



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

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

**REPORT OF THE ELEVENTH MEETING OF  
MET SUB-GROUP (MET SG/11)**

*(Cairo, 14 - 15 November 2023)*

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 Eleventh Meeting of the Meteorology Sub-Group of the Middle East Air Navigation Planning and Implementation Regional Group (MET SG/11) was held in Cairo, Egypt from 14 to 15 November 2023.

### **2. OPENING**

2.1 The meeting was opened by Mr. Mohamed Smaoui, Deputy Regional Director of the ICAO MID Regional Office.

2.2 Mr. Smaoui thanked the participants for joining the meeting as well as the Secure Aviation Data Information Service (SADIS) Provider for their contributions to the meeting. He noted that SADIS developments include significant changes in 2023 as there will be a significant increase in meteorological information in space and time that will be System Wide Information Management (SWIM) compliant. In the context of SWIM, he emphasized the importance of implementing the ICAO Meteorological Information Exchange Model (IWXXM) that is an important step to enable SWIM services.

2.3 He also emphasized that States support the development of the MID Region Air Navigation Report (2023) by reviewing and updating the level of implementation of the priority 1 Aviation System Block Upgrade (ASBU) elements related to the AMET thread. Furthermore, this information is used for updating the MID eANP Volume III – AMET Tables.

2.4 In closing, Mr. Smaoui thanked the participants for their attendance and provided his best wishes for a successful and productive meeting.

### **3. ATTENDANCE**

3.1 The meeting was attended by a total of twenty-two (22) participants, from seven (7) States (Egypt, Jordan, Kuwait, Oman, Saudi Arabia, United Arab Emirates, UK and USA) and one (1) Organization, IFALPA. The list of participants is provided at **Attachment A**.

### **4. OFFICERS AND SECRETARIAT**

4.1 Agenda Item 1 included the election of Chairperson noting the MET SG Chairperson and Vice-Chairperson positions were vacant since MET SG/9. In accordance with the MIDANPIRG Procedural Handbook, the meeting unanimously elected Mrs. Ameera Falah Al-Azmi, Head of Meteorology Aviation, Directorate General of Civil Aviation, Kuwait, as the Chairperson of the MET Sub- Group, and Ms. Lamiaa Salim Y. Mohammed, Meteorologist, Egyptian Meteorological Authority, as the Vice-Chairperson of the MET Sub-Group.

4.2 Mr. Christopher Keohan, Air Navigation Systems Implementation (Meteorology), ICAO Europe and North Atlantic, served as Secretary of the meeting, supported by Mr. Radhouan Aissaoui, Implementation Management, from the ICAO Middle East Office.

### **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 and election of Chairperson

Agenda Item 2: Follow-up on MIDANPIRG/20 Conclusions and Decisions relevant to MET

Agenda Item 3: Global and Regional Developments

Agenda Item 4: MET Planning and Implementation issues

- Performance Framework for MET implementation in the MID Region
- Review of the implementation of WAFS and SADIS
- Review of requirements for OPMET data as well as IWXXM implementation

Agenda Item 5: Review of air navigation deficiencies in the MET field

Agenda Item 6: Future Work Programme

Agenda Item 7: 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 11/1: WAFS DATA*

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**PART II: REPORT ON AGENDA ITEMS****REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA AND ELECTION OF CHAIRPERSONS**

1.1 The subject was addressed in WP/1 presented by the Secretariat. The meeting reviewed and adopted the Provisional Agenda as described at Para 6 of the History of the Meeting.

1.2 In accordance with the MIDANPIRG Procedural Handbook, the meeting unanimously elected Mrs. Ameera Falah Al-Azmi, Head of Meteorology Aviation, Directorate General of Civil Aviation, Kuwait, as the Chairperson of the MET Sub- Group, and Ms. Lamiaa Salim Y. Mohammed, Meteorologist, Egyptian Meteorological Authority, unanimously elected as the Vice-Chairperson of the MET Sub-Group.

1.3 Information related to the MET SG/11 Officers and Secretariat is provided in Para 4 of the History of the Meeting.

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**REPORT ON AGENDA ITEM 2: FOLLOW-UP ON MIDANPIRG/20 CONCLUSIONS AND DECISIONS RELEVANT TO MET**

2.1 The subject was addressed in WP/2 presented by the Secretariat. The meeting noted the status of the MIDANPIRG/20 Conclusions and Decisions relevant to MET and the follow-up actions taken by concerned parties as at **Appendix 2A**.

2.2 In addition, the Deputy Regional Director of the ICAO MID Regional Office emphasized the need for MET experts to attend the Regional Air Navigation Plan (RANP)/National Air Navigation Plan (NANP) Task Force expected to be held in early 2024. The RANP/NANP Task Force was established to ensure alignment of the MID Regional Air Navigation Strategy and MID ANP Volume III with the latest edition of the GANP and assist States developing NANPs (MIDANPIRG Decision 20/12 refers). MET experts would assist in this regard by selecting AMET thread priority elements for the MID Regional Air Navigation Strategy.

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**RT ON AGENDA ITEM 3: GLOBAL AND REGIONAL DEVELOPMENTS****MET Panel**

3.1 The subject was addressed in WP/3 presented by the Secretariat. The meeting noted that in response to Recommendation (5/2) by the Meteorology Divisional Meeting (2014) (MET-DIV/14), the MET Panel (METP) developed the restructured Annex 3 and the new PANS-MET to facilitate the migration of the provision of aeronautical meteorological information from a "product-centric" to an "information-based" environment under the System Wide Information Management (SWIM), and the evolution of the provision of aeronautical meteorological service in line with the Global Air Navigation Plan (GANP). The restructuring also provides clearer separation of performance and functional requirements in Annex 3 from the technical specifications to be transferred to the PANS-MET. Note that there are other consequential amendments to the ICAO Standards and Recommended Practices (SARPs).

3.2 Referencing State letter AN 10/1-23/1 dated 26 January 2023, the meeting noted these proposals addressed developments of the restructure Annex 3 and new PANS-MET, and the amendments relating to: a) space weather information services; b) Quantitative Volcanic Ash (QVA) information; c) the International Airways Volcano Watch (IAVW); d) the ICAO Meteorological Information Exchange Model (IWXXM); e) the World Area Forecast System (WAFS); and f) improved definition of meteorological authority and introduction of a new definition of meteorological service provider. The Commission authorized the transmission of these proposals to Contracting States and appropriate international organizations for comments by 26 July 2023. For more details, the meeting may reference Appendices B – J to State letter AN 10/1-23/1 dated 26 January 2023.

