



*International Civil Aviation Organization*

## **MIDANPIRG/22 & RASG-MID/12 Meetings**

*(Doha, Qatar, 4 – 8 May 2025)*

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### **Agenda Item 5.3: ANS (AIM, PBN, AGA-AOP, ATM-SAR, CNS and MET)**

#### **MET IMPLEMENTATION**

*(Presented by the Secretariat)*

<b>SUMMARY</b>
<p>This paper presents the outcomes of the MET Sub-Group (MET SG/12). It highlights key updates related to WAFS, IWXXM implementation, MET planning and implementation issues, air navigation deficiencies in the MET field, and the future work programme.</p> <p>Action by the meeting is at paragraph 3</p>
<b>REFERENCE</b>
<ul style="list-style-type: none"><li>- MET SG/12 Report</li><li>- MIDANPIRG/21 Report</li></ul>

### **1. INTRODUCTION**

1.1 The meeting recalled that The Twelfth Meeting of the MET Sub-Group (MET SG/12) of MIDANPIRG was held virtually from 12 to 13 November 2024. The meeting was attended by forty-three (43) participants from ten (10) MID States (Bahrain, Egypt, Iran, Iraq, Jordan, Libya, Oman, Qatar, Saudi Arabia, and the United Arab Emirates), two (2) other states (Austria and UK), and two (2) Organizations (IATA & WMO).

### **2. DISCUSSION**

#### ***GLOBAL AND REGIONAL DEVELOPMENTS***

2.1 The MET SG/12 meeting noted that following the Recommendation (5/2) by the Meteorology Divisional Meeting (2014) (MET-DIV/14), which tasked the METP with restructuring Annex 3 by separating performance and functional requirements (new Annex 3) from technical specifications (new PANS-MET). This aims to facilitate the transition from a product-centric to an information-based environment, utilizing SWIM, and aligns with GANP.

#### **WAFS**

2.2 The MET SG/12 meeting was updated on the significant changes to the World Area Forecast System (WAFS) and Secure Aviation Data Information Service (SADIS) planned for 2024 and beyond. This includes introducing new multi-timestep SIGWX forecasts in IWXXM format and changes to the T+24 forecasts scheduled for 23 January 2025. These updates aim to address the evolving

needs of the aviation industry for more detailed and timely forecast data. Additional information about these changes is available online from a webinar recording and a dedicated website, including a flyer. The meeting was encouraged to share information with stakeholders about planned updates for 26 November.

2.3 The MET SG/12 meeting was informed of WAFC upgrades to SIGWX forecasting capabilities, which will extend forecast coverage from T+6 to T+48 in three-hour intervals, issued four times daily. Access to these new forecasts will be provided via the SADIS API.

2.4 The MET SG/12 meeting noted also that the existing T+24 SIGWX PNG charts will remain available via the SADIS FTP and WIFS systems until November 2028 and will reflect the following enhancements:

- Removal of embedded cumulonimbus cloud areas
- Inclusion of turbulence areas (CAT and orographic)
- Tropopause height displayed as contours
- Upper boundary adjusted to FL600 (previously FL630)
- Medium-level SIGWX updated to exclude in-cloud turbulence; icing areas will be shown separately using a new “T” line style

2.5 It was recalled that the BUFR-format SIGWX data will be retired in November 2026. The MET SG/12 meeting also noted that, on 24 January 2024, WAFCs retired the 1.25-degree cumulonimbus and CAT datasets following their removal from ICAO Annex 3. WAFC London transitioned to a new data production infrastructure, improving system resilience and access via both SADIS API and FTP services.

2.6 The meeting noted that enhanced high-resolution WAFS data became operational on 19 March 2024, following a pre-operational phase beginning on 7 February 2024.

2.7 The meeting also noted that both WAFCs continue to verify their wind and temperature forecasts. WAFC London additionally verifies blended cumulonimbus and turbulence forecasts, while WAFC Washington verifies blended icing datasets. Further improvements in verification metrics are expected by 2026.

2.8 The SADIS API was acknowledged as SWIM-compliant and is published in the EUROCONTROL SWIM registry. It provides access to high-resolution WAFS gridded data, WAFS SIGWX forecasts, and OPMET data.

2.9 The new SIGWX forecasts will support improved flight planning by providing enhanced vertical coverage from FL100 to FL600, better representation of turbulence, icing, tropopause heights, and digital chart generation capabilities. The SADIS API will enable users to apply global and regional filters to access tailored, high-resolution, SWIM-compliant data.

2.10 Lastly, the MET SG/12 meeting noted that test BUFR and IWXXM datasets are available for users and that WAFCs London and Washington have enhanced their verification metrics and data delivery infrastructure accordingly.

### **ICAO MID IWXXM IMPLEMENTATION**

2.11 The MET SG/12 meeting recalled that IWXXM became a requirement with Amendment 78 to Annex 3, effective 5 November 2020. IWXXM enables SWIM-compatible data exchange for various MET products, including METAR, TAF, SIGMET, AIRMET, and advisories for volcanic ash, tropical cyclones, and space weather.

