



International Civil Aviation Organization

**MIDANPIRG Meteorology Sub-Group
Thirteenth Meeting (MET SG/13)**

(Cairo, Egypt, 16 - 17 December 2025)

Agenda Item 4: MET Planning and Implementation issues – Performance Framework for MET implementation in the MID Region

MET SURVEY FOR THE MIDDLE EAST STATES

(Presented by the Secretariat)

SUMMARY

This paper provides a detailed analysis of the ICAO MID survey regarding States' compliance with Annex 3 and related provisions, as well as the reception and operational use of global advisory information (WAFS, VAAC/VONA, SWX, TAAC). It also covers MET service delivery, advanced products, OPMET exchange arrangements, and States' readiness for IWXXM implementation.

Action by the meeting is at paragraph 3.

REFERENCES

- ICAO Strategic Plan 2026–2050
- State Letter AN 10/3 – 25/166 (8 July 2025), issued to implement MIDANPIRG Conclusion 22/32 and request State inputs to the compliance survey.
- Annex 3 (including Amendment updates), Doc 10157 (PANS-MET)

1. INTRODUCTION

1.1 The MET SG/13 meeting may recall that MIDANPIRG, through Conclusion 22/32, tasked the MID Regional Office with conducting a survey to assess States' compliance with current and upcoming global and regional MET requirements, including relevant provisions of Annex 3 and PANS-MET.

1.2 Accordingly, the MID Office issued State Letter Ref AN 10/3 – 25/166 on 8 July 2025, inviting States to complete the survey. The collected data will enable the Secretariat to compile regional results and recommend targeted actions.

1.3 The survey scope included institutional arrangements and legal frameworks, organizational aspects (such as MWO/AMO designation and procedures), compliance monitoring (QMS, SMS, competency programs), reception and use of global advisory information, MET service delivery and advanced products, OPMET/IWXXM status, and MET–ATM coordination, along with the identification of challenges and support needs.

1.4 Responses were received from 11 of the 15 Middle Eastern states (Egypt, Qatar, Bahrain, Iraq, Sudan, Libya, Saudi Arabia, Oman, Iran, Kuwait, and Jordan). Four states (Lebanon, Syria, the United Arab Emirates, and Yemen) did not

1.5 The survey results, as summarized in this paper and presented in detail in Tables 1–10 in **Appendix A**, are intended to support regional planning for Amendment 82 to Annex 3, PANS-MET implementation, and the transition towards SWIM-enabled MET services.

2. DISCUSSIONS

2.1 The Meeting may wish to note that an analysis of the survey responses received from eleven (11) MID States is presented for its consideration, providing a sufficient basis for a regional assessment. The ICAO MID Office will, in parallel, follow up individually with the four (4) States that were unable to respond within the established timeframe to ensure their specific contexts are taken into account in assistance planning.

Institutional Arrangements and Legal Framework (Table 1, Appendix A)

2.2 The survey confirms that MET Authority designation, oversight mechanisms, and AMSP nominations are in place in all 11 responding States, indicating strong institutional alignment. Functional separation and legal frameworks are reported by 10 of 11 States, with one State indicating ongoing efforts to formalize the legal basis.

2.3 Annex 3 amendment status is reported using different formulations (e.g. “Amendments 78–81”, “20th Edition (2018)”, “updating to Amendment 82”, and several “not specified”). This variability suggests that continuous monitoring is needed to ensure that the most recent Annex 3 amendments, including Amendment 82, are appropriately reflected in national regulations.

2.4 Overall, these results demonstrate that institutional fundamentals are solid, providing a strong foundation for the accelerated adoption of digital exchange and coordination practices.

Organizational Aspects (Table 2, Appendix A)

2.5 Based on the survey results, Operational structures are mature: MWO designation, procedures, AMS standards, and coordination mechanisms are reported as implemented by all 11 States. AMO presence at all international airports is confirmed by 10 States, with Libya working toward full coverage.