3.3 The proposed amendments to Annexes 3, 6 Parts I, II and III, 10, Volume II, 11 and 15 are envisaged for applicability on 28 November 2024, except for proposed amendments to Annex 3 related to QVA information, which should be indicated as 27 November 2025. The proposed amendments to PANS-ABC (Doc 8400), PANS-AIM (Doc 10066), PANS-ATM (DOC 4444) and PANS-MET (Doc 10157) are envisaged for applicability on 28 November 2024, except for proposed amendments to PANS-MET related to QVA information which should be indicated as 27 November 2025.

3.4 The meeting was reminded to update their national regulations to reflect these upcoming changes to the provisions related to meteorological services for international civil aviation.

**WMO activities of relevance to ICAO**

3.5 The subject was addressed in IP/3 submitted by WMO. With reference to the WMO organizational structures, the Commission for Aeronautical Meteorology (CAeM), along with other intergovernmental technical commissions were dissolved in 2019. In its place, a new non-governmental Standing Committee on Services for Aviation (SC-AVI) was established under a new intergovernmental Commission for Weather, Climate, Water and Related Environmental Services and Applications (abbreviated to 'Services Commission' or SERCOM).

3.6 The primary purpose of SC-AVI is to contribute to furthering the standardized provision of meteorological services for international air navigation and to provide assistance to Members with aeronautical meteorological services to achieve compliance with those standards. The SC-AVI is supported by three expert teams, one advisory group and several thematic coordinators.

3.7 WMO continues to play an active role in the ICAO METP and its working groups (presently Working Group on Meteorological Requirements and Development (WG-MRAD), Working Group on Meteorological Information Exchange (WG-MIE), Working Group on

Meteorological Operations Group (WG-MOG) and Working Group on Meteorological Cost Recovery Guidance and Governance (WG-MCRGG). In addition, WMO contributes to the ICAO Airport Economics Panel and Air Navigation Services Economics Panel (AEP-ANSEP) that addresses cost recovery of aeronautical meteorological service provision.

3.8 Furthermore, WMO is engaged on the impacts of climate change and variability on aviation with ICAO Committee on Aviation Environmental Protection (CAEP), International Air Transport Association (IATA), Airports Council International (ACI) and the European Union Aviation Safety Agency (EASA).

3.9 The IATA Accident Classification Task Force (ACTF) is supported by WMO who is a key contributor to the preparation of the annual IATA Safety Report, which provides an in-depth review and insight into global and regional accident rates as well as contributing factors, including those relating to meteorological conditions. The METG was encouraged to review the latest (2022) IATA Safety Report (<https://www.iata.org/en/publications/safety-report/>).

3.10 The meeting noted that Parts I and II of the *Technical Regulations* (WMO-No. 49), Volume II, *Meteorological Service for International Air Navigation* that concern core standards, recommended practices, appendices and attachments will be discontinued on 31 December 2023. The meeting noted that Annex 3 and PANS-MET will be accessible free of charge. Note that Parts III and IV of WMO-No. 49, Volume II that concern aeronautical climatology and the format and preparation of flight documentation respectively, will be discontinued only once material of continuing relevance has been incorporated into ICAO PANS-MET (provisionally 2026).

3.11 The meeting noted an upcoming amendment to the Aeronautical Meteorological Personnel (AMP) qualification and competency requirements contained in WMO-No. 49, Volume I and supported by guidance in WMO-No. 1209, with an applicability date of 1 January 2026.

3.12 In addition, the WMO Task Team on Aviation Data (TT-AvData) is working on a draft schema to support upcoming (November 2024 applicability) Amendment 81 to ICAO Annex 3. This IWXXM schema is expected to be available soon for review. TT-AvData has also recently expanded its expert composition, which should better enable the Task Team to support these IWXXM-related developments.

3.13 In the context of SWIM, WMO and ICAO are considering the establishment of a task team (or similar) to address the interoperability needs between the WMO Information System (WIS) and ICAO SWIM. If established, the team/group may comprise experts of WMO Infrastructure Commission Standing Committee on Information Management and Technology (INFCOM SC-IMT) and the ICAO METP WG-MIE.

3.14 The meeting noted that in 2021 WMO conducted a global survey on gender equality in the aeronautical meteorology domain. The survey, which yielded more than 500 responses worldwide, was designed to collate information on respondents' experience regarding gender equality in the workplace and the empowerment of women in the aeronautical meteorology domain in general. Following a comprehensive analysis by SC-AVI of the responses, a report on the outcomes of the survey was published by WMO in March 2023 as [AeM SERIES No. 7](#).

3.15 Additional information on the activities of WMO is accessible via a Services for Aviation website at URL: <https://community.wmo.int/activity-areas/aviation>.

3.16 The meeting noted that the Secretariat of the AVI Division is contactable via email: [aviation@wmo.int](mailto:aviation@wmo.int).

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**REPORT ON AGENDA ITEM 4: MET PLANNING AND IMPLEMENTATION ISSUES****Performance Framework for MET Implementation in the MID Region**

- 4.1 The subject was addressed in WP/4 presented by the Secretariat.
- 4.2 The meeting reviewed the Web-based MID Air Navigation Report (2022) for the MET Part as provided at **Appendix 4A** (note that the tabular part was input to the MID eANP Volume III - AMET Tables).
- 4.3 The meeting recalled that for the MID Region Air Navigation Report – 2023, States are encouraged to provide the ICAO MID office with the level of implementation of the elements related to the AMET thread priority elements, by 1 December 2023. A State letter in this regard is expected to be sent by the end of November.
- 4.4 The meeting urged States to provide information on the level of implementation of elements related to the AMET thread priority elements in order to have an accurate assessment of implementation in this regard.

