INTERNATIONAL CIVIL AVIATION ORGANIZATION

THE MIDDLE EAST AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (MIDANPIRG)

REPORT OF THE THIRD MEETING OF MET SUB-GROUP

(Cairo, Egypt 19 -20 December 2011)

The views expressed in this Report should be taken as those of the MIDANPIRG MET Sub-Group and not of the Organization. This Report will, however, be submitted to the MIDANPIRG and any formal action taken will be published in due course as a Supplement to the Report.

Approved by the Meeting
and published by authority of the Secretary General

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PART I – HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1. The third meeting of the Meteorology Sub-Group of the Middle East Planning and Implementation Regional Group (MET SG/3) was held in the conference hall of the ICAO Middle East (MID) Regional Office, Cairo, Egypt, from 19 to 20 December 2011.

2. OPENING

2.1. Mr. Mohamed R. M. Khonji, Regional Director of the ICAO Middle East Regional Office, opened the meeting and noted the dynamic era in meteorology with many global developments that have regional implications. He mentioned that near term outcomes from the various global groups related to volcanic ash would be available for regional consideration. Specifically, a regional template on volcanic ash contingency plan as well as a regional template on exercising the regional volcanic ash contingency plan would be available sometime in 2012. Furthermore, guidance related to SIGMET on radioactive cloud and aerodrome warnings on Tsunami was being developed at the global level and could be available as early as 2013. Continued participation in SIGMET tests (APAC for tropical cyclone and EUR for WS) was encouraged to assure States properly create and disseminate SIGMET for such hazards that include, but not exclusive to volcanic ash and radioactive cloud. Continued efforts on the providing accurate, timely OPMET data was also encouraged noting operators benefit by being able to optimize flight paths which saves time, fuel and subsequently reduces carbon emissions. Based on these important developments, Mr. Khonji strongly encouraged States to participate in ICAO meetings to ensure the safety and efficiency of international civil aviation by properly implementing provisions related to meteorology.

3. ATTENDANCE

3.1. The meeting was attended by a total of eleven (11) participants, from four (4) States (Egypt, Kuwait, Saudi Arabia, and the United Kingdom) and one (1) International Organization (International Air Transport Association (IATA)). The list of participants is at the **Attachment A** to the Report.

4. OFFICERS AND SECRETARIAT

4.1. The Secretary of the meeting was Mr. Christopher Keohan, Air Navigation Systems Implementation (Meteorology), Europe and North Atlantic, assisted by Mr. Mohamed Smaoui, Regional Officer, Air Navigation Service /Aeronautical Information Management (ANS/AIM) of the ICAO Middle East Regional Office

4.2. The meeting agreed that the Secretariat, Mr. Christopher Keohan of the ICAO EUR/NAT Regional Office, presides over the meeting due to the absence of the Chair and Vice-Chair of the MET SG.

5. LANGUAGE

5.1. The meeting was conducted in English and documentation posted under meetings on the ICAO MID Regional Office website.

6. AGENDA

6.1. The following Agenda was adopted:

Agenda Item 1: Adoption of the Provisional Agenda

Agenda Item 2: Follow-up on MIDANPIRG/12 Conclusions and Decisions relevant to the MET field

Agenda Item 3: Review of recent and forthcoming global developments

Agenda Item 4: Status of implementation of the meteorological services in the MID Region:

4.1 Review implementation of WAFS and SADIS

4.2 Review implementation of the meteorological advisories and warnings:
a) International Airways Volcano Watch (IAVW);
b) International Tropical Cyclone Watch (ITCW); and
c) SIGMET and AIRMET information, and other warnings

4.3 Review of requirements for OPMET data and status of OPMET data exchange

4.4 Review implementation of MET service for low-level flights

Agenda Item 5: Review of the MET provisions in the MID Basic ANP and FASID

Agenda Item 6: Identification, assessment and reporting of MET deficiencies

Agenda Item 7: Institutional issues related to MET

Agenda Item 8: Performance framework forms

Agenda Item 9: Future work programme

Agenda Item 10: Any other business

7. CONCLUSIONS AND DECISIONS - DEFINITIONS

7.1. All MIDANPIRG Sub-Groups and Task Forces record their actions in the form of Conclusions and Decisions with the following significance:

a) **Conclusions** deal with the matters which, in accordance with the Group's terms of reference, merit directly the attention of States on which further action will be initiated by ICAO in accordance with established procedures; and

b) **Decisions** deal with matters of concern only to the MIDANPIRG and its contributory bodies.

8. LIST OF DRAFT CONCLUSIONS AND DRAFT DECISIONS

DRAFT CONCLUSION 3/1 - IMPLEMENTATION OF SECURE SADIS FTP SERVICE

DRAFT CONCLUSION 3/2- SIGMET TEST PARTICIPATION

DRAFT CONCLUSION 3/3 - UPDATE TO THE MID REGIONAL SIGMET GUIDE

DRAFT DECISION 3/4 - ESTABLISHMENT OF AN ACTION GROUP OF THE BMG TO CONSIDER THE DESIGNATION OF MID OPMET CENTRES FOR INTER-REGIONAL EXCHANGE OF OPMET DATA

DRAFT CONCLUSION 3/5 - OPMET DATA ERRORS AND DEFICIENCIES

DRAFT CONCLUSION 3/6 - TIMELINESS OF OPMET DATA

DRAFT CONCLUSION 3/7 - PROPOSAL FOR AMENDMENT TO PART VI (MET) OF THE MID AIR NAVIGATION PLAN VOLUME I AND VOLUME II (MID DOC 9708)

DRAFT DECISION 3/8 - MET AIR NAVIGATION DEFICIENCIES IN THE MID REGION

DRAFT CONCLUSION 3/9 - PERFORMANCE FRAMEWORK FORMS - MET

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA

1.1 The meeting reviewed and adopted the Provisional Agenda as at Para 6 of the History of the Meeting.

MET SG/3
Report on Agenda Item 2

REPORT ON AGENDA ITEM 2: FOLLOW-UP ON MIDANPIRG CONCLUSIONS AND DECISIONS RELEVANT TO THE MET FIELD

2.1 The meeting noted the status of relevant MIDANPIRG/12 Conclusions and Decisions related to the MET field and the follow up actions taken by States, the secretariat and other parties concerned as at **Appendix 2A** to the Report on Agenda Item 2. The meeting agreed also to review the Conclusions and Decisions, which are still current, under the associated Agenda Items with a view to propose to MIDANPIRG/13 appropriate follow-up action.

MET SG/3
Appendix 2A to the Report on Agenda Item 2

FOLLOW-UP ACTION PLAN ON MIDANPIRG/12 CONCLUSIONS AND DECISIONS

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONC. 12/64: TRAINING FOR THE NEW WAFS FORECASTS That, in order to facilitate the implementation of the new WAFS forecasts by the WAFS users in the MID States, WAFC Provider States in coordination with the World Meteorological Organization (WMO) be invited to organize in 2011 or 2012 a training seminar for the MID Region on the use of the new gridded WAFS forecasts for convective clouds, icing and turbulence	Implement the Conclusion	WAFC Provider States WMO	Training Seminar	2012	Ongoing (IOM Ref: AN 10/3 – 10/421 to WAFSOPSG Secretariat dated 14 Dec 2010) Training method to be considered at WAFSOPSG/7 (Sep 2012: reference WAFSOPSG/6 C6/12 and C6/13)
CONC. 12/65: FINALIZED SIGMET TEST PROCEDURES AND CONDUCTING OF REGULAR SIGMET TESTS IN THE MID REGION That, a) the MID SIGMET Test Procedures, at Appendix 5.6A to the Report on Agenda Item 5.6, be adopted and forwarded to States for implementation; b) MID States be urged to participate in the conducting of regular WS- and WV-SIGMET tests in 2011 onwards and nominate SIGMET Focal Points if they have not already done so; and c) the results of the SIGMET tests be reported to each MET Sub-Group meeting, with feedback provided on any identified	Implement the Conclusion	ICAO States	State Letter Nominate SIGMET Focal point MET SG/3 Report	January 2011 February 2011 May 2011	Complete SL AN 10/12 – 10/422 Dated 14 December 2010 (note MET SG/3 draft Conclusion 3/2)

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
deficiencies provided to States concerned with proposed corrective actions.					
CONC. 12/66: SIGMET GUIDE FOR THE MID REGION That, the ICAO MID Regional Office, circulate the working draft of the MID SIGMET Guide, as presented at **Appendix 5.6B** to the Report on Agenda Item 5.6, to MID States in order to: a) obtain the necessary WS-, WV- and WC-SIGMET headers for Appendix B of the document; and b) finalize the document in time for the MET SG/3 meeting.	Implement the Conclusion	ICAO	State Letter Draft SIGMET Guide	January 2011 May 2011	Ongoing SL AN 12/3 – 10/424 Dated 14 December 2010 (note MET SG/3 draft Conclusion 3/3)
CONC. 12/67: IMPROVING OPMET DATA IN THE MID REGION That, in order to improve the quality and availability of OPMET data in the MID Region, MID States be urged, if they have not already done so, to: a) fully implement ICAO Annex 3 provisions relating to OPMET data, including TAF; b) investigate the reasons for the absence of SIGMET messages and reconsider their procedures for SIGMET generation and transmission; c) consider the need for establishing local quality control and format verification procedures for OPMET data; and d) undertake all efforts to reduce the errors in OPMET data significantly, the aim of which should be that less than 5% of all issued OPMET data being incorrect.	Implement the Conclusion	States	Implement annex 3 provisions Establish QC for OPMET data	May 2011	Complete SL AN 10/11 – 10/425 Dated 14 December 2010

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONC. 12/68: HARMONIZATION OF PROCEDURES FOR OPMET DATA ISSUANCE That, in order to improve the timeliness and regularity of OPMET data (METAR and TAF) for AOP aerodromes in the MID Region: a) the ICAO MID Regional Office develop guidance material related to the issuance of OPMET data by 31 December 2010; and b) MID States be urged to implement common procedures in accordance with this guidance by MET SG/3.	Implement the Conclusion	ICAO	State Letter Guidance material	January 2011	Complete SL AN 10/11 – 10/426 Dated 14 December 2010
CONC. 12/69: ACTIVATION AND PROPOSED MEETING OF THE MID OPMET BULLETIN MANAGEMENT GROUP That, a) the MID OPMET Bulletin Management Group (BMG) be activated with the Terms of Reference at **Appendix 5.6C** to the Report on Agenda Item 5.6; b) the MID States participating in the OPMET BMG are urged to nominate appropriate experts on the group and inform the ICAO MID Regional Office accordingly; and c) the Rapporteur of the OPMET BMG, in coordination with the ICAO MID Regional Office, organize a meeting of the group immediately prior to MET SG/3.	Implement the Conclusion	ICAO BMG	State Letter Organize BMG meeting	January 2011 May 2011	Complete SL AN 10/11 – 10/427 Dated 14 December 2010 BMG/1 meeting held 18 December 2011 in Cairo

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONC. 12/70: REGIONAL SURVEY ON THE IMPLEMENTATION OF MET SERVICES AND FACILITIES That, the ICAO MID Regional Office utilise the questionnaire presented at **Appendix 5.6D** to the Report on Agenda Item 5.6 as the basis of a regional survey on the implementation of MET services and facilities in the MID Region in 2010, and at least every 18 months thereafter	Implement the Conclusion	ICAO	State Letter	January 2011	Ongoing SL AN 10/22 – 10/428 Dated 14 December 2010 Reminder letter to be sent end of 2011 for completion before MIDANPIRG/13
CONC. 12/71: FACILITATING THE IMPLEMENTATION OF QMS FOR MET IN THE MID REGION That, MID States that have not yet implemented a Quality Management System (QMS) for meteorological (MET) service to international air navigation, be invited to take necessary action to expedite the implementation of QMS in accordance with Annex 3 provisions, taking into consideration the key recommendations at **Appendix 5.6E** to the Report on Agenda Item 5.6	Implement the Conclusion	ICAO	State Letter	January 2011	Completed SL AN 3/2.8 – 10/429 Dated 14 December 2010
DEC.12/72: VOLCANIC ASH CONTINGENCY PLAN FOR THE MID REGION That, the ATM/SAR/AIS Sub-Group and MET Sub-Group be invited to develop a draft Volcanic Ash Contingency Plan for the MID Region for consideration at MIDANPIRG/13.	Implement the Decision	ICAO MID	Draft Volcanic Ash contingency plan	May 2011	Ongoing Waiting on outcome from IVATF TF-ATM01 in June 2012

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONC 12/73: REVIEW OF PART VI (MET) OF THE MID AIR NAVIGATION PLAN VOLUME II (FASID) That, in time for MET Sub-Group 3, the ICAO MID Regional Office, in coordination with the MID OPMET Bulletin Management Group (BMG), is invited to review and propose amendments, as necessary, to FASID Tables MET 2A, 2C, 4A and 4B related to OPMET exchange.	Implement the Conclusion	ICAO BMG	FASID Amendment	May 2011	Ongoing AP with assistance from BMG/1 expected before MIDANPIRG/13
CONC.12/75: ELIMINATION OF AIR NAVIGATION DEFICIENCIES IN THE MID REGION That, MID States be urged to: a) review their respective lists of identified deficiencies, define their root causes and forward an action plan for rectification of outstanding deficiencies to the ICAO MID Regional Office prior to 31 March 2011; b) use the online facility offered by the ICAO MID Air Navigation Deficiency Database (MANDD) for submitting online requests for addition, update, and elimination of air navigation deficiencies; c) accord high priority to eliminate all air navigation deficiencies with emphasis on those with priority "U"; in particular by allocating the necessary budget to ensure that their Civil Aviation Authorities have and retain a sufficient number of qualified technical personnel, who are provided with appropriate initial, on-the-job and recurrent training; and d) seek support from regional and international organizations (i.e. ACAC, GCC, etc.) for the elimination of identified air navigation deficiencies.	Implement the Conclusion	ICAO States	State Letter Feedback from States	January 2011	Ongoing SL Ref.: AN2/2 – 11/123 dated 25 May 2011

REPORT ON AGENDA ITEM 3: REVIEW OF RECENT AND FORTHCOMING GLOBAL DEVELOPMENTS

3.1 The meeting noted the major developments at the global level in particular to volcanic ash and radioactive cloud. Specifically, the dynamic era in meteorology with many global developments that has regional implications. Near term outcomes from the various global groups related to volcanic ash would be available for regional consideration. Specifically, a regional template on volcanic ash contingency plan as well as a regional template on exercising the regional volcanic ash contingency plan would be available sometime in 2012. Furthermore, guidance related to SIGMET on radioactive cloud and aerodrome warnings on Tsunami was being developed at the global level and could be available as early as 2013. In addition, other activities such as regional trials on SIGMET advisories from regional SIGMET advisory centres with an aim to mitigate SIGMET deficiencies (lack of implementation, discontinuities at FIR boundaries, format and content issues) would be reviewed by the Meteorological Warnings Study Group (METWSG) in May 2012.

3.2 Furthermore, the ninth meeting of the Aerodrome Meteorological Observation and Forecast Study Group (AMOFSG/9) proposed the establishment of the Meteorological Aeronautical Requirements and Information Exchange Project Team (MARIE-PT) to combine user group efforts between ICAO and the World Meteorological Organization (WMO) in developing MET requirements for ATM and the exchange of meteorological information in digital form. The establishment of MARIE-PT was endorsed as a standalone group by the ICAO Air Navigation Council in November 2011. MARIE-PT would liaise with the ICAO Air Traffic Management Requirements and Performance Panel (ATMRPP) in developing requirements. The kick-off meeting of MARIE-PT was expected to be held from 20-21 February 2012 in Montréal.

REPORT ON AGENDA ITEM 4: STATUS OF IMPLEMENTATION OF THE METEOROLOGICAL SERVICES IN THE MID REGION

4.1: REVIEW IMPLEMENTATION OF THE WAFS AND SADIS

4.1.1 The meeting recalled MIDANPIRG/12 Conclusion 12/68 that called for training of new WAFS forecasts in 2011 or 2012 for the MID Region on the use of the new gridded WAFS forecasts for convective clouds, icing and turbulence. The development of guidance on the interpretation of the forecasts and a review of training options based on guidance developed was expected at the WAFSOPSG/7 meeting in September 2012 (WAFSOPSG/6 Conclusions 6/12 & 6/13 refer). The meeting noted that training would be available to regions (subject to ratification/endorsement by WAFSOPSG/7) possibly as early as 2013.

4.1.2 The meeting reviewed a summary of WAFS developments that included outcomes of the sixteenth meeting of the SADIS Operations Group (SADISOPSG/16, Paris from 23 to 25 May 2011) and the sixth meeting of the World Area Forecast System Operations Group (WAFSOPSG/6, Dakar from 21 to 25 March 2011). A summary of developments as provided in **Appendix 4.1A** to the Report on Agenda Item 4.1 was developed at other regional MET sub-group meetings (APAC CNS/MET SG/15 of APANPIRG, Bangkok from 25 to 29 July 2011; EUR METG/21 of EANPG, Paris from 6 to 9 September 2011) and adapted with new information provided to the meeting. The full reports of each meeting can be viewed at the following websites: http://www2.icao.int/en/anb/met/sadisopsg/Lists/Meetings1/AllItems.aspx and http://www2.icao.int/en/anb/met/wafsopsg/Lists/Meetings/AllItems.aspx.

4.1.3 The meeting noted instances where thunderstorms or squall-lines were not captured by WAFS forecasts and possibly due to the mesoscale forcing. Examples were provided for southwest Saudi Arabia (Asir) and southeast Egypt where mountainous terrain plays a role in the development of thunderstorms. WAFC London noted that these cases should be reported to WAFC London with as much data possible (e.g. satellite, radar, etc) as per guidance in ICAO Doc 8896. WAFC London encouraged feedback in these matters from all States in order to continually improve the forecasts. The WAFC London also noted that the SIGWX forecasts are produced 24 hours in advance and used primarily for flight planning. In addition to reporting the discrepancies identified to the WAFC, the meteorological watch office should issue SIGMET for in-flight tactical decision making.

4.1.4 The meeting also noted that the introduction of OCNL CB in high-level SIGWX forecasts on 15 June 2011 may help reduce the number of discrepancies observed. In addition, SIGWX would not be expected to capture isolated CB, but only isolated embedded CB. Furthermore, surface features (e.g. fronts often associated with squall-lines) were removed from SIGWX forecasts in 2007, but would be reconsidered at the WAFSOPSG/7 meeting due to the request by IFALPA that surface features be reinstated on the SIGWX forecasts.

4.1.5 The meeting expressed gratitude relating to the forthcoming (November 2013) addition of FL410 for forecasts on wind temperature and geopotential altitude.

4.1.6 With reference to Secure SADIS FTP Service which is sufficiently different to SADIS FTP in that it require updates to software, the SADIS Provider recommended that users should consult their software vendor to obtain the necessary software updates well in advance of the cessation of SADIS FTP Service in November 2012. As regional implementation of Secure SADIS

FTP Service was necessary, the meeting agreed that ICAO assist in informing States of this necessary action and agreed to the following draft Conclusion. The SADIS Provider also encouraged all users of SADIS FTP to contact the SADIS Manager to register for Secure SADIS FTP accounts if they had not already done so. The meeting agreed that WAFC London liaise with ICAO to campaign the implementation of Secure SADIS FTP Service.

DRAFT CONCLUSION 3/1- IMPLEMENTATION OF SECURE SADIS FTP SERVICE

That, States be informed of the need to implement Secure SADIS FTP Service noting the cessation of SADIS FTP Service in November 2012.

4.1.7 The meeting also noted that States should contact the WIFS provider to obtain WIFS accounts for backup/contingency purposes to the SADIS services. The majority of Vendors have the ability to provide software that would allow access to SADIS 2G, Secure SADIS FTP Service and WIFS and users should ensure that their workstations/software are compatible with their needs. Guidance is available at the SADISOPSG website explaining how to obtain a WIFS account for backup/contingency purposes.

MET SG/3
Appendix 4.1A to the Report on Agenda Item 4.1

WAFS DEVELOPMENTS

- WAFCs made GRIB2 data (forecast data from T+6 to T+36 at 3-hourly time intervals and additional information at flight levels FL270, FL320, and FL360) available.

  - on Internet based service - SADIS FTP/Secure SADIS FTP (implemented 17 November 2010 and will run in parallel with SADIS FTP until November 2012) and WIFS on 2 March 2010.

    Note that WAFC Washington GRIB2 upper-air forecasts were hosted on the Secure SADIS FTP Services since 1200 UTC 22 June 2011.

    Note that gridded forecasts of CB, icing and turbulence were provided on Internet based service and labelled as 'TRIAL_FORECASTS' in GRIB 2 form while GRIB 1 form withdrawn in November 2010.

    Note that training on gridded forecasts of CB, icing and turbulence would be considered after visualization standards and requirements for the provision of probabilistic forecasts expressed in terms of indices on these products were developed by IATA in coordination with WMO (WAFSOPSG/6 C6/16) and that subsequent guidance on interpretation of these products (WAFSOPSG/6 C6/12) would allow the WAFCs Provider States to review training requirements.

  - on Satellite based service – SADIS 2G and ISCS G2 in November 2010.

    Note that WAFS upper-air forecasts in GRIB1 code form planned for cessation in November 2013.

    Note that prioritization of GRIB2 WAFS Aviation Forecasts against the GRIB1 WAFS Aviation Forecasts will be tentatively implemented at 1200 UTC data time on 5 July 2012.

    Note that additional information for FL410 was expected in 2013 (Amendment 76 to Annex 3).

    Note that users should contact the suppliers of their visualization systems in order to confirm that their systems can visualize GRIB2 data from both WAFCs.

    Note that SADIS FTP users should contact their workstation suppliers to determine the status of availability of Secure SADIS FTP compatible visualization software. Those users who have not already done so should arrange to obtain Secure SADIS FTP log on credentials from the SADIS Manager.

- Use of maximum icing for use in extended range operations by twin-engined aeroplanes (ETOPS) flight planning endorsed as operationally acceptable (WAFSOPSG/6 D6/14).

- Changes to WAFS forecasts in draft Amendment 76 to Annex 3 as endorsed by WAFSOPSG/6 C6/3 includes:

  - Enabling the provision of concatenated route-specific wind/temperature forecasts

- Introduce additional wind and temperature forecasts for FL 410 (175 hPa)
- Introduce additional geopotential altitude forecasts for FL 270 (350 hPa) and FL 410 (175 hPa) prepared by the WAFCs

- Render operational the WAFS gridded significant weather (SIGWX) forecasts for CB clouds, icing and turbulence

  - Noting that successful harmonization of the WAFS gridded forecasts for CB, icing and turbulence, verification of forecasts and provision of updated guidance material on these forecasts were needed.

- WAFS Quality Management System Certification

  - WAFC London independently audited ISO9001 certification
  - WAFC Washington is implementing an ISO9001 QMS process

- WAFS SIGWX forecasts in current formats (BUFR code and PNG chart forms) will continue until such time that suitable alternative is available (WAFSOPSG/6 D6/17) given the WAFS SIGWX forecasts were not the same as the WAFS upper-air gridded forecasts (human versus computer produced).

- WAFC text administrative messages for SIGWX corrections were implemented on 31 December 2010.

  - Further clarification to be provided for users in how to use these messages expected for WAFSOPSG/7

- WAFS SIGWX backup tests were performed quarterly have been successful and transparent for a large majority of users.

  - For more information, go to the following URLs:

    http://www2.icao.int/en/anb/met/wafsopsg/Reference%20Documents/Operational%20Information/Recent%20and%20Forthcoming%20Chronology%20of%20WAFC%20Backup%20Tests%20_22%20Jul%2011_.pdf

    WAFC backup procedures:

    http://www2.icao.int/en/anb/met/wafsopsg/Reference%20Documents/Operational%20Information/WAFC%20Backup%20Procedures.pdf

- Introduction of OCNL CB in high-level SIGWX forecasts on 15 June 2011 to comply with Annex 3 requirements

- Update to Annex 3, Appendix 8, Figures A8-1, A8-2 and A8-3 to reflect operational WAFC SIGWX charts was expected and harmonization of fixed area between WAFCs London and Washington was also expected.

  - Differences between dimensions/orientation of SIGWX forecasts in PNG format between WAFC London and Washington removed with the WAFC London implementation of its new SIGWX production platform on 11th October 2011 – therefore, user will no longer witness differences during WAFC Backup events (test or real)

- Enhanced WAFS performance indicators were implemented. Also the feasibility of additional performance indicators was expected for WAFSOPSG/7.

- Nuclear Emergency Messages (WMO AHL NNXX01 EGRR) were made available via SADIS (both satellite and Internet based services) on 18 November 2010.

- Routing of tropical cyclone advisories in graphical form via SADIS (both satellite and Internet based services) were implemented on 18 November 2010 noting La Reunion advised intent of such graphics and WMO AHLs to be used (other TCACs received a State letter inquiring what WMO AHL to use).