2.6 The meeting noted that basic organizational arrangements do not appear to be a limiting factor in the Region. Remaining challenges relate mainly to advanced service enablement and cross-boundary processes, such as IWXXM integration and SIGMET harmonization.

Compliance Monitoring Systems (Table 3, Appendix A)

2.7 The survey shows that QMS is implemented in 10 of 11 States, demonstrating strong adoption of quality management principles. SMS is present in 7 of 11 States, indicating a key area for improving the integration of safety management into MET operations. All 11 States report competency programs, and AMF readiness is confirmed across all regions. In summary, while competence and quality systems are mainly in place, the integration and operationalization of SMS remain the main organizational gaps that require targeted guidance and refresher training.

Global Advisory Information Reception (Table 4, Appendix A)

2.8 The survey indicates that the reception and operational use of WAFS and VAAC/VONA advisories are well-established, with 9 of 11 States confirming capability. Similarly, TAAC reception is confirmed by 8 States. However, the Meeting is invited to note with concern that the Space Weather (SWX) advisory reception is confirmed by only 4 of 11 States, making it the least adopted advisory stream and a clear priority for regional intervention. Furthermore, the two states (Iran, Iraq) currently report no reception of the WAFS product, representing a critical foundational gap for en route operations.

2.9 The survey also highlights that Iraq currently reports no reception of WAFS, VAAC, SWX, or TAAC, which creates a critical foundational gap with direct consequences for en route and high-altitude operations. These findings suggest that the regional advisory baseline is adequate for most States, but integration of space weather remains insufficient, and basic advisory enablement is required in specific cases.

MET Services and Advanced Products (Table 5, Appendix A)

2.10 All 11 States report issuing METAR, SPECI, TAF, and SIGMET, confirming a solid core-service baseline. However, only 5 of 11 States report cross-border SIGMET coordination, revealing inconsistent hazard information across FIR boundaries. Similarly, 5 of 11 States have implemented SIGMET in IWXXM, and 6 of 11 States report broader IWXXM product exchange. Aircraft-based observations (e.g. AMDAR) are used in only 2 of 11 States.

2.11 The meeting may note that, although the essentials are in place, digital format adoption and cross-border harmonization require structured drills, standard operating procedures (SOPs), and regular performance monitoring.

OPMET and IWXXM Status (Table 6, Appendix A)

2.12 The survey results show that NOC designation, 24/7 operations, and ROC connection are reported in 10 of 11 states, reflecting the high availability of OPMET hubs and routing pathways. IWXXM translation and decoding capabilities are confirmed in 5 of 11 states, which, along with routing readiness, form the backbone of the end-to-end IWXXM exchange.

2.13 IWXXM status is reported as implemented in Qatar, Bahrain, Oman, Saudi Arabia, and Jordan; planned in Egypt (with a 2027 target) and Iran (subject to AMHS upgrade); and not implemented in Iraq, Sudan, Libya, and Kuwait.

2.14 The meeting noted that IWXXM enablement in the Region is uneven and that AMHS/ROC connectivity, translator/decoder deployment, and structured testing are the main levers to accelerate adoption.

MET-ATM Coordination (Table 7, Appendix A)

2.15 The survey indicates that institutional agreements and operational coordination between MET and ATM exist in 8 of 11 States, with 9 of 11 States reporting MET participation in decision-making, suggesting generally strong integration. Tailored products are available in 7 of 11 States, and joint training is reported by 5 of 11 States, highlighting a training and collaboration gap that likely limits shared situational awareness and procedural consistency.

2.16 The meeting noted that further strengthening of MET-ATM collaboration, including regular joint training, scenario-based exercises and co-development of tailored products, would enhance shared situational awareness and operational decision-making.

Consolidated Scorecard and Risk View (Table 9, Appendix A)

2.17 The consolidated scorecard (Table 9) indicates the following approximate compliance levels:

- Institutional and organizational: 100%
- Legal framework and QMS: 91%
- SMS: 55%
- WAFS reception: 72%
- IWXXM capability: 36%
- Cross-border SIGMET: 45%
- ATM coordination: 72%

2.18 It should be noted that digital exchange (IWXXM), cross-border continuity (SIGMET) and safety management integration (SMS) are the key factors affecting residual risk across the Region.

