



*International Civil Aviation Organization*

**Middle East Regional Monitoring Agency Board**

**Twentieth Meeting (MIDRMA Board/20)**  
*(Muscat, Oman, 10 – 11 November 2024)*

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**Agenda Item 3: Progress Report on the MIDRMA Project**

**MIDRMA BUSINESS CONTINUITY AND SUSTAINABILITY STRATEGIC PLAN**

*(Presented by the MIDRMA Sustainability Action Group)*

**SUMMARY**

This paper presents the progress made by the MIDRMA Sustainability Action Group.

Action by the meeting is at paragraph 3.

**References**

- MIDRMA Board/19 meeting report (Manama, Bahrain, 10 – 11 October 2023)
- MIDANPIRG/21 meeting report (Abu Dhabi, UAE, 4 – 8 March 2024)

**1. INTRODUCTION**

1.1 It was recognized that the significance of Reduced Vertical Separation Minima (RVSM) is a key enabler for enhancing airspace capacity and optimizing flight operations. RVSM promotes increased airspace efficiency, leading to reduced fuel consumption and emissions.

1.2 To meet the RVSM requirements, programme shall be instituted, on a regional basis, for monitoring the height-keeping performance of aircraft operating at these levels, in order to ensure that the continued application of this vertical separation minimum meets the safety objectives. The scope of regional monitoring programmes shall be adequate to conduct analyses of aircraft group performance and evaluate the stability of altimetry system errors (Annex 11 refer).

1.3 The meeting may wish to recall that the MIDRMA Board/18 Meeting discussed the subject related to the urgency to develop a succession plan for the MIDRMA addressing the staffing needs transfer of knowledge and training, to ensure business continuity; and the continued success of the MIDRMA project. The Board/18 meeting agreed through the Decision 18/2 to establish an Action Group for this purpose.

1.4 Additionally, the subject was presented to the MIDANPIRG/20 meeting and the meeting had agreed to the following Decision:

*MIDANPIRG DECISION 20/6: MIDRMA SUSTAINABILITY ACTION GROUP**That:*

- a) *the MIDRMA Sustainability Action Group is established to develop a Strategic Plan for the MIDRMA to ensure business continuity and sustainability; and*
- b) *the Action Group is composed of members designated by:*
- i. Bahrain;*
  - ii. Jordan;*
  - iii. Oman;*
  - iv. UAE (Rapporteur);*
  - v. MIDRMA; and*
  - vi. ICAO MID.*

1.5 The MIDANPIRG/21 meeting was apprised with the progress made by the development of the initial draft of the plan. The meeting requested the MSAG to continue the development of the plan and encouraged the States to provide support to the activities of the group.

1.6 The Action Group was requested to provide progress report to the MIDRMA Board/20 meeting before presenting to the MIDANPIRG/22 meeting planned in Doha, Qatar, 5 – 8 May 2025.

## **2. DISCUSSION**

2.1 The meeting may wish to note that the MIDRMA Sustainability Action Group (MSAG) has conducted several virtual meetings to develop a Strategic Plan for the MIDRMA to ensure business continuity and sustainability.

2.2 The MSAG developed a document, including the anticipated technical and managerial challenges for the coming 6 years (period from 2024 to 2030). The Group agreed to the following Layout/Table of Content of the MIDRMA Strategic Plan:

<b>MIDRMA Business Continuity and Sustainability, Strategic plan (2024 - 2030)</b>	
<b>1</b>	<b>Duties and Responsibilities</b>
1.1	Global RMAs duties and responsibilities
1.2	MIDRMA duties and responsibilities
1.3	Host State responsibilities (MoA)
1.4	MIDRMA Board responsibilities (ToR)
<b>2</b>	<b>Human Resources</b>
2.1	Assessment of staffing needs
2.2	Manpower/Succession Plan (retirement, recruitment, retention and training)
<b>3</b>	<b>Financial</b>
3.1	Funding mechanism
3.2	Incomes and expenses
3.3	Wages

<b>4</b>	<b>Technical</b>
4.1	MIDRMA Tools
4.2	MIDRMA Operating manual
4.3	Use of advanced technologies for heigh monitoring
4.4	Guidance material for continued RVSM safety monitoring of the MID Region

- 2.3 The meeting may wish to note that MSAG members noticed the following:
- a. The urgency of implementing a succession plan for MIDRMA to ensure continuous service delivery.
  - b. New core functions and responsibilities were assigned to the MIDRMA team throughout the years, which acquired the advanced technical capabilities to handle and support the MIDRMA functions; like PBCS approvals collection and publication.
  - c. Currently the MIDRMA staff consists of 3 personnel (Manager/Team leader, Technical Officer and support officer), while the Chairman is provided by Bahrain (the host State).
  - d. It was recognized the critical need for a structured knowledge transfer program to address the retirement of current technical staff, ensuring a seamless transition that maintains the MIDRMA's operational integrity that could require a period of not less than 2 years;
  - e. The tools and software currently available within the MIDRMA are anticipated to be sufficient for the coming 10 years.
  - f. The project maintained its financial growth through the annual States' contribution and the GMU height monitoring activities performed by the MIDRMA. On the other hand, the MIDRMA built extended technical capabilities of its staff and the assigned focal points from States to ensure the continued compliance with the requirements of Annex 6 and 11 related to the RVSM implementation.
  - g. It is anticipated during the coming years that the financial income generated by the GMU activities will be reduced due to introduction of new technologies that would facilitate the height monitoring and reduce the costs on the operators.

2.4 Considering all the above, The MSAG drafted the "MIDRMA Business Continuity and Sustainability Strategic Plan" as at **Appendix A**.

- 2.5 The meeting may wish to consider the following notes by the MSAG group members:
- a. There is a need to further enhancement to the MIDRMA Training Plan to ensure succession of knowledge and expertise of the Staff, by covering all the assigned task and responsibilities to the MIDRMA including ICT requirements.
  - b. The need to include the newly introduced technologies related to implementation of ADS-B Height Monitoring System (AHMS), including the current capabilities and required additional resources; subject to the discussion of WP/10 of this meeting.

Note: additional entries related to the financial model sustainability, duties and responsibilities, and staffing are potentially to further discussion within the MSAG meetings, to be included in the final version.

2.6 The draft plan has been presented to the MIDRMA Board/19 meeting; the Board/19 appreciated the progress made in the development of the initial version of the document and agreed on the need for further development of the plan, including in the criteria the duties and responsibilities of all MIDRMA stakeholders, based on best practices from other RMAs and the establishment of enhanced training manual.

2.7 Based on the above, the meeting had agreed on the following Decision:

*MIDRMA BOARD DECISION 19/2: MIDRMA SUSTAINABILITY ACTION GROUP*

*That:*

- a) *the MIDRMA Sustainability Action Group to continue working on the Strategic Plan for the MIDRMA to ensure business continuity and sustainability of the MIDRMA and explore new tasks;*
- b) *the Action Group is composed of members designated by:*
  - i. Bahrain;*
  - ii. Egypt;*
  - iii. Jordan;*
  - iv. Oman;*
  - v. Saudi Arabia;*
  - vi. UAE (Rapporteur);*
  - vii. MIDRMA;*
  - viii. ICAO MID;*
- c) *the MSAG provides progress report to the MIDRMA Board/20 Meeting.*

2.8 The meeting may wish to note that the MSAG continued drafting the MIDRMA Business Continuity and Sustainability Strategic Plan at **Appendix A**.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the progress made so far by the MIDRMA Sustainability Action Group; and
- b) review and amend accordingly the final draft of the MIDRMA Business Continuity and Sustainability Strategic Plan to be presented to the MIDANPIRG/22 meeting for endorsement.

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# 2023 -2030 MIDRMA BUSINESS PLAN

STRATEGIC SOLUTIONS FOR  
SUSTAINABLE SUCCESS



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## Executive summary

During the past 16 years, the MIDRMA team with the support of the host State (Bahrain), the other MID States and ICAO MID Office, managed to establish and maintain a programme, on a regional basis, for monitoring the height-keeping performance of aircraft operating at the RVSM levels, in order to ensure that the continued application of RVSM meets the safety objectives.

The project maintained its financial growth through the annual States' contribution and the GMU height monitoring activities performed by the MIDRMA. On the other hand, the MIDRMA built extended technical capabilities of its staff and the assigned focal points from States to ensure the continued compliance with the requirements of Annex 6 and 11 related to the RVSM implementation.

It is anticipated during the coming years that the financial income generated by the GMU activities will be reduced due to introduction of new technologies ([ADS-B Height Monitoring System \(AHMS\)](#)) and other [modern technologies](#) that would facilitate the height monitoring and reduce the costs on the operators; additionally, it is important to secure the expertise gained by the MIDRMA team through transfer of knowledge and training (succession plan).