    - The METG/21 Meeting was informed that TCAC Tokyo had implemented tropical cyclone advisories in graphical form and TCAC Darwin and Nadi were in the process of implementation noting official responses to regional State letters were expected in due time.

- Progress on SADIS data losses reported by some users were mostly due to local reception/equipment issues, but investigation continues noting delayed progress due to difficulties in establishing a Comparator at the UK Met Office.

- Ongoing harmonization work between SADIS and ISCS/WIFS continued in order to meet requirements of SADIS User Guide Annex 1.

- SCRAG/11, WAFSOPSG/6 and SADISOPSG/16 concurred with an access policy for Internet based services (SADIS FTP, Secure SADIS FTP and WIFS) for delivering WAFS data. Where the primary service was obtained by Internet, the selection of provider States would be based on the Regional Air Navigation Plans which was derived from current satellite footprints. Users would be permitted to obtain accounts for accessing the alternative providers Internet based services for backup/contingency purposes only.

    - The METG/21 Meeting was informed that this access policy was needed for administrative purposes and would allow the two WAFCs to manage accounts and resource allocations.

- Future requirements of a SADIS satellite broadcast beyond 2015 would be examined further by an ad-hoc team and recommendations were provided to the SADISOPSG/17 Meeting noting that 23 of 32 respondents identified a need for the continuation of the SADIS satellite broadcast, some States noted that their current legal position prohibited the use of aeronautical MET data disseminated by the Internet.

    - The Netherlands strongly endorsed the cessation of the satellite broadcast by 2015 in order to save costs to the users, the fact that the information of WAFC Washington would only be available via the Internet (WIFS), and that Internet issues in the AFI Region could possibly be resolved sooner than 2015

- Fourth round of SADIS Workstation Evaluations would be carried out in between end-2011 and mid-2013 in light of the introduction of GRIB2, Secure SADIS FTP and Amendment 75 to Annex 3.

REPORT ON AGENDA ITEM 4: STATUS OF IMPLEMENTATION OF THE METEOROLOGICAL SERVICES IN THE MID REGION

4.2: REVIEW IMPLEMENTATION OF THE METEOROLOGICAL ADVISORIES AND WARNINGS

4.2.1 With reference to the implementation of the International Airways Volcano Watch (IAVW), the meeting noted that MIDANPIRG/12 Meeting Decision 12/72 invited the ATM/SAR/AIS Sub-group and MET Sub-group to develop a draft Volcanic Ash Contingency Plan for the MID Region for consideration at the MIDANPIRG/13 meeting.

4.2.2 The meeting considered the International Volcanic Ash Task Force (IVATF) TF-ATM02 which was an ongoing task for the ATM working group of the IAVTF to develop a standardized regional volcanic ash contingency plan for consideration at the IVATF/4 meeting in June 2012. The meeting noted that adapting this proposed volcanic ash contingency plan template for the MID Region after June 2012 should consider the following:

- alternate routes for various scenarios (e.g. northern part of Region could be impacted by volcanic ash from Europe; south and western part of region could be impacted by volcanic ash from Africa) noting that these scenarios would be broad in scope that would benefit flight planning and that a dynamic component would have to be addressed based on specific cases;

- ATM and supporting services (e.g. planning departments), and pilot training on regional volcanic ash contingency plans (e.g. could consider workshop or Volcanic Ash Exercise planning meeting in 2012/2013 to exercise the plan noting a template on volcanic ash exercises from the IVATF was expected in 2012); and

- global developments with reference to pilot reporting of volcanic ash that emphasizes clarity in reporting (phraseology) and method of dissemination (reference IVATF TF-ATM03 and IVATF Recommendations 2/24-2/26: http://www2.icao.int/en/anb/met/ivatf/Documents/IVATF2%20Final%20Report.pdf); and

- IATA participation in the regional action group (if established) to assist in the adaptation of the regional volcanic ash contingency plan noting that IATA supported a master contingency plan that takes into account all aviation planning with regional appendices

4.2.3 The latest information on global developments related to volcanic ash provisions and guidance will be presented to MIDANPIRG/13 for consideration for determining the proper course of action.

4.2.4 The meeting also noted other volcanic ash issues being developed by the International Volcanic Ash Task Force (IVATF) with an emphasis placed on critical issues whose oversight by the Volcanic Ash Challenge Team (VACT) was designed to produce deliverables related to the most critical issues in a timely manner. These critical issues include but are not limited to developing criteria for night/Instrument Meteorological Conditions (IMC) operations to avoid volcanic ash with coordinated efforts by manufacturers and airlines and to improve volcano monitoring and communication links to the aviation community noting that approximately 200 active volcanoes are not properly monitored and pose a hazard to aviation.

4.2.5 The meeting noted the International Airways Volcano Watch Operations Group (IAVWOPSG) Conclusion 5/24 which called for an ad-hoc working group to develop guidance (e.g. atmospheric transport and dispersion modeling) to assist Meteorological Watch Offices (MWO) in the issuance of SIGMET on radioactive cloud. Guidance would have to take into account that personnel at MWOs were not versed in dealing with radioactive clouds. In addition, radiation and health impacts would have to be considered by appropriate international organizations (e.g. threshold exposure rate considered unsafe could be used in the development of products). The IAVWOPSG/6 meeting determined further work would have to be undertaken in the development of guidance and products related to radioactive cloud (IAVWOPSG Conclusion 6/29 refers) and alternative provisions for radioactive cloud information such as regional or global centres should be considered (IAVWOPSG Conclusion 6/30 refers) which is an option that addresses issues such as the lack of SIGMET implementation in many regions, inconsistencies of SIGMET associated with FIR boundaries, and the lack of expertise on radioactive cloud at MWOs. Progress with these initiatives would be reported at the IAVWOPSG/7 meeting (March 2013).

4.2.6 The meeting discussed implementation of the International Tropical Cyclone Watch (ITCW) noting that Oman was active in the WMO Tropical Cyclone programme and that they have been impacted by cyclones in the recent years. SIGMET tests relating to tropical cyclone was discussed and provided in the para 4.2.8.

4.2.7 The meeting recalled MIDANPIRG/12 Conclusion 12/65 to finalize SIGMET test procedures and conduct regular SIGMET tests in the MID Region. Part a) of this conclusion has been completed (State letter dated 14 December 2010) with the adaptation of the MID SIGMET Test Procedures which was forwarded to States for implementation. The meeting noted that Parts b) and c) of this conclusion were ongoing in that MID States were expected to participate in conducting regular WS- and WV- SIGMET tests in 2011 and beyond and report to each MET Sub-Group meeting. Feedback would be provided on any identified deficiencies provided to States concerned in order to formulate corrective actions. The meeting reformulated MIDANPIRG Conclusion 12/65 to ascertain States continue their efforts in participating in SIGMET tests as well as continue improvements in the format and dissemination of SIGMET where deficiencies were identified. Given the aforementioned, the meeting agreed to the following draft Conclusion.

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DRAFT CONCLUSION 3/2- SIGMET TEST PARTICIPATION

That, States' MID SIGMET Test focal points be invited to participate in the bi-annual SIGMET tests conducted by the EUR Region and report any deficiencies at each MET SG meeting.

4.2.8 The meeting noted that one State in the MID Region participated in the Asia and Pacific (APAC) SIGMET test on tropical cyclone on 10 November 2010 and 8 November 2011 (State letter reference AN 10/12 – 11/221, dated 24 August 2011, sent to MID States on the Arabian Gulf and/or Arabian Sea), which was associated with MET SG/2 draft Conclusion 2/4 – to coordinate with Tropical Cyclone Advisory Centre (TCAC) – New Delhi. The intent was to improve the tropical cyclone advisories and warnings for aviation (MET SG draft Conclusion 2/5 refers). Noting that MIDANPIRG/12 Conclusions associated with these MET SG/2 draft Conclusions were not adopted since the associated State letters had been provided before the MIDANPIRG/12 meeting. The meeting noted that coordination between the APAC and EUR/NAT Offices on including the MID States in the invitation for the APAC WC SIGMET test had become routine. States were strongly encouraged to participate in the annual APAC SIGMET test on tropical cyclone.

4.2.9 The meeting recalled MIDANPIRG/12 Conclusion 12/66 to finalize the MID SIGMET Guide. The meeting recalled that the working draft was circulated to States in January 2010 and finalized in December 2010, except for the WMO Abbreviated Header Lines (AHL) for SIGMET. Since that time, the WMO AHL for SIGMET for Saudi Arabia was received and included in the draft MID SIGMET Guide as provided in **Appendix 4.2A** to the Report on Agenda Item 4.2. The meeting noted that only two entries have been completed and States strongly encouraged to provide this information in order to fully complete the MID SIGMET Guide. Given the above, the meeting agreed to the following draft Conclusion.

DRAFT CONCLUSION 3/3- UPDATE TO THE MID REGIONAL SIGMET GUIDE

That, States be invited to provide WMO AHL for SIGMET for inclusion in the MID Regional SIGMET Guide.

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Working Draft of the

MID SIGMET GUIDE

FIRST EDITION
October 2010

PREPARED BY THE MIDDLE EAST OFFICE OF ICAO

First Edition
October 2010

RECORD OF AMENDMENTS AND CORRIGENDA

Amendments			
No.	Date of issue	Date entered	Entered by

Corrigenda			
No.	Date of issue	Date entered	Entered by

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PART 1. INTRODUCTION

1.1 The main purpose of this document is to provide guidance for standardization and harmonization of the procedures and formats related to the occurrence or expected occurrence of specified hazardous en-route weather conditions which may affect the safety of aircraft and low-level aircraft operations, known as SIGMET information. The guidance is complementary to the Annex 3 standards and recommended practices (SARPS) regarding SIGMET, and to the SIGMET related provisions of the MID ANP/FASID (ICAO Doc 9708).

1.2 In respect of SIGMET messages, this document includes guidance concerning SIGMET messages for significant en-route weather phenomena, volcanic ash and tropical cyclone SIGMET messages.

1.3 ICAO provisions concerning the issuance and dissemination of SIGMET information are contained in:

- Annex 3 - *Meteorological Service for International Air Navigation*, Part I, Chapter 3, paragraphs 3.4 – 3.7, Chapter 7, paragraphs 7.1 – 7.2, and Part II, Appendix 6.

- MID Basic ANP, Part VI and FASID Table MET 1B , MET 2B, MET 3A and MET 3B.

- Annex 11 - *Air Traffic Services*, Chapter 4, paragraph 4.2.1 and Chapter 7, paragraph 7.1.

- PANS – *Air Traffic Management*, Doc 4444, Chapter 9, paragraph 9.1.3.2.

Additional guidance on the SIGMET procedures is contained in the *Manual of Aeronautical Meteorological Practice*, Doc 8896, and *Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services*, Doc 9377.

1.4 The SIGMET Guide is intended mainly to assist the meteorological watch offices (MWOs) in the MID Region in preparing and disseminating SIGMET information. It provides detailed information on the format of SIGMET messages as specified by Annex 3. The explanations of the format are accompanied by a number of examples based on region-specific meteorological phenomena. The guide also provides information regarding the necessary coordination between the MWOs, the ATS units and the pilots, and their respective responsibilities.

1.5 This document is prepared by the ICAO MID Regional Office. It should be reviewed and updated regularly in order to be kept in line with the ICAO SARPs and regional procedures. This first edition of the MID SIGMET Guide takes into account changes to SIGMET provisions resulting from the applicability of Amendment 75 to Annex 3 on 18 November 2010.

PART 2. RESPONSIBILITIES AND COORDINATION

2.1 General

2.1.1 SIGMET is warning information; hence it is of highest priority among other types of OPMET information provided to aviation users. The primary purpose of SIGMET is for in-flight service, which requires timely transmission of the SIGMET messages to pilots by the ATS units and/or through VOLMET and D-VOLMET.

2.1.2 Airlines are the main users of the SIGMET information. Pilots contribute to the effectiveness of the SIGMET service through issuance of special air-reports to the ATS units. Special air-reports are among the most valuable sources of information for the Meteorological Watch Offices (MWO) in the preparation of SIGMET. The ATS units receiving special air-reports should forward them to the associated MWOs without delay.

2.1.3 As seen from the above, the SIGMET service involves MET, ATS and pilots. In order for the SIGMET service to be effective, close coordination between these parties, as well as mutual understanding of the needs and responsibilities, should be maintained.

2.1.4 For the special case of SIGMET for volcanic ash, the MWOs are provided with advisories from the volcanic ash advisory centres (VAAC) designated in the Regional ANP.

2.1.5 SIGMET is also used for the flight planning. This requires global dissemination of SIGMET through the international OPMET data banks and the satellite broadcasts: ISCS and SADIS. SIGMET should also be distributed to the World Area Forecast Centres (WAFC) London and Washington for use in the preparation of the significant weather (SIGWX) forecasts.

2.1.6 In the next paragraphs, the main responsibilities and coordination links between MET, ATS and pilots are described.

2.2 Meteorological Watch Office – responsibilities and procedures related to SIGMET

2.2.1 SIGMET information is issued by the MWO in order to provide timely warning for the occurrence or expected occurrence of specified en-route weather phenomena, affecting the safety of the flight operations in the MWO's area of responsibility (AOR). SIGMET provides information concerning the location, extent, intensity and expected evolution of the specified phenomena.

2.2.2 Information about the provision of SIGMET service, including details on the designated MWO(s), should be included in the State's Aeronautical Information Publication (AIP) as specified in Annex 15, Aeronautical Information Service, Appendix 1, GEN 3.5.8.

2.2.3 All designated MWOs in the MID Region are listed in the FASID Table MET 1B of the MID FASID.

2.2.4 If, for some reason, a MWO is not able to meet its obligations, including the provision of SIGMET, arrangements have to be made by the meteorological authority concerned, that another MWO takes over these responsibilities for a certain period of time. Such delegation of responsibilities has to be notified by a NOTAM and a letter to the ICAO Regional Office.

2.2.5 Since the MWO is normally not a separate administrative unit, but part of the functions of an aerodrome meteorological office or another meteorological office, the meteorological authority concerned should ensure that the MWO obligations and responsibilities are clearly defined and assigned to the unit designated to serve as MWO. The corresponding operational procedures have to be established and the meteorological staff should be trained accordingly.

2.2.6 In preparing SIGMET information, the MWOs have to strictly follow the format determined in Annex 3 (detailed format description is provided in Appendix 6, Table A6-1 of Annex 3). SIGMET should be issued only for those weather phenomena listed in Annex 3 and only when specified criteria for intensity and spatial extent are met.

2.2.7 The MWOs should be adequately equipped in order to identify, analyse and forecast (to the extent required) those phenomena for which SIGMET is required. The MWO should make use of all available sources of information, such as special air-reports, information from meteorological satellites and weather radars, numerical predictions, etc.

2.2.8 On receipt of a special air-report from the associated ACC or FIC, the MWO should :

a) issue the corresponding SIGMET information; or

b) send the special air-report for on-ward transmission in case that the issuance of SIGMET information is not warranted (e.g., the phenomenon reported is of transient nature).

2.2.9 Appropriate telecommunication means have to be available at the MWO in order to ensure timely dissemination of SIGMETs according to a dissemination scheme, which includes transmission to:

- local ATS users;
- aeronautical MET offices within the AOR;
- other MWOs concerned (it should be ensured that SIGMET is sent to all MWOs whose AORs are, at least partly, within the 925 km (500 NM) range from the reported phenomenon);
- centres designated for transmission of VOLMET or D-VOLMET where SIGMET is required for transmission;
- the responsible Regional OPMET Centres (ROC) and international OPMET data banks (it should be arranged through the EUR RODEX scheme, that SIGMETs are sent to the designated OPMET data banks in other ICAO Regions, to the WAFCs and to the uplink stations of SADIS and ISCS);
- responsible TCAC or VAAC (if applicable) according to FASID Table MET 3A and MET 3B respectively; and

2.2.10 In issuing SIGMET for volcanic ash or tropical cyclone, the MWOs should take into consideration the advisory information received from the responsible VAAC or TCAC. In addition to the information received from the VAAC or TCAC, the MWOs may use available complementary information from other reliable sources. In such a case the responsibility for this additional information would lie completely on the MWO concerned.

2.3 Responsibilities of ATS units

2.3.1 Close coordination should be established between the MWO and the corresponding ATS unit (ACC or FIC), including arrangements in order to ensure:

- receipt without delay and display at the relevant ATS units of SIGMETs issued by the associated MWO;

- receipt and display at the ATS unit of SIGMETs issued by MWOs responsible for the neighbouring FIRs /ACCs if these SIGMETs are required according to paragraph 2.3.4 below ; and

- transmission without delay of special air-reports received through voice communication to the associated MWO.

2.3.2 SIGMET information should be transmitted to aircraft with the least possible delay on the initiative of the responsible ATS unit, by the preferred method of direct transmission followed by acknowledgement or by a general call when the number of aircraft would render the preferred method impracticable.

2.3.3 SIGMET information passed to aircraft should cover a portion of the route up to a flying time of two hours ahead of the aircraft.

2.3.4 Air traffic controllers should ascertain whether any of the currently valid SIGMETs may affect any of the aircraft they are controlling, either within or outside their AOR up to a flying time of two hours ahead of the current position of the aircraft. If this is the case, the controllers should transmit the SIGMET promptly to the aircraft-in-flight likely to be affected.

2.3.5 The ATS units have to transmit to the concerned aircraft-in-flight the special air reports received, for which SIGMET has not been issued. Once a SIGMET for the weather phenomenon reported in the special air report is made available, this obligation of the ATS unit expires.

2.4 Responsibilities of pilots

2.4.1 Timely issuance of SIGMET information is largely dependent on the prompt receipt by MWOs of special air reports. That is why, it is essential that pilots prepare and transmit such reports to the ATS units whenever any of the specified en-route conditions are encountered or observed.

2.4.2 It should be emphasized that, even when automatic dependent surveillance (ADS) is being used for routine air reports, pilots should continue to make special air reports.

2.5 Coordination between MWOs and the VAACs and TCACs

2.5.1 Amongst the phenomena for which SIGMET information is required, the volcanic ash clouds and tropical cyclones are of particular importance for the planning of long-haul flights.

2.5.2 Since the identification, analysis and forecasting of volcanic ash and tropical cyclones requires considerable technical and human resource, normally not available at each MWO, the Volcanic Ash Advisory Centres (VAAC) and Tropical Cyclone Advisory Centres (TCAC) have been designated to provided VA and TC advisories to the users and assist the MWOs in the preparation of the forecast part of the SIGMETs for those phenomena. Close coordination should be established between the MWO and its responsible TCAC and/or VAAC.

2.5.3 Information regarding the VAACs and TCACs serving the MID Region with their corresponding areas of responsibility and lists of MWOs to which advisories are to be sent is provided in the MET FASID Tables MET 3A and MET 3B.

2.5.4 TC and VA advisories are required for global exchange through the satellite distribution systems, SADIS and ISCS. They are used by the operators during the pre-flight planning. Nevertheless, it should be emphasized that SIGMET information is still of higher operational status and is required especially for in-flight re-planning. SIGMETs should be transmitted to aircraft-in-flight through voice communication or VOLMET or D-VOLMET thus providing vital information for making in-flight decisions regarding large-scale route deviations due to volcanic ash clouds or tropical cyclones.

PART 3. RULES FOR PREPARATION OF SIGMET INFORMATION

3.1 General

3.1.1 SIGMET information is prepared in abbreviated plain language using approved ICAO abbreviations, a limited number of non-abbreviated words, geographical names and numerical values of self-explanatory nature. All abbreviations and words to be used in SIGMET are given in **Appendix A.**

3.1.2 The increasing use of automated systems for handling MET information by the MET offices and the aviation users makes it essential that all types of OPMET information, including SIGMET, are prepared and transmitted in the prescribed standardized formats. Therefore, the structure and format of the SIGMET message, as specified in Annex 3, Part II, Appendix 6, should be followed strictly by the MWOs. Appendix 6 provides detailed information regarding the content and order of elements in the SIGMET message.

3.1.3 SIGMET is intended for transmission to aircraft in flight either by ATC or by VOLMET or D-VOLMET. Therefore, SIGMET messages should be kept short and clear, without additional descriptive text other than that prescribed in Annex 3.

3.1.4 After issuing a SIGMET, the MWO maintain watch over the evolution of the phenomenon for which the SIGMET has been issued and issue a new updated SIGMET when necessary. VA SIGMETs have to be updated at least every 6 hours.

3.1.5 SIGMETs should be promptly cancelled when the phenomenon is no longer occurring or no longer expected to occur in the MWO's area of responsibility. The SIGMET is understood to cancel itself automatically at the end of its validity period. If the phenomenon persists a new SIGMET message for a further period of validity has to be issued.

3.2 Types of SIGMET

3.2.1 Although Annex 3 provides one general SIGMET format, which encompasses all weather phenomena, it is convenient when describing the structure and format of the messages to distinguish between three types of SIGMET, as follows:

- SIGMET for en-route weather phenomena other than volcanic ash or tropical cyclones (this includes: TS, TURB, ICE, MTW, DS and SS); this SIGMET will be referred as WS SIGMET;
- SIGMET for volcanic ash (VA SIGMET) (to be referred also as WV SIGMET)
- SIGMET for tropical cyclones (TC SIGMET (to be referred also as WC SIGMET)).

3.2.2 The three types of SIGMET can be identified through the data type designator included in the WMO abbreviated heading of the SIGMET message, as explained in the following paragraphs.

3.3 Structure of the SIGMET message

3.3.1 A SIGMET message consists of:

- *WMO heading* – all SIGMETs are preceded by an appropriate WMO heading;
- *First line*, containing location indicators of the relevant ATS unit and MWO, sequential number and period of validity;
- *Meteorological part*, containing meteorological information concerning the phenomenon for which the SIGMET is issued;

3.3.2 The first two parts of the SIGMET message are common for all types of SIGMETs. The content and format of the meteorological part is different depending on the type of SIGMET. Therefore, in the following paragraphs, the meteorological part of the WS, WV and WC types of SIGMET is described separately.

3.4 Format of SIGMET

Note: In the following text, square brackets - [ ] - are used to indicate an optional or conditional element, and angled brackets - < > - for symbolic representation of a variable element, which in the real SIGMETs accepts concrete numerical values.

3.4.1 WMO Header

$T_1T_2A_1A_2$ii CCCC YYGGgg

3.4.1.1 The group **$T_1T_2A_1A_2$ii** is the bulletin identification for the SIGMET message. It is constructed in the following way:

T_1T_2	Data type designator	**WS** – for SIGMET **WV** – for SIGMET for volcanic ash **WC** – for SIGMET for tropical cyclone
A_1A_2	Country or territory designators	Assigned according to Table C1, Part II of Manual on the Global Telecommunication System, Vol I – Global Aspects (WMO - No. 386)
ii	Bulletin number	Assigned on national level according to paragraph 2.3.2.2, Part II of Manual on the Global Telecommunication System, Vol I – Global Aspects (WMO - No. 386)

3.4.1.2 **CCCC** is the ICAO location indicator of the communication centre disseminating the message (could be the same as the MWO).

3.4.1.3 **YYGGgg** is the date/time group, where YY is the date and GGgg is the time in hours and minutes UTC, of the transmission of the SIGMET (normally this is the time assigned by the AFTN centre which disseminates the message).

3.4.1.4 It is recommended to assign a unique WMO header for each SIGMET bulletin per FIR, CTA or UIR. The distinction between different SIGMET bulletins issued by the State's MWOs should be through the respective data type designator (T_1T_2) and bulletin number (ii**).**

Examples (fictitious AHL):

WSOM50 OOMS 231100
WVOM50 OOMS 011400
WCOM50 OOMS 161700

Note: A table with WMO SIGMET headers used by the MID Meteorological Watch Offices is included in ***Appendix B***

3.4.2 First line of SIGMET

CCCC SIGMET [nn]n VALID YYGGgg/YYGGgg CCCC-

3.4.2.1 The meaning of the groups in the first line of the SIGMET is as follows:

CCCC	ICAO location indicator of the ATS unit serving the FIR or CTA to which the SIGMET refers
SIGMET	Message identifier
[nn]n	Daily sequence number (see paragraph 3.4.2.2)
VALID	Period of validity indicator
YYGGgg/YYGGgg	Validity period of the SIGMET given by date/time group of the beginning and date/time group of the end of the period (see paragraph 3.4.2.3)
CCCC-	ICAO location indicator of the MWO originating the message and – (hyphen, without space, to separate the preamble from the text)

3.4.2.2 The numbering of SIGMETs should start every day at 0001 UTC. The sequence number should consist of up to three symbols and may be a combination of letters and numbers, such as:

- 1, 2, …
- 01, 02, …
- A01, A02, …

Examples:

OOMM SIGMET 1 VALID 121100/121500 OOMS-
OEJD SIGMET 01 VALID 231300/231700 OEJD-

Note 1: No other combinations should be used, like "CHARLIE 05" or "NR7".