Alignment with MIDANPIRG Air Navigation Deficiency Database (MANDD)

2.19 The meeting should recognize the importance of reconciling survey results with entries currently listed in the MIDANPIRG Air Navigation Deficiency Database (MANDD). For example, in Libya, the MANDD lists a deficiency related to QMS implementation (Annex 3, paragraph 2.2) dating back to 2014, classified as Priority “A”. If the latest State submission states that a QMS has now been implemented, the meeting may consider removing the deficiency once official evidence, such as a QMS certificate or audit report, is reviewed and validated.

2.20 The survey confirms that Iran does not receive WAFS products, constituting a significant operational gap for flight briefing and documentation. This deficiency is not currently reflected in the MIDANPIRG Air Navigation Deficiency Database (MANDD).

2.21 To ensure proper monitoring and resolution, the ICAO MID Office will follow up with Iran to confirm the finding and formally draft the deficiency, citing the applicable normative references (Annex 3, Appendix 3, paragraphs 9.1.4, 9.3.1, and 9.4.1; and Appendix 2, paragraph 2.1.1). This action will maintain the accuracy and comprehensiveness of MANDD by ensuring all identified gaps are formally tracked until resolved with documented evidence.

2.22 Based on the foregoing, and in order to enhance the provision and operational use of aeronautical meteorological information in the MID Region, taking into account the specific situations identified through the regional MET implementation survey, the following draft conclusion is proposed

DRAFT CONCLUSION 13/1: STRENGTHENING MET IMPLEMENTATION AND OPERATIONAL USE OF GLOBAL ADVISORIES IN THE MID REGION

That,

a) States be urged to:

- take the necessary measures to fully implement the provisions of Annex 3 (including the latest amendments) and PANS-MET (Doc 10157), aiming for full implementation by 31 December 2026;*
- strengthen national capabilities for receiving and operationally using global advisory information, including WAFS, VAAC/VONA, SWX, and TAAC products and advisories;*
- improve cross-border SIGMET coordination through regular drills, harmonized procedures, and proper monitoring, with a target date of 31 December 2026; and*
- nominate national focal points for IWXXM and SWX matters, to support regional coordination and help identify assistance and capacity-building needs.*

b) ICAO MID Office be requested to continue monitoring MET implementation through periodic surveys and report progress to MET SG and MIDANPIRG.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note and discuss the results of the regional MET survey and the consolidated scorecard, as presented in **Appendix A**; and
- b) consider adoption of the draft conclusion as proposed in paragraph 2.22.

Appendix A-Survey Results

TABLE 1: INSTITUTIONAL ARRANGEMENTS & LEGAL FRAMEWORK

State	MET Authority	Oversight Entity	AMSP Designated	Functional Separation	Legal Framework	Annex 3 Amendment
Egypt	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Amendments 78-81
Qatar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20th Edition (2018)
Bahrain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not specified
Iraq	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not specified
Sudan	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not specified
Libya	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edition 2016
Saudi Arabia	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Amendment 81
Oman	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not specified
Iran	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Updating to Amendment 82
Kuwait	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not specified
Jordan	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not specified
TOTAL	11/11	11/11	11/11	10/11	10/11	

TABLE 2: ORGANIZATIONAL ASPECTS

State	MWO Designated	MWO Documented	AMO at All Airports	AMO Procedures	AMS Standards	Coordination Mechanism
Egypt	✓	✓	✓	✓	✓	✓
Qatar	✓	✓	✓	✓	✓	✓
Bahrain	✓	✓	✓	✓	✓	✓
Iraq	✓	✓	✓	✓	✓	✓
Sudan	✓	✓	✓	✓	✓	✓
Libya	✓	✓	✗	✓	✓	✓
Saudi Arabia	✓	✓	✓	✓	✓	✓
Oman	✓	✓	✓	✓	✓	✓
Iran	✓	✓	✓	✓	✓	✓
Kuwait	✓	✓	✓	✓	✓	✓
Jordan	✓	✓	✓	✓	✓	✓
TOTAL	11/11	11/11	10/11	11/11	11/11	11/11