The MIDRMA Board at its 18th meeting (Doha, Qatar, 19 – 20 September 2022) recalled that the MIDRMA Board Chairperson and both technical Staff are approaching their retirement. The meeting recognized the urgency to develop a succession plan for the MIDRMA addressing the Staffing, transfer of knowledge/training, business continuity, etc. In this respect, the meeting commended and valued the MIDRMA team for their efforts, contributions, expertise and experience acquired during the past 16 years of activity of the MIDRMA. The meeting agreed that a Strategic Plan for the MIDRMA should be developed to ensure sustainability and business continuity. Accordingly, through Decision 18/2, the meeting established the MIDRMA Sustainability Action Group to develop a Strategic Plan for the MIDRMA to ensure business continuity and sustainability.

The Group agreed that the Strategic Plan should address the Duties and responsibilities, financial aspects, MIDRMA Human Resources and technical subjects.

This Plan was developed by the Group for review and eventually endorsement by the MIDRMA Board. The proposed actions emanating from the Plan are summarized [hereafter](#) at page xxxxxxxx.

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## Summary of proposed actions

The following table summarizes the subjects addressed by the MSAG and the proposed actions:

Reference Para	Subject	Proposed action	Remarks /Notes
<b>Duties and responsibilities</b>			
1	MIDRMA Duties and responsibilities	The revised version of the MIDRMA duties and responsibilities (including three additional responsibilities related to PBCS) to be presented for approval to the MIDRMA Board and endorsement by the MIDANPIRG as at <b>Appendix A</b> .	<a href="#">Completed</a>
2	Host State Responsibilities (MoA)	No action required.	
3	MIDRMA Board responsibilities (ToR) <a href="#">to include responsibilities of the members (MIDRMA, State and Secretariat)</a>	Revised ToR to be presented to the Board meeting for review and to MIDANPIRG for endorsement, as at <b>Appendix C</b> .	<a href="#">Completed to be presented to the Board and the MIDANPIRG and shared with the States.</a>
4	<del>Member States Responsibilities</del> <a href="#">revised MoA</a>	<del>Reiterate MIDANPIRG Conclusion 14/35 and include the Member States' list of responsibilities in the ToR of the MIDRMA Board, as at <b>Appendix C</b>.</del> <a href="#">To include latest updates including the new members and including the revised ToR and State responsibilities.</a>	<a href="#">On going</a>
<b>Financial aspects</b>			
5	Funding mechanism	Revised funding mechanism Conclusion to be presented to the Board meeting for review and endorsement.	<a href="#">Completed revised Funding Mechanism was provided</a>
<b>MIDRMA Human Resources</b>			
6	Assessment of staffing needs	No action required.	
7	Manpower/Succession Plan (retirement, recruitment, retention, and training)	Encourage Bahrain (Host) to provide candidates to support the MIDRMA Succession Plan.	<a href="#">On going: 2 new teams provided by Bahrain (Host)</a>
<b>Technical subjects</b>			
8	MIDRMA Tools	No action required.	
9	MIDRMA Operating Manual and Guidance material for continued	MIDRMA to <del>develop further work on the</del> MIDRMA Training Manual <del>---</del> <a href="#">based on the related ICAO SARPs.</a>	<a href="#">Training manuals were developed.</a>



		RVSM safety monitoring of the MID Region		<a href="#">training plan is on going for the newly provided team members</a>
10		Use of advanced technologies for height monitoring	MIDRMA to continue monitoring industry trends, emerging technologies, and evolving regulatory requirements, to explore and incorporate these technologies into its software development initiatives and further augment its capabilities to address specific needs, <a href="#">which meet the technical requirements.</a>	<a href="#">Introduction of ADS-B Height Monitoring System (AHMS) and using ADS-B data for risk analysis.</a>  <a href="#">AI implementation within the new version of the MIDRAS tool.</a>

Draft

[List of acronyms](#)

Draft

# MIDRMA Business Continuity and Sustainability Strategic Plan (2024 -2030)

Draft Version 0.536

## Introduction

- I. The aviation industry plays a critical role in connecting people and economies across the globe. To ensure safe and efficient air travel, it is essential to implement robust measures and standards. In the Middle East region, the Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG) has approved to establish the Middle East Regional Monitoring Agency (MIDRMA) with the primary responsibility of supervising the implementation of Reduced Vertical Separation Minima (RVSM) within the Middle East airspace. The purpose of this Business Continuity and Sustainability Strategic Plan is to ensure the continued operation and long-term success of the MIDRMA. This plan outlines strategies and measures for the period 2024 to 2030 to enhance resilience and promote sustainability, ensuring the uninterrupted provision of services and the agency's ability to adapt to changing circumstances.
- II. The MIDRMA Board/18 meeting, through Decision 18/2, established the MIDRMA Sustainability Action Group (MSAG), to develop Strategic Plan for the MIDRMA to ensure sustainability and business continuity:

### ***MIDRMA DECISION 18/2: MIDRMA SUSTAINABILITY ACTION GROUP***

*That:*

*a) the MIDRMA Sustainability Action Group is established to develop a Strategic Plan for the MIDRMA to ensure business continuity and sustainability; and*

*b) the Action Group is composed of members designated by:*

- i. Bahrain;*
- ii. Jordan;*
- iii. Oman;*
- iv. UAE (Rapporteur);*
- v. MIDRMA; and*
- vi. ICAO MID.*

- III. The MSAG has conducted several virtual meetings, and developed this document, including the anticipated technical and managerial issues for the coming 6 years (period from 2024 to 2030). The Group agreed to the following Layout/Table of Content of the MIDRMA Strategic Plan:

<b>MIDRMA Business continuity and sustainability, Strategic Plan (2024 - 2030)</b>	
<b>1</b>	<b>Duties and responsibilities</b>
1.1	Global RMAs duties and responsibilities

	1.2	MIDRMA duties and responsibilities
	1.3	Host State responsibilities (MoA)
	1.4	MIDRMA Board responsibilities (ToR)
	1.5	MIDRMA Member States duties and responsibilities
<b>2</b>	<b>Financial</b>	
	2.1	Funding mechanism
	2.2	Incomes and expenses
	2.3	Wages
<b>3</b>	<b>MIDRMA Human Resources</b>	
	3.1	Assessment of staffing needs
	3.2	Manpower/Succession Plan (Retirement, Recruitment, retention and training)
<b>4</b>	<b>Technical</b>	
	4.1	MIDRMA Tools
	4.2	MIDRMA Operating manual
	4.3	Use of advanced technologies for heigh monitoring
	4.4	Guidance material for continued RVSM safety monitoring of the MID Region

- IV. The MIDRMA Sustainability Action Group (MSAG) recognizes the significance of RVSM as a key enabler for enhancing airspace capacity and optimizing flight operations within the Middle East region. By reducing the vertical separation between aircraft, RVSM promotes increased airspace efficiency, leading to reduced fuel consumption and emissions. MIDRMA's Business Continuity and Sustainability Strategic Plan leverages this foundational pillar of RVSM implementation to build a comprehensive framework that addresses operational continuity and safety enhancement.
- V. The strategic plan emphasizes on the integration of business continuity and sustainability principles, recognizing the interconnectedness between these two critical aspects. Maintaining a resilient aviation system is not limited to ensuring uninterrupted operations but also entails a commitment to continuously enhancing safety and fostering sustainable growth. By aligning business continuity and sustainability objectives, MIDRMA seeks to create a cohesive approach that promotes the long-term viability of the Middle East airspace while safeguarding the RVSM Airspace within the MID Region.
- VI. It is important to highlight that the MIDRMA is working and will continue to work closely with regional aviation stakeholders, including national aviation authorities, neighboring Regional Monitoring Agencies (RMAs), airlines, air traffic service providers, and other industry partners. Through collaborative efforts and knowledge exchange, the MIDRMA aims to facilitate the implementation of RVSM standards, share best practices, and enhance regional cooperation. By fostering a culture of continuous improvement and innovation, the aim is to position the Middle East airspace as a global benchmark for operational efficiency, safety, and sustainability.
- VII. Vision: To be a leading RVSM Regional Monitoring Agency, ensuring safe and efficient airspace operations through continuous monitoring and effective collaboration.