**SADIS matters**

- 4.5 The subject was address in WP/8 presented by the SADIS (Secure Aviation Data Information Service) Provider State.
- 4.6 The meeting encouraged States to complete the annual SADIS efficacy survey for 2023 that began on 1 July 2023 noting that users were notified via SADIS administrative messages. An ICAO State Letter to SADIS focal points was also provided (ref. AN 10/2 – 23/211 dated 1 October 2023). The survey can also be accessed at the following link:  
<https://response.questback.com/metoffice/siu8qqrbmg>.
- 4.7 The meeting noted that a catalogue of METAR and TAF data has been created from data obtained during the February 2023 monitoring period so that missing data can be more easily identified. States were encouraged to review this catalogue located on SADIS in the /DOCUMENTATION/ folder as well as within the SADIS and WIFS documentation section on the METP public webpage  
(<https://www.icao.int/airnavigation/METP/Pages/METP%20Public%20Documents.aspx>).
- 4.8 The meeting noted that if some METAR and/or TAF data was identified as absent from SADIS, the catalogue should be consulted to see if it is usually present before reporting it to the SADIS manager ([sadis.manager@metoffice.gov.uk](mailto:sadis.manager@metoffice.gov.uk)) who will raise this issue with Regional OPMET Centre (ROC) London. ROC London would investigate the matter and work with the other ROCs to try and restore missing data, or advise on next steps if there is a request for new data to be added to the feed.
- 4.9 The meeting encouraged States to review the WAFS verification data that shows the accuracy of WAFS forecasts at the following webpages:  
<http://www.metoffice.gov.uk/aviation/responsibilities/icao> (harmonized/blended cumulonimbus cloud (Cb) forecasts and turbulence forecasts) and <http://www.emc.ncep.noaa.gov/gmb/icao> (harmonized/blended icing data sets). Both WAFCs verify their own wind and temperature forecasts. WAFc London currently does not have verification data for turbulence available (expected in 2024).
- 4.10 The meeting noted guidance called the ‘SADIS Workstation Evaluation Guide’ hosted

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in the /DOCUMENTATION/ folder on SADIS as well as the SADIS and WIFS documentation section on the METP public webpage. This allows SADIS users to evaluate their own systems and provide non-compliance issues to their software provider.

4.11 The meeting noted that IWXXM data is available on SADIS for States served by ROC London, ROC Toulouse, ROC Vienna and ROC Moscow. Data from some other regions (APAC since January 2023 and MID since April 2023) is now also available. The meeting also noted that in due time IWXXM data from other regions will be added once inter-regional connections are established noting this is taking longer than expected. User consumption of IWXXM data is expected to increase when more IWXXM data is available from other regions.

4.12 The meeting noted that no changes have been made to WAFS gridded or SIGWX data sets in the past year, however, the 1.25-degree horizontal resolution gridded turbulence (CAT) potential, icing potential and cumulonimbus fields will be retired in November 2023, which is three years after they were removed as a requirement from Annex 3.

#### **WAFS & SADIS update**

4.13 The subject was addressed in WP/9 presented by WAFS London, and in particular to upcoming changes to the WAFS data sets in 2023 and 2024 as well as the SADIS and WIFS systems that are used to deliver the data. These changes have been agreed through the ICAO METP WG-MOG.

4.14 The meeting also noted planned upgrades to the WAFS in November 2023 (1 year earlier than the applicable date of Amendment 81 to Annex 3 and new PANS-MET) that includes an upgrade in the horizontal, vertical and temporal resolution to all WAFS data sets. The new data sets include: the provision of wind, temperature, relative humidity and geopotential height at 0.25-degree horizontal resolution; data at 1000ft flight level intervals; and data at 1-hourly intervals from 6-hours to 24-hours, 3-hourly intervals from 27-hours to 48-hours, and wind and temperature data at 6-hourly intervals out to 120-hours.

4.15 Furthermore, an upgrade to the WAFS SIGWX forecasts will most likely take place in July 2024 when both WAFCs will produce SIGWX forecasts four times a day for the 6-hour to 48-hour period at 3 hourly intervals (currently only a 24-hour SIGWX forecast is produced 4 times daily). Other changes include: coverage from FL100 to FL600 in a single forecast (i.e. no separate SWM, medium level SIGWX); tropopause spot heights will be replaced by tropopause contours; icing objects will be available for the whole globe; only occasional (OCNL) and frequent (FRQ) cumulonimbus cloud will be shown – not possible to include embedded (EMBD) cloud; and turbulence objects will include both clear air and orographic turbulence (no separate in-cloud turbulence field).

4.16 The new SIGWX forecasts will be produced in IWXXM format noting that the schema that will be used can be found at <https://schemas.wmo.int/iwxxm/2023-1/WAFSSigWxFC.xsd>. Test IWXXM data sets have been made available at the following link in order for users to visualize them: <https://www.metoffice.gov.uk/services/transport/aviation/regulated/wafs-sigwx-test-data>. WAFS Washington has also just started to make tests IWXXM data available on the servers at [https://beta.aviationweather.gov/wifs/data/IWXXM\\_TEST/](https://beta.aviationweather.gov/wifs/data/IWXXM_TEST/) which SADIS users are also able to access as long as they have WIFS account.

4.17 The new multi-time step SIGWX is intended to be used digitally, and therefore sets of briefing charts will not be supplied by the WAFCs. A set of three images will be provided for each forecast time step that users can use to ensure that their visualizations of the data matches with the WAFS version; however, it is important to note that these will not be suitable to print out onto A4

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paper and used for pilot briefing.

4.18 The meeting also noted that the existing SADIS FTP server will continue to run until November 2028, however it will only host the OPMET data, legacy gridded data sets and the 24-hour SIGWX forecasts. The ‘paper copy’ SIGWX charts for the SWH areas will be available until November 2028 (and not for the SWM areas). BUFR format SIGWX will be retained until July 2026.

4.19 The meeting noted that in order to manage the significant increase in volume of data, the delivery mechanism will be upgraded and be SWIM compliant and based on the Open Geospatial Consortium (OGC) Environmental Data Retrieval (EDR) Application Programming Interface (API) (<https://ogcapi.ogc.org/edr/>) framework. Users will be able to choose which region to download data for as well as to specify which vertical levels and which forecast time-steps of data are required. In addition, a set of 8 fixed regions will be provided as well as global data.

4.20 The new SADIS API’s will adhere to the EUROCONTROL SWIM yellow profile requirements (<https://www.eurocontrol.int/concept/system-wide-information-management>) and will be published in the European SWIM registry (<https://eur-registry.swim.aero/services>). Additionally, the SADIS API entry in the European SWIM registry will include a link to the backup WIFS API entry in the WIFS’ own SWIM registry.

4.21 SADIS FTP users will be invited to test the new SADIS API components when they become available (WAFS gridded data in December 2023, OPMET data in February 2024 and SIGWX in July 2024). The notifications will be sent out as a SADIS Administrative message.