TABLE 3: COMPLIANCE MONITORING SYSTEMS

State	QMS Established	SMS Established	Competency Program	Assessment Status	AMF Ready
Egypt	✓	✓	✓	Planned	✓
Qatar	✓	✓	✓	Implemented	✓

Bahrain				Implemented	
Iraq				Implemented	
Sudan				Implemented	
Libya				Implemented	
Saudi Arabia				Implemented	
Oman				Implemented	
Iran				Implemented	
Kuwait				Implemented	
Jordan				Implemented	
TOTAL	10/11	7/11	11/11		11/11

TABLE 4: GLOBAL INFORMATION RECEPTION

State	WAFS Reception	VAAC Reception	SWX Reception	TAAC Reception	Overall Integration	Data Integrated
Egypt						
Qatar						
Bahrain						
Iraq						
Sudan						
Libya						
Saudi Arabia						
Oman						
Iran						
Kuwait						

Jordan	✓	✓	✓	✓	✓	✓
TOTAL	9/11	9/11	4/11	8/11	9/11	9/11

TABLE 5: MET SERVICES & ADVANCED PRODUCTS

State	METAR/SPECI	TAF Issuance	SIGMET Issuance	Cross-border SIGMET	SIGMET in IWXXM	IWXXM Products	Aircraft Obs (AMDAR)
Egypt	✓	✓	✓	✗	✗	✗	✗
Qatar	✓	✓	✓	✓	✓	✓	✗
Bahrain	✓	✓	✓	✓	✓	✓	?
Iraq	✓	✓	✓	✓	✗	✗	✗
Sudan	✓	✓	✓	✗	✓	✓	✗
Libya	✓	✓	✓	✗	✗	✗	✗
Saudi Arabia	✓	✓	✓	✓	✓	✓	✗
Oman	✓	✓	✓	✗	✓	✓	✗
Iran	✓	✓	✓	✗	✗	✗	✗
Kuwait	✓	✓	✓	✗	✗	✗	✗
Jordan	✓	✓	✓	✓	✓	✓	✓
TOTAL	11/11	11/11	11/11	5/11	5/11	6/11	2/11

TABLE 6: OPMET & IWXXM STATUS

State	NOC Designated	NOC 24/7	ROC Connected	IWXXM Translation	IWXXM Decoding	IWXXM Status
Egypt	☑	☑	☑	✘ (2027)	✘	Planned
Qatar	☑	☑	☑	☑	☑	Implemented
Bahrain	☑	☑	☑	☑	☑	Implemented
Iraq	☑	☑	☑	✘	✘	Not implemented
Sudan	☑	☑	☑	✘	✘	Not implemented
Libya	☑	☑	☑	✘	✘	Not implemented
Saudi Arabia	☑	☑	☑	☑	☑	Implemented
Oman	☑	☑	☑	☑	☑	Implemented but not removed from the deficiency list. Official notification from States required
Iran	☑	☑	☑	✘ (needs AMHS)	✘	Needs upgrade
Kuwait	☑	☑	☑	✘	✘	Not implemented
Jordan	☑	☑	☑	☑	☑	Implemented
TOTAL	11/11	11/11	11/11	5/11	5/11	

TABLE 7: ATM COORDINATION

State	Institutional Agreement	Operational Coordination	MET in Decision Making	Tailored Products	MET-ATM Integration	Joint Training
Egypt	☑	☑	☑	☑	☑	☒
Qatar	☑	☑	☑	☒	☑	☒
Bahrain	☑	☑	☑	☑	☑	☒
Iraq	☑	☑	☑	☑	☑	☑
Sudan	☒	☒	☑	☒	☒	☑
Libya	☑	☑	☑	☑	☑	☑
Saudi Arabia	☑	☑	☑	☑	☑	☑
Oman	☑	☑	☑	☑	☑	☒
Iran	☒ (updating)	☑	☑	☒	☒	☒
Kuwait	☒	☑	☑	☑	☑	☒
Jordan	☑	☑	☑	☑	☑	☑
TOTAL	8/11	8/11	9/11	7/11	8/11	5/11