## 1. Duties and Responsibilities

### 1.1 Global RMAs Duties and Responsibilities:

The duties and responsibilities of all regional monitoring agencies are listed in the **ICAO Doc 9574 (Operating Procedures and Practices for Regional Monitoring Agencies in Relation to the Use of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive)**, as follows:

1. Establish and maintain a database of aircraft approved by the respective State authorities for operations within RVSM airspace in that region.
2. Receive reports of height deviations of aircraft observed to be non-compliant based on the following criteria:
  - a) TVE  $\geq$  90 m (300 ft);
  - b) ASE  $\geq$  75 m (245 ft);
  - c) AAD  $\geq$  90 m (300 ft);
3. Take the necessary action with the relevant State and operator to:
  - a) determine the likely cause of the height deviation; and
  - b) verify the approval status of the relevant operator.
4. Recommend, wherever possible, remedial action.
5. Analyze data to detect height deviation trends and, hence, take action as in 4;
6. Undertake such data collections as are required by the PIRG to:
  - a) investigate height-keeping performance of the aircraft in the core of the distribution;
  - b) establish or add to a database on the height-keeping performance of:
    - the aircraft population.
    - aircraft types or categories; and
    - individual airframes.
7. monitor the level of risk as a consequence of operational errors and in-flight contingencies as follows:
  - a) establish a mechanism for collation and analysis of all reports of height deviations of 90 m (300 ft) or more resulting from the above errors/actions.
  - b) determine, wherever possible, the root cause of each deviation together with its size and duration.
  - c) calculate the frequency of occurrence.
  - d) assess the overall risk (technical combined with operational and in-flight contingencies) in the system against the overall safety objectives (see Doc 9574); and
  - e) initiate remedial action as required.

8. initiate checks of the “approval status” of aircraft operating in the relevant RVSM airspace, identify non-approved operators and aircraft using RVSM airspace, and notify the appropriate State of Registry/State of the Operator accordingly.
9. circulate regular reports on all height-keeping deviations, together with such graphs and tables necessary to relate the estimated system risk to the TLS, employing the criteria detailed in Doc 9574, for which formats are suggested in Appendix A to Doc 9574; and
10. Submit annual reports to the PIRG.

## 1.2 MIDRMA Duties and Responsibilities

1.2.1 The Middle East Regional Monitoring Agency (MIDRMA) has the following duties and responsibilities, which were endorsed by MIDANPIRG/11 (Cairo, Egypt 9-13 February 2009) APPENDIX 5.2F:

1. To establish and maintain a central registry of State RVSM approvals of operators and aircraft using the Middle East Region airspace where RVSM is applied.
2. To initiate checks of the “approval status” of aircraft operating in the relevant RVSM airspace, identify non-approved operators and aircraft using RVSM airspace and notify the appropriate State of Registry/State of the Operator and other RMAs, accordingly.
3. To establish and maintain a database containing the results of height-keeping performance monitoring and all altitude deviations of 300 ft or more within Middle East Region airspace, and to include in the database the results of MIDRMA requests to operators and States for information explaining the causes of observed large height deviations.
4. Provide timely information on changes of monitoring status of aircraft type classifications to State Authorities and operators.
5. To assume overall responsibility for assessing compliance of operators and aircraft with RVSM height, keeping performance requirements in conjunction with RVSM introduction in the Middle East Region.
6. To facilitate the transfer of approval data to and from other RVSM Regional Monitoring Agencies.
7. To establish and maintain a database containing the results of navigation error monitoring.
8. To conduct safety analysis for RVSM operations in the MID Region and prepare RVSM Safety Monitoring Reports (SMR) as instructed by MIDANPIRG and the MIDRMA Board.
9. To conduct readiness and safety assessments to aid decision-making in preparation for RVSM implementation in those FIRs where RVSM is not yet implemented.
10. To carry out post-implementation safety assessments, as appropriate.

11. Based on information provided by States related to planned changes to the ATS routes structure, advise States and MIDANPIRG on the effects of such changes on the safe RVSM operations in the MID Region.
12. To liaise with other Regional Monitoring Agencies and organizations to harmonize implementation strategies.

1.2.2 Comparison between the duties and responsibilities in Doc 9574 and the ones endorsed by MIDANPIRG/11:

The MIDRMA is aligned with the global duties and responsibilities of all RMAs as mentioned in ICAO Doc 9574. Additional duties and responsibilities have been assigned to RMAs recently; based on that, the MIDRMA requested the inclusion of three additional responsibilities related to Performance-Based Communication and Surveillance (PBCS), as agreed by the ICAO SASP and included in ICAO 9869, and accepted by the Regional Monitoring Agency Coordination Group (RMACG). This was endorsed by MIDANPIRG/18 through Conclusion 18/3. Therefore, the following three responsibilities should be added to the list of MIDRMA duties and responsibilities:

13. Receive reports of non-compliance (Performance-Based Communication and Surveillance (PBCS) Manual (Doc 9869) refers) with RSP 180 and RCP 240 from other RMAs and transmitting reports to the respective State of the operator/aircraft.
14. Receive and maintain records of RCP and RSP approvals issued by States of Operator/Registry associated with current State responsibility and incorporating into expanded RVSM/PBCS approvals database and follow-up as appropriate instances of non-approved aircraft being identified in PBCS Airspace. This would be determined by augmenting the existing monthly RVSM approvals check to incorporate a similar check against PBCS Approvals where these have been included in the flight plan, but no approvals record is held by RMAs.
15. Share records of RCP and RSP approvals between RMAs in line with current sharing practices of RVSM approvals for the ability of States/ANSPs to verify that aircraft operators filing PBCS capabilities in the flight plan are authorized to do so.

Note: The final version of the amended duties and responsibilities of the MIDRMA is attached to this document in **Appendix A** and should be presented to MIDANPIRG for endorsement.

	<b>Proposed action</b>	<b>Champion</b>	<b>Timeline</b>
	The revised version of the MIDRMA duties and responsibilities (including three additional responsibilities related to PBCS) to be presented for approval to the MIDRMA Board and endorsement by the MIDANPIRG as at <b>Appendix A</b> .	MIDRMA	MIDRMA Board/19 (Manama, Bahrain; October 2023)  MIDANPIRG/21 (2024)

### 1.3 Host State Responsibilities (MoA):

1.3.1 As per the MIDRMA Memorandum of Agreement (**Appendix B**), the Member States accepted that Bahrain:

**Commented [AA1]:** Include the last version of the MoA

**Commented [AA2R1]:** In App B

1. To host the MIDRMA operations and pay for the initial setup of the MIDRMA without waiting for MID State contributions. The advance payment made by Bahrain shall be recovered through state's contributions in compliance with the agreed funding mechanism.
2. To provide the offices, equipment, and local personnel needed for the MIDRMA operations.
3. To monitor the progress of MIDRMA, maintain financial accounting, and provide general support and timely reporting.

The provisions and support the MIDRMA received and continues to receive from Bahrain CAA are very satisfactory. Looking ahead to the next six years, no challenges are foreseen considering Bahrain's high-level commitment and continuous support.

Note: The manpower responsible for running the MIDRMA are funded through the MIDRMA budget.

	<b>Proposed action</b>	<b>Champion</b>	<b>Timeline</b>
	No action required	--	--

### 1.4 MIDRMA Board Terms of Reference (ToR)

1.4.1 The following ToRs of the MIDRMA Board were endorsed by MIDANPIRG/11 (Appendix 5.2E) in February 2009:

1. The Board is responsible for the overall supervision, direction, and management of the MIDRMA project. The Board shall elect a Chairperson.
2. The elected Chairperson acts as the contact point/coordinator on behalf of the MIDRMA Board members to oversee the MIDRMA project in coordination with ICAO.
3. The Board shall review and update the MIDRMA work plan on a yearly basis and/or whenever required.
4. The Board shall meet at least once a year or when deemed necessary to review/update, consider, and approve:
  - i. the MIDRMA safety reports.
  - ii. matters related to funding mechanism, costs, accounting, etc., and
  - iii. the duties, responsibilities, and scope of the MIDRMA.
5. The Board meetings should be hosted by Participating States on rotation basis.



6. The MIDRMA Board reports its activity to MIDANPIRG through the ATM/SAR/AIS Subgroup.

1.4.2 The current MIDRMA Board ToR need to be reviewed and modified to reflect the present status and what is needed for the upcoming six-years period, including the inclusion of the responsibilities of the Chairperson, Member States and ICAO MID; in the ToRs. The proposed revised MIDRMA Board ToRs at **Appendix C** should be presented to the MIDRMA Board and MIDANPIRG for review and endorsement.