4.22 States are encouraged to test the SADIS APIs in order to take advantage of the higher spatial and temporal resolution WAFS gridded data and multi-time step SIGWX. Furthermore, WIFS APIs are compatible to those of SADIS.

4.23 When it comes to using the new SADIS API system operationally, users will be asked to re-register (so that up-to-date contact details are captured) and sign up to a user level agreement. Once registration is complete users will be able to get an authentication token that gives access to the system.

4.24 Given the aforementioned, the meeting agreed to the following Draft Conclusion:

***DRAFT CONCLUSION 11/1: WAFS DATA***

*That, the SADIS users be encouraged to prepare their systems for visualizing and creating charts from the new WAFS SIGWX data sets in IWXXM format by using the test data sets available at <https://www.metoffice.gov.uk/services/transport/aviation/regulated/wafs-sigwx-test-data> & for those with WIFS accounts [https://beta.aviationweather.gov/wifs/data/IWXXM\\_TEST/](https://beta.aviationweather.gov/wifs/data/IWXXM_TEST/).*

4.25 The meeting noted the following link that contains more information on the upcoming WAFS changes: <https://www.metoffice.gov.uk/services/transport/aviation/regulated/wafs-2023>.

**Quantitative Volcanic Ash**

4.26 The subject was addressed in WP/10 presented by VAAC London. The meeting was

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provided an overview of the new Quantitative Volcanic Ash (QVA) forecasting provision that is being introduced with Amendment 81 to Annex 3. Developed under the METP and relevant working groups, QVA is based on certified engine susceptibility versus the current discernible ash criteria. There are five descriptors (very low; low; medium; high; and very high) related to concentration thresholds and ranges ( $<0.2 \text{ mg/m}^3$ ;  $\geq 0.2 - <2 \text{ mg/m}^3$ ;  $\geq 2 - <5 \text{ mg/m}^3$ ;  $\geq 5 - <10 \text{ mg/m}^3$ ; and  $\geq 10 \text{ mg/m}^3$ ).

4.27 In addition to deterministic values, the probability of exceeding these thresholds will be provided for 5000 feet intervals from the surface to FL600 for three hourly intervals out to 24 hours with a horizontal resolution of 0.25 degrees. Forecasts will be updated at least every 6 hours noting that the first forecast is expected to be produced within 60 minutes of the VAAC being notified of a new eruption.

4.28 The deterministic data will be used by the VAACs to create a SIGWX style representation of the ash areas as polygons/features with base and top attributes that can be used for situational awareness. These polygons/features will be provided in a new IWXXM format and the new schema has already been largely developed by the WMO TT-AvData.

4.29 The VAA/VAG will continue to be produced for a number of years until the new QVA service is fully established.

4.30 The meeting noted that VAAC London is working with other VAACs to define a SWIM-compliant method and common framework for distributing the QVA data sets e.g. the OGC-EDR framework (the same as is being used for the new SADIS API). The meeting noted that not all VAAC's will be able to use this framework initially, and instead may work towards it on a longer-term basis and this is being addressed by the ICAO METP WG-MOG. The harmonization would reduce cost and complications of accessing the data. As there are 9 VAACs, separate services will be provided by each of them noting harmonization amongst them is desired.

4.31 QVA provision by VAAC London will use the OGC-EDR framework, will adhere to the EUROCONTROL SWIM yellow profile and will be published in the EUROCONTROL SWIM registry. Within the API data will be organized into a series of collections (one for the deterministic output, one for the probabilistic output, and one for the IWXXM output) per volcano that is erupting. Alongside this will sit a notification service which will inform subscribers when new data has been published, and prompt them to download QVA data from the API. However, it was recognised that users prefer a PUB/SUB solution for non-routine information services such as QVA, whereby a subscribed user will automatically receive QVA as soon as it is issued. VAAC London indicated their intention to develop this solution as soon as practicable.

4.32 In addition, since QVA forecasts will only be issued for 'significant ash cloud', the term 'significant' should mean the same by all the VAACs. The definition of what constitutes a significant ash cloud is still being debated by the METP WG-MOG IAVW and could include parameters such as impact to aircraft operations, height of cloud etc.

4.33 The meeting noted that development activities at VAAC London are already underway, and the QVA service is planned to become operational for those VAACs in a position to do so in November 2024 in line with ICAO Annex 3.

### **IWXXM Implementation**

4.34 The subject was addressed in WP/5 presented by the Secretariat.

4.35 The meeting recalled the ICAO MID IWXXM Implementation Webinar that was held

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virtually from 26 to 27 May 2021 which shared information on the background, requirements and best implementation practices of ICAO provisions and WMO means of compliance related to IWXXM.

4.36 The meeting recalled that provisions related to IWXXM became a requirement in Amendment 78 to Annex 3 applicable 5 November 2020. Specifically, the following MET related data shall be disseminated in IWXXM form in addition to Traditional Alphanumeric Code (TAC) form: METAR and SPECI, TAF, SIGMET and AIRMET, Tropical Cyclone Advisory, Volcanic Ash Advisory and Space Weather Advisory Information.

4.37 The status of IWXXM implementation in the MID Region was updated with input from ROC Jeddah as provided at **Appendix 4B**. Notably, the following States have implemented IWXXM v3.0: Bahrain, Jordan, Saudi Arabia and the United Arab Emirates. Kuwait also plans to implement IWXXM in 2024.

4.38 States that have implemented IWXXM were encouraged to assist those States that have not yet done so. In addition, States that have not yet implemented IWXXM were urged to review ICAO Doc 10003 (Manual on the ICAO Meteorological Information Exchange Model) and the ICAO MID IWXXM Implementation Webinar material provided at the following website: <https://www.icao.int/MID/Pages/2021/>.