TABLE 8: CHALLENGES & SUPPORT NEEDS

State	Top Challenges	Priority Support Areas	Audit Status
Egypt	Technical capacity, HR, IWXXM	Technical guidance, on-site training, system support	Planned
Qatar	None specified	Online training	No recent

Bahrain	Human resource capacity limitations	On-site training, online training	No recent
Iraq	Technical capacity, IWXXM, institutional gaps	IWXXM translation, all support types	Planned
Sudan	Technical capacity, HR, IWXXM	Infrastructure, equipment, training, regulatory alignment	No recent
Libya	Technical capacity, HR, IWXXM, data exchange	QMS, IWXXM, coordination with ATM	No recent
Saudi Arabia	Technical capacity, HR	Online training, desert phenomena support	2014
Oman	None specified	Not specified	2024
Iran	Technical capacity, IWXXM, ATM integration	System upgrade, on-site training, regional collaboration	2022
Kuwait	HR and training	HR and training	2023
Jordan	Technical capacity, IWXXM/SWIM, regulatory gaps, SIGMET/VAA/SWX readiness	IWXXM & SWIM implementation support, system upgrade, training, ROC connection	Not specified

TABLE 9: COMPLIANCE SCORECARD SUMMARY

Category	High Compliance	Medium Compliance	Low Compliance	% Compliance
Institutional	11/11 states	0	0	100%
Legal Framework	10/11 states	0	Sudan,	91%
Organizational	11/11 states	0	0	100%
QMS	10/11 states	0	Libya only	91%

SMS	6/11 states Egypt, Qatar, Bahrain, Sudan, Iran, Jordan		6 states	55%
WAFS Reception	8/11 states Egypt, Qatar, Bahrain, Sudan, Libya, Saudi Arabia, Oman, Jordan		Iraq, Libya. Iran does not receive WAFS products, receives VAAC and TAAC,	72%
IWXXM Capability	4/11 states	Egypt, Iran (planning)	5 states	36%
Cross-border SIGMET	5/11 states Qatar, Bahrain, Iraq, Iran, Jordan		6 states	45%
ATM Coordination	8/11 states	0	Kuwait, Sudan	72%
Overall Weighted Average				72%

MID Region - Dashboard Progress Bars (Original Order)