	<b>Proposed action</b>	Champion	Timeline
	Revised ToR to be presented to the Board meeting for review and to MIDANPIRG for endorsement, as at <b>Appendix C</b> .	MIDRMA Board	MIDANPIRG/21 (2024)

## 1.5 Member States Responsibilities

1.5.1 During the past years, it was noticed that many States did not provide the required data to the MIDRMA in a timely manner and required standard format. In addition, there was an increased number of aircraft in the MMR list. Therefore, the MIDRMA faced huge challenges in the development of the annual RVSM Safety Monitoring Reports (SMR); this led also sometimes to the exclusion of some States from the SMR for lack of data/information, in accordance with MIDANPIRG Conclusion 14/35. In other occasions, the results were impacted with the limited/reduced number of LHD reports. This will hinder the MIDRMA from providing representative data/analysis in the SMRs.

1.5.2 2.4.2 Therefore, Member States should provide the MIDRMA in a timely manner with all the necessary data and information to support the ongoing RVSM safety monitoring in the MID Region in accordance with MIDANPIRG conclusion 14/35:

### **CONCLUSION 14/35: PROVISION OF REQUIRED DATA TO THE MIDRMA**

*That, considering the on-going requirement for RVSM safety monitoring in the MID Region:*

*a) States provide the required data to the MIDRMA on a regular basis and in a timely manner. The data is to include, but is not necessarily limited to:*

*i) approval of operators and aircraft for RVSM operations (on monthly basis or whenever there's a change);*

*ii) Large Height Deviations (LHD) (on monthly basis);*

*iii) traffic data (as requested by the MIDRMA Board);*

*iv) radar data as, when and where required; and v) airway structure (above FL 290) and waypoints.*

b) States not providing the required data to the MIDRMA on a regular basis and in a timely manner:

- i) be included in the MIDANPIRG list of air navigation deficiencies; and
- ii) might not be covered by the MID RVSM Safety Monitoring Report (SMR).

1.5.3 Additionally, MIDRMA member States should:

1. Investigate and respond to relevant LHD reports filed related to its FIR.
2. Comply with MIDANPIRG Conclusions concerning the withdrawal of RVSM approvals for their airline operators who are not compliant with RVSM height monitoring.
3. Monitor their Minimum Monitoring Requirements (MMR) through the MIDRMA online system available on the MIDRMA website.
4. Update the MIDRMA and the ICAO MID Office regarding any changes in the appointed focal points for ATC and Airworthiness; and ensure that the newly appointed focal points provide a comprehensive briefing to their successors, explaining the tasks and responsibilities involved, and actively participate in the MIDRMA events.
5. Ensure the payments of the financial annual contributions to the MIDRMA in a timely manner, and avoid pending arrears.

	<b>Proposed action</b>	<b>Champion</b>	<b>Timeline</b>
	Reiterate MIDANPIRG Conclusion 14/35 and include the Member States' list of responsibilities in the ToR of the MIDRMA Board, as at <b>Appendix C</b> .	MIDRMA Board	Oct. 2023

## 2. Financial

### 2.1 Funding mechanism

2.1.1 The present MIDRMA funding mechanism was endorsed by MIDANPIRG through Conclusion 15/4:

***CONCLUSION 15/4: MIDRMA FUNDING MECHANISM***

*That,*

- a) *the activities of the MIDRMA be ensured through contributions from all MIDRMA Member States, which could be recovered in accordance with ICAO Policies on charges for Airports and Air Navigation Services (Doc 9082), in coordination with IATA;*
- b) *the MIDRMA Member States pay their contributions on a yearly basis not later than two (2) months after the issuance of the invoices by ICAO;*
- c) *ICAO issue the invoices related to States contribution to the MIDRMA Project on a yearly basis as decided by the MIDRMA Board or its Chairperson;*
- d) *the annual amounts to be paid by the MIDRMA Member States are, as follows:*

- i) Bahrain, Egypt, Iran, Oman Saudi Arabia and UAE annual contribution is US\$ 30,000 each; and
- ii) Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Sudan, Syria and Yemen annual contribution is US\$ 10,000 each;
- e) UAE is exempted from the payment of contributions to the MIDRMA for the first ten (10) years of operation (up-to end of 2015);
- f) the MIDRMA Member States comply with the payment instructions contained in the invoices sent by ICAO HQ (Project code, fund number, invoice number, Bank information, etc);
- g) in case a MIDRMA Member State does not pay the contribution to the MIDRMA Project in a timely manner, the MIDRMA Board might consider to take penalty measures against this State (exclusion from the MID RVSM Safety Monitoring Report, review of the Membership, etc);
- h) the MIDRMA Board Chairperson, in compliance with the Custodian Agreement and based on the agreed funding mechanism and the estimation of the yearly operating budget of the MIDRMA, be delegated the authority to certify on behalf of the MIDRMA Member States the requests for advance payment from the MIDRMA account managed by ICAO HQ to the MIDRMA Bank account in Bahrain, as decided by the MIDRMA Board;
- i) the bills related to the MIDRMA expenses be certified by the MIDRMA Board Chairperson and reviewed by the MIDRMA Board at each of its meetings;
- j) the MIDRMA funding mechanism be revised by the MIDRMA Board, when necessary.

2.1.2 The MIDRMA Funding mechanism endorsed by the MIDRMA Board and MIDANPIRG is based on 2 main criteria: the volume of RVSM traffic in a Flight Information Region and the number of RVSM approved aircraft registered in each Member State. Since the above Conclusion was endorsed in 2015, the Region observed some changes with regard to fleet and volume of traffic in some FIRs. It is therefore crucial to reassess the workload for each member State in light of the current circumstances, considering the number of movements within their respective FIRs and the number of RVSM approved aircraft. Consequently, the Table below provides a comparison between the member States' status in years 2011, 2015 and 2023 (2011 and 2015 are the dates when Conclusions related to the MIDRMA Funding Mechanism were endorsed by MIDANPIRG)

Member States	Comparison between Years 2011, 2015 and 2022/2023					
	RVSM ACFT Jan 2011	RVSM TDS Jan 2011	RVSM ACFT Jan 2015	RVSM TDS Sep 2015	RVSM ACFT April 2023	RVSM TDS June 2023
Bahrain	58	24285	50	25676	62	30479
Egypt	128	19229	125	29172	151	25262*
Iran	123	10479	205	39185	213	35302*
Iraq	14	-	38	3296	47	22420
Jordan	24	8554	46	5241	45	10131

Kuwait	36	3570	50	2139	68	14912
Lebanon	33	2949	24	52	32	85 for 2021
Libya	-	-	-	-	40	-
Oman	30	22520	51	37080	74	35947*
Qatar	107	-	205	-	297	-
KSA	260	19228	205	40250	281	42433*
Sudan	-	-	9	6297	15	5582*
Syria	9	9774	6	1911	21	2894
UAE	328	15868	549	25622	580	28327
Yemen	12	3490	9	-	6	3666*
<b>Total</b>	<b>1162</b>	<b>139946</b>	<b>1572</b>	<b>215921</b>	<b>1911</b>	<b>236279</b>

\*TDS for June 2022

Based on the data included in the above Table, it is obvious that the volume of RVSM traffic in Baghdad FIR has increased significantly to reach the levels of traffic registered by Bahrain, Egypt and UAE. Also, the number of RVSM approved aircraft registered in Qatar reached 297, and became the second biggest fleet in the Region after UAE.

Additionally, after follow up with the Libyan CAA, Libya signed the MIDRMA MoU on 8 August 2023 and joined officially the MIDRMA project. The Board will discuss the payment of contributions by Libya.

### 3.1.4 Current financial situation:

As of 31 August 2023, the MIDRMA bank accounts balance are as follows:

Bank account	Amount USD
MIDRMA Bank account in Bahrain (as of 31 August 2023)	355,583
MIDRMA Bank account in Montreal (RAB05802) (as of 30 June 2023)	635,487
Total	991,070

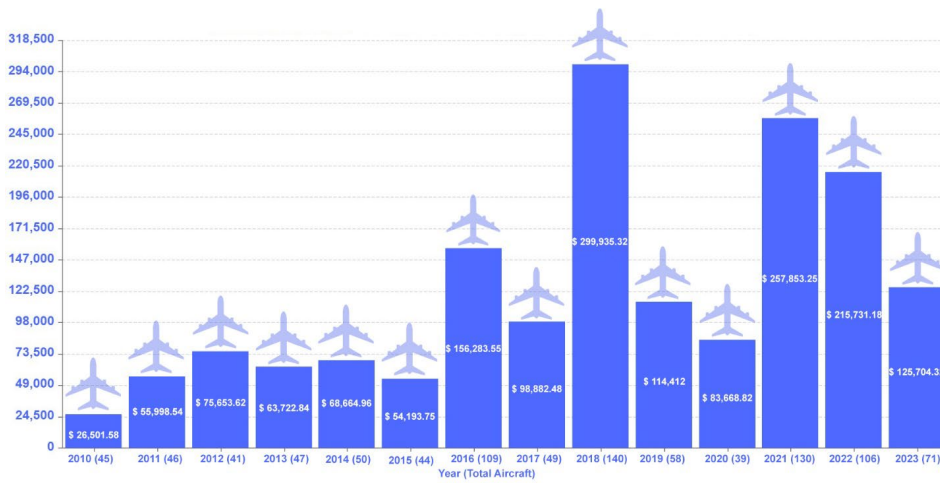
The Total of arrears (States' contributions) as of September 2023 is 460,000 USD.

