	WSCI39	ZWWW	180258	1	ZWWW	ZWUQ	-	-	-	3:05:21*
	WVC145	ZHHH	180330	2	ZHHH	ZHWH	3:39:40	3:39:00	3:39:36	-
	WVFJ01	NFFN	180000	1	NFFN	NFFF	-	-	2:10:21	2:10:30*
	WVID20	WIII	180240	1	WIII	WIIZ	2:48:11*	2:47:00*	2:47:26	-
	WVID20	WIII	180430	-	WIII	WIIZ	-	-	4:45:39	-
	WVID31	WADD	180300	1	WADD	WRDZ	-	-	3:29:40	-
	WVJP31	RJAA	180205	1	RJAA	RJTG	-	2:05:00	2:05:00	2:05:06
	WVJP31	RJAA	180205	1	RJAA	RORG	-	-	2:06:54	2:07:01
	WVKO31	RKSI	180205	1	RKSI	RKRR	2:07:35	2:07:00*	2:07:07	2:07:06
	WSKO31	RKSI	180205	1	RKSI	RKRR	-	2:10:00	-	2:10:33
	WVPH31	RPLL	180205	1	RPLL	RPHI	2:08:51*	2:08:00	2:08:18	-
	WVSR20	WSSS	180205	1	WSSS	WSJC	-	-	2:05:02	-
	WVSS01	VHHH	180205	1	VHHH	VHHK	-	-	2:08:04	2:07:47*
	WVVS31	VVGL	180207	1	VVNB	VVVV	2:09:44*	-	-	-
	WVTH31	VTBD	180215	1	VTBD	VTBB	2:25:28	-	-	-

*indicates two or more bulletins were received, and the time of the first one is shown.

ASIA/PAC SIGMET TEST Summary (Comparison with ROBEX Handbook)

Name of RODB : Bangkok, Brisbane, Singapore and Tokyo
Date of Test : 2005/1/18
Target (VA or TC) : VA

ROBEX Handbook 12th edition 2004 TABLE E							Reception (2005/1/18 VA test)						
State	MWO location	ICAO	FIR/ ACC	WMO Header	WMO Header TC	WMO Header VA	WMO Header	CCCC	VTBB	YBZZ	WSZZ	RJAA	Remarks
Australia	ADELAIDE/Adelaide	YPRM	YMMM	WSAU31	-	-							MWO in the test bulletin was YPDM
	BRISBANE/Brisbane	YBRF	YBBB	WSAU31	WCAU01	-							
			YMMM										
	DARWIN/Darwin	YDRM	YBBB	WSAU31	WCAU01	WVAU01	WVAU01	ADRM	-	O	O	O	
			YMMM										
	HOBART/Hobart	YMHF	YMMM	WSAU31	-	-							
	MELBOURNE/Melbourne	YMRF	YBBB	WSAU31	-	-							
			YMMM										
	PERTH/Perth	YPRF	YBBB	WSAU31	WCAU01	-							
			YMMM										
	SYDNEY/Sydney	YSRF	YBBB	WSAU31	-	-							
			YMMM										
	TOWNSVILLE	YBTL	YBBB	WSAU31	-	-							
Bangladesh	DHAKA/Zia Intl	VGZR	VGFR	WSBW20	WCBW20	-							
Cambodia	PHNOM-PENH/Pochentong	VDPP	VDPP	MWO not established									
China	BEIJING/Capital	ZBAA	ZBPE	WSCI33	-	-	WVCI33	ZBAA	O	O	O	-	
	CHENGDU/Shuangliu	ZUUU		WSCI36	-	-							
	GUANGZHOU/Baiyun	ZGGG	ZGZU	WSCI35	-	-	WVCI35	ZGGG	O	O	O	-	
	KUNMING/Wujiaba	ZPPP	ZPKM	WSCI36	-	-	WVCI36	ZPPP	O	O	O	-	
	LANZHOU/Chongchuan	ZLLL	ZLHW	WSCI37	-	-	WSCI37	ZLLL	-	O	-	O	
	SHANGHAI/Hongqiao	ZSSS	ZSHA	WSCI34	-	-	WVCI34	ZSSS	O	O	O	-	
	SHENYANG/Taoxian	ZYTX	ZYSH	WSCI38	-	-							
	TAIBEI/Taipei Intl	RCTP	RCTP	WSCI31	WCCI31	WVCI31							
	URUMQI/Diwopu	ZWWW	ZWUQ	WSCI39	-	-	WSCI39	ZWWW	-	-	-	O	
	WUHAN/Tianhe	ZHHH	ZHWH	WSCI35	-	-	WVCI45	ZHHH	O	O	O	-	
	HONG KONG/Hong Kong Intl	VHHH	VHHK	WSSS20	WCSS20	WVSS20	WVSS01	VHHH	-	-	O	O	
Democratic People's Republic of Korea	PYONGYANG/Sunan	ZKPY	ZKKK	No SIGMET issued									