Note 2: Correct numbering of SIGMET is very important since the number is used for reference in the communication between ATC and pilots and in VOLMET and D-VOLMET.

3.4.2.3 The following has to be considered when determining the validity period:

- the period of validity of WS SIGMET should not exceed 4 hours;
- the period of validity of WV and WC SIGMET should be up to 6 hours;
- in case of a SIGMET for an observed phenomenon the filing time (date/time group in the WMO heading) should be same or close to the date/time group indicating the start of the SIGMET validity period;
- when the SIGMET is issued for an expected (forecast) phenomenon:
  - the beginning of validity period should be the time of expected commencement (occurrence) of the phenomenon;
  - the lead time (the time of issuance of the SIGMET) should be not more than 4 hours before the start of validity period (i.e., expected time of occurrence of the phenomenon); for VA and TC SIGMETs the lead time may be up to 12 hours.

3.4.2.4 The period of validity is the period during which the SIGMET is valid for transmission to aircraft in flight.

Examples:

1. SIGMET for an observed phenomenon:

WSSD20 OEJD 231300
OEJD SIGMET 01 VALID 231300/231700 OEJD-

2. SIGMET for a forecast phenomenon (expected time of occurrence 1530)

WSSD20 OEJD 231300
OEJD SIGMET 01 VALID 231530/231930 OEJD-

3.4.3 *Format of the meteorological part of SIGMET messages for weather phenomena other than VA and TC*

3.4.3.1 The meteorological part of a SIGMET consists of eight elements as shown in the table below.

Start of the second line of the message

1	2	3	4	5	6
Location indicator of the FIR/UIR or CTA	Name of the FIR or UIR or FIR/UIR or CTA	Description of the phenomenon	Observed or forecast	Location	Level
<CCCC>	<name> FIR [UIR, FIR/UIR, CTA]	<Phenomenon>	OBS [AT <GGggZ>] or FCST [AT <GGggZ>]	Geographical location of the phenomenon given by coordinates, or geographical objects, or location indicators	FL<nnn/nnn> or [SFC/]FL<nnn> or [SFC/]<nnnn>M or [SFC/]<nnnn>FT or TOP FL<nnn> or [TOP] ABV FL<nnn>

7	8
Movement or expected movement	Changes in intensity
MOV <direction, speed> KMH[KT], or STNR	INTSF or WKN or NC

3.4.3.1.1 Location indicator and name of the FIR, UIR, FIR/UIR or CTA

location indicator <name> FIR
or
location indicator <name> UIR
or
location indictor <name> FIR/UIR
or
location indicator <name> CTA

Example:

OOMM MUSCAT FIR

3.4.3.1.2 Phenomenon

The description of the phenomenon consists of a qualifier and a phenomenon abbreviation. SIGMET shall be issued only for the following phenomena (with only one phenomenon in each SIGMET):

at cruising levels (irrespective of altitude):

- thunderstorms – if they are OBSC, EMBD, FRQ or SQL with or without hail;
- turbulence – only SEV
- icing – only SEV with or without FZRA
- mountain waves – only SEV
- dust storm – only HVY
- sand storm – only HVY
- radioactive cloud – RDOACT CLD

The appropriate abbreviations and combinations thereof, and their meaning are given in **Appendix C**.

3.4.3.1.3 Indication if the phenomenon is observed or forecast

OBS [AT <GGggZ>]
or
FCST [AT <GGggZ>]

The indication whether the information is observed or forecast is given by the abbreviations OBS and FCST. OBS and FCST are optionally followed by a time group in the form AT GGggZ, where GGgg is the time of the observation or forecast in hours and minutes UTC. If the exact time of the observation or forecast is not known the time is not included.

Examples:

OBS AT 0140Z
FCST AT 0200Z

3.4.3.1.4 Location of the phenomenon

The location of the phenomenon is given with reference to geographical coordinates (latitude and longitude) or with reference to geographical features well known internationally. The MWOs should try to be as specific as possible in reporting the location of the phenomenon and, at the same time, to avoid overwhelming geographical information, which may be difficult to process or perceive.

The following are the most common ways to describe the location of the phenomenon:

- Indication of a part of the FIR with reference to latitude:
  N OF or S OF <Nnn[nn]> or <Snn[nn]>

- indication of a part of the FIR with reference to a longitude:
  E OF or W OF <Ennn[nn]> or <Wnnn[nn]>

- indication of a part of the FIR with reference to a latitude and longitude:
  any combination of the above two cases;

- with reference to a location with ICAO location indicator CCCC (normally, this should be the case in a SIGMET based on a special air-report in which the reported phenomenon is given with reference to an airport or another object with an ICAO location indicator CCCC), or

- with reference to geographical features well known internationally.

More details on reporting of the location of the phenomenon are given in Appendix 6 to Annex 3 and in **Appendix D** to this Guide.

3.4.3.1.5 Flight level or altitude and extent

[SFC/]FL<nnn>
or FL<nnn/nnn>
or [SFC/]<nnnn>M
or [SFC/]<nnnn>FT
or TOP FL<nnn>
or [TOP] ABV FL<nnn>

The location or extent of the phenomenon in the vertical is given by one or more of the above abbreviations, as follows:

- reporting of single level – **FL<nnn>**;
- reporting of a layer – **SFC/FL<nnn>, SFC/<nnnn>M, or SFC/<nnnn>FT**, where the lower level is the surface and the upper level is a flight level, an altitude in metres or an altitude in feet respectively;
- reporting a layer using flight levels – **FL<nnn/nnn>**, where the lower flight level is reported first; this is used particularly in reporting turbulence and icing;
- reporting the top of a phenomenon with reference to one flight level – **TOP FL<nnn>;**
- reporting a phenomenon with reference to one flight level and the abbreviation ABV – **ABV FL<nnn>;**
- reporting the top of a phenomenon with reference to one flight level and the abbreviation ABV – **TOP ABV FL<nnn>;**

Examples:

EMBD TS … TOP ABV FL340
SEV TURB … FL180/210
SEV ICE … SFC/FL150
SEV MTW … FL090

3.4.3.1.6 Movement

MOV <direction> <speed> KMH[KT]
or
STNR

Direction of movement is given with reference to one of the sixteen points of compass. Speed of movement is given in KMH or KT. The abbreviation STNR is used if no significant movement is expected.

Examples:

MOV NW 30KMH
MOV NNW 30KMH
MOV E 25KT

3.4.3.1.7 Expected changes in intensity

The expected evolution of the phenomenon's intensity is indicated by one of the following abbreviations:

INTSF – intensifying
WKN – weakening
NC – no change

3.4.4 Structure of the meteorological part of VA SIGMET

3.4.4.1 The general structure of the meteorological part of the SIGMET message is given in the table below:

Start of the second line of the message

1	2	3		4
Location indicator of the FIR/UIR or CTA	Name of the FIR or UIR or FIR/UIR or CTA	Volcano		Volcanic ash cloud
		Name	Location	
<CCCC>	<name> FIR [UIR, FIR/UIR, CTA]	[VA ERUPTION] [MT <name>]	[PSN <position>]	VA CLD OBS [AT <GGggZ>] or VA CLD FCST [AT GGggZ]

5			6
Extent of the cloud			Expected movement
Location	Vertical	Horizontal	
Location (referring to latitude and longitude (in degrees and minutes) or locations or geographic features well known internationally)	FL<nnn/nnn>	[APRX <nnn>KM BY <nnn>KM] or [APRX <nnn>NM BY <nnn>NM]	MOV <direction> <speed>

7	
Volcanic ash cloud forecast at the end of the period of validity	
FCST time	Position
FCST <GGggZ>	VA CLD APRX <lat,lon> - <lat,lon> - …

3.4.4.2 Name and location of the volcano and/or indicator for VA cloud

[VA ERUPTION] [MT <name>] [PSN <lat,lon>] VA CLD
or
VA CLD

3.4.4.2.1 The description of the volcano injecting volcanic ash consists of the following elements:

- the term **VA ERUPTION** is used when the SIGMET is issued for a known volcanic eruption;
- geographical/location information:
  i. if the name of the volcano is known, it is given by the abbreviation **MT** – mountain, followed by the name, e.g. **MT RABAUL**
  ii. the position of the volcano is given by the abbreviation **PSN**, followed by the latitude and longitude in degrees and minutes, e.g. **PSN N3520 E09040**
- this section of the message ends with the abbreviation **VA CLD** – volcanic ash cloud.

3.4.4.2.2 If the FIR is affected by a VA cloud with no information about the volcanic eruption which generated the cloud, only the abbreviation **VA CLD** shall be included in the SIGMET.

3.4.4.3 Time of VA CLD observation or forecast

VA CLD OBS [AT <GGgg>Z]
or
VA CLD FCST [AT <GGgg>Z]

The time of observation is taken from the source of the observation – satellite image, special air- report, report from a ground volcano logical station, etc. If the VA cloud is not yet observed over the FIR but the volcanic ash advisory received from the responsible VAAC indicates that the cloud is affecting the FIR after certain time, SIGMET shall be issued, and the abbreviation VA CLD FCST [AT <GGgg>Z] shall be used.

Examples:

VA CLD OBS AT 0100Z
VA CLD FCST AT 1200Z

3.4.4.4 Level and extent of the volcanic ash cloud

<P1(lat,lon) - P2(lat,lon) - … > FL<nnn/nnn> [APRX <nnn>KM BY <nnn>KM] or
<P1(lat,lon) - P2(lat,lon) - … > FL<nnn/nnn> [APRX <nnn>NM BY <nnn>NM]

<P1(lat,lon) – P2(lat,lon) - … >	Approximate description of the VA cloud by a number of points given with their geographical coordinates[1]; the points shall be separated by hyphen
FL<nnn/nnn>	The layer of the atmosphere where the VA cloud is situated, given by two flight levels from the lower to the upper boundary of the cloud
[APRX <nnn>KM BY <nnn>KM] or [APRX <nnn>NM BY <nnn>NM]	Approximate horizontal extent of the VA cloud in KM or NM

If the VA cloud spreads over more than one FIR, separate SIGMETs shall be issued by all MWOs whose FIRs are affected. In such a case, the description of the volcanic ash cloud by each MWO should encompass the part of the cloud, which lies over the MWO's area of responsibility. The MWOs should try to keep the description of the volcanic ash clouds consistent by checking the SIGMET messages received from the neighbouring MWOs.

Examples:

N0100 E09530 – N1215 E11045 FL100/180 APRX 10KM BY 50KM

S0530 E09300 – N0100 E09530 – N1215 E11045 FL 150/210

3.4.4.5 Movement or expected movement of the VA cloud

MOV <direction> <speed>

The direction of movement is given by the abbreviation **MOV** – moving, followed by one of the sixteen points of compass: N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW, NNW. The speed of movement is given in KMH or KT.

Examples:

MOV E 35 KMH
MOV SSW 20 KT
STNR

[1] The format of geographical coordinates reporting in SIGMET is given in **Appendix D.**

3.4.4.6 Forecast position of the VA cloud at the end of the validity period of the SIGMET message

FCST <GGggZ> VA CLD APRX <P1(lat,lon) - P2(lat,lon) - … >

3.4.4.6.1 The **GGggZ** group should indicate the end of the validity period given in the first line of the SIGMET message. The description of the expected position of the volcanic ash cloud is given by a number of points forming a simplified geometrical approximation of the cloud.

3.4.4.6.2 In describing the VA cloud, up to four different layers can be used, indicated by flight levels in the form FL<nnn/nnn>. The use of more than one level is necessary when the wind direction changes with height which causes the VA cloud to spread into different directions at different heights.

3.4.5 ***Structure of the meteorological part of TC SIGMET***

3.4.5.1 The general structure of the meteorological part of the TC SIGMET is given in the table below:

Start of the second line of the message

1	2	3	4		5
Location indicator of the FIR/UIR or CTA	Name of the FIR or UIR or FIR/UIR or CTA	TC name	Observed or forecast		Extent
			Time	Location of TC centre	
<CCCC>	<name> FIR [UIR, FIR/UIR, CTA]	TC <name> or TC NN	OBS [AT <GGgg>Z] or FCST [AT <GGgg>Z]	<lat,lon>	CB TOP [ABV or BLW] FL<nnn> WI <nnn> KM[NM] OF CENTRE

6	7	8
Expected movement	Intensity change	Forecast of the centre position at the end of the validity period
MOV <direction> <speed> KMH[KT] or STNR	INTSF or WKN or NC	FCST <GGgg>Z TC CENTRE <lat,lon>

3.4.5.2 Name of the tropical cyclone

TC <name>
TC NN

Note: NN used for unnamed tropical cyclones.

The description of the tropical cyclone consists of the abbreviation TC followed by the international name of the tropical cyclone given by the corresponding WMO RSMC. If the TC has not yet been given a name, the abbreviation NN shall be used.

Examples:

TC GLORIA
TC 04B
TC NN

3.4.5.3 Time of observation or indication of forecast

OBS [AT <GGgg>Z]
or
FCST [AT <GGgg>Z]

The time in UTC is given in hours and minutes, followed by the indicator Z. Normally, time is taken from own observations or from a TC advisory received from the responsible TCAC. If the TC is not yet observed in the FIR but the tropical cyclone advisory received from the responsible TCAC, or any other TC forecast used by the MWO, indicates that the TC is going to affect the FIR within the next 12 hrs, SIGMET should be issuedand the abbreviation FCST should be used.

Examples:
OBS AT 2330Z
FCST AT 1400Z

3.4.5.4 Location of the TC centre

<location>

The location of the TC centre is given by its lat, lon coordinates in degrees and minutes.

Examples:

N1535 E14230

3.4.5.5 Vertical and horizontal extent of the CB cloud formation around TC centre

CB TOP [ABV or BLW] <FLnnn> WI <nnnKM or nnnNM> OF CENTRE

Examples:

CB TOP ABV FL450 WI 200NM OF CENTRE
CB TOP FL500 WI 250KM OF CENTRE

3.4.5.6 Movement or expected movement

MOV <direction> <speed>KMH[KT]
or
STNR

Direction of movement is given with reference to one of the sixteen points of compass. Speed is given in KMH or KT. The abbreviation STNR is used if no significant movement is expected.

Examples:

MOV NW 30KMH
MOV NNW 30KMH
MOV E 25KT

3.4.5.7 Intensity change

The expected change of the intensity of the tropical cyclone is indicated by one of the following abbreviations:

INTSF – intensifying
WKN – weakening
NC – no change

3.4.5.8 Forecast location of the TC centre at the end of the validity period of the SIGMET Message

FCST <GGgg>Z TC CENTRE <location>

Normally, the time given by GGggZ should be the same as the end of validity period indicated in the first line of the SIGMET message. Since the period of validity is up to 6 hours (normally, 6 hours), this is a 6-hour forecast of the position of the TC centre.

The location of the TC centre is given by its lat, lon coordinates following the general rules of reporting lat, lon information provided in **Appendix D** to this Guide.

Examples:

FCST 1200Z TC CENTRE N1430 E12800

3.4.6 ***Cancellation of SIGMET***

3.4.6.1 If, during the validity period of a SIGMET, the phenomenon for which the SIGMET had been issued is no longer occurring or no longer expected, this SIGMET should be cancelled by the issuing MWO. The cancellation is done by issuing the same type of SIGMET with the following structure:

- WMO heading with the same data type designator;
- first line, including the next sequence number followed by a new validity period, and
- second line, which contains the location indicator and name of the FIR or CTA, the combination CNL SIGMET, followed by the sequential number of the original SIGMET and its validity period.

Examples:

1. Cancellation of a WS or WC SIGMET with the following first line

WSXY31 YUSO 101200
YUDD SIGMET 5 VALID 101200/101600 YUSO-
YUDD SHANLON FIR …

Cancellation SIGMET:

WSXY31 YUSO 101430
YUDD SIGMET 6 VALID 101430/101600 YUSO-
YUDD SHANLON FIR CNL SIGMET 5 101200/101600=

2. Cancellation of a VA SIGMET

WVXY31 YUSO 131518
YUDD SIGMET 03 VALID 131515/132115 YUSO-
YUDD SHANLON FIR …

Cancellation SIGMET:

WVXY31 YUSO 132000
YUDD SIGMET 04 VALID 132000/132115 YUSO-
YUDD SHANLON FIR CNL SIGMET 03 13151500/132115 VA MOV TO YUDO FIR=

APPENDIX A

List of the abbreviations and decode used in SIGMET

Abbreviation	Decode
ABV	Above
AND*	And
APRX	Approximate or approximately
AT	At *(followed by time)*
BLW	Below
BY*	By
CB	Cumulonimbus
CENTRE*	Centre *(used to indicate tropical cyclone centre)*
CLD	Cloud
CNL	Cancel *or* cancelled
CTA	Control area
DS	Duststorm
E	East *or* eastern longitude
EMBD	Embedded in layer *(to indicate CB embedded in layers of other clouds)*
ENE	East-Northeast
ERUPTION*	Eruption *(used to indicate volcanic eruption)*
ESE	East=Southeast
FCST	Forecast
FIR	Flight information region
FL	Flight level
FRQ	Frequent
FZRA	Freezing rain
GR	Hail
HVY	Heavy *(used to indicate intensity of weather phenomena)*
ICE	Icing
INTSF	Intensify *or* intensifying
ISOL	Isolated
KM	Kilometres
KMH	Kilometres per hour
KT	Knots
LINE	Line
MOD	Moderate *(used to indicate intensity of weather phenomena)*
MOV	Move *or* moving *or* movement
MPS	Metres per second
MT	Mountain
MTW	Mountain waves
N	North *or* northern latitude
NC	No change
NE	North-east
NM	Nautical miles
NNE	North-Northeast
NNW	North-Northwest
NW	North-west
OBS	Observe *or* observed *or* observation
OBSC	Obscure *or* obscured *or* obscuring
OCNL	Occasional *or* occasionally
OF*	Of … *(place)*
PSN	Position
RA	Rain
RDOACT*	Radioactive

Abbreviation	Decode
S	South *or* southern latitude
SE	South-east
SEV	Severe *(used e.g. to qualify icing and turbulence reports)*
SIGMET	Information concerning en-route weather phenomena which may affect the safety of aircraft operations
SQL	Squall line
SS	Sandstorm
SSE	South-Southeast
SSW	South-Southwest
STNR	Stationary
SW	South-west
TC	Tropical cyclone
TO	To … *(place)*
TOP	Cloud top
TS	Thunderstorm
TURB	Turbulence
UIR	Upper flight information region
VA	Volcanic ash
VALID*	Valid
W	West *or* western longitude
WI	Within
WID	Width
WNW	West-Northwest
WSW	West-Southwest
Z	Coordinated Universal Time *(used in meteorological messages)*

** not in the ICAO Doc 8400, ICAO Abbreviations and Codes*

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APPENDIX B

List of MID SIGMET (WS, WV and WC) headers

State	MWO name (Doc 7910)	MWO Loc. Ind.	WS AHL	WV AHL	WC AHL	FIR Name (Doc 7910)	FIR Loc. Ind.	ATSU serving the FIR
BAHRAIN	BAHRAIN INTERNATIONAL	OBBI	WS[AAii] [CCCC]	WV[AAii] [CCCC]	WC[AAii] [CCCC]	BAHRAIN	OBBB	OBBB
EGYPT	CAIRO/INTL	HECA	WS[AAii] [CCCC]	WV[AAii] [CCCC]	N/A	CAIRO	HECC	HECC
IRAN (ISLAMIC REPUBLIC OF)	TEHRAN/MEHRABAD INTL	OIII	WS[AAii] [CCCC]	WV[AAii] [CCCC]	WC[AAii] [CCCC]	TEHRAN	OIIX	OIIX
IRAQ	BAGHDAD INTERNATIONAL AIRPORT	ORBI	WS[AAii] [CCCC]	WV[AAii] [CCCC]	N/A	BAGHDAD	ORBB	ORBS
~~ISRAEL~~	~~TEL AVIV/BEN GURION AIRPORT~~	~~LLBG~~	~~WS[AAii] [CCCC]~~	~~WV[AAii] [CCCC]~~	~~N/A~~	~~TEL AVIV~~	~~LLLL~~	~~LLAD~~
JORDAN	AMMAN/QUEEN ALIA	OJAI	WS[AAii] [CCCC]	WV[AAii] [CCCC]	N/A	AMMAN	OJAC	OJAC
KUWAIT	KUWAIT/INTL AIRPORT	OKBK	WSKW10 OKBK	WVKW10 OKBK	WCKW10 OKBK	KUWAIT	OKAC	OKAC
LEBANON	BEIRUT/BEIRUT INTL	OLBA	WS[AAii] [CCCC]	WV[AAii] [CCCC]	N/A	BEIRUT	OLBB	OLBA
OMAN	MUSCAT/SEEB INTL	OOMS	WS[AAii] [CCCC]	WV[AAii] [CCCC]	WC[AAii] [CCCC]	MUSCAT	OOMM	OOMM
SAUDI ARABIA	JEDDAH/KING ABDULAZIZ INTL	OEJN	WSSD20 OEJD	WVSD20 OEJD	WCSD20 OEJD	JEDDAH	OEJD	OEJD
SYRIAN ARAB REPUBLIC	DAMASCUS/INTL	OSDI	WS[AAii] [CCCC]	WV[AAii] [CCCC]	N/A	DAMASCUS	OSTT	OSDI
UNITED ARAB EMIRATES	ABU DHABI INTERNATIONAL	OMAA	WS[AAii] [CCCC]	WV[AAii] [CCCC]	WC[AAii] [CCCC]	EMIRATES	OMAE	OMAE
YEMEN	SANAA/INTL	OYSN	WS[AAii] [CCCC]	WV[AAii] [CCCC]	WC[AAii] [CCCC]	SANAA	OYSC	OYSN

Note 1: Qatar is not indicated in the above table, since it has no FIR area if responsibility.

Note 2: The AHL for each of the WS, WV and WC SIGMETs (highlighted above) is to be completed based on information provided by the State(s) concerned following consultation.

APPENDIX C

Meteorological phenomena to be reported by SIGMET

Phenomenon	**Description**	**Meaning**
Thunderstorm (TS)	OBSC[2] TS	Obscured thunderstorm(s)
	EMBD[3] TS	Embedded thunderstorm(s)
	FRQ[4] TS	Frequent thunderstorm(s)
	SQL[5] TS	Squall line thunderstorm(s)
	OBSC TSGR	Obscured thunderstorm(s) with hail
	EMBD TSGR	Embedded thunderstorm(s) with hail
	FRQ TSGR	Frequent thunderstorm(s) with hail
	SQL TSGR	Squall line thunderstorm(s) with hail
Tropical cyclone (TC)	TC (+ TC name)	Tropical cyclone (+ TC name)
Turbulence (TURB)	SEV TURB[6]	Severe turbulence
Icing (ICE)	SEV ICE	Severe icing
	SEV ICE (FZRA)	Severe icing due to freezing rain
Mountain wave (MTW)	SEV MTW[7]	Severe mountain wave
Duststorm (DS)	HVY DS	Heavy duststorm
Sandstorm (SS)	HVY SS	Heavy sandstorm
Volcanic ash cloud (VA)	VA (+ volcano name, if known)	Volcanic ash (+ volcano name)
Radioactive cloud	RDOACT CLD	Radioactive cloud

Notes:

1. Only one of the weather phenomena listed should be selected and included in each SIGMET

*2. Obscured (**OBSC**) indicates that the thunderstorm is obscured by haze or smoke or cannot be readily seen due to darkness*

*3. Embedded (**EMBD**) – indicates that the thunderstorm is embedded within cloud layers and cannot be readily recognized*

*4. Frequent (**FRQ**) indicates an area of thunderstorms within which there is little or no separation between adjacent thunderstorms with a maximum spatial coverage greater than 75% of the area affected, or forecasts to be affected, by the phenomenon (at a fixed time or during the period of validity)*

*5. Squall line (**SQL**) indicates thunderstorms along a line with little or no space between individual clouds*

*6. Severe (**SEV**) turbulence (**TURB**) refers only to:*
- *low-level turbulence associated with strong surface winds;*
- *rotor streaming;*
- *turbulence whether in cloud or not in cloud (CAT) near to jet streams.*
- *Turbulence is considered severe whenever the peak value of the cube root of the eddy dissipation rate (EDR) exceeds 0.7.*

*7. A mountain wave (**MTW**) is considered:*
- *severe – whenever an accompanying downdraft of 3.0 m/s (600 ft/min) or more and/or severe turbulence is observed or forecasted..*

APPENDIX D

Guidelines for reporting geographical coordinates in SIGMET

When reporting geographical coordinates of points in SIGMET the following should apply:

1. Each point is represented by latitude/longitude coordinates in whole degrees or degrees and minutes in the form:

N(S)nn[nn] W(E)nnn[nn]

Note: There is a space between the latitude and longitude value.