## 2.2 Incomes and Expenses

### 2.2.1 Incomes

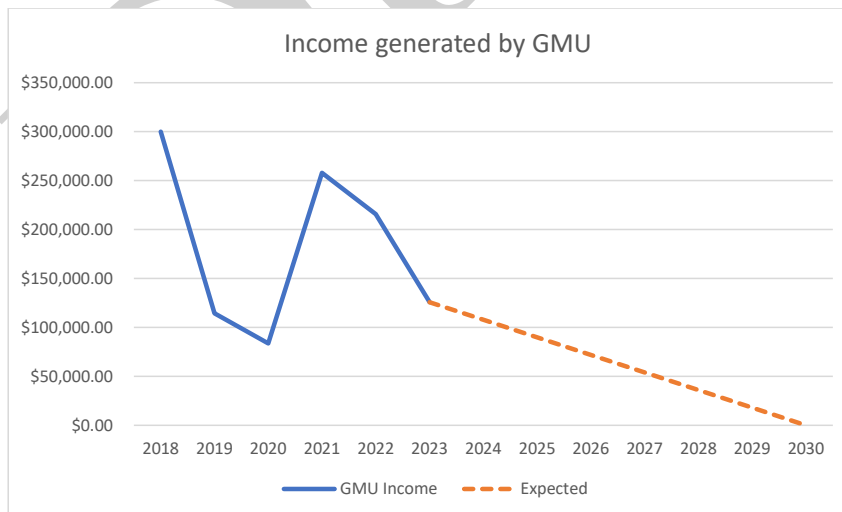
The total income from the annual contributions (6 States category 1 and 9 States category 2) is 270,000 USD. The income from performing the required ICAO RVSM height monitoring using E2GMU for the past years is as follows:

**MIDRMA EGMU Height Monitoring Net Income (2010 – August 2023)**



Income from height monitoring using E2GMU, as of 31 August 2023

Considering the emergence of ADS-B as a main method for RVSM height monitoring, an important reduction in income from GMU monitoring is expected for the coming years. The reduction in income may eventually reach 100% once all Middle East-registered aircraft are equipped with ADS-B out. For the purpose of this Strategic Plan, and the development of a financial outlook up-to 2030, it is estimated that the incomes from GMU monitoring will be decreasing linearly to reach 0 by 2030, date at which almost 100% of the fleet in the Region will be equipped with ADS-B out.



### 2.2.2 Expenses

The yearly MIDRMA expenses include fixed and variable costs, such as annual maintenance, utility subscription rent, dedicated Web domain server, MS Office, emails, ~~insurance~~, software upgrades, salaries, duty travels, and insurance fees.

Fixed costs are those that do not vary based on the production level, while variable costs change depending on the inputs or outputs of the required MIDRMA tasks. Software upgrades, maintenance, staff duty travel, seminars, and workshop fees typically fall under variable costs. They may change from year to year or depending on the usage level and its specific requirements.

Based on the current hardware and newly upgraded software specifications, they will likely run smoothly for the next coming six years.

The yearly estimated fixed costs are USD 18,730 with an increase of 5% margin that can be adjusted based on factors such as inflation and market conditions.

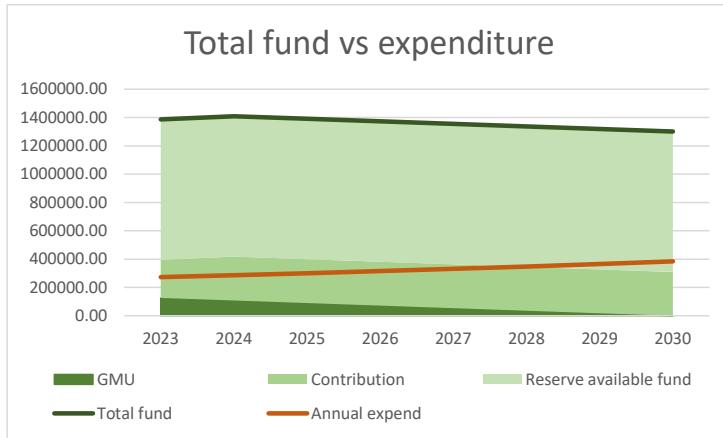
The yearly estimated variable costs are USD 20,300; these costs may increase or decrease depending on the inputs or outputs of the required MIDRMA tasks.

### 2.3 Wages

Through the MIDRMA Board/13 DRAFT CONCLUSION 13/4, the MIDRMA Board agreed that as of 1<sup>st</sup> May 2014, the salaries of the MIDRMA staff are paid as monthly lump sums with a 5% increment of the salaries granted to the MIDRMA staff on an annual and regular basis on 1st January of each year. MIDRMA runs by three full-time staff (MIDRMA Manager/Team leader, MIDRMA Officer/Administrator, and MIDRMA Data Analyst/Secretary), and this is the minimum overloaded staffing that can run RMA tasks only. Their yearly wages are USD 233,710.32 with a 5% increment of the salaries granted to the MIDRMA staff annually and regularly on 1st January of each year.

### 2.4 Financial Risk

The financial risk associated with non-payment of annual contributions by certain MIDRMA Member States could pose a significant challenge to covering the annual budget. If these member States fail to fulfill their financial obligations, it may result in a deficit that hampers MIDRMA's ability to sustain its operations effectively. With the implementation of ADS-B height monitoring, there are no additional income sources available to offset this potential shortfall. Thus, it becomes crucial for all member States to fulfill their commitments promptly, ensuring the continued smooth functioning of the MIDRMA. Proactive measures, such as enforcing payment timelines and fostering financial accountability, will be essential to mitigate this financial risk and maintain the financial stability of the MIDRMA.



## 2.5 Conclusion Concerning Financial Issues

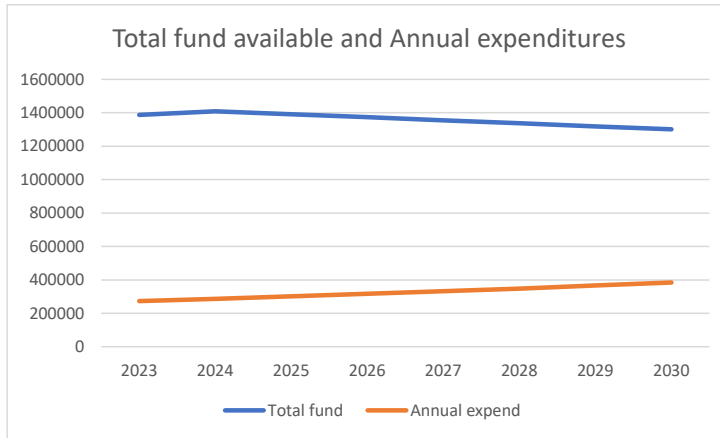
2.5.1 The MIDRMA Funding mechanism endorsed by the MIDRMA Board and MIDANPIRG is based on 2 main criteria: the volume of RVSM traffic in a Flight Information Region and the number of RVSM approved aircraft registered in each Member State. The experience shows that this mechanism has been working very well during the past 17 years of operation of the MIDRMA. Therefore, it is proposed that the same logic will be maintained.

2.5.2 Based on the analysis of the current data related to volume of traffic and number of RVSM approved aircraft, it is proposed to move Qatar and Iraq from Category 2 to Category 1 as follows :

The annual amounts to be paid by the MIDRMA Member States are, as follows:

- a. **Category 1: Bahrain, Egypt, Iran, Iraq, Oman, Qatar, Saudi Arabia and UAE** annual contribution is US\$30,000 each; and
- b. **Category 2: Jordan, Libya, Kuwait, Lebanon, Sudan, Syria and Yemen** annual contribution is US\$10,000 each;

2.5.3 Considering, the current financial status of the MIDRMA Project (available funds in the MIDRMA Bank accounts: **991,070 USD**) and the expected expenditures, by moving Qatar and Iraq to Category 1, the total annual contribution from all member States will be increased to **310,000 USD**; the financial sustainability of the MIDRMA will be ensured up-to 2030 and beyond, as reflected in the MIDRMA Financial Outlook below:



Note: The MIDRMA has pending arrears as of September 2023: **460,000USD**.

