



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**REPORT OF THE NINETEENTH MEETING
OF THE MIDDLE EAST REGIONAL
MONITORING AGENCY BOARD**

MIDRMA Board/19

(Manama, Bahrain, 10 – 11 October 2023)

The views expressed in this Report should be taken as those of the Middle East Regional Monitoring Agency Board (MIDRMA Board) and not of the Organization. MIDANPIRG will be informed of the outcome of this Report and any formal action taken will be included in the Report of the MIDANPIRG.

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

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PART I - HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1 The Nineteenth meeting of the Middle East Regional Monitoring Agency Board (MIDRMA Board/19) was kindly hosted by Bahrain Ministry of Transportation and Telecommunications (MTT) / Civil Aviation Affairs (BCAA) and the MIDRMA in Manama, Bahrain, during the period 10 – 11 October 2023.

2. OPENING

2.1 The meeting was opened by Mrs. Ebtessam Mohammed Al-Shamlan, Assistant Undersecretary for Air Transport, Aviation Safety and Security, CAA, Bahrain, who thanked ICAO for organizing this important meeting in Bahrain, and extended a warm welcome to all participants and wished them a pleasant stay in Manama. Mrs. Al-Shamlan highlighted the importance of the MIDRMA Board meeting, which will discuss subjects related to the safe and efficient operations of international Air Transport. She also highlighted that the outstanding efforts, collaboration and cooperation between the MID States, the MIDRMA and the ICAO MID Office become a role model in the field of safety monitoring and contributes significantly in providing the necessary support, when required. She reassured the commitment of BCAA to support all ICAO Safety enhancement activities and initiatives.

2.2 In his opening address, Mr. Mohamed Abubaker Farea, Regional Director, Middle East Office, welcomed all participants to Manama. He highlighted the importance of the RVSM implementation, as a key enabler for enhancing airspace capacity and optimizing flight operations; by reducing the vertical separation between aircraft, which promotes increased airspace efficiency, leading to reduced fuel consumption and emissions. Accordingly, there is a list of requirements to be applied to ensure the continued level of safety within the RVSM airspace. He elaborated that the main technical issues related to the RVSM implantation will be discussed during this meeting in addition to financial and managerial matters.

2.3 The meeting will discuss the financial situation of the MIDRMA, and the measures to be applied to ensure its sustainability. Which is directly related to the technical tasks assigned to the MIDRMA and its ability to adapt new introduced technologies that will facilitate the economy of operations. On related subject, I would like to commend all efforts made and resulted in the signature of MoU by Libyan CAA as the newest MIDRMA member State.

2.4 Mr. Farea appreciated the support provided by BCAA for hosting the MIDRMA premises and providing the expertise and other logistics to the MIDRMA through the last 18 years, Also, Mr. Farea thanked the MIDRMA Chairman and Team for their excellent efforts in making this programme a success, which resulted in that the MIDRMA is considered a model for the other RMAs in other ICAO regions. He also thanked all MID States for supporting the MIDRMA activities.

2.5 In closing, Mr. Farea extended the appreciation for Bahrain for hosting the event, and for the generosity extended for all the participants and ICAO Staff. He also thanked all the participants for their attendance and wished the meeting every success in its deliberations.

3. ATTENDANCE

3.1 The meeting was attended by a total of forty-four (44) participants from nine (9) States (Bahrain, Egypt, Iraq, Jordan, Libya, Oman, Saudi Arabia, UAE and Yemen) and seven (7)

Organizations/Industries (AEROTHAI-Thailand, ARMA, Cham Wings Airlines-Syria, EUROCONTROL, IATA, NTU-Singapore and Saudia Airlines) in addition to MIDRMA. The list of participants is at **Attachment A**.

4. OFFICERS AND SECRETARIAT

4.1 The meeting was chaired by Mr. Abdulla Hassan Al Qadhi, Director of Safety and Security, from Bahrain Civil Aviation Affairs, Bahrain, who was unanimously elected as Chairperson of the Middle East Regional Monitoring Agency (MIDRMA) Board.

4.2 Mr. Ahmad Amireh, Regional Officer, Air Traffic and Management and Search and Rescue (RO/ATM/SAR) was the Secretary of the meeting. The meeting was supported by Mr. Ahmed Kavehfiroz, Regional Officer, Air Traffic and Management (RO/ATM). Ms. Dina El Karimy provided the Technical Assistance.