Examples:

N3623 W04515

S1530 E12500

N42 E023

2. In describing lines or polygons, the latitude, longitude coordinates of the respective points are separated by the combination space-hyphen-space, as in the following examples:

S0530 E09300 – N0100 E09530 – N1215 E11045 – S0820 E10330

S05 E093 – N01 E095 – N12 E110 – S08 E103

Note1: It is not necessary to repeat the first point when describing a polygon.

Note 2: In the case of the same phenomenon covering more than one area within the FIR, these elements may be repeated, as necessary.

3. When describing a volcanic ash cloud approximate form and position, a limited number of points, which form a simplified geometric figure (a line, or a triangle, or quadrangle, etc.) should be used in order to allow for a straightforward interpretation by the user.

REPORT ON AGENDA ITEM 4: STATUS OF IMPLEMENTATION OF THE METEOROLOGICAL SERVICES IN THE MID REGION

4.3: REVIEW OF REQUIREMENTS FOR OPMET DATA AND STATUS OF OPMET DATA EXCHANGE

4.3.1 The meeting recalled MIDANPIRG/12 Conclusions 12/67 and 12/68 to improve the quality, availability, timeliness and regularity of OPMET data in the MID region. State letters have been issued on 14 December 2010 urging MID States to improve the quality and availability of OPMET data in the MID Region by:

- implementing ICAO Annex 3 provisions relating to OPMET data, including TAF;
- investigating the reasons for the absence of SIGMET messages and reconsider their procedures for SIGMET generation and transmission;
- considering the need for establishing local quality control and format verification procedures for OPMET data; and
- undertaking all efforts to reduce the errors in OPMET data significantly, the aim of which should be less than 5% of all issued OPMET data being correct.

4.3.2 To increase the efficiency in inter-regional OPMET exchange, the meeting recalled that the BMG/1 meeting noted that designating an OPMET Centre in the MID Region for the collection and exchange of OPMET data to the EUR Region was most desirable. Coordination on routing changes would greatly increase the efficiency of OPMET exchange between the two regions. Furthermore, efficiency would be gained if OPMET Centres were designated for inter-regional OPMET exchange to Asia and to Africa. The meeting agreed to establish a small action group of the BMG in order to coordinate with States on establishing Regional OPMET Centre(s). The meeting also noted that bulletins in the MID Region (Bahrain, Beirut, Jeddah, Tehran and Cairo) were contained in the Asia/Pacific Regional OPMET Exchange (ROBEX) Handbook located at the following website http://www.bangkok.icao.int/edocs/robex2004_e12.pdf. One adjustment was provided by Egypt (update to SAEG31 bulletin to only include Cairo and placing the other entries in Egypt in the SAEG32 bulletin) that would be forwarded to the APAC OPMET/M TF for consideration. Likewise, a set of bulletins could be developed for exchange from the MID Region to ROC Vienna, which would be simpler in that only one destination address would be needed (ROC Vienna). This information could be included in the EUR OPMET Data Management Handbook (EUR Doc 018) located at the following website http://www.paris.icao.int/documents_open/files.php?subcategory_id=87.

4.3.3 To improve coordination amongst the regions, the BMG/1 meeting (particularly those who were interested in becoming a Regional OPMET Centre) was invited to attend at least one of the other regions OPMET related meetings. The EUR Data Management Group (DMG) meetings in 2012 include DMG/4 from 13 – 15 March 2012 in Bucharest; DMG/5 from 19-21 June 2012 in Vienna; DMG/6 in October 2012 in Toulouse. The APAC OPMET/M TF/10 meeting would meet from 20-22 March 2012 in Bangkok. The participants of the BMG/1 would be informed by ICAO of forthcoming events. This list would be updated by States not present through coordination of the action group of the BMG. Given the above, the meeting agreed to the following draft Conclusion.

DRAFT DECISION 3/4 – ESTABLISHMENT OF AN ACTION GROUP OF THE BMG TO CONSIDER THE DESIGNATION OF MID OPMET CENTRES FOR INTER-REGIONAL EXCHANGE OF OPMET DATA

That, an action group consisting of Egypt, Kuwait and Saudi Arabia and other interested States be established to

a) determine requirements associated with the establishment of Regional OPMET Centres in the MID Region;

b) develop a survey based on requirements developed in (a) to determine States capability of developing a ROC; and

c) report back to MET SG/4 with a recommendation of potential regional designation of ROC(s) for further consideration by MIDANPIRG/14

4.3.4 The meeting recalled incorrect bulletin addressing to Vienna (inter-regional OPMET exchange centre with the Middle East) that was identified through EUR Data Management Group (DMG) monitoring during the period from 28 October to 2 November 2011. Monitoring revealed that bulletins FTSY31 OSDI, FTYE21 OYSN and SALB31 OLBA should be sent to LOZZMMID (Vienna ROC) and reproduced in **Appendix 4.3A** to the Report on Agenda Item 4.3. Multiple bulletins were also identified from the MID Region that were provided in **Appendix 4.3B** to the Report on Agenda Item 4.3 in order for States to consider deleting multiple bulletins or if used only on a bilateral basis deleting the entry for dissemination to Vienna.

4.3.5 The meeting recalled the results of EUR DMG monitoring of OPMET data routinely (twice per year at the EUR regional OPMET centres) against the SADIS User Guide Annex 1 OPMET user requirements (FASID Table MET 2A for each region is extracted from this global data base) which revealed the following errors:

- METAR requested, but not received for HEAZ, HEOW, OEJB (received only for 6 out of 16 exercises), ORNI
- FC requested but not received for OEYN (but FT is received – ICAO may need to update this table)
- FT requested but not received for HEAZ, HEOW, OIAA (received only for 5 out of 16 exercises), ORNI, ORSU, OYAD, OYRN, OYSY, OYTZ

4.3.6 The meeting noted that the non-AOP aerodromes HEAZ and HEOW were used for military purposes and that OPMET data was not provided. As it is the States' prerogative whether to issue OPMET data for non-AOP aerodromes, the meeting noted that the State should inform ICAO to remove aerodromes from the SADIS User Guide Annex 1 if there was no intention of providing OPMET data for a non-AOP aerodrome. Reiterating, the SADIS User Guide Annex 1 is the global database of OPMET data to satisfy user requirements that includes AOP and non-AOP aerodromes.

4.3.7 The meeting observed and noted that FC type TAF for OEYN was included in a bulletin (FCSD31 Jeddah) and that this information would be forwarded to ROC Vienna. Clarification was also provided with reference to OEJB in that no METAR is issued as it is a naval airbase and that this information would be sent to ICAO to update the SADIS User Guide Annex 1. The above bullets were adapted with this information and provided in **Appendix 4.3C** to the Report on Agenda Item 4.3.

4.3.8 Given the above discussions and based on monitoring of OPMET data and identified errors and deficiencies, the meeting agreed to the following draft Conclusion.

DRAFT CONCLUSION 3/5 – OPMET DATA ERRORS AND DEFICIENCIES

That, States be informed of

*a) incorrect addressing to ROC Vienna as provided **Appendix 4.3A**;*

*b) multiple bulletins received at ROC Vienna as provided in **Appendix 4.3B** and assure only one bulletin is sent to ROC Vienna;*

*c) non-receipt of OPMET (SA, FC, FT) requests during monitoring as provided in **Appendix 4.3C**; and*

d) non-compliance of TAF requirements will be included in ICAO MID deficiency list

4.3.9 The meeting recalled that ROC Vienna reported the cessation of 2 TAF valid at one time at one aerodrome in the MID Region, which meets standards set out in Amendment 74 to Annex 3.

4.3.10 The meeting recalled that in order to improve the timeliness and regularity of OPMET data (METAR and TAF) for AOP aerodromes in the MID Region, the ICAO MID Regional Office developed guidance material related to the issuance of OPMET data which was attached to State letter AN 10/11-10-426 issued on 14 December 2010. The BMG/1 meeting determined that further guidance was needed and agreed to use an excerpt from the APAC ROBEX Handbook modified further based on recent discussions between the SADIS Gateway and Inter-Regional OPMET Gateway (IROG) Singapore as provided in **Appendix 4.3D** to the Report on Agenda Item 4.3. Given the above issues relating to OPMET data, the meeting formulated the following draft Conclusion.

DRAFT CONCLUSION 3/6- TIMELINESS OF OPMET DATA

*That, States be notified of procedures related to METAR and TAF compilation and dissemination times as per **Appendix 4.3D**.*

4.3.11 The meeting noted the overall OPMET exchange between IROG Vienna and MID States was provided in an EXCEL-file and reproduced as **Appendix 4.3E** to the Report on Agenda Item 4.3 that would be considered for updating when Regional OPMET Centres would be considered by the BMG.

4.3.12 The meeting noted the planned backup procedure in the EUR Regional OPMET Exchange (RODEX) system whose associated documentation could be endorsed as early as the later half of 2012 (update to EUR OPMET Data Management Handbook (EUR Doc 018) – inclusion of Appendix H). The backup OPMET bulletin list would be updated through a shopping cart and through bi-annual data management group monitoring to assure the database used in the backup for the Regional OPMET Centres were the same. In addition, users can check online which data was presently available within the EUR Region based on FASID Table MET 2A (user requirements for OPMET data derived from SADIS User Guide Annex 1). This information was relevant to States outside the EUR-region in terms of requesting data through the shopping cart and thus updating their requirements with reference to EUR OPMET data.

4.3.13 The meeting reviewed the terms of reference of the MID OPMET Bulletin Management Group (BMG) as provided in **Appendix 4.3F** to the Report on Agenda Item 4.3.

FTSY31 OSDI, FTYE21 OYSN and SALB31 OLBA should be sent to LOZZMMID (Vienna ROC)

TT	AAii	CCCC	Loc.Ind.	Sent to	Originator	Suggestion
FT	AR20	OEJD	OBBI	LOZZMMID	OEJDYMYX	
FT	AR20	OEJD	OBBI	LOZZMMID	OLLLYPYX	FTAR20 OEJD is obviously a recompiled bulletin. All included reports are received within the original bulletins. It is not necessary to s
FT	BN31	OBBI	OBBI	LOZZMMID	OBBITAFS	this bulletin to LOWM. Furthermore it should be checked whether there is a need for it in general.
FT	BN31	OBBI	OBBI	LOZZMMID	OBBIYPYX	Furthermore both bulletins are received more than once, sent by differnent centres. It is sufficient to receive it from only one centr
FT	BN31	OBBI	OBBI	LOZZMMID	OLLLYPYX	FTIN90 VOMM: It seems to be a special recompilation of airports from different states. UK will be contacted for details.
FT	IN90	VOMM	OBBI	LOWMMMXX	EGGYYBYA	
FT	SD40	OEJD	OEAB	LOZZMMID	OEJDYMYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
FT	SD40	OEJD	OEAB	LOZZMMID	OLLLYPYX	
FT	BN31	OBBI	OEDF	LOZZMMID	OBBITAFS	
FT	BN31	OBBI	OEDF	LOZZMMID	OBBIYPYX	The bulletin FTBN31 OBBI is received from three different AFTN-addresses. Receiving it from only one would be sufficient.
FT	BN31	OBBI	OEDF	LOZZMMID	OLLLYPYX	The buleltins FTSD22 OEJD as well as FTSD31 OEJD are received from two different addresses. Receiving it from only on would be
FT	SD22	OEJD	OEDF	LOZZMMID	OEJDYMYX	sufficient.
FT	SD22	OEJD	OEDF	LOZZMMID	OLLLYPYX	
FT	SD31	OEJD	OEDF	LOZZMMID	OEJDYMYX	The TAF for OEDF is included in all three of them!!
FT	SD31	OEJD	OEDF	LOZZMMID	OLLLYPYX	
FT	BN31	OBBI	OEDR	LOZZMMID	OBBITAFS	
FT	BN31	OBBI	OEDR	LOZZMMID	OBBIYPYX	
FT	BN31	OBBI	OEDR	LOZZMMID	OLLLYPYX	
FT	SD22	OEJD	OEDR	LOZZMMID	OEJDYMYX	Same as above!
FT	SD22	OEJD	OEDR	LOZZMMID	OLLLYPYX	
FT	SD31	OEJD	OEDR	LOZZMMID	OEJDYMYX	
FT	SD31	OEJD	OEDR	LOZZMMID	OLLLYPYX	
FT	SD22	OEJD	OEJN	LOZZMMID	OEJDYMYX	
FT	SD22	OEJD	OEJN	LOZZMMID	OLLLYPYX	Same as above!
FT	SD31	OEJD	OEJN	LOZZMMID	OEJDYMYX	
FT	SD31	OEJD	OEJN	LOZZMMID	OLLLYPYX	
FT	SD22	OEJD	OEMA	LOZZMMID	OEJDYMYX	
FT	SD22	OEJD	OEMA	LOZZMMID	OLLLYPYX	Same as above!
FT	SD31	OEJD	OEMA	LOZZMMID	OEJDYMYX	
FT	SD31	OEJD	OEMA	LOZZMMID	OLLLYPYX	
FT	SD22	OEJD	OERK	LOZZMMID	OEJDYMYX	
FT	SD22	OEJD	OERK	LOZZMMID	OLLLYPYX	Same as above!
FT	SD31	OEJD	OERK	LOZZMMID	OEJDYMYX	
FT	SD31	OEJD	OERK	LOZZMMID	OLLLYPYX	
FT	SD22	OEJD	OETF	LOZZMMID	OEJDYMYX	
FT	SD22	OEJD	OETF	LOZZMMID	OLLLYPYX	
FT	SD32	OEJD	OETF	LOZZMMID	OEJDYMYX	Same as above with different bulletins!
FT	SD40	OEJD	OETF	LOZZMMID	OEJDYMYX	
FT	SD40	OEJD	OETF	LOZZMMID	OLLLYPYX	
FT	IR31	OIII	OIAW	LOZZMMID	OIIIYPYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
FT	IR31	OIII	OIAW	LOZZMMID	OLLLYPYX	
FT	IR32	OIII	OIBK	LOZZMMID	OIIIYPYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
FT	IR32	OIII	OIBK	LOZZMMID	OLLLYPYX	
FT	IR33	OIII	OIZC	LOZZMMID	OIIIYPYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
FT	IR33	OIII	OIZC	LOZZMMID	OLLLYPYX	
FT	JD31	OJAI	OJAI	LOZZMMID	OJAMYMYX	
FT	ME31	OEJD	OJAI	LOZZMMID	OEJDYMYX	The TAF for OJAI is received in three different bulletins. The bulletin FTME31 is available as compilation from OEJD and OLBA.
FT	ME31	OLBA	OJAI	LOZZMMID	OLBAYZYX	
FT	JD31	OJAI	OJAM	LOZZMMID	OJAMYMYX	
FT	ME31	OEJD	OJAM	LOZZMMID	OEJDYMYX	Same as above!
FT	ME31	OLBA	OJAM	LOZZMMID	OLBAYZYX	
FT	JD31	OJAI	OJAQ	LOZZMMID	OJAMYMYX	
FT	ME31	OEJD	OJAQ	LOZZMMID	OEJDYMYX	Same as above!
FT	ME31	OLBA	OJAQ	LOZZMMID	OLBAYZYX	
FT	AR20	OEJD	OKBK	LOZZMMID	OEJDYMYX	
FT	AR20	OEJD	OKBK	LOZZMMID	OLLLYPYX	
FT	BN31	OBBI	OKBK	LOZZMMID	OBBITAFS	
FT	BN31	OBBI	OKBK	LOZZMMID	OBBIYPYX	The TAF for OKBK is included in three different bulletins from the MID region sent from different addresses and in one compilation
FT	BN31	OBBI	OKBK	LOZZMMID	OLLLYPYX	by VOMM.
FT	IN90	VOMM	OKBK	LOWMMMXX	EGGYYBYA	
FT	KW21	OKBK	OKBK	LOZZMMID	OLLLYPYX	
FT	LB31	OLBA	OLBA	LOZZMMID	OLBAYMYX	
FT	ME31	OEJD	OLBA	LOZZMMID	OEJDYMYX	The TAF for OLBA is received in three different bulletins. The bulletin FTME31 is available as compilation from OEJD and OLBA.
FT	ME31	OLBA	OLBA	LOZZMMID	OLBAYZYX	
FT	AR20	OEJD	OMAA	LOZZMMID	OEJDYMYX	
FT	AR20	OEJD	OMAA	LOZZMMID	OLLLYPYX	
FT	BN32	OBBI	OMAA	LOZZMMID	OBBITAFS	
FT	BN32	OBBI	OMAA	LOZZMMID	OBBIYPYX	The TAF for OMAA is included in three different bulletins from the MID region sent from different addresses and in one compilation
FT	BN32	OBBI	OMAA	LOZZMMID	OLLLYPYX	by VOMM.
FT	ER32	OMAE	OMAA	LOZZMMID	OMAEYFYX	
FT	ER32	OMAE	OMAA	LOZZMMID	OMAEYPYX	

FT	ER32	OMAE	OMAA	LOZZMMID	OMAEYYPY	
FT	IN90	VOMM	OMAA	LOWMMMXX	EGGYYBYA	
FT	AR20	OEJD	OMAD	LOZZMMID	OEJDYMYX	
FT	BN32	OBBI	OMAD	LOZZMMID	OBBITAFS	
FT	BN32	OBBI	OMAD	LOZZMMID	OBBIYPYX	
FT	BN32	OBBI	OMAD	LOZZMMID	OLLLYPYX	The TAF for OMAD is included in three different bulletins from the MID region sent from different addresses.
FT	ER32	OMAE	OMAD	LOZZMMID	OMAEYFYX	
FT	ER32	OMAE	OMAD	LOZZMMID	OMAEYPYX	
FT	ER32	OMAE	OMAD	LOZZMMID	OMAEYYPY	
FT	BN32	OBBI	OMAL	LOZZMMID	OBBITAFS	
FT	BN32	OBBI	OMAL	LOZZMMID	OBBIYPYX	
FT	BN32	OBBI	OMAL	LOZZMMID	OLLLYPYX	
FT	ER32	OMAE	OMAL	LOZZMMID	OMAEYFYX	The TAF for OMAL is included in two different bulletins from the MID region sent from different addresses and in one compilation d
FT	ER32	OMAE	OMAL	LOZZMMID	OMAEYPYX	by VOMM.
FT	ER32	OMAE	OMAL	LOZZMMID	OMAEYYPY	
FT	IN90	VOMM	OMAL	LOWMMMXX	EGGYYBYA	
FT	AR20	OEJD	OMDB	LOZZMMID	OEJDYMYX	
FT	AR20	OEJD	OMDB	LOZZMMID	OLLLYPYX	
FT	BN32	OBBI	OMDB	LOZZMMID	OBBITAFS	
FT	BN32	OBBI	OMDB	LOZZMMID	OBBIYPYX	
FT	BN32	OBBI	OMDB	LOZZMMID	OLLLYPYX	The TAF for OMDB is included in three different bulletins from the MID region sent from different addresses and in one compilation
FT	ER32	OMAE	OMDB	LOZZMMID	OMAEYFYX	by VOMM.
FT	ER32	OMAE	OMDB	LOZZMMID	OMAEYPYX	
FT	ER32	OMAE	OMDB	LOZZMMID	OMAEYYPY	
FT	IN90	VOMM	OMDB	LOWMMMXX	EGGYYBYA	
FT	BN32	OBBI	OMDW	LOZZMMID	OBBITAFS	
FT	BN32	OBBI	OMDW	LOZZMMID	OBBIYPYX	
FT	BN32	OBBI	OMDW	LOZZMMID	OLLLYPYX	
FT	ER32	OMAE	OMDW	LOZZMMID	OMAEYFYX	The TAF for OBBI is included in two different bulletins from the MID region sent from different addresses.
FT	ER32	OMAE	OMDW	LOZZMMID	OMAEYPYX	
FT	ER32	OMAE	OMDW	LOZZMMID	OMAEYYPY	
FT	BN32	OBBI	OMFJ	LOZZMMID	OBBITAFS	
FT	BN32	OBBI	OMFJ	LOZZMMID	OBBIYPYX	
FT	BN32	OBBI	OMFJ	LOZZMMID	OLLLYPYX	
FT	ER32	OMAE	OMFJ	LOZZMMID	OMAEYFYX	The TAF for OMFJ is included in two different bulletins from the MID region sent from different addresses and in one compilation do
FT	ER32	OMAE	OMFJ	LOZZMMID	OMAEYPYX	VOMM.
FT	ER32	OMAE	OMFJ	LOZZMMID	OMAEYYPY	
FT	IN90	VOMM	OMFJ	LOWMMMXX	EGGYYBYA	
FT	AR20	OEJD	OMRK	LOZZMMID	OEJDYMYX	
FT	AR20	OEJD	OMRK	LOZZMMID	OLLLYPYX	
FT	BN32	OBBI	OMRK	LOZZMMID	OBBITAFS	
FT	BN32	OBBI	OMRK	LOZZMMID	OBBIYPYX	
FT	BN32	OBBI	OMRK	LOZZMMID	OLLLYPYX	The TAF for OMRK is included in three different bulletins from the MID region sent from different addresses.
FT	ER32	OMAE	OMRK	LOZZMMID	OMAEYFYX	
FT	ER32	OMAE	OMRK	LOZZMMID	OMAEYPYX	
FT	ER32	OMAE	OMRK	LOZZMMID	OMAEYYPY	
FT	AR20	OEJD	OMSJ	LOZZMMID	OEJDYMYX	
FT	AR20	OEJD	OMSJ	LOZZMMID	OLLLYPYX	
FT	BN32	OBBI	OMSJ	LOZZMMID	OBBITAFS	
FT	BN32	OBBI	OMSJ	LOZZMMID	OBBIYPYX	
FT	BN32	OBBI	OMSJ	LOZZMMID	OLLLYPYX	The TAF for OMSJ is included in three different bulletins from the MID region sent from different addresses and in one compilation
FT	ER32	OMAE	OMSJ	LOZZMMID	OMAEYFYX	by VOMM.
FT	ER32	OMAE	OMSJ	LOZZMMID	OMAEYPYX	
FT	ER32	OMAE	OMSJ	LOZZMMID	OMAEYYPY	
FT	IN90	VOMM	OMSJ	LOWMMMXX	EGGYYBYA	
FT	AR20	OEJD	OOMS	LOZZMMID	OEJDYMYX	
FT	AR20	OEJD	OOMS	LOZZMMID	OLLLYPYX	
FT	BN32	OBBI	OOMS	LOZZMMID	OBBITAFS	The TAF for OOMS is included in two different bulletins from the MID region sent from different addresses and in one compilation c
FT	BN32	OBBI	OOMS	LOZZMMID	OBBIYPYX	by VOMM.
FT	BN32	OBBI	OOMS	LOZZMMID	OLLLYPYX	
FT	IN90	VOMM	OOMS	LOWMMMXX	EGGYYBYA	
FT	AR20	OEJD	OOSA	LOZZMMID	OEJDYMYX	
FT	AR20	OEJD	OOSA	LOZZMMID	OLLLYPYX	The TAF for OEJD is included in two different bulletins from the MID region sent from different addresses.
FT	BN32	OBBI	OOSA	LOZZMMID	OBBIYPYX	
FT	BN32	OBBI	OOSA	LOZZMMID	OLLLYPYX	
FT	ME31	OEJD	OSAP	LOZZMMID	OEJDYMYX	
FT	ME31	OLBA	OSAP	LOZZMMID	OLBAYZYX	The TAF for OSAP is included in three different bulletins from the MID region sent from different addresses.
FT	SY31	OSDI	OSAP	LOZZMMID	OSDIYMYX	
FT	SY31	OSDI	OSAP	LOWMYBYX	OSDIYMYX	
FT	ME31	OEJD	OSDI	LOZZMMID	OEJDYMYX	
FT	ME31	OLBA	OSDI	LOZZMMID	OLBAYZYX	The TAF for OSDI is included in three different bulletins from the MID region sent from different addresses and in one compilation d
FT	SY31	OSDI	OSDI	LOZZMMID	OSDIYMYX	by VOMM.