Fiji	NADI/Nadi Intl	NFFN	NFFF	WSFJ01,...WCFJ01,..WVFJ01,...	WVFJ01 NFFN	-	-	O	O	
French Polynesia	TAHITI/Faaa	NTAA	NTTT	WSPF21,2WCPF21 WVPF21						
Guam	GUAM/Aana NAS	PGUM	KZOA	WSPQ31-5WCPN31 -						MWO responsibility transferred to PHFO (Sep 29, 2004)
India	CALCUTTA/Calcutta CHENNAI/Chennai DELHI/Indira Ghandi Intl MUMBAI/Jawaharlal Nehru Intl	VECC VOMM VIDP VABB	VECF VOMF VIDF VABF	WSIN31 WCIN31 - WSIN31 WCIN31 - WSIN31 WCIN31 - WSIN31 WCIN31 -						
Indonesia	BIAK/Frans Kaisieppo DENPASAR/Ngurah Rai (Bali Intl) JAKARTA/Soekarno-Hatta Intl UJUNG Pandang/Hasanuddin	WABB WRRR WIII WAAA	WABZ WRRZ WIIZ WAAZ	WSID23 WCID23 WVID23 WSID22 WCID22 WVID22 WSID20 WCID20 WVID20 WSID21 WCID21 WVID21	WVID31 WADD WVID20 WIII	- O -	- O -	O O -	- -	According to AIP MWO: WRRR-> WADD, FIR: WRRX -> WADZ (But in the test bulletin, FIR was WRDZ) Without header
Japan	TOKYO/Narita	RJAA RJTG	RORG RJTG	WSJP31 WCJP31 WVJP31 WSJP31 WCJP31 WVJP31	WVJP31 RJAA WVJP31 RJAA	- -	O -	O O	O O	
Lao People's Democratic Republic	VIENTIANE/Wattay	VLVT	VLVT	WSLA31 - (not confirmed)	WVLA31					
Malaysia	KOTA KINABALU/Kota Kinabalu Intl KUALA LUMPUR/Kuala Lumpur Intl	WBKK WMKK	WBFC WMFC	- - - WSMS31 WCMS31 WVMS31						
Maldives	MALE/Hulule	VRMM	VRMM	WSMV31 - -						No VAA was received.
Mongolia	ULAN BATOR/Ulan Bator	ZMUB	ZMUB	WSMO31 - -						
Myanmar	YANGON/Yangon Intl	VYYY	VYYY	WSBM31 WCBM31 - (not confirmed)						
Nauru	NAURU/Nauru	ANAU	ANAU	- - - (No information)						
Nepal	KATHMANDU/Tribhuvan Intl	VNKT	VNSM	WSNP31 - - (not confirmed)						
New Zealand	WELLINGTON/Kelburn Intl	NZKL	NZZO NZZC	WSNZ21 WCNZ21 WVNZ21 WSPS21 WCPS21 WVPS21						
Northern Mariana Islands	SAIPAN I.(OBYAN)/ Saipan I.(Obyan) Intl	PGSN		- - - (No information)						