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**REPORT ON AGENDA ITEM 5: REVIEW OF AIR NAVIGATION DEFICIENCIES IN THE MET FIELD**

- 5.1 The subject was addressed in WP/6 presented by the Secretariat.
- 5.2 The meeting recalled that MIDANPIRG/20 reviewed the contents of the MIDANPIRG Air Navigation Deficiency Database (MANDD). MIDANPIRG/20 agreed to remove the deficiencies reported against Iraq and Oman respectively related to lack of provision METAR at ORBM and implementation of QMS. The meeting noted that the total number of MET deficiencies is fourteen (14) priority 'A' deficiencies and that five (5) were related to QMS; and nine (9) related to METAR, TAF, SIGMET and WAFS.
- 5.3 The meeting also noted that several deficiencies listed in the MANDD still did not have any specific Corrective Action Plan (CAP) and that States are urged to provide this information for each deficiency (MIDANPIRG Conclusion 15/35 refers).
- 5.4 The meeting noted that Jordan has re-established the SADIS service and therefore will be proposed to be removed from the MANDD subject to MIDANPIRG/21 endorsement.
- 5.5 With reference to MET deficiencies in Iraq, Lebanon, Libya, Sudan and Syria, no updates were provided as they did not participate in the meeting.
- 5.6 The meeting noted that OPMET data for OYAA (Aden) is now received by ROC Jeddah through NOC Oman and available on SADIS. As this deficiency contains other OPMET data not yet available from Yemen, this deficiency will remain with the CAP description section updated accordingly.
- 5.7 The list of deficiencies was updated based on the information above as provided at **Appendix 5A**.
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**REPORT ON AGENDA ITEM 6: FUTURE WORK PROGRAMME**

6.1 The subject was addressed in WP/7 presented by the Secretariat. The meeting reviewed the MET SG Terms of Reference (TORs) and no proposed changes were provided.

6.2 The meeting agreed that the MET SG/12 meeting be held in Q4 2024 preferably November 2024.

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**REPORT ON AGENDA ITEM 7: ANY OTHER BUSINESS**

7.1 No issues were raised by the meeting in any other business.

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# *APPENDICES*

APPENDIX 2A

FOLLOW-UP ACTION PLAN ON MIDANPIRG/20 CONCLUSIONS AND DECISIONS

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/ REMARKS
C. 20/52	<p><b>0.25-DEGREE WAFS HAZARD DATA</b></p> <p>That, the SADIS users integrate the new 0.25-degree WAFS hazard data into systems and software prior to November 2023, if they have not already done so.</p>	Operators benefit by having the higher resolutions WAFS hazard data available for flight planning.	State Letter	ICAO	Sep. 2023	<p><b>Completed</b></p> <p>SL AN 10/2 &amp; AN 10/3 – 23/160 dated 10 August 2023</p>
C. 20/53	<p><b>ANNEX 3 AMENDMENT 81 WAFS AND SADIS UPGRADES</b></p> <p>That, the SADIS users be invited to:</p> <p>a) familiarize themselves with the proposed WAFS and SADIS changes planned for November 2023 and 2024;</p> <p>b) discuss the upcoming changes with their technical departments about how their organization could adapt to these technological changes; and</p> <p>c) get involved in trying out the new Beta SADIS API's once they become available in late 2022 or 2023.</p>	Prepare for future WAFS and SADIS upgrades in order to implement in a timely manner, which benefits operators in flight planning.	State Letter	ICAO	Sep. 2023	<p><b>Completed</b></p> <p>SL AN 10/2 &amp; AN 10/3 – 23/160 dated 10 August 2023</p>
C. 20/54	<p><b>MID REGION SIGMET GUIDE</b></p> <p>That, the updated <i>MID Region SIGMET Guide</i> (MID Doc 009) as provided at <b>Appendix 6.7A</b> be endorsed and posted on the ICAO MID Website.</p>	To update the MID Region SIGMET Guide.	Updated MID Region SIGMET Guide is posted on the ICAO MID Office website	ICAO	Sep. 2023	<p><b>Completed</b></p> <p>Email notification provided on 10 August 2023</p>

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/ REMARKS
C. 20/7	<p><b>REVISED MID AIR NAVIGATION STRATEGY</b></p> <p>That, the Revised MID Air Navigation Strategy (Doc 002) is endorsed and be published by the ICAO MID Office.</p>	<p>Identification of priority 1 ASBU threads/elements, their baseline and linked KPA/KPI, monitoring and reporting at Regional level.</p>	Revised MID Air Navigation Strategy (ICAO MID DOC 002)	ICAO	May 2023	<p><b>Completed</b></p> <p>Revised MID Air Navigation Strategy (ICAO MID DOC 002) is posted and accessible through :</p> <p><a href="https://www.icao.int/MID/MIDANP/IRG/Documents/eDocuments/MID%20Doc%20002%20-%20MID%20Air%20Navigation%20Strategy%20-%20Feb%202021.pdf">https://www.icao.int/MID/MIDANP/IRG/Documents/eDocuments/MID%20Doc%20002%20-%20MID%20Air%20Navigation%20Strategy%20-%20Feb%202021.pdf</a></p>
C. 20/8	<p><b>REVISED MID ANP VOL III</b></p> <p>That, the Revised MID ANP Vol III is endorsed and be published by the ICAO MID Office.</p>	<p>Implementation of the Performance based approach in the Regional Air Navigation Plan.</p>	Revised MID ANP Vol III	ICAO	May 2023	<p><b>Completed</b></p> <p>Revised MID ANP Vol III is endorsed and published :</p> <p><a href="https://www.icao.int/MID/Document/eANP/MID%20eANP%20VOL%20III.pdf">https://www.icao.int/MID/Document/eANP/MID%20eANP%20VOL%20III.pdf</a></p>
C. 20/10	<p><b>WEB-BASED MID REGION AIR NAVIGATION REPORT - 2022</b></p> <p>That, the Web-based MID Air Navigation Report (2022) is</p>	<p>To publish the status of</p>	MID Air	ICAO	May 2023	<p><b>Completed</b></p> <p>MID Air</p>

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/ REMARKS
	endorsed.	ASBU implementation in the MID Region for 2022.	Navigation Report (2022)			Navigation Report (2022) is published and accessible through <a href="https://www.icao.int/MIDANReport/Pages/ANReport2022-Main.aspx">https://www.icao.int/MIDANReport/Pages/ANReport2022-Main.aspx</a>
C. 20/11	<p><b>WEB-BASED MID REGION AIR NAVIGATION REPORT (2023)</b></p> <p>That,</p> <p>a) States be invited to provide the ICAO MID Office with the following data for the development of the MID Region Air Navigation Report (2023) by 1 December 2023:</p> <p>i) Status of ASBU Implementation; and</p> <p>ii) States' implementation of the Performance Based approach using the agreed Template as at <b>Appendix 6.1A</b></p> <p>b) the MID Air Navigation Report (2023) be presented to the MIDANPIRG/21 for endorsement.</p>	Monitoring and Reporting of ASBU implementation in the MID Region.	<p>State Letter</p> <p>Data for WEBBASED AN Report 2023</p> <p>WEB-BASED AN Report 2023</p>	<p>ICAO</p> <p>States</p> <p>ICAO</p>	<p>Nov. 2023</p> <p>Dec. 2023</p> <p>Jan. 2024</p>	<b>On-going</b>

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**MID REGION ASBU Threads & Elements (AMET B0) Monitoring Table**

**Priority 1:** Elements that have the highest contribution to the improvement of air navigation safety, capacity and/or efficiency in the MID Region. These elements should be implemented where applicable and will be used for the purpose of regional air navigation monitoring and reporting.