	<b>Proposed action</b>	<b>Champion</b>	<b>Timeline</b>
	Revised funding mechanism Conclusion to be presented to the Board meeting for review and endorsement.	MSAG MIDRMA ICAO MID	MIDRMA Board/19 (Oct. 2023)

### 3. MIDRMA Human Resources

#### 3.1 Assessment of staffing needs

The MIDRMA Strategic Plan (2024-2030) places a strong emphasis on business continuity and sustainability. As part of this strategic vision, the assessment of staffing needs has been carefully considered. After thorough evaluation, it has been determined that the agency can effectively fulfill its responsibilities and carry out its work with a lean staff consisting of only three staff members. This decision is rooted in the objective of optimizing efficiency while also taking into account the imperative to save costs for the next six years. By maintaining a small but dedicated team, MIDRMA can streamline its operations, ensure effective communication and coordination, and maintain a focus on the core objectives of the agency. This staffing approach not only contributes to the financial sustainability of the organization but also aligns with the overarching goal of delivering high-quality services and support to member states in the most efficient manner possible. Through careful resource allocation and a strategic approach to staffing, MIDRMA is well-positioned to achieve its long-term objectives while maximizing the prudent utilization of resources.

	<b>Proposed action</b>	<b>Champion</b>	<b>Timeline</b>
	No action required.	--	--

#### 3.2 Manpower/Succession Plan (retirement, recruitment, retention, and training)

The MIDRMA strongly focuses on ensuring a robust Manpower/Succession Plan to address retirement, recruitment, retention, and training needs. Recognizing the importance of maintaining a skilled and capable workforce, MIDRMA has implemented comprehensive measures to manage workforce transitions effectively and ensure a smooth transition for key personnel.



Air traffic Controllers candidates provided by Bahrain CAA will be selected through rigorous recruitment evaluation to attract talented professionals who align with MIDRMA's mission and vision. By combining effective manpower planning, comprehensive succession strategies, and the automation of routine tasks, MIDRMA is well-positioned to ensure a skilled, motivated, and sustainable workforce that can effectively contribute to the agency's long-term goals and the advancement of aviation safety and efficiency in the Middle East region.

Succession Plan for Air Traffic Controllers at Middle East Regional Monitoring Agency (MIDRMA):

Objective: Our aim is to train two air traffic controllers part-time for two to three years, so they can eventually lead at MIDRMA. This plan will make sure the shift in leadership and responsibilities goes smoothly while keeping up the high-quality operation.

**Phase 1: Identification and Selection (Months 1-3)**

- a. Identify Potential Candidates: The HR department, in consultation with current leadership, will identify two promising air traffic controllers who exhibit strong leadership qualities, technical competence, and commitment to MIDRMA's mission.
- b. Assessment and Evaluation: Conduct assessments, including interviews, performance reviews, and competency evaluations, to confirm the suitability of the selected candidates for leadership roles.
- c. Training Needs Analysis: Develop a comprehensive training needs analysis (TNA) for the selected candidates to determine specific areas of development required for leadership roles.

**Phase 2: Part-Time Training (Months 4-30)**

- a. Individual Development Plans (IDPs): Create tailored IDPs for each candidate based on the Training Needs Assessment (TNA), outlining the training modules, goals, and milestones to be achieved during the part-time training.
- b. Training Curriculum: Collaborate with external training institutions and internal mentors to design a curriculum that covers leadership, management, regulatory aspects, and the intricacies of MIDRMA operations.
- c. Part-Time Training: The selected candidates will undergo part-time training, balancing their regular air traffic control duties with leadership training. This phase will span two to three years to ensure thorough development.
- d. Mentorship: Assign experienced mentors from within MIDRMA to guide and support the candidates throughout their training.

**Phase 3: Transition to Leadership Roles (Months 31-36)**

- a. Gradual Transition: Transition of the trained candidates into leadership roles gradually. Initially, they will work alongside current leadership to gain practical experience and exposure to managerial responsibilities.
- b. Continuous Assessment: Conduct periodic performance evaluations and feedback sessions to monitor progress and address any development areas.

**Phase 4: Ongoing Monitoring and Support (Months 37 and Beyond)**

- a. Leadership Roles: Once the candidates have demonstrated their readiness, officially appoint them to leadership roles within MIDRMA.
- b. Continued Mentorship: Maintain mentorship and support systems to ensure the candidates' success in their new roles.
- c. Monitoring and Evaluation: Regularly assess the leadership team's performance and provide coaching or additional training as needed.
- d. Succession Continuity: Develop a succession plan for future leaders to ensure a continuous pipeline of talent.
- e. Team Collaboration: Encourage seamless collaboration between the outgoing and incoming leadership teams to facilitate knowledge transfer and a smooth transition.

By implementing this succession plan, MIDRMA will prepare two capable air traffic controllers for carrying out their duties and responsibilities but also establish a framework for ongoing preparations and succession planning within MIDRMA. This approach will help maintain operational excellence and ensure the agency's long-term success.

**Conclusion**

In conclusion, the MIDRMA has taken a strategic approach to its human resources, focusing on business continuity, sustainability, and cost-effectiveness. Through a carefully staffing needs evaluation, the agency has determined that a lean team of three individuals can efficiently carry out its responsibilities and achieve its objectives for the next six years. This staffing approach aligns with the goal of optimizing efficiency while delivering high-quality services to member States. The MIDRMA has also proactively automated operations to enhance efficiency and reduce reliance on manual processes. With these comprehensive strategies in place, the MIDRMA is well-prepared to maintain a skilled and motivated workforce, advancing aviation safety and efficiency in the Middle East region effectively.

	<b>Proposed action</b>	<b>Champion</b>	<b>Timeline</b>
	Encourage Bahrain (Host) to provide candidates to support the MIDRMA Succession Plan.	MIDRMA Chairperson	As soon as practicable.

**Commented [SM3]:** What about the required expertise in IT?

**Commented [AA4R3]:** Included in the new Training Plan

#### 4. Technical

##### 4.1 MIDRMA Tools

- 1- **MID RVSM Risk Analysis Software (MIDRAS AI):** is a cutting-edge AI-powered tool designed for RVSM airspace risk analysis. It offers unparalleled precision in identifying risks in the Middle East Region by analyzing extensive data and utilizing advanced AI algorithms. MIDRAS includes advanced simulation capabilities, enabling the creation of virtual traffic scenarios to assess potential risks and develop mitigation strategies. Moreover, it features autocorrect functionality, automatically detecting and rectifying inaccurate traffic data, saving time, and ensuring reliable risk analysis based on accurate information.
- 2- **Large Height Deviation (LHD) Online Reporting System:** MIDRMA's online reporting software is designed for Large Height Deviation Reports (LHD) and is a robust platform for member states to submit and manage LHD incidents efficiently. It streamlines reporting with a user-friendly interface and automates report distribution to relevant stakeholders, enabling swift investigations and responses. The software's advanced database offers historical reference and trend analysis available for all users.
- 3- **Minimum Monitoring Requirement (MMR) Online System:** An online application developed by MIDRMA to assist the MID Airworthiness Authorities and Airline operators in following up their RVSM Minimum Monitoring Requirements for each Member State and Operator. This application is updated regularly from the received RVSM approvals, MIDRMA EGMU Height Monitoring, and RMAs HMU ASE results.
- 4- **Online MIDRMA Bulletin:** MIDRMA developed this website for publishing the RMA bulletin, which lists all non-RVSM approved Aircraft observed within the MIDRMA area of responsibility. This application access is restricted to State Authorities.  
Access link: <https://bulletin.midrma.com/bulletin>
- 5- **Global RVSM Approvals Database – Search Engin Tool:** This search function is developed to verify the RVSM approval status of any Aircraft registered around the world. The consolidated RVSM records from all RMAs across the globe have been used for support. This application access is restricted to State Authorities in the MIDRMA website and updated in a regular basis.
- 6- **Post Flight Processing GrafNav Software:** GrafNav is a software package developed by NovAtel, a leading manufacturer of Global Navigation Satellite System (GNSS) products. GrafNav is designed for post-processing of GNSS data collected from various receivers, allowing users to achieve level positioning accuracy. The software allows users to post-process raw GNSS data to obtain precise positioning solutions and calculate accurate ASE results.
- 7- **ADSB 7- ADSB Height Monitoring System (AHMS) Software:** This software was jointly developed by the FAA and the Australia Airspace Monitoring Agency (AMAA) for processing ADSB data to calculate aircraft Altimetry System Error (ASE).