Pakistan	KARACHI/Quaid-E-Azam Intl LAHORE/Lahore	OPKC OPLA	OPKR OPLR	WSPK31 WCPK31 - WSPK31 - -						
Papua New Guinea	PORT MORESBY/Jacksons	AYPY	AYPY	WSNG20 WCNG20 WVNG20 WVNG01						WVNG01 AYPY issued on real eruption
Philippines	MANILA/Ninoy Aquino Intl	RPLL	RPHI	WSPH31 WCPH31 WVPH31	WVPH31 RPLL	O	O	O	-	
Republic of Korea	INCHEON/Incheon Intl	RKSI	RKRR	WSKO31 WCKO31 WVKO31	WVKO31 RKSI	O	O	O	O	WSKO31 also received
Singapore	SINGAPORE/Singapore Changi	WSSS	WSJC	WSSR20 WCSR20 WVSR20	WVSR20 WSSS	-	-	O	-	
Solomon Islands	HONIARA/Henderson	AGGH	AGGG	- - - (No information)						
Sri Lanka	COLOMBO/Katunayake	VCBI	VCBI	WSSB31 WCSB31						
Thailand	BANGKOK/Bangkok Intl	VTBD	VTBB	WSTH31 WCTH31 WVTH31	WVTH31 VTBD	O	-	-	0	
United States	ANCHORAGE/Anchorage Intl HONOLULU/Honolulu Intl (JUNEAU, Alaska) (KANSAS CITY/Missouri ???)	PANC PHFO PAJN KKCI PAWU	PZAN KZOA PZAN KZOA	WSPN01 WVAK20-24 WSPA31-5 WCPA31-5 WVPA31-5 WSPN47-8 WCAK31-5 WVAK21-25						
Viet Nam	Gialam MWO	VVGL	VVNB VVTS	WSVS31 WCVS31 WVVS31	WVVS31 VVGL	O	-	-	-	

ASIA/PAC SIGMET TEST Summary (Reception time at RODBs)

Name of RODB : Bangkok, Brisbane, Singapore and Tokyo
Date of Test : 2005/2/18
Target (VA or TC) : TC

TCA	Header			Received time (UTC)			
	TTAAii	CCCC	YYGGgg	Bangkok	Brisbane	Singapore	Tokyo
	FKIN20	VIDP	180200	2:00:40	-	2:00:09	2:00:02
	FKIN21	VIDP	180200	2:11:09	-	2:10:14	2:00:11
	FKIN20	DEMS	180200	3:03:28	-	3:02:56	-
	FKPQ30	RJTD	180200	2:12:03	-	2:00:13	2:00:02
	FKAU01	ADRM	180200	2:01:19	2:02:00	2:04:27	2:00:05
	FKAU03	ADRM	180200	2:00:17	-	-	-
	FKAU05	ADRM	180200Z	2:01:51	-	2:04:33	-

SIGMET	Header						Received time (UTC)			
	TTAAii	CCCC	YYGGgg	No	MWO	FIR/UIR	Bangkok	Brisbane	Singapore	Tokyo
	WCAU01	ABRF	180201	BN01	ABRF	YBBB	-	2:02:00	2:02:27	-
	WCAU01	APRF	180202	PH01	YPRF	YBBB	-	2:03:00	2:03:14	-
	WCAU01	APRF	180202	PH02	YPRF	YMMM	-	2:03:00	2:03:45	-
	WCAU01	ADRM	180206	DN1	YPDM	YBBB	-	2:06:00	2:06:48	-
	WSC131	RCTP	180117	2	RCTP	RCTP	2:21:29	2:21:00	2:21:21	2:21:18
	WSC131	RCTP	180645	6	RCTP	RCTP	6:48:18	-	6:48:40	6:48:20
	WCCI34	ZSSS	180210	1	ZSSS	ZSHA	2:15:54	2:15:00	2:15:32	-
	WCCI35	ZGGG	180220	1	ZGGG	ZGZU	2:25:57*	2:25:00*	2:25:31	2:25:40*
	WCID	WABD	180210	1	WADD	WADD	-	-	2:11:17	-
	WCID20	WIII	180210	1	WIII	WIIZ	2:19:13*	2:18:00	2:18:19	-
	WCID20	WIII	180230	2	WIII	WIIZ	2:46:04	2:46:00	2:45:34	-
	WCID22	WADD	180635	1	WADD	WADD	-	-	6:36:48	-
	WCIN90	VOMM	180200	02	VOMM	VOMM	2:07:38	2:01:00	2:01:26	-
	WSIN90	VECC	180557	01	VECC	VECC	-	4:02:00	6:13:03	-
	WSIN90	VABB	180344	01	VABB	VABB	3:59:52*	4:02:00	3:58:20	-
	WCJP31	RJAA	180205	1	RJAA	RJTG	2:06:01	2:06:00	2:05:09	2:05:26
	WCJP31	RJAA	180205	1	RJAA	RORG	2:06:15	-	2:05:33	2:05:51
	WCJP31	RJAA	180200	5	RJAA	RJTS	2:31:26	2:31:00	2:31:02	-
	WSKO31	RKSI	180205	1	RKSI	RKRR	2:12:21	2:12:00	2:11:55	2:12:05
	WCPH31	RPLL	180204	1	RPLL	RPHI	2:06:31*	2:06:00	2:06:11	2:05:06*
	WCSR20	WSSS	180215	1	WSSS	WSJC	2:20:00	2:19:00	2:19:15	-
	WCSS20	VHHH	180215	1	VHHH	VHHK	2:22:11	2:22:00	2:22:53	2:21:52*
	WCVS31	VVGL	180200	01	VVVV	VVNB	2:02:56*	-	-	-
	WCVS31	VVGL	180645	01	VVVV	VVNB	6:49:14*	-	-	-
	WVTH31	VTBD	180215	1	VTBD	VTBB	2:39:09	-	-	-