**Priority 2:** Elements recommended for implementation based on identified operational needs and benefits.

**Priority 1 Thread:** Any thread with at least 1 priority 1 element.

AMET					
Element	Title	Applicability	Performance Indicators/	Performance Indicators/	Performance Indicators/
AMET B0/1	Meteorological observations products	All states	Indicator*: Regional average implementation status of B0/1 (Meteorological observations products).  Supporting Metrics: Number of States that provide the following Meteorological observations products, as required: <ol style="list-style-type: none"> <li>1. Automatic Weather Observation System (AWOS) information (including real-time exchange of wind and RVR data)</li> <li>2. Local reports (MET REPORT/SPECIAL)</li> <li>3. Aerodrome reports (METAR/SPECI)</li> <li>4. Lightning Information</li> <li>5. Ground-based weather radar information</li> <li>6. Meteorological satellite imagery</li> <li>7. Aircraft meteorological report (ie. ADS-B, AIREP, etc.)</li> <li>8. Vertical wind and temperature profiles</li> <li>9. Wind shear alerts</li> </ol>	80%	Dec 2021
AMET B0/2	Meteorological forecast and warning products	All states	Indicator*: Regional average implementation status of B0/2 (Meteorological forecasts and warning products)  Supporting Metrics: Number of States that provides the following Meteorological forecast and warning products, as required:	90%	Dec 2021

			<ol style="list-style-type: none"> <li>1. World Area Forecast System (WAFS) gridded products</li> <li>2. Significant Weather (SIGWX)</li> <li>3. Aerodrome Forecast (TAF)</li> <li>4. Trend Forecast (TREND)</li> <li>5. Take-off Forecast</li> <li>6. SIGMET</li> <li>7. Aerodrome Warning</li> <li>8. Wind Shear Warning</li> </ol>		
AMET B0/3	Climatological and historical meteorological products	All states	<p>Indicator: % of States that provide Climatological and historical meteorological products, as required.</p> <p>Supporting Metric: Number of States that provide Climatological and historical meteorological products, as required</p>	85%	Dec 2021
AMET B0/4	Dissemination of meteorological products	All states	<p>Indicator: % of States disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM)</p> <p>Supporting Metric: Number of States disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM)</p>	85%	Dec 2021

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AMET Implementation Level = 58 %

B0/1

State	AWOS	Local Report	Aerodrome report	Lighting info	Ground based weather radar info	MET SAT imagery	A/C met report	Vertical wind & Temp profile	Wind shear alert	Average
Bahrain	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Egypt	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Iran	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Iraq	Y	Y	Y	Y	N	N	N	N	N	44%
Jordan	Y	Y	Y	Y	Y	Y	Y	Y	N	89%
Kuwait	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Lebanon	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Libya	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Oman	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Qatar	Y	Y	Y	N	Y	Y	Y	Y	Y	89%
Saudi Arabia	Y	Y	Y	Y	Y	Y	Y	Y	0.25Y	92%
Sudan	N	Y	Y	Y	N	Y	N	N	Y	56%
Syria	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
UAE	Y	Y	Y	Y	Y	Y	Y	Y	.25Y	92%
Yemen	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Total average	60%	67%	67%	60%	53%	60%	53%	53%	43%	57%

MET SG/11-REPORT  
**APPENDIX 4A**

4A-4

B0/2

State	WAFS	SIGWX	TAF	Trend	Take-off forecast	SIGMET	AERODROME WARNING	Wind shear warning	Average
Bahrain	Y	Y	Y	Y	Y	Y	Y	Y	100%
Egypt	Y	Y	Y	Y	Y	Y	Y	Y	100%
Iran	No Info	No Info	Y	No Info	No Info	Y	No Info	No Info	25%
Iraq	N	N	Y	Y	N	Y	N	N	38%
Jordan	N	Y	Y	Y	Y	Y	Y	Y	88%
Kuwait	N	N	Y	Y	Y	Y	N	Y	63%
Lebanon	No Info	No Info	Y	No Info	No Info	Y	No Info	No Info	25%
Libya	Y	No Info	N	N	No Info	N	No Info	No Info	13%
Oman	Y	Y	Y	Y	Y	Y	Y	Y	100%
Qatar	Y	Y	Y	Y	Y	Y	Y	Y	100%
Saudi Arabia	Y	Y	Y	Y	Y	Y	Y	0.25Y	91%
Sudan	N	Y	Y	Y	No Info	Y	Y	Y	67%
Syria	No Info	No Info	N	N	No Info	N	No Info	No Info	0
UAE	Y	Y	Y	Y	Y	Y	Y	Y	100%
Yemen	No Info	No Info	N	N	No Info	N	No Info	No Info	0
Total average	47%	53%	80%	67%	53%	80%	53%	55%	61%

4A-5

B0/3 & B0/4

State	B0/3	B0/4	Average
Bahrain	Y	Y	100%
Egypt	Y	0.5Y	75%
Iran	No info	0.5Y	25%
Iraq	No info	Y	50%
Jordan	Y	Y	100%
Kuwait	Y	0.5Y	75%
Lebanon	No info	0.5Y	25%
Libya	No info	N	0
Oman	Y	Y	100%
Qatar	Y	Y	100%
Saudi Arabia	Y	Y	100%
Sudan	N	N	0
Syria	No info	N	0
UAE	Y	Y	100%
Yemen	No info	N	0
average	53%	60.0%	57%