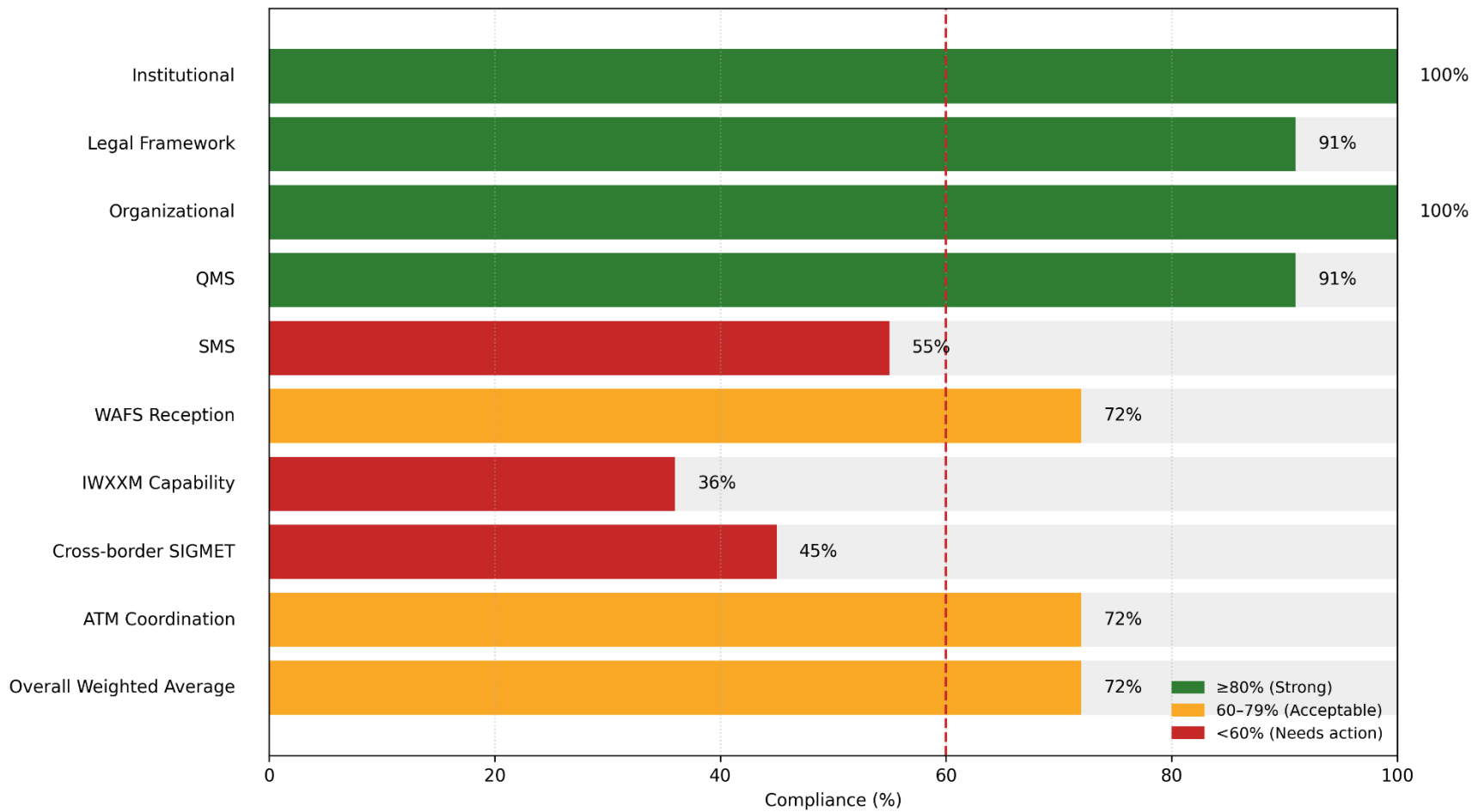


TABLE 10: REGIONAL PRIORITY MATRIX

Priority Level	States	Key Issues	Recommended Actions	Target deadline
CRITICAL	Iraq, Libya	<ol style="list-style-type: none"> Iraq: No reception of any global advisory information. Libya: Multiple systemic deficiencies (QMS, SMS, AMO coverage, IWXXM). 	<ol style="list-style-type: none"> Iraq: Urgent technical mission to establish basic global info reception. Libya: Comprehensive capability-building programme. 	Q2 2026
HIGH	Iran, Sudan, Kuwait	<ol style="list-style-type: none"> Iran: AMHS upgrade required for IWXXM; no WAFS reception. Sudan: Legal framework not formalized. Kuwait: IWXXM status unclear; HR/training challenges. 	<ol style="list-style-type: none"> Iran: Technical/financial support for AMHS upgrade. Sudan: Legal advisory support. Kuwait: IWXXM gap assessment & training. 	Q4 2026
MEDIUM	Egypt, Bahrain, Qatar	<ol style="list-style-type: none"> IWXXM implementation planned or advanced. Need to enhance cross-border SIGMET coordination. 	<ol style="list-style-type: none"> Technical support for IWXXM & ROC connectivity. Regional SIGMET coordination workshops. 	Q4 2027
LOW	Saudi Arabia, Oman, Jordan	Advanced implementation with minor gaps. Opportunity for regional leadership.	<ol style="list-style-type: none"> Peer-support roles. Lead regional best practices & SOPs development. Host training events. 	Ongoing / 2028