FT	SY31	OSDI	OSDI	LOWMYBYX	OSDIYMYX	
FT	ME31	OEJD	OSLK	LOZZMMID	OEJDYMYX	The TAF for OSLK is included in two different bulletins from the MID region sent from different addresses.
FT	ME31	OLBA	OSLK	LOZZMMID	OLBAYZYX	
FT	SY31	OSDI	OSLK	LOZZMMID	OSDIYMYX	
FT	SY31	OSDI	OSLK	LOWMYBYX	OSDIYMYX	
FT	AR20	OEJD	OTBD	LOZZMMID	OEJDYMYX	The TAF for OTBD is included in two different bulletins from the MID region sent from different addresses and in one compilation d
FT	AR20	OEJD	OTBD	LOZZMMID	OLLLYPYX	
FT	BN31	OBBI	OTBD	LOZZMMID	OBBITAFS	
FT	BN31	OBBI	OTBD	LOZZMMID	OBBIYPYX	VOMM.
FT	BN31	OBBI	OTBD	LOZZMMID	OLLLYPYX	
FT	IN90	VOMM	OTBD	LOWMMMXX	EGGYYBYA	
FT	AR20	OEJD	OYAA	LOZZMMID	OEJDYMYX	The TAF for OYAA is included in two different bulletins from the MID region sent from different addresses.
FT	AR20	OEJD	OYAA	LOZZMMID	OLLLYPYX	
FT	YE21	OYSN	OYAA	LOZZMMID	OLLLYPYX	
FT	YE21	OYSN	OYAA	LOWMYBYX	OYSNYMYX	
FT	YE21	OYSN	OYHD	LOZZMMID	OLLLYPYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
FT	YE21	OYSN	OYHD	LOWMYBYX	OYSNYMYX	
FT	AR20	OEJD	OYSN	LOZZMMID	OEJDYMYX	The TAF for OKBK is included in three different bulletins from the MID region sent from different addresses.
FT	AR20	OEJD	OYSN	LOZZMMID	OLLLYPYX	
FT	SD31	OEJD	OYSN	LOZZMMID	OEJDYMYX	
FT	SD31	OEJD	OYSN	LOZZMMID	OLLLYPYX	
FT	YE21	OYSN	OYSN	LOZZMMID	OLLLYPYX	
FT	YE21	OYSN	OYSN	LOWMYBYX	OYSNYMYX	
SA	BN31	OBBI	OBBI	LOZZMMID	OBBIYRYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
SA	BN31	OBBI	OBBI	LOZZMMID	OLLLYPYX	
SA	SD20	OEJD	OEAB	LOZZMMID	OEJDYMYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
SA	SD20	OEJD	OEAB	LOZZMMID	OLLLYPYX	
SA	BN31	OBBI	OEDF	LOZZMMID	OBBIYRYX	The METAR for OEDF is included in three different bulletins from the MID region sent from different addresses.
SA	BN31	OBBI	OEDF	LOZZMMID	OLLLYPYX	
SA	SD20	OEJD	OEDF	LOZZMMID	OEJDYMYX	
SA	SD20	OEJD	OEDF	LOZZMMID	OLLLYPYX	
SA	SD31	OEJD	OEDF	LOZZMMID	OEJDYMYX	
SA	SD31	OEJD	OEDF	LOZZMMID	OLLLYPYX	
SA	BN31	OBBI	OEDR	LOZZMMID	OBBIYRYX	The METAR for OEDR is included in three different bulletins from the MID region sent from different addresses.
SA	BN31	OBBI	OEDR	LOZZMMID	OLLLYPYX	
SA	SD20	OEJD	OEDR	LOZZMMID	OEJDYMYX	
SA	SD20	OEJD	OEDR	LOZZMMID	OLLLYPYX	
SA	SD31	OEJD	OEDR	LOZZMMID	OEJDYMYX	
SA	SD31	OEJD	OEDR	LOZZMMID	OLLLYPYX	
SA	SD20	OEJD	OEJN	LOZZMMID	OEJDYMYX	The METAR for OEJN is included in two different bulletins from the MID region sent from different addresses.
SA	SD20	OEJD	OEJN	LOZZMMID	OLLLYPYX	
SA	SD31	OEJD	OEJN	LOZZMMID	OEJDYMYX	
SA	SD31	OEJD	OEJN	LOZZMMID	OLLLYPYX	
SA	SD20	OEJD	OEMA	LOZZMMID	OEJDYMYX	The METAR for OEMA is included in two different bulletins from the MID region sent from different addresses.
SA	SD20	OEJD	OEMA	LOZZMMID	OLLLYPYX	
SA	SD31	OEJD	OEMA	LOZZMMID	OEJDYMYX	
SA	SD31	OEJD	OEMA	LOZZMMID	OLLLYPYX	
SA	SD20	OEJD	OERK	LOZZMMID	OEJDYMYX	The METAR for OERK is included in two different bulletins from the MID region sent from different addresses.
SA	SD20	OEJD	OERK	LOZZMMID	OLLLYPYX	
SA	SD31	OEJD	OERK	LOZZMMID	OEJDYMYX	
SA	SD31	OEJD	OERK	LOZZMMID	OLLLYPYX	
SA	SD20	OEJD	OETF	LOZZMMID	OEJDYMYX	The METAR for OETF is included in two different bulletins from the MID region sent from different addresses.
SA	SD20	OEJD	OETF	LOZZMMID	OLLLYPYX	
SA	SD32	OEJD	OETF	LOZZMMID	OEJDYMYX	
SA	SD32	OEJD	OETF	LOZZMMID	OLLLYPYX	
SA	JD20	OJAM	OJAI	LOWMMMXX	EDZWYMYX	The METAR for OJAI is included in **four** different bulletins from the MID region sent from different addresses.
SA	JD31	OJAI	OJAI	LOZZMMID	OJAMYMYX	
SA	ME31	OEJD	OJAI	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OJAI	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OJAI	LOZZMMID	OLBAYZYX	
SA	JD20	OJAM	OJAM	LOWMMMXX	EDZWYMYX	The METAR for OJAM is included in **four** different bulletins from the MID region sent from different addresses.
SA	JD31	OJAI	OJAM	LOZZMMID	OJAMYMYX	
SA	ME31	OEJD	OJAM	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OJAM	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OJAM	LOZZMMID	OLBAYZYX	
SA	JD20	OJAM	OJAQ	LOWMMMXX	EDZWYMYX	The METAR for OJAQ is included in **four** different bulletins from the MID region sent from different addresses.
SA	JD31	OJAI	OJAQ	LOZZMMID	OJAMYMYX	
SA	ME31	OEJD	OJAQ	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OJAQ	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OJAQ	LOZZMMID	OLBAYZYX	
SA	BN31	OBBI	OKBK	LOZZMMID	OBBIYRYX	The METAR for OKBK is included in two different bulletins from the MID region sent from different addresses.
SA	BN31	OBBI	OKBK	LOZZMMID	OLLLYPYX	

SA	KW31	OKBK	OKBK	LOZZMMID	OLLLYPYX	
SA	LB31	OLBA	OLBA	LOWMYMYX	OLBAYMYX	The METAR for OLBA is included in three different bulletins from the MID region sent from different addresses.
SA	ME31	OEJD	OLBA	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OLBA	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OLBA	LOZZMMID	OLBAYZYX	
SA	BN32	OBBI	OMAA	LOZZMMID	OBBIYRYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
SA	BN32	OBBI	OMAA	LOZZMMID	OLLLYPYX	
SA	BN32	OBBI	OOMS	LOZZMMID	OBBIYRYX	The METAR for OOMS is included in two different bulletins from the MID region sent from different addresses.
SA	BN32	OBBI	OOMS	LOZZMMID	OLLLYPYX	
SA	OM20	OOMS	OOMS	LOZZMMID	OLLLYPYX	
SA	BN32	OBBI	OOSA	LOZZMMID	OBBIYRYX	The METAR for OOSA is included in two different bulletins from the MID region sent from different addresses.
SA	BN32	OBBI	OOSA	LOZZMMID	OLLLYPYX	
SA	OM20	OOMS	OOSA	LOZZMMID	OLLLYPYX	
SA	ME31	OEJD	OSAP	LOZZMMID	OEJDYMYX	The METAR for OSAP is included in three different bulletins from the MID region sent from different addresses.
SA	ME31	OLBA	OSAP	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OSAP	LOZZMMID	OLBAYZYX	
SA	SY31	OSDI	OSAP	LOZZMMID	OSDIYMYX	
SA	ME31	OEJD	OSDI	LOZZMMID	OEJDYMYX	The METAR for OSDI is included in three different bulletins from the MID region sent from different addresses.
SA	ME31	OLBA	OSDI	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OSDI	LOZZMMID	OLBAYZYX	
SA	SY31	OSDI	OSDI	LOZZMMID	OSDIYMYX	
SA	ME31	OEJD	OSLK	LOZZMMID	OEJDYMYX	The METAR for OSLK is included in three different bulletins from the MID region sent from different addresses.
SA	ME31	OLBA	OSLK	LOZZMMID	OEJDYMYX	
SA	ME31	OLBA	OSLK	LOZZMMID	OLBAYZYX	
SA	SY31	OSDI	OSLK	LOZZMMID	OSDIYMYX	
SA	BN31	OBBI	OTBD	LOZZMMID	OBBIYRYX	The bulletin is received more than once, sent by different centres. It is sufficient to receive it from only one centre.
SA	BN31	OBBI	OTBD	LOZZMMID	OLLLYPYX	
SA	YE20	OYAA	OYAA	LOWMMMXX	EDZWYMYX	Two different bulletins are issued with the same content. One with only the TAF for the respective aerodrome. The second one is th compilation. Both bulletins are not addressed to Vienna but are received from Germany. According to an info from Germany they re the bulletins via Madrid.
SA	YE20	OYSC	OYAA	LOWMMMXX	EDZWYMYX	
SA	YE20	OYAG	OYAG	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSC	OYAG	LOWMMMXX	EDZWYMYX	
SA	YE20	OYAS	OYAS	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSC	OYAS	LOWMMMXX	EDZWYMYX	
SA	YE20	OYAT	OYAT	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSC	OYAT	LOWMMMXX	EDZWYMYX	
SA	YE20	OYHD	OYHD	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSC	OYHD	LOWMMMXX	EDZWYMYX	
SA	YE20	OYMB	OYMB	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSC	OYMB	LOWMMMXX	EDZWYMYX	
SA	YE20	OYRN	OYRN	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSC	OYRN	LOWMMMXX	EDZWYMYX	
SA	SD31	OEJD	OYSN	LOZZMMID	OEJDYMYX	Two different bulletins are issued with the same content. One with only the TAF for the respective aerodrome. The second one is th compilation. Both bulletins are not addressed to Vienna but are received from Germany. According to an info from Germany they re the bulletins via Madrid. Furthermore the report is included in the compiation SASD31 OEJD. This is not necessary.
SA	SD31	OEJD	OYSN	LOZZMMID	OLLLYPYX	
SA	YE20	OYSC	OYSN	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSN	OYSN	LOWMMMXX	EDZWYMYX	
SA	YE20	OYAA	OYSQ	LOWMMMXX	EDZWYMYX	Two different bulletins are issued with the same content. One with only the TAF for the respective aerodrome. The second one is th compilation. Both bulletins are not addressed to Vienna but are received from Germany. According to an info from Germany they re the bulletins via Madrid.
SA	YE20	OYSC	OYSQ	LOWMMMXX	EDZWYMYX	
SA	YE20	LOWM	OYSY	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSC	OYSY	LOWMMMXX	EDZWYMYX	
SA	YE20	LOWM	OYTZ	LOWMMMXX	EDZWYMYX	
SA	YE20	OYSC	OYTZ	LOWMMMXX	EDZWYMYX	

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MET SG/3
Appendix 4.3C to the Report on Agenda Item 4

NON RECEIPT OF REQUESTED OPMET DATA

- METAR requested, but not received for HEAZ, HEOW, OEJB (received only for 6 out of 16 exercises), ORNI
- FC requested but not received for OEYN (but FT is received – ICAO may need to update this table)
- FT requested but not received for HEAZ, HEOW, OIAA (received only for 5 out of 16 exercises), ORNI, ORSU, OYAD, OYRN, OYSY, OYTZ

Note that Egypt would inform ICAO RO-MET that OPMET is not provided for HEAZ and HEOW as they are used for military purposes

Note that Saudi Arabia would inform ICAO RO-MET that METAR is not provided for OEJB as it is used as a naval airbase

Note that Saudi Arabia demonstrated to the meeting that FC for OEYN is included in FCSD31 Jeddah bulletin and that this would be communicated to ROC Vienna

The Secretariat would then inform the SADISOPSG Secretariat of the above changes to the global OPMET database

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7.5 Summary of OPMET data issuance

7.5.1 In response to APANPIRG/20 Conclusion 20/62, a summary of correct methods of issuing OPMET data are provided in the following two tables (adapted further with input provided by Regional OPMET Data Bank Singapore – highlighted in yellow)

METAR Observation, Compiling and Filing

Function	Responsible Entity	Explanation of Time	Time of task (min)
METAR Observation	Originating stations (AMS, AMO, forecast office, MWO, TCAC, VAAC)	State determines how often and when (emphasis on consistency, i.e. 50 minutes past the hour every hour every day) **Examples : HH+00, HH+30, HH+10, HH+50** Note that the observation time is used in the METAR report	0
Send METAR observation to NOC	Orig station		
Send METAR observations to ROBEX Centre	NOC		
Bulletin compiling and filing	ROBEX Bulletin Compiling Centre	Up to 5 minutes after actual time of observation (ref.: Annex 3, App. 10, 2.1.2) Note that the observation time of the METAR is used in the DTG – YYGGgg of the bulletin header Note that the filing time is used in the AFTN header and should be up to 5 minutes after the observation time given in the bulletin header also referred to as the WMO Abbreviated Heading in the ROBEX HB	<5
Send METAR bulletin to: ROBEX Centres (predefined distribution list) RODBs NOCs Other MET offices	ROBEX Centre *via AFTN*	Up to 5 minutes (10 minutes for distances greater than 900 km) (ref.: Annex 3, App. 10, 1.1)	<5 (<10 for distances > 900 km)
Acceptable time from observation at originating stations to reception by user			<10 (<15 mins for distances > 900 km)

TAF Issuance, Compiling and Filing

Function	Responsible Entity	Explanation of Time	Time of task (min)
TAF Issuance	AMO or NOC	State determines time of 4 scheduled TAFs (emphasis on consistency, i.e. 00, 06, 12, 18Z every day) Note that issuance time of TAF (which is one hour before the start period of validity of the TAF) is used in the date/time group (DTG) (YYGGggZ) of TAF messages TAF is sent to ROBEX Centre before the cutoff time of accepting TAF for filing one hour before the start period of validity time (typically 15 minutes before filing)	(allow enough time to reach ROBEX Centre before cutoff time – typically 15 minutes before the filing time or one-hour and 15 minutes before the start period of validity) Ex: TAF to be valid at 0600 is sent to ROBEX Centre by 0445
Bulletin compiling and filing	ROBEX Centre	Bulletins are compiled during the 15 minutes before filing Note that the TAF issuance time (official filing time) is used in the DTG – YYGGgg of the bulletin header Note that the actual filing time is used in the AFTN header and should be after the time given in the bulletin header also referred to as the WMO Abbreviated Heading in the ROBEX HB TAF should be filed for transmission at least one hour before the commencement of their period of validity, unless otherwise determined by regional air navigation agreement. (ref.: Annex 3, App. 10, 2.1.2)	<15 Ex: TAF bulletin compiled between 0445 and 0500 and filed for transmission
Send TAF bulletin to: ROBEX Centres (predefined distribution list) RODBs NOCs Other MET offices	ROBEX Centre *via AFTN*	Up to 5 minutes (10 minutes for distances greater than 900 km) (ref.: Annex 3, App. 10, 1.1)	<5 (<10 for distances > 900 km)
Acceptable time for ROBEX BCC compiling and filing to reception by user			<20 (<25 for distances > 900 km)

OBZZYPYX	OEJDYPYX	OPKCYMYX	OPZZYPYX	OKBKYMYX
FCFR22 LFPW	FCFR22 LFPW	FCTRA31 RUMS	FCAJ31 UBBB	FCFR22 LFPW
FCFR23 LFPW	FCFR23 LFPW	FTAJ31 UBBB	FCBY31 UMMM	FCFR23 LFPW
FCFR24 LFPW	FCFR24 LFPW	FTBX31 EBBR	FCBY31 UMMN	FCFR24 LFPW
FTBU31 LBSM	FTBU31 LBSM		FCEE31 LOWM	FTBU31 LBSM
FTBX31 EBBR	FTBX31 EBBR		FCFR22 LFPW	FTBX31 EBBR
FTCY31 LCLK	FTCY31 LCLK		FCFR23 LFPW	FTCY31 LCLK
FTCZ31 LKPW	FTCZ31 LKPW		FCFR24 LFPW	FTCZ31 LKPW
FTDN31 EKCH	FTDN31 EKCH		FCGG31 UGTB	FTDN31 EKCH
FTEU31 BKPR	FTEU31 BKPR		FCKZ31 RUMS	FTEU31 BKPR
FTEW32 LEMM	FTEW32 LEMM		FCRA31 RUMS	FTEW32 LEMM
FTFI31 EFHK	FTFI31 EFHK		FCRA32 RUMS	FTFI31 EFHK
FTFR21 LFPW	FTFR21 LFPW		FCRS31 RUMS	FTFR21 LFPW
FTFR31 LFPW	FTFR31 LFPW		FCRS32 RUMS	FTFR31 LFPW
FTFR32 LFPW	FTFR32 LFPW		FCRS33 RUMS	FTFR32 LFPW
FTFR33 LFPW	FTFR33 LFPW		FCRS34 RUMS	FTFR33 LFPW
FTFR34 LFPW	FTFR34 LFPW		FCTA31 RUMS	FTFR34 LFPW
FTFR35 LFPW	FTFR35 LFPW		FCTR31 RUMS	FTFR35 LFPW
FTFR36 LFPW	FTFR36 LFPW		FCUR30 UKMS	FTFR36 LFPW
FTFR37 LFPW	FTFR37 LFPW		FCUR31 UKMS	FTFR37 LFPW
FTFR38 LFPW	FTFR38 LFPW		FCUZ31 UTTT	FTFR38 LFPW
FTFR39 LFPW	FTFR39 LFPW		FCUZ31 UTTW	FTFR39 LFPW
FTGR31 LGAT	FTGR31 LGAT		FTAJ31 UBBB	FTGR31 LGAT
FTGR32 LGAT	FTGR32 LGAT		FTAY31 RUMS	FTGR32 LGAT
FTHU31 LHBM	FTHU31 LHBM		FTBU31 LBSM	FTHU31 LHBM
FTIE31 EIDB	FTIE31 EIDB		FTBX31 EBBR	FTIE31 EIDB
FTIY31 LIIB	FTIY31 LIIB		FTBY31 UMMN	FTIY31 LIIB
FTNL31 EHDB	FTNL31 EHDB		FTCY31 LCLK	FTNL31 EHDB
FTNO31 ENMI	FTNO31 ENMI		FTCZ31 LKPW	FTNO31 ENMI
FTNO32 ENMI	FTNO32 ENMI		FTDN31 EKCH	FTNO32 ENMI
FTNO32 LOWM	FTNO32 LOWM		FTEU31 BKPR	FTNO32 LOWM
FTNO33 ENMI	FTNO33 ENMI		FTEW31 LEMM	FTNO33 ENMI
FTNO38 ENMI	FTNO38 ENMI		FTEW32 LEMM	FTNO38 ENMI
FTOS31 LOWM	FTOS31 LOWM		FTEW33 LEMM	FTOS31 LOWM
FTPL31 EPWA	FTPL31 EPWA		FTEW34 LEMM	FTPL31 EPWA
FTPO31 LPMG	FTPO31 LPMG		FTEW35 LEMM	FTPO31 LPMG
FTPO32 LPMG	FTPO32 LPMG		FTEW36 LEMM	FTPO32 LPMG
FTPO33 LPMG	FTPO33 LPMG		FTEW37 LEMM	FTPO33 LPMG
FTRH31 LDZM	FTRH31 LDZM		FTEW38 LEMM	FTRH31 LDZM
FTRO31 LROM	FTRO31 LROM		FTFI31 EFHK	FTRO31 LROM
FTSN31 ESWI	FTSN31 ESWI		FTFR21 LFPW	FTSN31 ESWI
FTSQ31 LZIB	FTSQ31 LZIB		FTFR31 LFPW	FTSQ31 LZIB
FTSW31 LSSW	FTSW31 LSSW		FTFR32 LFPW	FTSW31 LSSW
FTTS31 DTTA	FTTS31 DTTA		FTFR33 LFPW	FTTS31 DTTA
FTTS32 DTTA	FTTS32 DTTA		FTFR34 LFPW	FTTS32 DTTA
FTTU31 LTAA	FTTU31 LTAA		FTFR35 LFPW	FTTU31 LTAA
FTTU32 LTAA	FTTU32 LTAA		FTFR36 LFPW	FTTU32 LTAA
FTUK31 EGGY	FTUK31 EGGY		FTFR37 LFPW	FTUK31 EGGY
FTUK32 EGGY	FTUK32 EGGY		FTFR38 LFPW	FTUK32 EGGY
FTUK33 EGGY	FTUK33 EGGY		FTFR39 LFPW	FTUK33 EGGY

FTUK34 EGGY	FTUK34 EGGY
FTUK35 EGGY	FTUK35 EGGY
FTYG31 LYBM	FTYG31 LYBM
SACY31 LCLK	SACY31 LCLK
SAGR31 LGAT	SAGR31 LGAT
SAGR32 LGAT	SAGR32 LGAT
SAGR33 LGAT	SAGR33 LGAT
SATU31 LTAA	SATU31 LTAA
UACY31 ////	UACY31 ////
UAGR31 ////	UAGR31 ////
UARM// ////	UARM// ////
UATU31 LTAA	UATU31 LTAA
WSCY// ////	WSCY// ////
WSGR// ////	WSGR// ////
WSTU31 LTAC	WSTU31 LTAC
WSTU31 LTBA	WSTU31 LTBA

FTGG31 UGTB	FTUK34 EGGY
FTGI32 EGRR	FTUK35 EGGY
FTGR31 LGAT	FTYG31 LYBM
FTGR32 LGAT	SACY31 LCLK
FTHU31 LHBM	SAGR31 LGAT
FTIE31 EIDB	SAGR32 LGAT
FTIY31 LIIB	SAGR33 LGAT
FTIY32 LIIB	SATU31 LTAA
FTKY31 RUMS	UACY31 ////
FTNL31 EHDB	UAGR31 ////
FTNO31 ENMI	UARM// ////
FTNO32 ENMI	UATU31 LTAA
FTNO32 LOWM	WSCY// ////
FTNO33 ENMI	WSGR// ////
FTNO38 ENMI	WSTU31 LTAC
FTOS31 LOWM	WSTU31 LTBA
FTPL31 EPWA	
FTPO31 LPMG	
FTPO32 LPMG	
FTPO33 LPMG	
FTRA31 RUMS	
FTRA32 RUMS	
FTRA33 RUMS	
FTRA34 RUMS	
FTRA35 RUMS	
FTRA36 RUMS	
FTRA37 RUMS	
FTRH31 LDZM	
FTRO31 LROM	
FTRS31 RUMS	
FTRS32 RUMS	
FTRS33 RUMS	
FTRS34 RUMS	
FTRS35 RUMS	
FTSN31 ESWI	
FTSQ31 LZIB	
FTSW31 LSSW	
FTTR31 RUMS	
FTTS31 DTTA	
FTTS32 DTTA	
FTTU31 LTAA	
FTTU32 LTAA	
FTUK31 EGGY	
FTUK32 EGGY	
FTUK33 EGGY	
FTUK34 EGGY	
FTUK35 EGGY	
FTUR30 UKMS	
FTUR31 UKMS	
FTUZ31 UTTT	

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FTUZ31 UTTW
FTYG31 LYBM
SAAJ31 UBBB
SAAY31 RUMS
SABY31 UMMN
SACY31 LCLK
SAEE31 LOWM
SAGG31 UGTB
SAGR31 LGAT
SAGR32 LGAT
SAGR33 LGAT
SAKY31 RUMS
SAKZ31 RUMS
SARA31 RUMS
SARA32 RUMS
SARA33 RUMS
SARA34 RUMS
SARA35 RUMS
SARA36 RUMS
SARS31 RUMS
SARS32 RUMS
SARS33 RUMS
SARS34 RUMS
SARS35 RUMS
SATR31 RUMS
SATU31 LTAA
SAUR30 UKMS
SAUR31 UKMS
SAUZ31 UTSB
SAUZ31 UTTT
SAUZ31 UTTW
SPAJ31 UBBB
SPAY31  RUMS
SPBY31 UMMN
SPGG31 UGTB
SPRA34 RUMS
SPTR// ////
SPUR30 UKMS
SPUR31 UKMS
SPUR41 ////
SPUZ31 ////
UACY31 ////
UAGR31 ////
UARM// ////
UATU31 LTAA
WSCY// ////
WSGR// ////
WSTU31 LTAC
WSTU31 LTBA
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OBBIYMYX	OBBIYZYX	OIZZYPYB	OIIIYPYX	OPLAYMYX
FTDN31 EKCH	FTDN31 EKCH	FCUK31 EGGY	FTBU31 LBSM	FTDL31 EDZO
FTFI31 EFHK	FTFI31 EFHK	FCUK32 EGGY	FTCZ31 LKPW	FTDL32 EDZO
FTNO31 ENMI	FTNO31 ENMI	FCUK33 EGGY	FTEU31 BKPR	FTDL33 EDZO
FTNO32 ENMI	FTNO32 ENMI	FCUK34 EGGY	FTHU31 LHBM	
FTNO33 ENMI	FTNO33 ENMI	FCUK35 EGGY	FTPL31 EPWA	
FTNO38 ENMI	FTNO38 ENMI	FCUK36 EGGY	FTRO31 LROM	
FTSN31 ESWI	FTSN31 ESWI	FTDL31 EDZO	FTSQ31 LZIB	
		FTIQ01 ORBI	FTTU31 LTAA	
		FTUK31 EGGY	FTTU32 LTAA	
		FTUK32 EGGY	FTTU33 LTAA	
		FTUK33 EGGY	FTTU34 LTAA	
		FTUK34 EGGY	FTYG31 LYBM	
		FTUK35 EGGY		
		SADL31 EDZO		
		SAIQ01 KWBC		
		SAIQ01 ORBI		
		SAUK31 EGGY		
		SAUK32 EGGY		
		SAUK33 EGGY		
		SAUK34 EGGY		
		SAUK35 EGGY		
		SAUK36 EGGY		
		SAUK37 EGGY		
		SAUK38 EGGY		
		SPUK31 EGBE		
		WSUK// ////		

OEJDYRYX	OIZZYRYR
FTIL31 BICC	SARS41 LOWM

MET SG/3
Appendix 4.3F to the Report on Agenda Item 4.3

TERMS OF REFERENCE OF THE MID OPMET BULLETIN MANAGEMENT GROUP (MID OPMET BMG)

1. Terms of Reference

a) Review the OPMET exchange schemes in the MID Region and develop proposals for their optimization taking into account the current trends in the global OPMET exchange;

b) Develop monitoring and management procedures related to the ROBEX exchange and other exchanges of OPMET information;

c) Keep up-to-date the regional guidance material related to OPMET exchange;

d) Liaise with similar groups in the adjacent ICAO Regions in order to ensure harmonized and seamless OPMET exchange; and

e) The group will report to the MET Sub-Group of MIDANPIRG.