	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0/1	Green	Green	Grey	Green	Green	Green	Grey	Grey	Green	Green	Green	Green	Grey	Green	Grey
B0/2	Green	Green	Yellow	Yellow	Green	Green	Yellow	Yellow	Green	Green	Green	Green	Red	Green	Red
B0/3	Green	Green	Grey	Grey	Green	Green	Grey	Grey	Green	Green	Green	Red	Grey	Green	Grey
B0/4	Green	Green	Green	Green	Green	Green	Green	Red	Green	Green	Green	Red	Red	Green	Red
Average Impl.	Green	Green	Yellow	Yellow	Green	Green	Yellow	Yellow	Green	Green	Green	Yellow	Red	Green	Red

Average Regional Implementation is 58%

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**APPENDIX B**

**Table – Status of IWXXM Implementation in the MID Region**

<b>State</b>	<b>Expected implementation date</b>	<b>Comment</b>
Bahrain	Completed	IWXXM v3.0
Egypt		In progress
Iraq		
Iran		Support planned until end of 2022
Jordan	Completed	IWXXM v3.0
Kuwait	2024	
Lebanon	End 2023	
Libya		
Oman	tbd	
Qatar	Completed	IWXXM v2.1 Testing IWXXM v3.0 between MET and COM Centres Need to exchange with ROC Jeddah
Saudi Arabia	Completed	IWXXM v3.0
Sudan		
Syria		
United Arab Emirates	Completed	IWXXM v3.0
Yemen		

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**APPENDIX 5A**

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**Deficiencies in the MET Field**

**BAHRAIN**

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action
No Deficiencies Reported									

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**EGYPT**

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

<sup>(1)</sup> Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

**Deficiencies in the MET Field**

**IRAN**

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action
No Deficiencies Reported									

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**IRAQ**

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	-	O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec 2022	A
2	Annex 3; Para 9.1.4, 9.3.1, 9.4.1 and Appendix 2, 2.1.1	WAFS forecasts required for briefing and flight documentation	SADIS FTP not available	January 2021	SADIS Provider	F	Corrective Action Plan has not been formally provided by the State	Iraq	Dec 2022	A

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**JORDAN**

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 9.1.4, 9.3.1, 9.4.1 and Appendix 2, 2.1.1	WAFS forecasts required for briefing and flight documentation	SADIS FTP not available	January 2022	SADIS Provider	F	Corrective Action Plan has not been formally provided by the State	Jordan	<del>Dec 2022</del> Nov 2023 – Jordan informed MET SG/11 that SADIS service re-established and Jordan will provide a letter to the ICAO MID RO. This deficiency will be proposed to be removed from the MANDD subject to MIDANPIRG/21 approval.	A

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**KUWAIT**

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

<sup>(1)</sup> Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

**Deficiencies in the MET Field**

**LEBANON**

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	(USOAP – CMA finding)	O	Corrective Action Plan has not been formally provided by the State	Lebanon	Dec 2022	A
2	Annex 3; Para 9.1.4, 9.3.1, 9.4.1 and Appendix 2, 2.1.1	WAFS forecasts required for briefing and flight documentation	SADIS FTP not available	May 2016	-	O	Corrective Action Plan has not been formally provided by the State	Lebanon	Dec 2022	A

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**LIBYA**

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	(USOAP – CMA finding)	O	Corrective Action Plan has not been formally provided by the State	Libya	Dec 2022	A
2	MID eANP VOL II, MET Table II-2	HLLB and HLLT METAR and 24-hour TAF; HLLS METAR	HLLB and HLLT METAR and 24-hour TAF; HLLS METAR not available internationally	Nov 2021	ROC Jeddah monthly OPMET monitoring	S	Corrective Action Plan has not been formally provided by the State	Libya	Dec 2022	A

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

5A-9

**Deficiencies in the MET Field**

**OMAN**

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**QATAR**

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**SAUDI ARABIA**

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**SUDAN**

Item No	Identification		Deficiencies			Corrective Action				
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action	
1	MID eANP VOL II, MET Table II-2	HSSK and HSPN METAR and 30-hour TAF; HSOB and HSNN METAR	HSSK and HSPN METAR and 30-hour TAF; HSOB and HSNN METAR not available internationally	Oct 2021	ROC Jeddah monthly OPMET monitoring	S	Corrective Action Plan has not been formally provided by the State	Sudan	Dec 2022	A

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**SYRIA**

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	MID eANP VOL II, MET Table II-2	OSAP METAR and 24-hour TAF	OSAP METAR and 24-hour TAF not available internationally	Nov 2013	-	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec 2022	A
2	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	(USOAP – CMA finding)	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec 2022	A
3	Annex 3; Para 7.1	SIGMET Implementation	Non-Issuance of SIGMET information	Nov 2017	(USOAP – CMA finding)	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec 2022	A

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

**Deficiencies in the MET Field**

**UAE**

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

<sup>(1)</sup> Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

**Deficiencies in the MET Field**

**YEMEN**

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	-	F H	A contract is being signed with an external quality consultant to assist in establishment & implementation of QMS in the provision of MET service by the end of year 2022.	Yemen	Dec 2022	A
2	Annex 3; Para 7.1	SIGMET Implementation	Non-issuance of SIGMET information	Nov 2017	-	S	All OPMET (SIGMET) information is issued internally but not transmitted internationally due to war, considering a reconnection with another MET regional centre other than Jeddah.	Yemen	Dec 2022	A

<sup>(1)</sup> Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Item No	Identification		Deficiencies			Corrective Action				
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action	
3	MID eANP VOL II, MET Table II-2	OYAA METAR and 30-hour TAF; OYHD, OYRN, OYSN, OYTZ METAR and 24-hour TAF	OYAA METAR and 30-hour TAF; OYHD, OYRN, OYSN, OYTZ METAR not available internationally	Dec 2019	Annual OPMET monitoring	S	All OPMET information is issued internally but not transmitted internationally due to war, considering a reconnection with another MET regional centre other than Jeddah.  OPMET for OYAA is received at ROC Jeddah via NOC Oman as of 22 October 2023. ROC Jeddah distributes this information to other ROCs for global availability via SADIS. This has been confirmed by the Secretariat using a SADIS account.	Yemen	Dec 2022	A

**Note:\* Priority for action to remedy a deficiency is based on the following safety assessments:**

**'U' priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.**

**Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.**

**'A' priority = Top priority requirements necessary for air navigation safety.**

**Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.**

<sup>(1)</sup> Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

**'B' priority = Intermediate requirements necessary for air navigation regularity and efficiency.**

**Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.**

**Definition:**

**A deficiency is a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.**

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<sup>(1)</sup> Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