*indicates two or more bulletins were received,
and the time of the first one is shown.

ASIA/PAC SIGMET TEST Summary (Comparison with ROBEX Handbook)

Name of RODB : Bangkok, Brisbane, Singapore and Tokyo
Date of Test : 2005/2/18
Target (VA or TC) : TC

ROBEX Handbook 12th edition 2004 TABLE E							Reception (2005/2/18 TC test)							Remarks
State	MWO location	ICAO	FIR/ ACC	WMO Header	WMO Header TC	WMO Header VA	WMO Header	CCCC	VTBB	YBZZ	WSZZ	RJAA		
Australia	ADELAIDE/Adelaide	YPRM	YMMM	WSAU31	-	-							MWO in the test bulletin was YPDM	
	BRISBANE/Brisbane	YBRF	YBBB	WSAU31	WCAU01	-	WCAU01	ABRF	-	0	0	-		
	DARWIN/Darwin	YDRM	YBBB	WSAU31	WCAU01	WVAU01	WCAU01	ADRM	-	0	0	-		
	HOBART/Hobart	YMHF	YMMM	WSAU31	-	-								
	MELBOURNE/Melbourne	YMRF	YBBB	WSAU31	-	-								
	PERTH/Perth	YPRF	YBBB	WSAU31	WCAU01	-	WCAU01	APRF	-	0	0	-		
	SYDNEY/Sydney	YSRF	YBBB	WSAU31	-	-	WCAU01	APRF	-	0	0	-		
	TOWNSVILLE	YBTL	YBBB	WSAU31	-	-								
Bangladesh	DHAKA/Zia Intl	VGZR	VGFR	WSBW20	WCBW20	-								
Cambodia	PHNOM-PENH/Pochentong	VDPP	VDPP	MWO not established										
China	BEIJING/Capital	ZBAA	ZBPE	WSCI33	-	-							mistyping in YYGGgg	
	CHENGDU/Shuangliu	ZUUU		WSCI36	-	-								
	GUANGZHOU/Baiyun	ZGGG	ZGZU	WSCI35	-	-	WCCI35	ZGGG	0	0	0	0		
	KUNMING/Wujiaba	ZPPP	ZPKM	WSCI36	-	-								
	LANZHOU/Chongchuan	ZLLL	ZLHW	WSCI37	-	-	WSCI37	ZLLL	-	0	-	0		
	SHANGHAI/Hongqiao	ZSSS	ZSHA	WSCI34	-	-	WCCI34	ZSSS	0	0	0	-		
	SHENYANG/Taoxian	ZYTX	ZYSH	WSCI38	-	-								
	TAIBEI/Taibei Intl	RCTP	RCTP	WSCI31	WCCI31	WVCI31	WSCI31	RCTP	0	0	0	0		
	URUMQI/Diwopu	ZWWW	ZWUQ	WSCI39	-	-	WSCI39	ZWWW	-	-	-	0		
	WUHAN/Tianhe	ZHHH	ZHWH	WSCI35	-	-								
	HONG KONG/Hong Kong Intl	VHHH	VHHK	WSSS20	WCSS20	WVSS20	WCSS20	VHHH	0	0	0	0		
Democratic People's Republic of Korea	PYONGYANG/Sunan	ZKPY	ZKKK	No SIGMET issued										