2.12 The MET SG/12 meeting reviewed the status of IWXXM implementation in the MID Region. As of MET SG/12, Bahrain, Jordan, Saudi Arabia, Qatar, and the UAE had completed implementation of IWXXM v3.0, with other States like Kuwait and Oman were planning implementation in 2024. Coordination with ROC Jeddah and ROC Vienna continues to support regional and interregional data exchange.

2.13 States that have not yet implemented IWXXM were urged to expedite their efforts and refer to ICAO Doc 10003 and other implementation guidance. It was agreed that non-implementing States may be listed under air navigation deficiencies at MIDANPIRG/22.

2.14 Given the aforementioned, the MET SG/12 agreed to the following Draft Conclusion:

*DRAFT CONCLUSION 12/1: IWXXM IMPLEMENTATION DEFICIENCIES*

*That, States that have not implemented IWXXM for OPMET exchange as per ICAO and WMO provisions be included in the list of Air Navigation Deficiencies.*

**INTERREGIONAL EXCHANGE OF OPMET INFORMATION**

2.15 The MET SG/12 meeting noted that the AMHS link between Nicosia and Jeddah, which has been operational since January 2023, facilitated the IWXXM exchange between EUR and MID. Following successful testing, routing within EUR was activated on April 4, 2023.

2.16 It was indicated that IROG London continues coordinating with IROG Washington to align OPMET on SADIS and WIFS. However, the IWXXM exchange is not yet possible. IWXXM data from Canada was expected in 2024 for testing at ROC Vienna and ROC London.

2.17 The WMO and the MET SG/12 meeting emphasized the importance of establishing a similar DMG (Data Management Group EUR METG), which would significantly enhance the exchange and oversight of OPMET data in the region, improve coordination, and increase the quality and reliability of meteorological information. A proposal was made to address this topic at the MET SG/13 meeting.

**REVIEW OF AIR NAVIGATION DEFICIENCIES IN THE MET FIELD**

2.18 The meeting noted that MIDANPIRG/21 reviewed the contents of the MIDANPIRG Air Navigation Deficiency Database (MANDD). MIDANPIRG/21 agreed to remove the deficiencies reported against Jordan related to SADIS service. The meeting noted that the total number of MET deficiencies is fourteen (14), comprising fourteen priority 'A' deficiencies, five of which were related to QMS and nine to METAR, TAF, SIGMET, and WAFS.

2.19 The MET SG/12 meeting also noted that several deficiencies listed in the MANDD still did not have a specific Corrective Action Plan (CAP). States were urged to provide this information for each deficiency (MIDANPIRG, Conclusion 15/35).

2.20 It was pointed out that most deficiencies have remained on the list for over 10 years, with many States not updating their CAPs. Following discussions, it was agreed to organize and conduct a workshop in close coordination with the WMO. This Workshop will raise awareness among States and guide to support practical activities to address and remove the identified deficiencies.

2.21 Given the aforementioned, the MET SG/12 agreed to the following Draft Conclusion:

*DRAFT CONCLUSION 12/2: WORKSHOP ON ENHANCING METEOROLOGICAL SERVICES CAPABILITIES*

*That, the ICAO MID Office, in collaboration with the WMO and Member States, organize a Workshop on enhancing meteorological services capabilities in 2025. This Workshop aims to support States in strengthening their understanding and capabilities to address current deficiencies, thereby enhancing the overall effectiveness of their meteorological services and fostering improved regional cooperation.*

**FUTURE WORK PROGRAMME**

2.22 2.24 The MET SG/12 meeting reviewed the Terms of Reference (TORs) for the MET Sub-Group (MET SG) and suggested amendments for further improvement. The proposal to include Space Weather Information in the MET SG's TORs was presented as an essential enhancement to ensure comprehensive coverage of aviation meteorological phenomena requirements.

2.23 Given the aforementioned, MET SG/12 agreed to the following Draft Decision:

*DRAFT DECISION 12/3: REVISED MET SG TORs*

*That, the revised Terms of References (TORs) of the MET SG are endorsed as at Appendix B.*

**State Compliance with Global and Regional MET Requirements**

2.24 The MET SG/12 meeting highlighted the need to develop and conduct a comprehensive survey to assess States' compliance with existing and forthcoming global and regional MET requirements. This survey would also help identify states' specific needs to facilitate targeted assistance and planning.

2.25 Given the aforementioned, MET SG/12 agreed to the following Draft Conclusion:

*DRAFT CONCLUSION 12/4: SURVEY ON STATES' COMPLIANCE WITH EXISTING AND FORTHCOMING GLOBAL AND REGIONAL MET REQUIREMENTS*

*That, the ICAO MID Regional Office conduct a survey to assess States' compliance with both current and upcoming global and regional MET requirements.*

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the outcomes of the MET SG/12 meeting; and
- b) endorse the Draft Conclusions and Decision.

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## APPENDIX A

Table – Status of IWXXM Implementation in the MID Region

State	Expected implementation date	Comment
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	Q1 2024	To be officially submitted by State
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 B****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

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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)).

- k) monitor and review developments in space weather information services, foster the integration of space weather advisories into MET services, and provide guidance to States on mitigating the impact of space weather phenomena on international civil aviation in alignment with ICAO provisions and global best practices.**

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 paperwork (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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