2. Work Programme

The work to be addressed by the MID OPMET BMG includes:

a) examine the existing requirements and any new requirements for the OPMET exchange in MID Region and to assess the feasibility of satisfying these requirements, taking into account the availability of the data;

b) review the ROBEX scheme and other OPMET exchange schemes and prepare proposal for updating and optimizing of the schemes;

c) review and update the procedures for interregional exchange and for transmission of the regional OPMET data to SADIS;

d) review and amend the regional guidance materials on the OPMET exchange and include procedures for the exchange of all required OPMET message types: SA, SP, FC, FT, WS, WC, WV, FK, FV,UA;

e) develop procedures for monitoring and management of the OPMET information, based on similar procedures used in the EUR and APAC Regions; and

f) provide regular progress reports to MET SG meetings.

3. Composition

a) The OPMET/BMG is composed by experts from Egypt, Iran, Kuwait and Oman (Rapporteur). Bahrain, Saudi Arabia and UAE are also expected to participate in the activity of the Group; and

b) Experts from the EUR OPMET Data Management Group (DMG), the VAAC Toulouse, APAC OPMET/M Task Force and IATA are invited to participate in the work of the MID OPMET BMG.

4. Working arrangements

It is expected that most of the work of the group will be conducted via correspondence by fax, e-mail or telephone. The group should establish a network of OPMET focal points at all MID COM/MET centres dealing with OPMET data. When necessary, the Rapporteur, in coordination with the Regional Office, Cairo, will call teleconferences or meetings to discuss important issues.

MET SG/3
Report on Agenda Item 4.4

REPORT ON AGENDA ITEM 4: STATUS OF IMPLEMENTATION OF THE METEOROLOGICAL SERVICES IN THE MID REGION

4.4: REVIEW IMPLEMENTATION OF MET SERVICE FOR LOW-LEVEL FLIGHTS

4.4.1 The meeting did not have any items to discuss with relation to the implementation of MET service for low-level flights.

REPORT ON AGENDA ITEM 5: REVIEW OF THE MET PROVISIONS IN THE MID BASIC ANP AND FASID

5.1 The meeting recalled MET SG/2 draft Conclusion 2/9 and 2/10 a) that proposed an amendment to Part VI (MET) of the MID Air Navigation Plan Volume I and Volume II (MID Doc 9708), which was acted on with amendment proposals to the MID Basic ANP and FASID in April 2010. This approved proposal aligned regional procedures with the International Airways Volcano Watch (IAVW) and World Area Forecast System (WAFS) as well as regional requirements for 24- and 30-hour Aerodrome Forecasts (TAF) in the MID Region.

5.2 The meeting also recalled MIDANPIRG/12 Conclusion 12/73 to review Part VI (MET) of the MID Air Navigation Plan Volume II (FASID) in time for the meeting noting that FASID Tables MET 2B, 2C, 4A and 4B as provided in **Appendices 5A, 5B, 5C** and **5D** to the Report on Agenda Item 5. This initiative was considered at the first meeting of the MID OPMET Bulleting Management Group (MID OPMET BMG/1) held on 18 December 2011 (MIDANPIRG Conclusion 12/69 refer) in Cairo. The BMG/1 meeting determined that no changes were necessary to FASID Table MET 2B and that changes such as the inclusion of Dammam to Dhahran would be considered in FASID Table MET 4A. States would have the opportunity to provide changes until the end of January 2012 before the next amendment proposal commenced.

5.3 The meeting recalled the use of the Regional Air Navigation Plan as the basis of 1) cost recovery, 2) measuring implementation of requirements (e.g. OPMET monitoring) that assists in identifying where improvements need to be made, and 3) regional planning by some stakeholders. The meeting noted that changes in requirements provided by global initiatives (WAFSOPSG/6 and IAVWOPSG/6) warranted another amendment proposal. The meeting noted that the entries for Israel would be removed as they are now part of the EUR Regional Air Navigation Plan. In addition, the meeting was invited to provide responses before 31 January 2012. Given the aforementioned, the meeting agreed to the following draft Conclusion.

DRAFT CONCLUSION 3/7- PROPOSAL FOR AMENDMENT TO PART VI (MET) OF THE MID AIR NAVIGATION PLAN VOLUME I AND VOLUME II (MID DOC 9708)

*That, taking into consideration the outcomes of WAFSOPSG/6, IAVWOPSG/6 and comments provided by States to be included in **Appendix 5E** and **5F**, a proposal for amendments to Part VI (MET) of the MID Air Navigation Plan Volume I and II be processed in accordance to established procedures.*

MID FASID MET 2B **VI-MET 2B-1**

FASID Table MET 2B

EXCHANGE REQUIREMENTS FOR SIGMET, AIRMET, VOLCANIC ASH AND TROPICAL CYCLONE ADVISORIES, AND SPECIAL AIR REPORTS FOR WHICH SIGMET HAS NOT BEEN ISSUED

Since the EUR Region has a requirement for a global set of SIGMET, AIRMET, volcanic ash and tropical cyclone advisories, and special air reports for which SIGMET has not been issued, no FASID Table MET 2B is included in the document. All the foregoing information issued outside the EUR Region should be AFTN addressed as follows:

Source Region Responsible EUR Gateway in AFTN address to be used

AFI	France	LFZZMAFI
MID	**Austria**	**LOZZMMID**
ASIA	United Kingdom	EGZZMASI
CAR	United Kingdom	EGZZMCAR
NAM	United Kingdom	EGZZMNAM
NAT	United Kingdom	EGZZMNAT
PAC	United Kingdom	EGZZMPAC
SAM	United Kingdom	EGZZMSAM

MID FASID MET 2C **VI-MET 2C-1**

FASID Table MET 2C

EXCHANGE OF OPERATIONAL METEOROLOGICAL INFORMATION DURING THE PILGRIMAGE SEASON

EXPLANATION OF THE TABLE

Column

1 Name of the State in which the operational meteorological information should be available.

2 Location from which, or related to which, the operational meteorological information refers.

3 TF – Aerodrome forecasts X: Seasonal requirement

4 RF – Route forecasts

To be available in	From or related to	Information required	
		TF	RF
1	2	3	4
SAUDI ARABIA	ABIDJAN	X	
	ACCRA	X	
	AKTYUBINSK	X	
	ALGER (ROUTE/RUTA		X
	CASABLANCA-TRIPOLI)	X	
	ALMATY	X	
	ASKHABAT	X	
	BAMAKO	X	
	BANGUI	X	
	BRAZZAVILLE		X
	CAIRO (ROUTE/RUTA TRIPOLI-JEDDAH)	X	
	CONAKRY	X	
	COTONOU	X	
	DAKAR	X	
	DOUALA	X	
	DUSHANBE		X
	KHARTOUM (ROUTE/RUTA KHARTOUM-GENEINA)	X	
	KYIV	X	
	NOUADHIBOU	X	
	OUAGADOUGOU	X	
	SAL ISLAND	X	
	SAMARKAND		
	TASHKENT		

MID FASID MET 4A **VI-MET 4A-1**

FASID Table MET 4A

REGIONAL OPMET BULLETIN EXCHANGE (ROBEX) SCHEME – COLLECTION AREAS FOR AERODROME FORECASTS

EXPLANATION OF THE TABLE

Column

1 Location of the TAF collection centre

2 Aerodromes for which aerodrome forecasts in the TAF code form are collected

TAF Collection Centre	Collection Area
BAHRAIN	ABU DHABI AL AIN BAHRAIN DAMMAM DOHA DUBAI FUJAIRAH KUWAIT MUSCAT RAS AL KHAIMAH SALALAH SHARJAH
BEIRUT	AMMAN BAGHDAD BASRAH BEIRUT DAMASCUS
JEDDAH	ADEN DHAHRAN JEDDAH MADINAH RIYADH SANA'A
TEHRAN	AHWAZ BANDAR ABBASS ESFAHAN KERMAN MASHHAD SHIRAZ TABRIZ TEHRAN ZAHEDAN

MET SG/3
Appendix 5D to the Report on Agenda Item 5

MID FASID MET 4B **VI-MET 4B-1**

FASID Table MET 4B

REGIONAL OPMET BULLETIN EXCHANGE (ROBEX) SCHEME – COLLECTION AREAS FOR ROUTINE REPORTS AND AIR-REPORTS

EXPLANATION OF THE TABLE

Column

1 Location of the METAR/AIREP collection centre

2 Aerodromes for which aerodrome forecasts in the METAR/AIREP code form are collected

METAR/AIREP Collection Centre	Collection Area
BAGHDAD	BAGHDAD BASRAH
BAHRAIN	ABU DHABI AL AIN BAHRAIN DAMMAM DOHA DUBAI FUJAIRAH KUWAIT MUSCAT RAS AL KHAIMAH SHARJAH
BEIRUT	AMMAN BEIRUT DAMASCUS
JEDDAH	DHAHRAN JEDDAH MADINAH RIYADH SANA'A
TEHRAN	AHWAZ BANDAR ABBASS ESFAHAN KABUL KANDAHAR KERMAN MASHHAD SHIRAZ TABRIZ TEHRAN ZAHEDAN

MET SG/3
Appendix 5E to the Report on Agenda Item 5

MID ANP VOLUME I (BASIC ANP) PART VI (MET)

Part VI

METEOROLOGY (MET)

INTRODUCTION

1. This part of the Middle East (MID) Basic Air Navigation Plan contains elements of the existing planning system and introduces the basic planning principles, operational requirements and planning criteria related to aeronautical meteorology (MET) as developed for the MID Region.

2. As a complement to the Statement of Basic Operational Requirements and Planning Criteria (BORPC) set out in Part I, Part VI constitutes the stable guidance material considered to be the minimum necessary for effective planning of MET facilities and services in the MID Region. A detailed description/list of the facilities and/or services to be provided by States in order to fulfill1 the requirements of the Basic ANP is contained in the MID Facilities and Services Implementation Document (FASID)

3. The Standards, Recommended Practices and Procedures to be applied are contained in the following ICAO documents:
a) Annex 3 — Meteorological Service for International Air Navigation;
b) Regional Supplementary Procedures (Doc 7030), Part 3 - Meteorology.

4. Background information of importance in the understanding and effective application of the Plan is contained in the Reports of the Limited Middle East (COM/MET/RAC) Regional Air Navigation Meeting (Doc 9672, LIM MID (COM/MET/RAC)(1996)) and of the Third Middle East Regional Air Navigation Meeting (Doc 9434, MID/3 (1984)), supplemented by information appropriate to the MID Region which is contained in the Reports of the other Regional Air Navigation Meetings.

5. RAN Meeting recommendations or conclusions, Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG) conclusions and ICAO operations groups conclusions shown in brackets below a heading indicate the origin of all paragraphs following that heading; where these conclusions are shown in brackets below a paragraph they indicate the origin of that particular paragraph.

METEOROLOGICAL SERVICE AT AERODROMES AND REQUIREMENTS FOR METEOROLOGICAL WATCH OFFICES

(FASID Tables MET 1A and MET 1B)

6. The service to be provided at the international aerodromes listed in MID Basic ANP Table AOP1 is set out in FASID Table MET 1A.
[LIM MID (COM/MET/RAC), Rec.4/10]

7. The service to be provided for flight information regions (FIR), upper flight information regions (UIR), control areas (CTA) and search and rescue regions (SRR) is set out in FASID Table MET 1B.
[LIM MID (COM/MET/RAC), Rec. 4/10]

8. Routine observations should be made at all aeronautical stations at hourly intervals and reports issued as local routine reports and METAR, complemented by special observations issued as local special reports and SPECI.
[MID/3, Rec. 3.1/12]

9. TAF should be issued at intervals of six hours, with the period of validity beginning at one of the main synoptic hours (00, 06, 12, 18 UTC). The period of validity should be 24 or 30 hours, to meet the requirements indicated in FASID Table MET 1A. The filing time of the forecasts should be one hours before the start of the period of validity.
[MIDANPIRG/11 Report]

10. The forecast maximum temperatures should be included in aerodrome forecasts for certain stations as agreed between the meteorological authorities and the operators concerned.
[LIM MID (COM/MET/RAC) Rec. 4/10]

11. Trend forecasts should be provided at the aerodromes as indicated in FASID Table MET 1A.
[LIM MID (COM/MET/RAC), Rec. 4/10]

12. Meteorological service should be provided on a 24 hour basis, except as otherwise agreed between the meteorological authority, the air traffic services authority and the operators concerned.
[MID/3, Rec.3.1/12]

13. At aerodromes with limited hours of operation, the issuance of METAR should be issued at least one hour prior to the aerodrome resuming operations to meet pre-flight and in-flight planning requirements for flights due to arrive at the aerodrome concerned as soon as it is opened for use. Furthermore, TAF should be issued with adequate periods of validity so that they cover the entire period during which the aerodrome is open for use.
[MID/3, Rec. 3.1/12]

14. When an MWO is temporarily not functioning or is not able to meet all its obligations, its responsibilities should be transferred to another MWO and a NOTAM should be issued to indicate such a transfer and the period during which the office is unable to fulfil all its obligations.
[MID/3, Rec. 3.1/12]

15. Details of the service provided should be indicated in Aeronautical Information Publications, in accordance with the provisions of Annex 15.
[MID/3, Rec. 3.1/12]

16. As far as possible, English should be among the languages used in meteorological briefing and consultation.
[MID/3, Rec. 3.1/12]

17. FASID Tables MET 1A and 1B should be implemented as soon as possible.

AIRCRAFT OBSERVATIONS AND REPORTS

18. The meteorological authority should adopt the approved list of ATS/MET reporting points, as it relates to points located within and on the boundaries of the FIR for which the State is responsible. Those ATS/MET reporting points should be published in the AIP of the State concerned.
[LIM MID (COM/MET/RAC), Rec.4/19]

Note.— The approved list of ATS/MET reporting points is published and kept up to date by the ICAO Regional Office concerned, on the basis of consultations with ATS and MET authorities in each State and the provisions of Annex 3 in this respect.

19. The meteorological watch offices (MWO) designated as the collecting centres for air-reports received by voice communications within the FIR/UIR for which they are responsible, are shown in FASID Table MET 1B.

AIRMET INFORMATION

20. AIRMET messages are not required to be issued by MWOs.
[LIM MID (COM/MET/RAC), Rec. 4/10]

TROPICAL CYCLONE ADVISORIES AND VOLCANIC ASH ADVISORIES
(FASID Tables MET 3A, 3B and 3C; FASID Charts MET1 and MET2)

21. Tropical cyclone advisory centre (TCAC) New Delhi has been designated to prepare advisory information. FASID Table MET 3A sets out the area of responsibility, the period of operation of the TCAC and the MWOs to which the advisory information should be sent.
[IAVWOPSG Conclusion 3/2]

22. Volcanic ash advisory centre (VAAC) Toulouse has been designated to prepare advisory information. FASID Table MET 3B sets out the area of responsibility of the VAACs, and the MWOs and ACCs/FICs to which the advisory information should be sent.
[IAVWOPSG Conclusion 3/2]

23. In order for the VAAC to initiate the monitoring of volcanic ash from satellite data and the forecast of volcanic ash trajectories, MWOs should notify the VAAC immediately on receipt of information that a volcanic eruption has occurred or volcanic ash has been observed in the FIR for which they are responsible. In particular, any special air-reports of pre-eruption volcanic activity, a volcanic eruption or volcanic ash cloud, received by MWOs should be transmitted without delay to the VAAC Toulouse. Selected State volcano observatories have been designated for direct notification of significant pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash in the atmosphere to their corresponding ACC/FIC, MWO and VAAC. FASID Table MET 3C sets out the selected State volcano observatories and the VAACs, MWOs and ACCs to which the notification should be sent by the observatories.
[IAVWOPSG Conclusion 3/2]

EXCHANGE OF OPERATIONAL METEOROLOGICAL INFORMATION
(FASID Tables MET 2A, 2B, 4A and 4B)

24. FASID Table MET 2A sets out the requirements for operational meteorological (OPMET) information, which should be made available to States and users through the AFS satellite broadcasts (SADIS and ISCS).

25. FASID Table MET 2B sets out the operational meteorological information which should be available in Saudi Arabia for the pilgrimage flights. For its implementation, ICAO should notify, in accordance with AFI/6, Recommendation 6/24, as approved by Council, meteorological offices concerned well in advance of the exact dates of the beginning and the end of the Pilgrimage Season (cf also Doc 7474, Table MET 2B).
[LIM MID (COM/MET/RAC), Rec. 5/3]

26. FASID Tables MET 4A and MET 4B set out the Regional OPMET Bulletin Exchange (ROBEX) Scheme for the collection of METAR and air reports (AIREP), and TAF, respectively. When the designated ROBEX centres are not operational for any reason, the exchanges required under the ROBEX Scheme should be carried out by direct address messages.
[LIM MID (COM/MET/RAC), Rec. 5/5]

Note.— Details of the ROBEX procedures including the exchange of OPMET information required under the scheme are given in the ROBEX Handbook prepared by the ICAO Asia and Pacific Office, Bangkok, Thailand.

27. Each MWO should arrange for the transmission to all aerodrome meteorological offices within its associated FIR of its own SIGMET messages and relevant SIGMET messages for other FIR, as required for briefing and, where appropriate, for flight documentation.
[MID/3, Rec. 3.1/12]

28. Each MWO should arrange for the transmission to its associated ACC/FIC of SIGMET messages and special air-reports received from other MWOs.

29. Each MWO should arrange for the transmission of routine air-reports received by voice communications to all meteorological offices within its associated FIR.

30. Operational meteorological information required in MID States from the EUR Region should be requested from the inter-regional OPMET Gateway (IROG), Vienna. OPMET information from the AFI Region should be requested from Jeddah (OEJNYM). OPMET information from ASIA/PAC Region should be requested from IROG Bangkok.

WORLD AREA FORECAST SYSTEM (WAFS)
(FASID Table MET 5)

31. FASID Table MET 5 sets out the MID Region requirements for WAFS forecasts to be provided by WAFC London.
[WAFSOPSG Conclusion 1/2]

32. For back-up purposes, each WAFC should have the capability to produce WAFS forecasts for all required areas of coverage.
[WAFSOPSG Conclusion 5/2]

33. WAFS forecasts should be ~~disseminated~~ made available by WAFC London using the satellite distribution system for information relating to air navigation (SADIS) ~~covering the reception area shown in FASID Chart COM 7~~ or using the SADIS FTP service.
[WAFSOPSG Conclusion~~4/2~~ 6/2]

Editorial note. – Insert "or using the SADIS FTP service" in the corresponding CNS procedure contained in Part IV of the ANP

34. Each State should make the necessary arrangements to receive and make full use of operational WAFS forecasts ~~issued~~ made available by WAFC London. The lists of the authorized users of the SADIS services in the MID Region and location of the operational VSATs and ~~FTPs~~ Internet-based services are available from the following website:

www/icao.int/anb/sadisopsg (click: "Status of implementation") for SADIS
[WAFSOPSG Conclusion ~~5/2~~ 6/2]

MID ANP VOLUME II (FASID) PART VI (MET)

METEOROLOGY (MET)

1. Introduction

1.1 The Standards, Recommended Practices and Procedures to be applied are as listed in paragraph 1.2, Part VI - MET of the MID Basic ANP. The material in this part complements that contained in Part I – Statement of Basic Operational Requirements and Planning Criteria (BORPC) of the MID Basic ANP and should be taken into consideration in the overall planning processes for the MID Region.

1.2 This Part contains a detailed description/list of the facilities and/or services to be provided to fulfil the basic requirements of the Plan and are as agreed between the provider and user States concerned. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified. This element of the FASID, in conjunction with the MID Basic ANP, is kept under constant review by the MIDANPIRG in accordance with its schedule of management, in consultation with user and provider States and with the assistance of the ICAO Middle East Office, Cairo.

2. Meteorological Service Required at Aerodromes and Requirements for Meteorological Watch Offices

(FASID Tables MET 1A and 1B)

2.1 The meteorological service to be provided at aerodromes to satisfy international flight operations is outlined in FASID Table MET 1A.

2.2 The requirements for meteorological watch offices (MWO) together with the service to be provided to flight information regions (FIR), upper flight information regions (UIR) and search and rescue regions (SRR) are listed in FASID Table MET 1B.

3. Exchange of Operational Meteorological Information

(FASID Tables MET 2A, 2B, 4A and 4B)

3.1 The requirements for availability of OPMET information (METAR, SPECI and TAF) on a global basis through the AFS satellite distribution system (the SADIS and ISCS) are provided in FASID Table MET 2A. This table contains the aerodromes included in the AOP Table of the Basic ANP and those non-AOP aerodromes for which the States concerned have agreed to make available the OPMET information via the satellite distribution system on a regular basis.

3.2 FASID Table MET 2B contains the operational meteorological information which should be available in Saudi Arabia for the pilgrimage flights.

3.3 FASID Tables MET 4A and 4B set out the Regional OPMET Bulletin Exchange (ROBEX) Scheme for the exchange of METAR, SPECI, air reports (AIREP) and TAF.

Note. - Details of the ROBEX procedures including the exchange of OPMET information required under the Scheme are given in the ROBEX Handbook published by the ICAO Asia and Pacific Office, Bangkok in co-ordination with the ICAO MID Office, Cairo. The ROBEX handbook is available via the 'MET' section of: http://www.bangkok.icao.int/edocs/index.html.

4. Tropical Cyclone Warning System and International Airways Volcano Watch

(FASID Tables MET 3A, MET 3B, and MET 3C and FASID Charts MET ~~3~~ 1 and 2)

4.1 The area of responsibility and the periods of operation of the designated Tropical Cyclone Advisory Centre (TCAC) New Delhi and the MWOs to which the advisory information should be sent by the TCAC are contained in FASID Table MET 3A. The areas of responsibility of the designated TCACs in all regions are shown on FASID Chart MET 1.

4.2 The area of responsibility of the designated Volcanic Ash Advisory Centre (VAAC) Toulouse and the MWOs and ACCs/FICs to which the advisory information should be sent by the VAAC are contained in FASID Table MET 3B. The areas of responsibility of the designated VAACs in all regions are shown on FASID Chart MET ~~3~~ 2.

4.3 FASID Table MET 3C sets out the selected State volcano observatories in the MID Region designated for direct notification of significant pre-eruption volcanic activity and/or volcanic ash in the atmosphere and the VAACs, MWOs and ACCs to which the notification should be sent by the observatories.

Note 1. - Operational procedures to be used for the dissemination of information on volcanic eruptions and associated ash clouds in areas which could affect routes used by international flights, and necessary pre-eruption arrangements as well as the list of operational contact points are provided in the document titled Handbook on the International Airways Volcano Watch (IAVW) - Operational Procedures and Contact List (Doc 9766).

Note 2.- Additional guidance material regarding the IAVW is contained in the Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691).

5. World Area Forecast System (WAFS)

(FASID Table MET 5)

5.1 FASID Table MET 5 sets out the MID Region requirements for WAFS forecasts to be provided by WAFC London.

– END –

MID ANP VOLUME II (FASID) PART VI (MET)

TABLE MET 1A - METEOROLOGICAL SERVICE AT AERODROMES

EXPLANATION OF THE TABLE

Column

1. Name of the aerodrome.

2. ICAO location indicator of the aerodrome.

3. Designation of aerodrome:
   RG - international general aviation, regular use
   RS - international scheduled air transport, regular use
   RNS - international non-scheduled air transport, regular use
   AS - international scheduled air transport, alternate use
   ANS - international non-scheduled air transport, alternate use

4. Name of the meteorological office responsible for the provision of meteorological service at the aerodrome indicated in column 1.