Fiji	NADI/Nadi Intl	NFFN	NFFF	WSFJ01,...WCFJ01,..WVFJ01,...							
French Polinesia	TAHITI/Faaa	NTAA	NTTT	WSPF21,2WCPF21 WVPF21							
Guam	GUAM/Aana NAS	PGUM	KZOA	WSPQ31-5WCPN31 -							MWO responsibility transferred to PHFO (Sep 29, 2004)
India	CALCUTTA/Calcutta CHENNAI/Chennai DELHI/Indira Gandhi Intl MUMBAI/Jawaharlal Nehru Intl	VECC VOMM VIDP VABB	VECF VOMF VIDF VABF	WSIN31 WCIN31 - WSIN31 WCIN31 - WSIN31 WCIN31 - WSIN31 WCIN31 -	WSIN90 VECC WCIN90 VOMM WSIN90 VABB	- 0 0 0	0 0 0 0	0 0 0 0	- - - -		
Indonesia	BIAK/Frans Kaisieppo DENPASAR/Ngurah Rai (Bali Intl) JAKARTA/Soekarno-Hatta Intl UJUNG Pandang/Hasanuddin	WABB WRRR WIII WAAA	WABZ WRRZ WIIZ WAAZ	WSID23 WCID23 WVID23 WSID22 WCID22 WVID22 WSID20 WCID20 WVID20 WSID21 WCID21 WVID21	 WCID22 WADD WCID20 WIII	 - 0	 - 0	 0 0	 - -		According to AIP MWO: WRRR-> WADD, FIR: WRRX -> WADZ (But in the test bulletin, FIR was WADD)
Japan	TOKYO/Narita	RJAA	RORG RJTG	WSJP31 WCJP31 WVJP31 WSJP31 WCJP31 WVJP31	WCJP31 RJAA WCJP31 RJAA	0 0	0 -	0 0	0 0		
Lao People's Democratic Republic	VIENTIANE/Wattay	VLVT	VLVT	WSLA31 - WVLA31 (not confirmed)							
Malaysia	KOTA KINABALU/Kota Kinabalu Intl KUALA LUMPUR/Kuala Lumpur Intl	WBKK WMKK	WBFC WMFC	- - - WSMS31 WCMS31 WVMS31							
Maldives	MALE/Hulule	VRMM	VRMM	WSMV31 - -							
Mongolia	ULAN BATOR/Ulan Bator	ZMUB	ZMUB	WSMO31 - -							
Myanmar	YANGON/Yangon Intl	VYYY	VYYY	WSBM31 WCBM31 - (not confirmed)							
Nauru	NAURU/Nauru	ANAU	ANAU	- - - (No information)							
Nepal	KATHMANDU/Tribhuvan Intl	VNKT	VNSM	WSNP31 - - (not confirmed)							
New Zealand	WELLINGTON/Kelburn Intl	NZKL	NZZO NZZC	WSNZ21 WCNZ21 WVNZ21 WSPS21 WCPS21 WVPS21							
Northern Mariana Islands	SAIPAN I. (OBYAN)/ Saipan I. (Obyan) Intl	PGSN		- - - (No information)							
Pakistan	KARACHI/Quaid-E-Azam Intl	OPKC	OPKR	WSPK31 WCPK31 -	WCJP31 RJAA	0		0			Possible misunderstanding of format