~~Note: This software will be provided to MIDRMA upon the completion of the required training.~~

- 8- [add also a bullet on the EGMU Units](#)

#### Conclusion:

In conclusion, MIDRMA is well-equipped with a comprehensive suite of tools and software to effectively monitor and manage the RVSM airspace. With these advanced tools and software at their disposal, MIDRMA is well-prepared to carry out its tasks and goals efficiently. The only potential challenge on the horizon is the installation or equipage of ADSB out in the MID RVSM approved aircraft. While the current percentage of compliance is high and continues to rise, mandating the equipage of ADSB out in all Middle

East RVSM approved aircraft is a critical step that the RMA is considering. However, with the existing tools and software, the MIDRMA is well-positioned to address this challenge and navigate any other evolving aviation technologies that may arise in the future. Therefore, the RMA is set to proceed confidently in the next six years and beyond without significant hindrances to achieving its objectives.

	<b>Proposed action</b>	Champion	Timeline
	No action required.	--	--

#### **4.2 MIDRMA Operating Manual and Guidance material for continued RVSM safety monitoring of the MID Region**

Following the guidelines outlined in the ICAO Document 9937, which pertains to the Operating Procedures and Practices for Regional Monitoring Agencies (RMAs), holds significant importance for the successful implementation of Reduced Vertical Separation Minimum (RVSM) procedures. This manual serves as a comprehensive resource that educates and guides RMAs in fulfilling their duties and responsibilities effectively.

The ICAO Document 9937 provides a standardized framework that enables RMAs to establish and maintain a consistent approach to RVSM implementation. It offers a wealth of information regarding the technical, operational, and administrative aspects of monitoring and managing RVSM operations. By adhering to the guidelines outlined in this document, RMAs can ensure a harmonized and synchronized approach across different regions and member States. Moreover, the manual serves as a valuable tool for educating RMAs about their roles and responsibilities. It provides a clear understanding of the functions, processes, and best practices associated with the effective operation of an RMA. By following these guidelines, RMAs can improve their capability to identify, monitor, and address any deviations or non-compliance with RVSM standards promptly.

The ICAO Document 9937 serves as a reference manual that empowers RMAs to enhance their overall operational efficiency. It covers a wide range of topics, including airspace management, data processing, safety oversight, and collaborative decision-making processes. By utilizing this comprehensive resource,

RMAs can optimize their workflows, streamline their procedures, and ensure consistent and accurate reporting.

Furthermore, adhering to the ICAO Document 9937 demonstrates a commitment to international standards and promotes a harmonized approach to RVSM implementation. It enables RMAs to align their practices with global aviation regulations and ensures the seamless integration of regional monitoring efforts into the broader international aviation community.

In conclusion, the MIDRMA, like other Regional Monitoring Agencies (RMAs), relies extensively on the ICAO Document 9937 for the successful execution of its tasks and daily operations. This document serves as a comprehensive guide that encompasses all the necessary procedures, practices, and guidelines for RVSM implementation and oversight. Given the thoroughness and comprehensiveness of this document, RMAs such as MIDRMA do not need to develop separate manuals or documents. The ICAO Document 9937 provides a consolidated resource that effectively educates, informs, and equips RMAs with the knowledge and tools required to carry out their responsibilities. By fully embracing and adhering to this document, MIDRMA can confidently execute its routine daily works and ensure a consistent, harmonized approach to RVSM implementation in line with international standards and best practices.

The MIDRMA recognizes the importance of providing comprehensive manuals for all its software applications. These manuals serve as essential resources for new users, guiding them through the functionalities and operations of each software. MIDRMA ensures that these manuals are readily available, offering clear instructions and explanations to facilitate a smooth onboarding process.

Moreover, MIDRMA understands the dynamic nature of technology and the need for continuous improvement. As new versions of the software are developed, MIDRMA is committed to reviewing and updating the corresponding manuals to reflect the latest features, enhancements, and changes. This proactive approach ensures that the manuals remain up to date, relevant, and accurate, aligning with the evolving capabilities of the software.

By providing accessible and regularly updated manuals, MIDRMA enables new users to quickly familiarize themselves with the software and maximize its potential. The manuals offer step-by-step instructions, screenshots, and detailed explanations, ensuring that users can effectively navigate and utilize the software's functionalities.

The availability and ongoing review of the manuals showcase MIDRMA's dedication to transparency, efficiency, and effective knowledge transfer. By equipping users with detailed guidance on the utilization of the agency's software applications, MIDRMA fosters a culture of proficiency, enabling users to harness the full potential of these tools in their daily work.

In conclusion, the MIDRMA prioritizes the availability and continuous review of manuals for its software applications. These manuals serve as indispensable resources for new users, providing them with the necessary guidance to navigate and utilize the software effectively. With regular updates and revisions, MIDRMA ensures that the manuals remain current and reflect the latest features and improvements in the software. By facilitating easy access to comprehensive manuals, MIDRMA supports user proficiency, operational excellence, and the successful implementation of its software solutions.

#### **MIDRMA Training Manual**

MIDRMA developed a comprehensive operating manual that provides concise explanations and essential guidance for the daily tasks and responsibilities of its staff. This manual was meticulously compiled, reviewed, and is subject to ongoing revisions to ensure it remains up-to-date and reflects the latest best practices. MIDRMA is committed to clarity and effectiveness in its guidance, offering staff members clear, step-by-step instructions on task execution. The MIDRMA team is actively working on the inclusion of images and instructional videos within the manual to simplify the comprehension and execution of complex tasks.

	<b>Proposed action</b>	<b>Champion</b>	<b>Timeline</b>
	MIDRMA to further work on the MIDRMA Training Manual ...	MIDRMA	TBD

#### **4.3 Use of advanced technologies for height monitoring**

The MIDRMA Strategic Plan (2024-2030) recognizes the significance of incorporating advanced technologies into RVSM height monitoring practices. One such evolving method that holds great promise is the utilization of Automatic Dependent Surveillance-Broadcast Out (ADSB-Out) data. This method is expected to become the primary approach for RVSM height monitoring across all RMAs, including MIDRMA, due to its cost-effectiveness and practicality.

The adoption of ADSB-Out data for RVSM height monitoring offers several advantages. Firstly, it eliminates the need for costly ground-based infrastructure, such as height monitoring units or EGMU, as it relies on aircraft broadcasting their information directly.

Furthermore, the use of ADSB-Out data improves the efficiency of height monitoring. Real-time information allows for prompt detection of any deviations from RVSM height standards, enabling immediate intervention and corrective actions. By leveraging this technology, MIDRMA can enhance safety, minimize disruptions to airspace operations, and optimize airspace utilization.

Additionally, the practicality of ADSB-Out data for RVSM height monitoring cannot be overstated. The widespread adoption of ADSB technology by aircraft and the continuous advancements in its implementation make it a reliable and scalable solution. As more aircraft become equipped with ADSB transponders, the coverage and accuracy of height monitoring will improve, further enhancing the effectiveness of MIDRMA's oversight.

In conclusion, the immense potential of advanced technologies, particularly the utilization of ADSB-Out data, for RVSM height monitoring is recognized. Embracing this evolving method offers MIDRMA numerous benefits, including real-time monitoring capabilities and improved efficiency. By embracing the use of ADSB-Out data, MIDRMA can lead the way in implementing this cost-effective and practical solution, ensuring enhanced safety and compliance with RVSM height standards across the Middle East airspace.

[Add para about the aircraft equipment \(ADS-B out\) and the percentage of the compatible fleet within the MID Region. and any other end users challenges.](#)

**Conclusion**

The MIDRMA places significant importance on utilizing advanced technologies and user-friendly tools to enhance the continuous monitoring of safety in the RVSM airspace. The development of the Minimum Monitoring Requirement Tool and the MIDRMA Risk Analysis Software AI (MIDRAS AI) demonstrates the agency's commitment to harnessing the power of technology for accurate risk analysis and streamlined reporting processes. Additionally, the implementation of ADSB-Out height monitoring showcases forward-thinking approach to promoting safety and cost-effectiveness. By adhering to international guidelines outlined in the ICAO Document 9937, MIDRMA ensures a harmonized and standardized approach to RVSM implementation. With a focus on continuous improvement, MIDRMA actively updates and maintains comprehensive manuals for its software applications, fostering proficiency and knowledge transfer among users.