5. ICAO location indicator of the responsible meteorological office.

6. Requirement for trend forecasts.

7. Requirement for aerodrome forecasts in TAF code
   T – Requirement for 24-hour validity aerodrome forecasts in TAF code (24H)
   X - Requirement for 30-hour validity aerodrome forecasts in TAF code (30H)

8. Availability of OPMET information
   F - Full : OPMET data as listed issued for the aerodrome all through the 24-hour period
   P - Partial : OPMET data as listed not issued for the aerodrome for the entire 24-hour period
   N - None : No OPMET data issued for the time being

Aerodrome where service is to be provided			Responsible MET office		Forecasts to be provided		Availability of OPMET
Name 1	ICAO Location Indicator 2	Use 3	Name 4	ICAO Location Indicator 5	TR 6	TAF 7	8
BAHRAIN							
BAHRAIN INTERNATIONAL	OBBI	RS	BAHRAIN INTERNATIONAL	OBBI	Y	X	F
EGYPT							
ALEXANDRIA / INTL	HEAX	RS	CAIRO/INTL	HECA	Y	X	F
ALMAZA AFB/MIL	HEAZ	RNS	CAIRO/INTL	HECA		X	F
ASWAN / INTL	HESN	RS	CAIRO/INTL	HECA	Y	X	F
ASYUT/INTL	HEAT	AS	CAIRO/INTL	HECA		X	F
CAIRO/INTL	HECA	RS	CAIRO/INTL	HECA	Y	X	F
HURGHADA / INTL	HEGN	RS	CAIRO/INTL	HECA	Y	X	F
LUXOR / INTL	HELX	RS	CAIRO/INTL	HECA	Y	X	F
MARSA ALAM/INTL	HEMA	RS	CAIRO/INTL	HECA		X	F
SHARK EL OWEINAT	HEOW	AS	CAIRO/INTL	HECA		X	F
SHARM EL SHEIKH / INTL	HESH	RS	CAIRO/INTL	HECA		X	F
ST.CATHERINE / INTL	HESC	AS	CAIRO/INTL	HECA		X	F
TABA / INTL	HETB	RS	CAIRO/INTL	HECA		X	F
IRAN (ISLAMIC REPUBLIC OF)							
BANDAR ABBASS/INTL	OIKB	RS	TEHRAN/MEHRABAD INTL	OIII		T	F
ESFAHAN / SHAHID BEHESHTI INTL	OIFM	RS	TEHRAN/MEHRABAD INTL	OIII		X	F
MASHHAD/SHAHID HASHEMI NEJAD INTL	OIMM	RS	TEHRAN/MEHRABAD INTL	OIII		T	F
SHIRAZ/SHAHID DASTGHAIB INTL	OISS	RS	SHIRAZ/SHAHID DASTGHAIB INTL	OISS	Y	X	F
TABRIZ/INTL	OITT	RNS	TABRIZ/INTL	OITT		X	F
TEHRAN/IMAM KHOMAINI INTL	OIIE	RS	TEHRAN/MEHRABAD INTL	OIII	Y	X	F
TEHRAN/MEHRABAD INTL	OIII	RS	TEHRAN/MEHRABAD INTL	OIII	Y	T	F
ZAHEDAN/INTL	OIZH	RS	TEHRAN/MEHRABAD INTL	OIII		T	F
IRAQ							
BAGHDAD INTERNATIONAL AIRPORT	ORBI	RS	BAGHDAD INTERNATIONAL AIRPORT	ORBI	Y	T	F
BASRAH INTL AIRPORT	ORMM	RS	BAGHDAD INTERNATIONAL AIRPORT	ORBI	Y	T	F
ERBIL INTL AIRPORT	ORER	RS					F
SULAYMANIYAH INTERNATIONAL AIRPORT	ORSU	RS					F
~~**ISRAEL**~~							
~~EILAT/J. HOZMAN AIRPORT~~	~~LLET~~	~~RNS~~	~~TEL-AVIV/BEN GURION AIRPORT~~	~~LLBG~~			~~F~~
~~HAIFA/U. MICHAELI AIRPORT~~	~~LLHA~~	~~RNS~~					~~F~~
~~OVDA AIRPORT~~	~~LLOV~~	~~RNS~~	~~TEL-AVIV/BEN GURION AIRPORT~~	~~LLBG~~	~~Y~~		~~F~~
~~TEL-AVIV/BEN GURION AIRPORT~~	~~LLBG~~					~~T~~	~~F~~
~~TEL-AVIV/SDE-DOV AIRPORT~~	~~LLSD~~						~~F~~
JORDAN							
AMMAN/MARKA	OJAM	AS	AMMAN/MARKA	OJAM	Y	T	F
AMMAN/QUEEN ALIA	OJAI	RS	AMMAN/MARKA	OJAM	Y	X	F
AQABA/KING HUSSEIN INTERNATIONAL AIRPORT	OJAQ	RNS	AMMAN/MARKA	OJAM			F
JERUSALEM/JERUSALEM	OJJR	RS	AMMAN/MARKA	OJAM			N

Aerodrome where service is to be provided			Responsible MET office		Forecasts to be provided		Availability of OPMET
Name 1	ICAO Location Indicator 2	Use 3	Name 4	ICAO Location Indicator 5	TR 6	TAF 7	 8
KUWAIT							
KUWAIT/INTL AIRPORT	OKBK	RS	KUWAIT/INTL AIRPORT	OKBK	Y	X	F
LEBANON							
BEIRUT/BEIRUT INTL	OLBA	RS	BEIRUT/BEIRUT INTL	OLBA	Y	X	F
OMAN							
MUSCAT/SEEB INTL.	OOMS	RS	MUSCAT/SEEB INTL.	OOMS	Y	X	F
SALALAH	OOSA	AS	SALALAH	OOSA		X	F
QATAR							
DOHA INTERNATIONAL	OTBD	RS	DOHA INTERNATIONAL	OTBD	Y	T	F
SAUDI ARABIA							
DAMMAM/KING FAHD INTERNATIONAL	OEDF	RS				X	F
JEDDAH/KING ABDULAZIZ INTL	OEJN	RS	JEDDAH/KING ABDULAZIZ INTL	OEJN	Y	X	F
MADINAH/PRINCE MOHAMMAD BIN ABDULAZIZ	OEMA	RS	JEDDAH/KING ABDULAZIZ INTL	OEJN	Y	T	F
RIYADH/KING KHALED INTL	OERK	RS	JEDDAH/KING ABDULAZIZ INTL	OEJN	Y	X	F
SYRIAN ARAB REPUBLIC							
ALEPPO/INTL	OSAP	RS	DAMASCUS/INTL	OSDI		T	F
BASSEL AL-ASSAD/INTL.	OSLK	RS	DAMASCUS/INTL	OSDI		T	F
LATTAKIA DAMASCUS/INTL	OSDI	RS	DAMASCUS/INTL	OSDI	Y	X	F
UNITED ARAB EMIRATES							
ABU DHABI INTERNATIONAL	OMAA	RS	ABU DHABI INTERNATIONAL	OMAA	Y	X	F
AL AIN	OMAL	RS	ABU DHABI INTERNATIONAL	OMAA		X	F
DUBAI INTERNATIONAL	OMDB	RS	DUBAI INTERNATIONAL	OMDB	Y	X	F
FUJAIRAH INTERNATIONAL	OMFJ	RS	DUBAI INTERNATIONAL	OMDB		X	F
JEBEL ALI INTERNATIONAL	OMJA	RS					
RAS AL KHAIMAH INTERNATIONAL	OMRK	RS	DUBAI INTERNATIONAL	OMDB		T	F
SHARJAH INTERNATIONAL	OMSJ	RS	DUBAI INTERNATIONAL	OMDB		T	F
YEMEN							
ADEN/INTL	OYAA	RS	SANAA/INTL	OYSN	Y	X	F
HODEIDAH	OYHD	RS	SANAA/INTL	OYSN		T	F
MUKALLA/INTL	OYRN	RS	SANAA/INTL	OYSN		T	F
SANAA/INTL	OYSN	RS	SANAA/INTL	OYSN		T	F
TAIZ/INTL	OYTZ	RS	SANAA/INTL	OYSN		T	F

FASID TABLE MET 1B - METEOROLOGICAL WATCH OFFICES

EXPLANATION OF THE TABLE

Column

1	Name of State with Meteorological Watch Office (MWO) responsibility.
2	Location name of the MWO
3	ICAO location indicator assigned to the MWO.
4	Name of FIR, the UIR and/or the search and rescue region (SRR) served by the MWO.
5	ICAO location indicator assigned to the ATS unit serving the FIR, UIR and/or SRR.
6	Requirement for issuance of SIGMET, *excluding* volcanic ash SIGMET and tropical cyclone SIGMET
7	Requirement for issuance of volcanic ash SIGMET
8	Requirement for issuance of tropical cyclone SIGMET
9	Remarks

Note.— Unless otherwise stated in column 9, the MWO listed in column 2 is the designated collecting centre for the air reports received within the corresponding FIR/UIR listed in column 4.

State	MWO location		Area served		SIGMET			Remarks
	Name	ICAO loc. ind.	Name	ICAO loc. ind.	WS	WV	WC	
1	2	3	4	5	6	7	8	9
BAHRAIN								
	BAHRAIN INTERNATIONAL	OBBI	BAHRAIN FIR and SRR	OBBB	Y	Y	Y	
EGYPT								
	CAIRO/INTL	HECA	CAIRO FIR and SRR	HECC	Y	Y		Asian part thereof
IRAN (ISLAMIC REPUBLIC OF)								
	TEHRAN/MEHRABAD INTL	OIII	TEHRAN FIR and SRR	OIIX	Y	Y	Y	
IRAQ								
	BAGHDAD INTERNATIONAL AIRPORT	ORBI	BAGHDAD FIR and SRR	ORBS	Y	Y		
~~**ISRAEL**~~								
	~~TEL AVIV/BEN GURION AIRPORT~~	~~LLBG~~	~~TEL AVIV FIR and SRR~~	~~LLAD~~	~~Y~~	~~Y~~		
JORDAN								
	AMMAN/QUEEN ALIA	OJAI	AMMAN FIR and SRR	OJAC	Y	Y		
KUWAIT								
	KUWAIT/INTL AIRPORT	OKBK	KUWAIT FIR and SRR	OKAC	Y	Y	Y	
LEBANON								
	BEIRUT/BEIRUT INTL	OLBA	BEIRUT FIR and SRR	OLBA	Y	Y		
OMAN								
	MUSCAT/SEEB INTL	OOMS	MUSCAT FIR and SRR	OOMM	Y	Y	Y	
SAUDI ARABIA								
	JEDDAH/KING ABDULAZIZ INTL	OEJN	JEDDAH FIR and SRR	OEJD	Y	Y	Y	
SYRIAN ARAB REPUBLIC								
	DAMASCUS/INTL	OSDI	DAMASCUS FIR and SRR	OSDI	Y	Y		
UNITED ARAB EMIRATES								
	ABU DHABI INTERNATIONAL	OMAA	EMIRATES FIR and SRR	OMAE	Y	Y	Y	
YEMEN								
	SANAA/INTL	OYSN	SANAA FIR and SRR	OYSN	Y	Y	Y	

FASID Table MET 2B

EXCHANGE REQUIREMENTS FOR SIGMET, AIRMET, VOLCANIC ASH AND TROPICAL CYCLONE ADVISORIES, AND SPECIAL AIR REPORTS FOR WHICH SIGMET HAS NOT BEEN ISSUED

Since the EUR Region has a requirement for a global set of SIGMET, AIRMET, volcanic ash and tropical cyclone advisories, and special air reports for which SIGMET has not been issued, no FASID Table MET 2B is included in the document. All the foregoing information issued outside the EUR Region should be AFTN addressed as follows:

Source Region	Responsible EUR Gateway in	AFTN address to be used
AFI	France	LFZZMAFI
MID	**Austria**	**LOZZMMID**
ASIA	United Kingdom	EGZZMASI
CAR	United Kingdom	EGZZMCAR
NAM	United Kingdom	EGZZMNAM
NAT	United Kingdom	EGZZMNAT
PAC	United Kingdom	EGZZMPAC
SAM	United Kingdom	EGZZMSAM

FASID Table MET 2C

EXCHANGE OF OPERATIONAL METEOROLOGICAL INFORMATION DURING THE PILGRIMAGE SEASON

EXPLANATION OF THE TABLE

Column

1 Name of the State in which the operational meteorological information should be available.

2 Location from which, or related to which, the operational meteorological information refers.

3 TF – Aerodrome forecasts X: Seasonal requirement

4 RF – Route forecasts

To be available in	From or related to	Information required	
		TF	RF
1	2	3	4
SAUDI ARABIA	ABIDJAN	X	
	ACCRA	X	
	AKTYUBINSK	X	
	ALGER (ROUTE/RUTA CASABLANCA-TRIPOLI)		X
	ALMATY	X	
	ASKHABAT	X	
	BAMAKO	X	
	BANGUI	X	
	BRAZZAVILLE	X	
	CAIRO (ROUTE/RUTA TRIPOLI-JEDDAH)		X
	CONAKRY	X	
	COTONOU	X	
	DAKAR	X	
	DOUALA	X	
	DUSHANBE	X	
	KHARTOUM (ROUTE/RUTA KHARTOUM-GENEINA)		X
	KYIV	X	
	NOUADHIBOU	X	
	OUAGADOUGOU	X	
	SAL ISLAND	X	
	SAMARKAND	X	
	TASHKENT	X	

FASID TABLE MET 3A - TROPICAL CYCLONE ADVISORY CENTRE FOR THE MID REGION

EXPLANATION OF THE TABLE

Column

1 Location of the Tropical Cyclone Advisory Centre (TCAC)

2 ICAO location indicator of the TCAC (for use in the WMO heading of advisory bulletin)

3 Area of responsibility for the preparation of advisory information on tropical cyclones by the TCAC in Column 1

4 Period(s) of operation of the TCAC

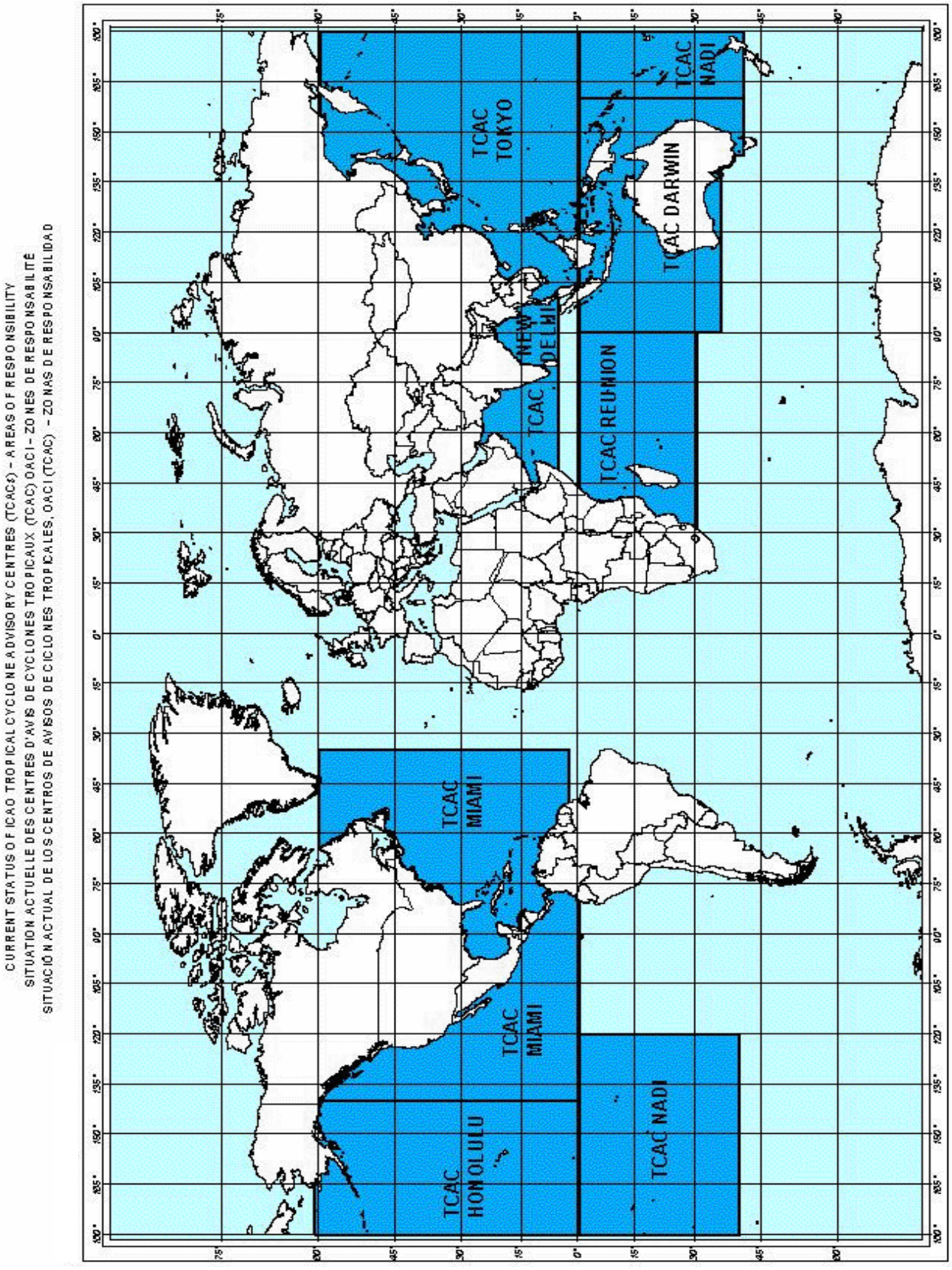
5 Meteorological Watch Office (MWO) to which the advisory information on tropical cyclones should be sent

6 ICAO location indicator of the MWO in Column 5

Tropical Cyclone Advisory Centre		**Area of Responsibility**	~~**Tropical cyclone season***~~ **Period(s) of operation**	**MWO to which advisory information is to be sent**	
Name	**ICAO Loc. Ind.**			**Name**	**ICAO Loc. Ind.**
1	**2**	**3**	**4**	**5**	**6**
New Delhi (India)	VIDP	Arabian Sea including Gulf of Oman and Gulf of Aden N: Coastline S: 5°N W: Coastline E: 65°E	April – June October – December	Abu Dhabi Bahrain Jeddah Kuwait Muscat Sana'a Tehran	OMAA OBBI OEJN OKBK OOMS OYSN OIII

~~* Indicates approximately the main season for tropical cyclones~~.

FASID CHART MET 1 - AREAS OF RESPONSIBILITY OF THE TCACs



FASID TABLE MET 3B — VOLCANIC ASH ADVISORY CENTRES

EXPLANATION OF THE TABLE

Column

1 Name of the Volcanic Ash Advisory Centre (VAAC).

2 ICAO location indicator of VAAC (for use in the WMO ~~heading~~ header of advisory bulletin).

3 Area of responsibility for the preparation of advisory information on volcanic ash by the VAAC in Column 1.

4 ICAO Contracting State where the MWOs and ACCs/FICs are located.

5 ICAO Region where the MWOs and ACCs/FICs are located.

6 MWOs to which the advisory information on volcanic ash should be sent.

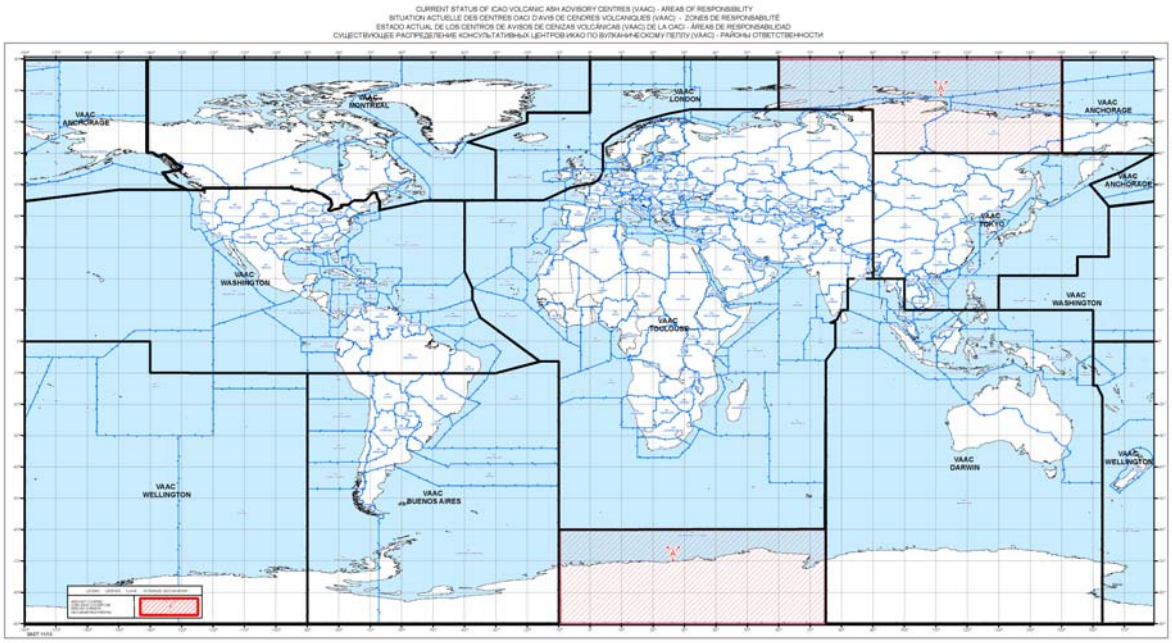
7 ICAO location indicator of the MWOs in Column 6.

8 ACCs/FICs to which the advisory information on volcanic ash should be sent.

9 ICAO location indicator of the ACCs/FICs in Column 8.

Volcanic Ash Advisory Centre			**State**	**ICAO Region**	**MWO to which advisory information is to be sent**		**ACC/FIC to which advisory information is to be sent**	
Name	**ICAO Loc. Ind.**	**Area of responsibility**			**Name**	**ICAO Loc. Ind.**	**Name**	**ICAO Loc. Ind.**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Toulouse (France)	LFPW	The whole ICAO MID Region	Bahrain	MID	Bahrain	OBBI	Bahrain	OBBB
			Egypt	MID	Cairo	HECA	Cairo	HECC
			Iran (Islamic Republic of)	MID	Tehran	OIII	Tehran	OIIX
			Iraq	MID	Baghdad	ORBI	Baghdad	ORBS
			~~Israel~~	~~MID~~	~~Tel Aviv~~	~~LLBG~~	~~Tel Aviv~~	~~LLAD~~
			Jordan	MID	Amman	OJAI	Amman	OJAC
			Kuwait	MID	Kuwait	OKBK	Kuwait	OKAC
			Lebanon	MID	Beirut	OLBA	Beirut	OLBA
			Oman	MID	Muscat	OOMS	Muscat	OOMM
			Saudi Arabia	MID	Jeddah	OEJN	Jeddah	OEJD
			Syrian Arab Republic	MID	Damascus	OSDI	Damascus	OSDI
			United Arab Emirates	MID	Abu Dhabi	OMAA	Emirates	OMAE
			Yemen	MID	Sanaa	OYSN	Sanaa	OYSN

VOLCANIC ASH ADVISORY CENTRES (VAAC) AREAS OF COVERAGE



FASID Table MET 3C

SELECTED STATE VOLCANO OBSERVATORIES

EXPLANATION OF THE TABLE

Column

1 ~~Name of the~~ Provider State of the volcano observatory designated for direct notification of volcanic activity.

2 Name of the volcano observatory.

3 VAAC to which the information related to pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash cloud should be sent.

4 ACC/FIC to which the information related to pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash cloud should be sent.

5 ICAO location indicator ~~assigned to~~ of the ACC/FIC listed in Column 4.

6 MWO to which information related to pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash cloud should be sent.

7 ICAO location indicator of the MWO listed in Column 6

Provider State of volcano observatory	*Volcano observatory*	*VAAC to which the information is to be sent*	*ACC/FIC to which the information is to be sent*		*MWO to which information is to be sent*	
			Name	*ICAO Loc Ind.*	*Name*	*ICAO Loc Ind.*
1	2	3	4	5	6	7
…	…	VAAC Toulouse	…	…	…	…

Note:— AFTN is not available at all selected volcano observatories; ~~and~~ therefore, it is the responsibility of each State to make appropriate communication arrangements.