	LAHORE/Lahore	OPLA	OPLR	WSPK31 - -						
Papua New Guinea	PORT MORESBY/Jacksons	AYPY	AYPY	WSNG20 WCNG20 WVNG20 WVNG01						
Philippines	MANILA/Ninoy Aquino Intl	RPLL	RPHI	WSPH31 WCPH31 WVPH31	WCPH31 RPLL	0	0	0	0	
Republic of Korea	INCHEON/Incheon Intl	RKSI	RKRR	WSKO31 WCKO31 WVKO31	WSKO31 RKSI	0	0	0	0	
Singapore	SINGAPORE/Singapore Changi	WSSS	WSJC	WSSR20 WCSR20 WVSR20	WCSR20 WSSS	0	0	0	-	
Solomon Islands	HONIARA/Henderson	AGGH	AGGG	- - - (No information)						
Sri Lanka	COLOMBO/Katunayake	VCBI	VCBI	WSSB31 WCSB31						
Thailand	BANGKOK/Bangkok Intl	VTBD	VTBB	WSTH31 WCTH31 WVTH31	WCTH31 VTBD	0	-	-	-	
United States	ANCHORAGE/Anchorage Intl HONOLULU/Honolulu Intl (JUNEAU, Alaska) (KANSAS CITY/Missouri ???)	PANC PHFO PAJN KKCI PAWU	PZAN KZOA PZAN KZOA	WSPN01 WVAK20-24 WSPA31-5 WCPA31-5 WVPA31-5 WSPN47-8 WCAK31-5 WVAK21-25						
Viet Nam	Gialam MWO	VVGL	VVNB VVTS	WSVS31 WCVS31 WVVS31	WCVS31 VVGL	0	-	-	-	

ASIA/PAC OPMET/M TF SIGMET TEST

Procedures for conducting SIGMET (WS) tests

1. Introduction

- 1.1 The MET Divisional Meeting (2002) formulated Recommendation 1/12 b), *Implementation of SIGMET requirements*, which called, *inter alia*, for the relevant planning and implementation regional groups (PIRGs) to conduct periodic tests of the issuance and reception of SIGMET messages, especially those for volcanic ash.
- 1.2 As follow up to Recommendation 1/12 b) of the MET Divisional Meeting (2002), ICAO Regional Office for Asia and Pacific prepared and published a new version of the ASIA/PAC Regional SIGMET Guide. This document provided *inter alia* information on the requirements for the dissemination and exchange of SIGMET.
- 1.3 The OPMET/M TF/2 meeting noted, that with the inclusion of the new SIGMET table in the ROBEX Handbook, it would be possible to start monitoring of the SIGMET issuance and availability. The Task Force designated a SIGMET Team to undertake further development of the necessary procedures, based on procedures in the EUR Region.

2. Purpose and Scope

- 2.1 The purpose of the tests is to check the awareness of the participating MWOs of the ICAO requirements for the issuance of WS SIGMET and the adequacy of the existing telecommunication procedures for dissemination of the SIGMET. Based on the result of the tests, the States will be provided with advice aimed at improving their practices and procedures.
- 2.2 SIGMET should be prepared by the meteorological watch office (MWO) designated by the State's meteorological authority. The MWOs and their area of responsibility are given in FASID Table Met 1B of ASIA/PAC FASID.
- 2.3 SIGMET messages should be distributed using normal dissemination according to distribution lists used for normal WS SIGMETs to all RODBs either directly or through the responsible ROBEX centre. SIGMET messages should be distributed to other ICAO regions and made available for uplink through SADIS and ISCS. This distribution should be carried out through the relevant IROGs. The AFTN addresses of the RODBs to which test SIGMETs should be sent are as follows:

Bangkok	VTBBYPYX
Brisbane	YBBBYPYX
Nadi	NFZZRFXX
Singapore	WSZZYPYM
Tokyo	RJAAYPYX

- 2.4 The RODBs and ROBEX centre will record the reception of the test SIGMETs and the corresponding time and will provide a summary table to the Rapporteur of the OPMET/M TF with a copy to the Regional Office. For details of recording see 3.4.

- 2.5 A consolidated summary report will be prepared by the Rapporteur and reported to the next OPMET/M TF and CNS/MET Sub-Group meeting. The report will include recommendations for improvement of the SIGMET exchange and availability.

3. SIGMET test procedures

3.1 *Participating units:*

- 3.1.1 All MWOs listed in FASID Table Met 1B of ASIA/PAC FASID will issue a Test SIGMET, with all ROBEX centres and RODBs within the ASIA/PAC Region participating in logging arrival of all SIGMET during the test period.

3.2 *Test Message*

- 3.2.1 The transmission of the SIGMET Test message formatted as described below shall be carried out at 0200UTC on the date set by the ICAO Regional Office. The information covering the SIGMET Test will be sent to all States concerned by a State letter.