## METEOROLOGY SUB-GROUP (MET SG)

### TERMS OF REFERENCE

#### 1. Terms of Reference

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

- a) ensure that the implementation of MET in the MID Region is coherent and compatible with developments in adjacent regions, and is in line with the Global Air Navigation Plan (GANP), the Aviation System Block Upgrades (ASBU) framework and the MID Region Air Navigation Strategy;
- b) monitor the status of implementation of the MID Region MET-related ASBU threads/elements included in the MID Region Air Navigation Strategy as well as other required MET facilities and services, identify the associated difficulties and deficiencies and provide progress reports, as required;
- c) keep under review the MID Region MET performance objectives/priorities, develop action plans to achieve the agreed performance targets and propose changes to the MID Region MET plans/priorities, through the MIDANPIRG as appropriate;
- d) seek to achieve common understanding and support from all stakeholders involved in or affected by the MET developments/activities in the MID Region;
- e) provide a platform for harmonization of developments and deployments in the MET domain;
- f) monitor and review the latest MET developments that support Air Navigation and provide expert inputs for the implementation of the Air Navigation Systems related to MET based on ATM operational requirements;
- g) provide regular progress reports to the MIDANPIRG concerning its work programme; and
- h) review periodically its Terms of Reference and propose amendments, as necessary.

#### 1.2 In order to meet the Terms of Reference, the MET Sub Group shall:

- a) monitor the status of implementation of the required MET facilities and services in the MID Region;
- b) provide necessary assistance and guidance to States to ensure harmonization and interoperability in line with the GANP, the MID ANP and ASBU framework;
- c) provide necessary inputs to the MID Region Air Navigation Strategy through the monitoring of the agreed Key Performance Indicators related to MET;
- d) identify and review those specific deficiencies and problems that constitute major obstacles to the provision of efficient MET services, and recommend necessary remedial actions;

- e) keep under review the adequacy of ICAO SARPs requirements in the area of MET, taking into account, inter alia, changes in user requirements, the evolution of operational requirements and technological developments;
- f) develop proposals for the updating of relevant ICAO documentation related to MET, including the amendment of relevant parts of the MID ANP, as deemed necessary;
- g) monitor and review technical and operating developments in the area of MET and foster their implementation in the MID Region in a harmonized manner;
- h) foster the integrated improvement of MET services through proper training and qualification of the MET personnel;
- i) coordinate with relevant MIDANPIRG and RASG-MID Subsidiary bodies for issues with common interests; and
- j) liaise with other States providing services and/or serve as inter-regional exchange of meteorological information for international civil aviation (e.g. SADIS (U.K.), VAAC Toulouse (France), TCAC New Delhi (India), Regional OPMET Centre Vienna (Austria)).

## **2. Composition**

2.1 The Sub-Group is composed of:

- a) MIDANPIRG Member States;
- b) World Meteorological Organization (WMO) and other concerned International and Regional Organizations as observers; and
- c) other representatives from provider States and Industry may be invited on ad hoc basis, as observers, when required.

## **3. Working Arrangements**

3.1 The Chairperson, in close co-operation with the Secretary, shall make all necessary arrangements for the most efficient working of the Subgroup. The Subgroup shall at all times conduct its activities in the most efficient manner possible with a minimum of formality and paper work (paperless meetings). Permanent contact shall be maintained between the Chairperson, Secretary and Members of the Subgroup to advance the work. Best advantage should be taken of modern communications facilities, particularly video-conferencing (Virtual Meetings) and e-mails.

3.2 Face-to-face meetings will be conducted when it is necessary to do so.

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***ATTACHMENT A***



**Eleventh Meeting of the MIDANPIRG Meteorology Sub-Group (MET SG/11)**  
*(Cairo, 14 - 15 November 2023) and*

**Workshop on Formulating a Space Weather Exercise**  
*(Cairo, 15 - 16 November 2023)*

*List of Participants*

State/ Org	Contact	Title
<b>Egypt</b>	Mr. Yasser Abdelgwad El Sayed	Director of Cairo Airport Forecast Center
	Mr. Mahmoud Abraham M. Abdou	Deputy Director of Egyptian Meteorological Watch Office
	Mr. Ahmed Abd Al-Radi Abdelrahman	Meteorologist of Cairo Airport Forecast
	Mr. Ahmad Mohammad Zoulfakar	Meteorologist of Cairo Airport Forecast
	Mrs. Nadia Abdel Fattah Elsebaey	1 <sup>st</sup> Specialist International Affairs Dept, MET Authority
	Dr. Lamiaa Salim Y. Mohammed	Meteorologist
	Mr. Mohammed Essam El Nayeab	ANS Inspector
	Mr. Shawki Abdel Fattah Soker	Chief Inspector MET
<b>Jordan</b>	Mr. Dafi Mohammad Mustafa Elryalat	ANS/MET Inspector
<b>Kuwait</b>	Mrs. Ameerah Falah Al-Azmi	Head of MET Aviation
<b>Oman</b>	Mr. Mansoor Hilal Said Al Shabibi	Chief of Aviation Forecasting
	Mr. Mohammed Mustahil Salim Kashoob	Acting Head of Meteorological Ops
<b>Saudi Arabia</b>	Mr. Waleed Yousef Alsulaim	Air Navigation Meteorology Head
	Mr. Sami Ben Mansour Elwafi	Manager of Aviation
	Mr. Alaa Ben Madany Elsanousi	Deputy Manager
	Mr. Majed Ben Khaled Mahjoub	ROC-Jeddah
	Mr. Mansour Mortada BenGabi	Supervisor
<b>UAE</b>	Mr. Sultan Abdul Aziz M. Lootah	Inspector – Air Traffic Service
<b>UK</b>	Ms. Karen Shorey (virtual)	SADIS Manager
<b>USA (FAA)</b>	Mrs. Karen Shelton-Mur (virtual)	Senior Meteorologist and Int'l Aviation Weather Program Lead
	Mr. Joseph Kunches (virtual)	Advisor on Space Weather to US member of ICAO Met
<b>IFALPA</b>	Mr. Klaus Sievers (virtual)	IFALPA

State/ Org	Contact	Title
<b>ICAO</b>	Mr. Mohamed Smaoui	Deputy Regional Director
	Mr. Christopher Keohan	RO/MET
	Mr. Radhouan Aissaoui	RO/IM
	Mrs. Manal Wissa	Programme Analysis Associate

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