Note:—The FASID Table MET 3C to be completed when information is provided by the States concerned

FASID Table MET 4A

REGIONAL OPMET BULLETIN EXCHANGE (ROBEX) SCHEME – COLLECTION AREAS FOR AERODROME FORECASTS

EXPLANATION OF THE TABLE

Column

1 Location of the TAF collection centre

2 Aerodromes for which aerodrome forecasts in the TAF code form are collected

TAF Collection Centre	Collection Area
BAHRAIN	ABU DHABI AL AIN BAHRAIN DAMMAM DOHA DUBAI FUJAIRAH KUWAIT MUSCAT RAS AL KHAIMAH SALALAH SHARJAH
BEIRUT	AMMAN BAGHDAD BASRAH BEIRUT DAMASCUS
JEDDAH	ADEN DHAHRAN JEDDAH MADINAH RIYADH SANA'A
TEHRAN	AHWAZ BANDAR ABBASS ESFAHAN KERMAN MASHHAD SHIRAZ TABRIZ TEHRAN ZAHEDAN

FASID Table MET 4B

REGIONAL OPMET BULLETIN EXCHANGE (ROBEX) SCHEME – COLLECTION AREAS FOR ROUTINE REPORTS AND AIR-REPORTS

EXPLANATION OF THE TABLE

Column

1 Location of the METAR/AIREP collection centre

2 Aerodromes for which aerodrome forecasts in the METAR/AIREP code form are collected

METAR/AIREP Collection Centre	Collection Area
BAGHDAD	BAGHDAD BASRAH
BAHRAIN	ABU DHABI AL AIN BAHRAIN DAMMAM DOHA DUBAI FUJAIRAH KUWAIT MUSCAT RAS AL KHAIMAH SHARJAH
BEIRUT	AMMAN BEIRUT DAMASCUS
JEDDAH	DHAHRAN JEDDAH MADINAH RIYADH SANA'A
TEHRAN	AHWAZ BANDAR ABBASS ESFAHAN KABUL KANDAHAR KERMAN MASHHAD SHIRAZ TABRIZ TEHRAN ZAHEDAN

FASID TABLE MET 5 - REQUIREMENTS FOR WAFS FORECASTS

EXPLANATION OF THE TABLE

Column

1 WAFS forecasts required by the MID States, to be provided by WAFC London.

2 Area of coverage required for the WAFS forecasts to be provided by WAFC London.

FORECASTS REQUIRED	AREAS REQUIRED
1	2
SWH forecasts (FL250-630) in the BUFR code form	GLOBAL
SWM forecasts (FL100-250) in the BUFR code form	EUR, MID
Forecasts of upper-air wind, temperature and humidity, cumulonimbus clouds, icing and clear-air and in-cloud turbulence and of altitude of flight levels in GRIB code form	GLOBAL

Note 1.— SWM forecasts are provided for limited geographical areas as determined by regional air navigation agreement. Areas "EUR" and "MID" provided by WAFC London.

Note 2. — WAFCs will continue to issue forecasts of SIGWX in PNG chart form for back-up purposes for fixed areas of coverage as specified in Annex 3.

Note 3. — Forecasts of cumulonimbus clouds, icing, and clear-air and in-cloud turbulence are labelled as "trial forecasts" and are currently distributed through the internet-based services. ~~experimental forecasts which are expected to become available by the end of 2009.~~

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REPORT ON AGENDA ITEM 6: IDENTIFICATION, ASSESSMENT AND REPORTING OF MET DEFICIENCIES

6.1 The meeting recalled the MIDANPIRG Air Navigation Deficiency Database (MANDD) which contained a list of deficiencies that includes MET as provided in **Appendix 6A** to the Report on Agenda Item 6. The MIDANPIRG/12 meeting added deficiencies in the MET field for the reception of OPMET data at Regional OPMET Centre (ROC) Vienna from Iraq noting AFTN was not yet available (however, RODB Singapore would be able to forward OPMET from Iraq to Vienna if the OPMET were sent by email to RODB Singapore); implementation of 30-hour TAF as per the RANP for Iran (OIFM, OISS and OITT) and 24- or 30-hour TAF for Syria (OSAP-24 hour, OSDI-30 hour, and OSLK-24 hour). The meeting noted that OPMET for Iraq was available at SADIS as recently as 18 December 2011 and warrants further monitoring for the possible removal of this deficiency. The meeting also agreed that the other deficiencies listed should be monitored to obtain a status as to whether or not those deficiencies still exist. Based on the above discussions, the meeting agreed to the following draft Decision.

DRAFT DECISION 3/8- OPMET AIR NAVIGATION DEFICIENCIES IN THE MID REGION

That, the ICAO Regional Office coordinate with ROC Vienna in monitoring of OPMET Air Navigation Deficiencies in the MID Region.

MET SG/3
Appendix 6A to the Report on Agenda Item 6

Deficiencies in the MET field

IRAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date first reported	Remarks/ Rationale for non-elimination		Facilities/ Services	Executing body	Date of completetion	Priority for action
1	Annex 3 Chapter 6 Para 6.2.6. MID ANP Doc 9706 Volume I (Basic ANP) Part VI (MET) Para 9.	Provision of 30-hour aerodrome forecasts (TAF)	No international exchange requirement for 18-hour validity long-TAF in the MID Region. Only 30-hour validity long-TAF should be available internationally for OIFM, OISS and OITT.	Dec 2009	Follow-up of MIDANPIRG METSG/2 report. State Letter ME 3/56.14-10/091 issued 15 March 2010.	FHO	Only 30-hour validity long-TAF should be available internationally for OIFM, OISS and OITT. Availability of 18-hour long-TAF for these aerodromes should cease.	Iran	Dec 2010	A

Deficiencies in the MET field

IRAQ

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date first reported	Remarks/ Rationale for non-elimination		Facilities/ Services	Executing body	Date of completetion	Priority for action
1	Annex 3, App. 3, 3.1 and App. 5, 1.6	Provision of OPMET data (METAR and TAF) to international OPMET data banks	OPMET data not available at Vienna RODB	Jun 2008	-	FHO	-	Iraq	Dec 2011	A

Deficiencies in the MET field

SYRIA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date first reported	Remarks/ Rationale for non-elimination		Facilities/ Services	Executing body	Date of completetion	Priority for action
1	Annex 3 Chapter 6 Para 6.2.6. MID ANP Doc 9706 Volume I (Basic ANP) Part VI (MET) Para 9.	Provision of 24- or 30-hour aerodrome forecasts (TAF)	No international exchange requirement for 9-hour validity short-TAF or 18-hour long-TAF. Only 24- or 30-hour validity long-TAF should be exchanged internationally.	Dec 2009	Follow-up of MIDANPIRG METSG/2 report. State Letter ME 3/56.14-10/093 issued 15 March 2010.	F H O	Only 24- or 30-hour long-TAF should be available internationally for OSAP, OSDI and OSLK. Availability of 9-hour short-TAF or 18-hour long-TAF for these aerodromes should cease.	Syria	Dec 2010	A

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REPORT ON AGENDA ITEM 7: INSTITUTIONAL ISSUES RELATED TO MET

7.1 The meeting recalled MIDANPIRG/12 Conclusion 12/70 to conduct a regional survey on the implementation of MET services and facilities as provided in **Appendix 7A** to the Report on Agenda Item 7 to be used to assess the level of implementation of MET services and facilities in the MID Region. Only one response from Egypt was received and as a result, the meeting agreed to send a reminder letter referencing MIDANPIRG Conclusion 12/70.

7.2 The meeting noted MIDANPIRG/12 Conclusion 12/71 to take necessary action to expedite the implementation of Quality Management System in accordance with Annex 3 provisions taking into consideration the key recommendation in Appendix 7B to the MET SG/2 meeting report had been completed. The meeting noted the provisions related to QMS in Annex 3, and in particular, to the implementation date of 15 November 2012 and the text related to certification.

MET SG/3
Appendix 7A to the Report on Agenda Item 7

Attachment to the SL Ref. 10/22-10/428

REGIONAL SURVEY ON THE IMPLEMENTATION OF METEOROLOGICAL SERVICES AND FACILITIES

A. Background

In response to Middle East Planning and Implementation Regional Group (MIDANPIRG) Conclusion 12/70, the MID Regional Office has been tasked to conduct a regional survey on the status of implementation of the meteorological services and facilities in the MID Region, including up-to-date information on the designated meteorological authorities and authorised meteorological service provider(s).

This regional survey is designed to collect information that can be used as a benchmark for measuring the success of the activities conducted by the Meteorological Sub-Group (MET SG) of the MIDANPIRG in accordance with its work programme. Such a survey will also help in the identification of MET deficiencies.

In order to ensure the relative currency of the information, the MID Regional Office expects to conduct the survey at least once every 18 months, in keeping with the schedule of MET SG meetings.

Please complete sections B1 to B3 in full. At section B4, please answer each question in turn by placing an 'X' in the appropriate box. If necessary, please provide additional remarks in the 'Comments' column.

B. Regional Survey

1. Questionnaire respondent

STATE:	...
Organization:	...
Name:	...
Position:	...
Contact address:	...
Contact telephone:	...
Contact fax:	...
Contact email:	...

2. Meteorological Authority

Organization:	...
Focal point of contact:	...
Contact address:	...

Contact telephone*:	...
Contact fax*:	...
Contact email:	...

3. Meteorological Service Provider

Organization:	...
Focal point of contact:	...
Contact address:	...
Contact telephone*:	...
Contact fax*:	...
Contact email:	...

4. Questionnaire (over page)

Please place an 'X' in the appropriate column. Only one answer is permissible per question. If necessary, please provide any relevant comments in the final column.

* Including international dialling code

QUESTION NUMBER	QUESTION	ANSWER			COMMENTS
		YES	NO	NOT APPLICABLE OR UNSURE	
Meteorological Services - Oversight					
1.	Is the MET authority of the State also the provider of MET services?				
2.	If not, has the MET authority of the State delegated the provision of the service to a non-governmental agency or another State?				
3.	Does the State ensure that an agreement has been established between ATS authorities and MET authorities for the provision of MET services?				
4.	Does the State ensure that the MET authority employs a sufficient number of qualified MET staff in the inspectorate?				
5.	Are all the functions and responsibilities of the MET inspectorate clearly defined?				
6.	Have job descriptions been developed for MET inspectorate staff?				
7.	Has the State established minimum qualifications and experience requirements for MET inspectorate personnel?				
8.	Has the State developed a formal training programme detailing what type of training should be provided to its MET inspectorate staff?				
9.	Does the MET authority develop a periodic training plan detailing and prioritizing what type of training will be provided during the established period?				
10.	Is the training programme appropriately implemented for MET inspectorate staff?				
11.	Are MET inspectorate staff required to satisfactorily complete on-the-job training prior to being assigned tasks and responsibilities?				

QUESTION NUMBER	QUESTION	ANSWER			COMMENTS
		YES	NO	NOT APPLICABLE OR UNSURE	
12.	Does the MET inspectorate have a system for the maintenance of training records for its technical staff?				
13.	Does the State effectively conduct safety oversight over the entity providing the MET service?				
14.	Has the State established a mechanism/system with time frame for elimination of deficiencies identified by MET inspectorate staff?				
Meteorological Services - Operational					
15.	Does the State ensure that the entity providing the MET service has established a properly organized quality system?				
16.	Does the State ensure that the entity providing the MET service has developed job descriptions for its technical staff?				
17.	Does the State ensure that the entity providing the MET service has established a training programme for its technical staff?				
18.	Does the State ensure that the entity providing the MET service maintains training records for its technical staff?				
19.	Does the State ensure that the wind sensors for local routine reports are appropriately sited to give the best practicable indication of conditions along the runway/touchdown zone?				
20.	Do MET Watch Offices issue SIGMET messages, including those for volcanic ash and tropical cyclones?				
21.	Does the State ensure that provisions related to special air-reports, including those for volcanic ash, are being adhered to concerning their relay to the relevant MET offices?				

QUESTION NUMBER	QUESTION	ANSWER			COMMENTS
		YES	NO	NOT APPLICABLE OR UNSURE	
22.	Does the State ensure that MET offices issue wind shear warnings for aerodromes where wind shear is considered as a safety factor?				
23.	Does the State ensure that the MET authority, in coordination with the ATS authority, has promulgated regulatory criteria for special observations?				
24.	Does the State ensure that the MET offices issue local routine and special reports?				
25.	Does the State ensure that the MET offices issue METAR, SPECI and TAF?				
26.	Are MET offices readily accessible to provide briefing, consultation and flight documentation to flight crew members and/or other flight operations personnel?				
27.	Does the State ensure that the following reports are issued in accordance with the format in Annex 3? 1. Local routine and local special reports 2. METAR and SPECI 3. TAF 4. SIGMET and AIRMET 5. Aerodrome warning and wind shear warning				

REPORT ON AGENDA ITEM 8: PERFORMANCE FRAMEWORK FORMS

8.1 The meeting recalled MIDANPIRG/11 Conclusion 11/70 to develop Regional Performance Framework to support the ICAO planning objective to achieve a performance based global air traffic management system (ATM) through the implementation of air navigation systems and procedures in a progressive, cost-effective and cooperative manner. In order to completely fulfil this initiative, the meeting was invited to adapt performance framework forms provided by ICAO. The performance framework forms for MET were based on four objectives that included 1) Implement International Airways Volcano Watch (IAVW), International Tropical Cyclone Watch (ITCW) and SIGMETs; 2) Implement WAFS and associated developments; 3) Develop regional MET requirements to support ATM; and 4) Improve OPMET exchange efficiency. The meeting agreed to add an entry under the WAFS related performance framework form to encourage the migration from WAFS upper-air forecasts in GRIB1 to GRIB2 format noting the forthcoming change in priority of production and dissemination (GRIB2 to be produced and delivered before GRIB1 beginning 5 July 2012). The meeting agreed that comments on the performance framework forms be extended until 15 January 2012 for further review by CNS/ATM/IC SG/6 meeting. The meeting agreed to the following draft Conclusion which included changes to the performance framework forms as provided in **Appendix 8A** to the Report on Agenda Item 8.

DRAFT CONCLUSION 3/9- MET PERFORMANCE FRAMEWORK FORMS

That,

*a) the performance framework forms in the MET field as provided in **Appendix 8A** be adopted and reviewed at each MET SG meeting; and*

b) States provide inputs and feedback by 15 January 2012 for further review by the CNS/ATM/IC SG/6 Meeting.

MID REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 5 December 2011)

REGIONAL PERFORMANCE OBJECTIVE: *MID MET Objective 1*

IMPLEMENT INTERNATIONAL AIRWAYS VOLCANO WATCH (IAVW), INTERNATIONAL TROPICAL CYCLONE WATCH (ITCW), AND IMPROVE THE QUALITY OF METEOROLOGICAL WARNINGS AND ADVISORIES

Benefits	
Safety Efficiency	• Improve in-flight safety by providing information on volcanic ash, tropical cyclone and other hazardous weather by way of meteorological advisories and warnings • Improve pre-flight planning by optimizing flight routes with respect to volcanic ash, tropical cyclone and other hazardous weather phenomena by way of meteorological advisories and warnings

Strategy
Short term (2012-2013)/Medium term (2014 - 2016)

ATM OC COMPONENTS	TASKS	TIME FRAME	RESPONSIBILITY	STATUS
MET	• Monitor and provide assistance in the regional implementation of meteorological warnings and advisories that include volcanic ash (VA) and tropical cyclone (TC) advisories and meteorological warnings and advisories based on current and future requirements	2012 - 2016	MET SG	In progress
	• Track and investigate deficiencies in the format and dissemination of meteorological advisories and warnings and propose remediation plans and provide information to ICAO and WMO groups for possible assistance	2012 - 2016	BMG	In progress
	• Conduct periodic tests for SIGMET on VA, TC, and phenomena other than VA and TC in view of assessing improvements in their implementation	2012 – 2016	MET SG & BMG	In progress

	• Provide guidance and/or training related to the implementation of meteorological advisories and warnings, including the Regional SIGMET Guide as they relate to the Annex 3 amendment cycle	2012 - 2016	MET SG	In progress
	• Develop contingency plan for volcanic ash with reference to developments made by the IVATF and WMO scientific steering committee	2012 - 2012	MET SG Ad-hoc	To begin
Linkage to GPIs	GPI/19 – Meteorological Systems			
References	• *Annex 3* • *Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691)* • *Handbook on the International Airways Volcano Watch (IAVW) Operational Procedures and Contact List (Doc 9766)* • *Manual on Low-level Wind Shear (Doc 9817)* • *MID Regional SIGMET Guide*			

MID REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 5 December 2011)

REGIONAL PERFORMANCE OBJECTIVE: *MID MET Objective 2* **IMPLEMENT WAFS AND ASSOCIATED DEVELOPMENTS**				
Benefits				
Safety Efficiency	• Improve the regional implementation of weather forecasts (including upper winds and upper-air temperatures, direction, speed and height of maximum winds and tropopause heights, as well as turbulence, icing, cumulonimbus) used by airlines and ATM needed to optimize flight routes which will provide an increase in efficiency and reduced carbon emissions			
Strategy **Short term (2012-2013)/Medium term (2014 - 2016)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
MET	• Assist the regional implementation of new gridded products for turbulence, icing and CB forecasts	2012 - 2016	MET SG	In progress
	• Facilitate in organizing regional training of new gridded products for turbulence, icing and cumulonimbus forecasts	2012 - 2016	ICAO & WMO	In progress
	• Monitor the implementation of WIFS for backup purposes to SADIS noting the planned cessation of ISCS-G2 broadcast in June 2012	2012 -2016	MET SG	In progress
	• Promote the implementation of Secure SADIS FTP service	By Nov 2012	MET SG	In progress
	• Promote the migration from WAFS upper-air forecasts in ~~upgrade from~~ GRIB1 to GRIB2 format	Preferably by 5 July 2012, but no later than~~By~~ Nov 2013	MET SG	In progress
	• Monitor the implementation status of WAFS within the MID Regions, and report to MET SG	2012 -2016	MET SG	To begin
	• Report WAFS training needs of MID States to MET SG	2012 - 2016	MET SG	To begin

Linkage to GPIs	GPI/19 – Meteorological Systems
References	• *Annex 3* • *http://www.icao.int/anb/wafsopsg/* • *http://www.icao.int/anb/sadisopsg/* • *Asia/Pac WAFS Implementation Plan and Procedures*

MID REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 5 December 2011)

REGIONAL PERFORMANCE OBJECTIVE: *MID MET Objective 3* **DEVELOP REGIONAL MET REQUIREMENTS TO SUPPORT ATM**				
Benefits				
Safety Efficiency	• Improve efficiency of ATM and airlines by providing tailored regional MET products needed to optimize flight routes in all weather conditions			
Strategy **Short term (2012-2013)/Medium term (2014 - 2016)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
MET	• Conduct MET seminar in coordination with WMO in 2013 or 2014 depending on regional and global developments related to MET requirements to support ATM	2013-2014	MET SG	planning
	• Assess aviation meteorological services, systems and architecture in the region and how they can integrate weather information into decision support tools	2013-2016	MET SG	In progress
	• Investigate sub-regional exchange of MET information (e.g. weather radar data) and associated agreements that facilitate ATM operations particularly over busy routes that overlap different FIRs	2013 - 2016	MET SG	In progress
	• Facilitate implementation of Meteorological Services for the Terminal Area (under development by WMO)	2014-2016	MET SG	future
Linkage to GPIs	GPI/19 – Meteorological Systems			
References	• *Manual on co-ordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services (Doc 9377)*			

MID REGION

PERFORMANCE FRAMEWORK FORM
(REGIONAL)

(amended 5 December 2011)

REGIONAL PERFORMANCE OBJECTIVE: *MID Objective 4* **IMPROVE OPMET EXCHANGE EFFICIENCY**				
Benefits				
Safety Efficiency	• Increase OPMET availability and reliability needed for flight planning (efficiency) and in-flight re-planning (safety)			
Strategy **Short term (2012-2013)/Medium term (2014 - 2016)**				
ATM OC COMPONENTS	**TASKS**	**TIME FRAME**	**RESPONSIBILITY**	**STATUS**
MET	• Improve the availability of OPMET data at the Regional OPMET Data Banks (RODB)	2012 - 2016	BMG	In progress
	• Improve the inter-regional OPMET exchange	2012 - 2016	BMG	In progress
	• Consider development of and maintenance of regional ROBEX tables and guidance material	2012 - 2016	BMG	In progress
	• Facilitate and provide guidance to the implementation new/modified standards before applicability date and carry out post implementation review to ensure that standardized procedures are followed	2012 - 2016	BMG	In progress
	• Conduct periodic quality checks and OPMET monitoring to improve the quality and timeliness of OPMET in the MID Region	2012 - 2016	BMG in coordination with EUR DMG	In progress
	• *Facilitate and monitor the migration to AIM and new MET codes (e.g. XML) for METAR/SPECI, TAF and SIGMET*	*TBD*	*BMG & MET SG & RO*	*TBD*
Linkage to GPIs	GPI/19 – Meteorological Systems			

References	• *SADIS User Guide* • *Asia/Pacific ROBEX Handbook* • *Asia/Pacific OPMET Data Banks Interface Control Document*

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REPORT ON AGENDA ITEM 9: FUTURE WORK PROGRAMME

9.1 The meeting reviewed the terms of reference and future work programme of the MET Sub-Group of the MIDANPIRG as provided in **Appendix 9A** to the Report on Agenda Item 9**.** The meeting agreed to include two supporting tasks to the Terms of Reference: under b) to support regional volcanic ash contingency plan activities (e.g. volcanic ash exercises, workshops) and under e) to conduct a feasibility study on the establishment of Regional OPMET Centres.

9.2 MET related events were sketched from the current meeting to the MET SG/4 meeting and include the following:

- 22-26 April 2012, MIDANPIRG/13 (BMG/2 concurrently), Abu Dhabi
- 3rd Quarter 2012 or 1st Quarter 2013, consider planning meeting of volcanic ash exercise
- 2nd Quarter 2013, MET SG/4 (BMG/3 back-to-back), Cairo

9.3 The meeting agreed that conducting volcanic ash exercises in the MID Region would be considered depending on actions with relation to regional volcanic ash contingency plans, availability of experts and VAAC Toulouse, etc...

MET SG/3
Appendix 9A to the Report on Agenda Item 9

METEOROLOGY SUB-GROUP (MET SG)

1. Terms of Reference

1.1 The terms of reference of the MET Sub-Group are:

a) Ensure the continuous and coherent development of the MET Part of the MID Air Navigation Plan (Basic ANP and FASID, Doc 9708) taking into account the evolving operational requirements in the MID Region and the need for harmonization with the adjacent regions in compliance with the Global Air Navigation Plan.

b) Monitor and coordinate implementation of the relevant ICAO SARPs and regional procedures, facilities and services on aeronautical meteorology by the MID States and pursue harmonization.

c) Identify any deficiencies in the provision of meteorological service for air navigation in the MID Region and ensure the development and implementation of relevant action plans by the States to resolve them.

d) Foster implementation by facilitating the exchange of know-how and transfer of knowledge and experience between the MID States.

e) Provide input to the work of appropriate ICAO bodies in the field of aeronautical meteorology, according to the established procedures.

1.2 In order to meet the Terms of Reference, the MET SG shall:

a) Monitor implementation of WAFS and SADIS by the MID States and provide guidance for timely implementation of changes to the systems that affect end users

b) Foster implementation of IAVW:

- Liaise with VAAC Toulouse
- Organise VA SIGMET tests
- Work towards enhancing the awareness of all IAVW stakeholders
- Support regional volcanic ash contingency plan activities (e.g. adapting plan, volcanic ash exercises, workshops)

c) Foster implementation of TC advisories and warnings:

- Liaise with TCAC New Delhi
- Organize TC SIGMET Tests

d) Enhance the availability and quality of SIGMET:

- Organize WS SIGMET Tests

e) Monitor the OPMET exchange and improve the availability and reliability of OPMET information from the MID Region:

- Ensure establishment of proper Regional OPMET Data Bank
- Conduct regular monitoring of OPMET data
- Provide feed-back to States on observed deficiencies

- Conduct feasibility study on the establishment of Regional OPMET Centres

f) Maintain the MET part of the MID ANP:

- Ensure that FASID Tables are up-to-date

g) Develop regional guidance on the provision of SIGWX forecasts for Low-level flights

h) Facilitate the implementation of QMS for MET in the MID States:

- Organize a QMS Seminar/Workshop

2. Composition

2.1 The Sub-Group is composed of:

a) MIDANPIRG Member States;

b) concerned International/Regional Organizations as observers. (IATA, IFALPA, WMO); and

c) Provider States of specific MET services to the MID Region, WAFC London, VAAC Toulouse, TCAC New Delhi, Vienna OPMET Databank, should be invited to attend meetings on a regular basis.

REPORT ON AGENDA ITEM 10: ANY OTHER BUSINESS

10.1 The meeting expressed concern with the low participation level at the meeting and encouraged other States to participate in future meetings.

MET SG/3
Attachment A to the Report

LIST OF PARTICIPANTS

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-END-