- 3.2.2 The WMO heading and the first line of the SIGMET should be valid ones, while the body of the message should contain an explanatory text on the tests as per the following examples.

3.3 *SIGMET Test Message Format:*

- 3.3.1 It is vital that Test SIGMETs are not confused with operational SIGMETs or that a Test SIGMET could overwrite an operational SIGMET in an automated system. In order to prevent this it is suggested that;

- a) If NO SIGMET is current for the FIR then after a Test SIGMET the next SIGMET shall be transmitted with the next consecutive sequence number. E.g.

WSAU01 YBRF 230200
YBBB SIGMET 1 VALID 230200/230230 YBRF-
TEST SIGMET PLEASE DISREGARD=

Note it would be preferable to have a validity period as short as possible for this Test SIGMET so that messages ingested into automatic systems are deleted as soon as possible.

- b) If a SIGMET is VALID at the time of the test then after the Test SIGMET the valid SIGMET shall be repeated with the next appropriate sequence number. E.g.
If the following SIGMET is issued at 0100 on the 23rd

WSAU01 YBRF 230100
YBBB SIGMET 1 VALID 230100/230700 YBRF-
BRISBANE FIR SEV CAT FCST WITHIN AREA
S2230 E12445 TO S2030 E 12700 TO S2015 E 12030 TO S1645 E11445 TO S1845
E11230 TO S2215 E11815 BTN F240/320 MOV E AT 20KT NC=

A Test SIGMET is scheduled for 0200 UTC on the 23rd. This is issued with the next consecutive sequence number as follows:

WSAU01 YBRF 230200
YBBB SIGMET 2 VALID 230200/230230 YBRF-
TEST SIGMET PLEASE DISREGARD=

The original SIGMET is then retransmitted immediately after this with the next consecutive sequence number. It is suggested that the SIGMET is issued as a CORRECTION (CCA) and that the start of the validity changes to 0200. The message would be as follows:

WSAU01 YBRF 230200 CCA
YBBB SIGMET 3 VALID 230200/230700
BRISBANE FIR SEV CAT FCST WITHIN AREA
S2230 E12445 TO S2030 E 12700 TO S2015 E 12030 TO S1645 E11445 TO S1845
E11230 TO S2215 E11815 BTN F240/320 MOV E AT 20KT NC=

3.4 ***Processing of the test message and results***

- 3.4.1 The RODBS and ROBEX centres will be requested to file all incoming TEST SIGMETs and perform an analysis of the availability, timeliness of arrival and the correctness of headers. A table as shown in *Attachment A*, should be prepared by each RODB and ROBEX centre and sent to the Rapporteur of the OPMET Management TF with a copy to the Regional Office.
- 3.4.2 The Rapporteur shall prepare the final report of the test and present to the next CNS/MET Sub-group and OPMET/M TF meetings.

Attachment A

ASIA/PAC SIGMET TEST

Sample Table to be used by RODBs

Name of RODB: Brisbane
Date of Test: 23 – 06-05

SIGMET Header

TTAAii	CCCC	YYGGgg	MWO	FIR/UIR	Received Time (UTC)
WSJP31	RJAA	230200	RJAA	RORG	2:01:15
WSAU31	YBRF	230200	YBRF	YBBB	2:01:15
WSNG20	AYPY	230200	AYPY	AYPY	2:05:23
WSID22	WRRR	230200	WRRR	WRRZ	2:05:25

Sample Table to be used by ROBEX Centres

Name of Robex centre:Indonesia
Date of Test: 23-06-05

SIGMET Header

TTAAii	CCCC	YYGGgg	MWO	FIR/UIR	Received Time (UTC)
WSID22	WRRR	230200	WRRR	WRRZ	2:01:15
WSAU31	YBRF	230200	YBRF	YBBB	2:01:15
WSNG20	AYPY	230200	AYPY	AYPY	2:05:23
WSJP31	RJAA	230200	RJAA	RORG	2:05:25

**Report
of EUR BUFR Transition Assessment Task Force
on the proposed transition from Traditional Alphanumeric Codes (TAC) to BUFR for OPMET
messages**

1 EXECUTIVE SUMMARY

1.1 BUFR is a Table Driven Code Form (TDCF) developed by the WMO that can be used to encode meteorological data using a self describing code which is presented in a binary form. The WMO is currently transitioning its existing Traditional Alphanumeric Codes (TACs) to BUFR as a major programme covering all of the domains in which meteorological data is exchanged including aviation.