	<b>Proposed action</b>	<b>Champion</b>	<b>Timeline</b>
	MIDRMA to continue monitoring industry trends, emerging technologies, and evolving regulatory requirements, to explore and incorporate these technologies into its software development initiatives and further augment its capabilities to address specific needs.	MIDRMA	continuous

**Commented [SM5]:** We need also to add 1 para. or 2 on requirements, including equipage of fleet (you may add the current percentage) and provision of the data by States and expected challenges.

**Commented [AA6R5]:** @MIDRMA to add paras related to the current MID Region Fleet equipage and any other requirements from the Aircraft side.

## Appendix A: Duties and Responsibilities

### Duties and Responsibilities of the MIDRMA

**The Middle East Regional Monitoring Agency (MIDRMA) has the following duties and responsibilities:**

1. To establish and maintain a central registry of State RVSM approvals of operators and aircraft using the Middle East Region airspace where RVSM is applied.
2. To initiate checks of the “approval status” of aircraft operating in the relevant RVSM airspace, identify non-approved operators and aircraft using RVSM airspace and notify the appropriate State of Registry/State of the Operator and other RMAs, accordingly.
3. To establish and maintain a database containing the results of height keeping performance monitoring and all altitude deviations of 300 ft or more within Middle East Region airspace, and to include in the database the results of MIDRMA requests to operators and States for information explaining the causes of observed large height deviations.
4. Provide timely information on changes of monitoring status of aircraft type classifications to State Authorities and operators.
5. To assume overall responsibility for assessing compliance of operators and aircraft with RVSM height keeping performance requirements in conjunction with RVSM introduction in the Middle East Region.
6. To facilitate the transfer of approval data to and from other RVSM Regional Monitoring Agencies.
7. To establish and maintain a database containing the results of navigation error monitoring.
8. To conduct safety analysis for RVSM operations in the MID Region and prepare RVSM Safety Monitoring Reports (SMR) as instructed by MIDANPIRG and the MIDRMA Board.
9. To conduct readiness and safety assessments to aid decision-making in preparation for RVSM implementation in those FIRs where RVSM is not yet implemented.
10. To carry out post-implementation safety assessments, as appropriate.
11. Based on information provided by States related to planned changes to the ATS routes structure, advise States and MIDANPIRG on the effects of such changes on the safe RVSM operations in the MID Region.
12. To liaise with other Regional Monitoring Agencies and organizations to harmonize implementation strategies.

13. Receive reports of non-compliance (Performance-Based Communication and Surveillance (PBCS) Manual (Doc 9869) refers) with RSP 180 and RCP 240 from other RMAs and transmitting reports to the respective State of the operator/aircraft.
14. Receive and maintain records of RCP and RSP approvals issued by States of Operator/Registry associated with current State responsibility and incorporating into expanded RVSM/PBCS approvals database and follow-up as appropriate instances of non-approved aircraft being identified in PBCS airspace. This would be determined by augmenting the existing monthly RVSM approvals check to incorporate a similar check against PBCS Approvals where these have been included in the flight plan. Still, no approvals record is held by RMAs.
15. Share records of RCP and RSP approvals between RMAs in line with current sharing practices of RVSM approvals for the ability of States/ANSPs to verify that aircraft operators filing PBCS capabilities in the flight plan are authorized to do so.



Appendix B (MoA)

[insert signed MIDRMA MOA]

Between ICAO and the member States

Draft

## Appendix C: ToR

### MIDDLE EAST REGIONAL MONITORING AGENCY (MIDRMA) BOARD

#### TERMS OF REFERENCE

*The Terms of reference was developed in line with the composition of the MIDRMA Board members (para 2 refers) to assign the relevant tasks and responsibilities to the concerned parties.*

#### **I. Board responsibilities**

1. The Board is responsible for the overall supervision, direction, and management of the MIDRMA project, **to ensure an efficient functioning of the MIDRMA and its sustainability.**
- ~~1-2.~~ Develop and continue monitoring the MIDRMA sustainability plan in periodic manner, not more than 3 years, or when deemed necessary.
- ~~2-3.~~ The Board shall elect a Chairperson.
- ~~3-4.~~ The Board shall review and update the MIDRMA work plan on a yearly basis and/or whenever required.
- ~~4-5.~~ The Board shall meet at least once a year or when deemed necessary to review/update, consider, and approve:
  - i. the MIDRMA safety reports;
  - ii. matters related to the **financial management of the MIDRMA project** (funding mechanism, **annual contributions, incomes, expenditures**, etc.); and
  - iii. the duties, responsibilities, and scope of the MIDRMA.
- ~~5-6.~~ The Board meetings should be hosted by the member States on rotation basis.
7. The outcomes of the Board meeting related to technical subjects should be reported to MIDANPIRG for final review and endorsement; whereas, the financial and managerial subject related to the MIDRMA are handled by the Board and do not necessitate MIDANPIRG endorsement.
8. The Board shall promote effective communication channels between the MIDRMA and the Member States.
9. The Board shall promote collaboration and cooperation among member states, encouraging the sharing of best practices, experiences, and lessons learned in RVSM operations and monitoring.

10. The Board shall facilitate capacity building initiatives, including training programs and workshops, to enhance the technical expertise of member States related to RVSM operations, risk analysis and monitoring.

11. The Board shall promote compliance with applicable international standards, recommended practices, and procedures related to RVSM, taking into account the evolving regulatory framework and technological advancements.

## **II. Composition**

The Board is composed of:

- a) Board Members/**Alternates designated by Member States;**
- b) **MIDRMA**
- c) ICAO MID **Secretariat**
- d) Other Representatives from **non-member States, agencies, organizations and industry with an interest in the MIDRMA activities** may be invited on ad hoc basis, as observers, when required.

## **III. Chairperson responsibilities**

The elected Chairperson should:

1. Act as the contact point/coordinator on behalf of the MIDRMA Board members to manage the MIDRMA operational and financial activities.
2. Call, organize and Chair Board meetings.
3. Ensure that the Agenda of the Board meetings meets the objectives to improve MIDRMA activities and keep focus on high priority items.
4. Ensure meeting Agendas, documentation and meeting Reports/Summaries are provided to Member States.
5. Promote consensus among the member States.
6. Coordinate MIDRMA activities closely with the Secretariat and follow-up meeting outcomes and Action items.
7. Present annual financial statement to the board meetings.
8. Coordinate relevant subjects with ICAO, Host State (Bahrain) and Board members, as deemed necessary.

## **IV. Member States responsibilities**

Each MIDRMA member State should:

1. Designate a MIDRMA Board Member/ Alternate, an ATC and Airworthiness/Flight OPS Focal Points. The designated representatives should be familiar with the MIDRMA Objectives and able to support its activities.
2. Provide update to the MIDRMA and the ICAO MID Office regarding any changes in the appointed focal points for ATC and Airworthiness; and ensure that the newly appointed focal point(s) are provided with a comprehensive briefing by their predecessors, explaining the assigned tasks and responsibilities.
3. Regularly attend the MIDRMA events.
4. Ensure the payment of the financial annual contributions to the MIDRMA in a timely manner, and avoid pending arrears.
5. Provide the required data to the MIDRMA on regular basis and in a timely manner; the data include, but is not limited to:
  - a) approval of operators and aircraft for RVSM operations (on monthly basis or whenever there's a change);
  - b) Large Height Deviations (LHD) (on monthly basis);
  - c) traffic data (TDS and ADS-B...) (as requested by the MIDRMA Board);  
~~— radar data as, when and where required; and~~
  - d) airway route structure (above FL 290) and list of waypoints.
6. Investigate and respond to relevant LHD reports filed related to its FIR, through the MIDRMA online reporting tool.
7. Withdraw the RVSM approvals for their airline operators who are not compliant with RVSM height monitoring, and notify the MIDRMA; accordingly.
8. Monitor the relevant Minimum Monitoring Requirements (MMR) through the MIDRMA online system available on the MIDRMA website (add link).

#### V. MID Office Secretariat Responsibilities

The Secretariat will support the Chairperson by providing administrative, coordination and technical support to the MIDRMA Board. In particular, the Secretariat will:

1. Coordinate meeting logistics with the relevant parties~~host.~~
2. Develop meetings Agenda.

3. Ensure meeting Reports/Summaries and related documents are posted in a timely manner on the ICAO MID Regional Office website.
4. Monitor and follow-up on the implementation of the Board Conclusions and Decisions and provide status reports to the Board meetings.
5. In coordination with the MIDRMA, report the outcomes of the Board meetings to MIDANPIRG and/or its subsidiary bodies, as appropriate.
6. Maintain communication with the Chairperson, MIDRMA and Member States.
7. Coordinate with ICAO HQ/CDI for the issuance of payment requests and follow up on the arrears.

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