1.2 This document, on the planning for the migration to BUFR (Binary Universal Form for the Representation of meteorological data) encoded OPMET Messages, has been produced by the BUFR Transition Assessment Task Force in response to Decision 45/13 of the EANPG.

1.3 The Task Force considered a number of issues in relation to the migration from TAC to BUFR in the aviation domain. These issues included an assessment of the benefits to the aviation community of a full transition to BUFR, an assessment of the different approaches to transition and whether or not the proposed transition time frames are realistic. The task force also considered whether the transition was justifiable in the aviation domain and what guidelines would be required in order to provide an ordered, safe and efficient transition if it proceeds.

1.4 The benefits of BUFR were examined and it was agreed that BUFR would produce some significant benefits most particularly by forcing the automation of systems originating BUFR encoded observations or forecasts and the use of communications protocols that included sophisticated error detection. Other benefits related to BUFR self describing nature including the ability to examine and interpret legacy data and the ability to add new parameters without code changes to the BUFR processing.

1.5 The flexibility of BUFR was however compromised by its unsuitability for human interpretation which requires that a presentation format be used. Conversion to the presentation format, assumed to be the same as the existing TAC codes, removes the benefits of flexibility and adds to the complexity of systems. It is vital however that a familiar presentation format is maintained as aviation users of meteorological data are a much broader group than for other meteorological data. Safety and liability issues, particularly in the light of forthcoming 'Single European Skies' legislation could also be a significant problem.

1.6 A fundamental element of any transition will be the development and implementation of TAC/BUFR and BUFR/TAC converters so that information in presentation format can be generated from BUFR data and legacy systems can be used during the transition period. Some conversion software is available at the moment but it needs to be developed further as it does not do the complete conversion. Any such software should be built to a standard developed by the WMO and ICAO to ensure correct and consistent operation.

1.7 National communications infrastructures for the promulgation of meteorological data are highly diverse so it is important that these infrastructures can support BUFR coded messages without problem. This situation can however be worked around by the use of TAC/BUFR and BUFR/TAC converters. States face a choice of supporting BUFR directly by updating data generating

systems and end users systems or by insulating these systems from BUFR by use of converters. Special attention, in the latter case, needs to be paid to the interface between the AMHS and the TAC/BUFR Converter.

1.8 Of critical importance in relation to BUFR migration with the EUR region is the implementation of the AMHS. It is noted from the AFSG Work Programme that the implementation planning of the AMHS based on the BUFR requirements has been suspended until it can be fully justified. It is matter of debate whether the benefits accruing from BUFR alone justify the implementation of AMHS. Although the GTS is used in some states for both national and international distribution it is not part of the AFS and its widespread use would lead to institutional difficulties including funding.

1.9 Assuming that BUFR transition does go ahead it is suggested the existing MOTNE distribution scheme be used and dual transmission of both TAC and BUFR be maintained. Once a number of qualifying criteria have been achieved states may transition to international promulgation in BUFR only. Changes will also be required to the OPMET Databanks in Brussels, Toulouse and Vienna. The transition process will need to be planned, administered and monitored by a dedicated group.

1.10 On a regional basis the same problems apply but in particular the implementation of AMHS with a minimum profile equivalent to that defined in the EUR-ATSMHS Profile is a prerequisite for transition implementation activities. ATSMHS trials have been carried between Japan and the United States but the profile used does not support binary data.

1.11 In conclusion the paper states that BUFR does offer some useful benefits, in particular a guarantee of correctly formatted data. Other benefits however are less clear and there is a significant amount of work and cost involved in a transition both by ICAO and the states. A substantial amount of this work, production of specifications, compliance procedures and guideline material, must be carried out prior to operational transition in order to ensure that the transition process is on a firm basis. There are also issues regarding safety and liability that may further complicate the transition. The transition also has a significant dependency on the implementation of AMHS for which there is no agreed operational requirement and therefore no agreed timetable for implementation.