5. LANGUAGE

5.1 Discussions were conducted in English and documentation was issued in English.

6. AGENDA

6.1 The following Agenda was adopted:

- Agenda Item 1: Adoption of the Provisional Agenda and election of the MIDRMA Board Chairperson
- Agenda Item 2: Follow-up on MIDANPIRG/20 and MIDRMA Board/18 Conclusions and Decisions
- Agenda Item 3: Progress Report on the MIDRMA Project
- Agenda Item 4: RVSM Monitoring and related Technical Issues
- Agenda Item 5: Future Work Programme
- Agenda Item 6: Any other Business

7. CONCLUSIONS AND DECISIONS – DEFINITION

7.1 The MIDANPIRG records its actions in the form of Conclusions and Decisions with the following significance:

- a) **Conclusions** deal with matters that, according to the Group's terms of reference, merit directly the attention of States, or on which further action will be initiated by the Secretary in accordance with established procedures; and
- b) **Decisions** relate solely to matters dealing with the internal working arrangements of the Group and its Sub-Groups.

8. LIST OF DRAFT CONCLUSIONS AND DECISIONS

<i>MIDRMA CONCLUSION 19/1:</i>	<i>PAYMENT OF ARREARS TO THE MIDRMA PROJECT</i>
<i>MIDRMA DECISION 19/2:</i>	<i>MIDRMA SUSTAINABILITY ACTION GROUP</i>
<i>DRAFT CONCLUSION 19/3:</i>	<i>MIDRMA FUNDING MECHANISM</i>
<i>DRAFT DECISION 19/4:</i>	<i>MID ADS-B HEIGHT MONITORING SYSTEM (MID AHMS)</i>
<i>DRAFT CONCLUSION 19/5:</i>	<i>MID RVSM SMR 2024</i>

PART II: REPORT ON AGENDA ITEMS**REPORT ON AGENDA ITEM 1: ELECTION OF THE MIDRMA BOARD CHAIRPERSON**

1.1 The meeting extended gratitude and thanks to Mr. Mohammed Zainal for his outstanding support provided to the MIDRMA since its inception in 2006 and for the excellent management of the programme and Chairmanship of the MIDRMA Board. The meeting unanimously elected Mr. Abdulla Hassan Al Qadhi, Director of Safety and Security, Civil Aviation Affairs, Bahrain, as Chairperson of the MIDRMA Board.

REPORT ON AGENDA ITEM 2: ADOPTION OF THE PROVISIONAL AGENDA

2.1 The meeting reviewed and adopted the Provisional Agenda as at Paragraph 6 of the History of the Meeting.

**REPORT ON AGENDA ITEM 3: FOLLOW-UP ON MIDANPIRG/20 AND MIDRMA BOARD/18
CONCLUSIONS AND DECISIONS**

3.1 The subject was addressed in WP/3 presented by the Secretariat. The meeting noted the status of relevant MIDANPIRG/20 and MIDRMA Board/18 Conclusions and Decisions and the follow-up actions taken by States, ICAO and other parties concerned as at **Appendix 3A**.

REPORT ON AGENDA ITEM 4: PROGRESS REPORT ON THE MIDRMA PROJECT
MIDRMA Project (RAB/05/802) Financial Status

4.1 The subject was addressed in WP/4 presented by the Secretariat. The meeting reviewed the status of States' contributions to the MIDRMA Project (RAB/05/802), as of 30 September 2023 as reflected at **Appendix 4A**. The meeting noted that several States have arrears for the past years' contributions.

4.2 The meeting noted with concern that several States have arrears related to the contribution to the project (not current with the annual payments). Accordingly, the meeting agreed to the following Conclusion:

MIDRMA CONCLUSION 19/1: PAYMENT OF ARREARS TO THE MIDRMA PROJECT

That, States, that have not yet done so, pay their contributions to the MIDRMA Project prior to 31 December 2023, based on the payment request issued by ICAO CDI.

4.3 The meeting reviewed and approved the financial report of the MIDRMA project (RAB/05/802) for the year 2023.

4.4 The meeting noted that after coordination with the Libyan Civil Aviation Authority, Libya has signed the MIDRMA MoU to join the programme; and will start to pay the contribution starting next year 2024. Accordingly, Libya will be included in the contribution payment requests issued by the ICAO CDI starting next year 2024.

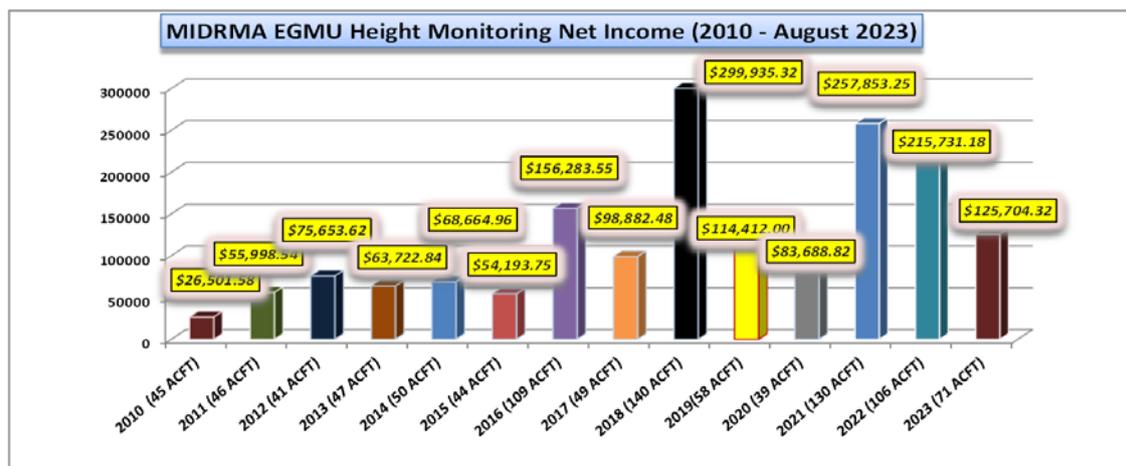
4.5 The meeting noted that the balance of the funds available in the MIDRMA account managed by ICAO HQ (RAB/05/802) were as follows:

- Fund Balance as of 31 December 2018:	USD 374,592
- Fund Balance as of 31 December 2019:	USD 179,831
- Fund Balance as of 31 December 2020:	USD 170,084
- Fund Balance as of 31 December 2021:	USD 189,963
- Fund Balance as of 31 December 2022:	USD 509,050
- Fund Balance as of 20 July 2023:	USD 635,487
- Pending arrears (not collected)	USD 390,000

4.6 The meeting noted that according to the latest Bank Statement dated 31 August 2023, the fund balance of the MIDRMA Bank account in Bahrain is: USD 355,583.

4.7 The meeting noted with appreciation that during the period of 1 January to 31 August 2023, the MIDRMA has conducted GMU monitoring for 71 Aircraft, generating a USD 125,704.32. The expected income for the remaining of 2023 is USD 155,882.98 for 47 remaining Aircraft.

4.8 Additionally, the meeting noted that since year 2010, the MIDRMA has managed to generate income from successful GMU height monitoring missions for a total of 975 aircraft, as reflected in Graph 1. The total amount credited to the MIDRMA account used in the development of tools for the MIDRMA activities and cover some of the operational expenses. In accordance with the 2023 Plan for GMU monitoring activities, the expected income from GMU missions would be approximately USD 281,587.30.



Graph 01: showing the income generated from the EGMU RVSM height monitoring missions (as of 31 August 2023)

4.9 The meeting recalled that the financial status and expenditure summaries for year 2022 as of 31 December 2022 was reviewed during the MIDRMA Board/18 meeting, which was conducted Doha, Qatar, 19 – 20 September 2022. The meeting reviewed and approved the financial statements related to the MIDRMA expenditures and income for year 2023 (as of 31 August 2023) as reflected in Table 1 below:

	Budget Items	Budget Estimation (USD)	
		Updated as of 31 August 2023	2024
1	MIDRMA Manpower	\$160,676.37	\$245,752.00
2	Staff Health / Travel Insurance	\$14,669.31 (not yet paid)	\$15,511.00
3	Computer Hardware & Software	\$15,473.41	\$12,500.00
4	Duty Travel (ICAO, RMAs Meeting)	\$29,601.07	\$20,000.00
5	Training /Train Members State Focal Point	\$15,873.02 (not yet paid)	\$16,000.00
6	Miscellaneous/Other	\$877.93	\$2,500.00
Estimated Total		\$206,628.77	\$312,263.00
Estimated income from EGMU Height Monitoring income.		\$125,704.32	\$223,617.00

Table 1: MIDRMA expenditure as of August 2023 and preliminary budget estimation for year 2024.

MIDRMA Business Continuity and Sustainability Strategic Plan

4.10 The subject was addressed in WP/5 presented by the MSAG Chairman. The meeting recalled that the MIDRMA Board/18 Meeting (Doha, Qatar, 19 – 20 September 2022) 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 MIDRMA Board/18 and subsequently MIDANPIRG/20 meeting agreed respectively through the Decision 18/2 and 20/6 to establish an Action Group for this purpose.

4.11 The meeting recalled that the MIDRMA Sustainability Action Group (MSAG) has conducted 5 virtual meetings, to develop a Strategic Plan for the MIDRMA to ensure business continuity and Sustainability. The MSAG developed a document, including the anticipated technical and managerial issues for the coming 6 years (period from 2024 to 2030). The Group agreed on the following Layout/Table of Content of the MIDRMA Strategic Plan:

MIDRMA Business continuity and sustainability, Strategic Plan (2024 - 2030)	
1	Duties and responsibilities
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
2	Financial
2.1	Funding mechanism
2.2	Incomes and expenses
2.3	Wages
3	MIDRMA Human Resources
3.1	Assessment of staffing needs
3.2	Manpower/Succession Plan (Retirement, Recruitment, retention and training)
4	Technical
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

- 4.12 The meeting may wish to note that MSAG members noticed the following:
- a) An agreement on a succession plan for the continuity of services of the MIDRMA is becoming an urgency.
 - b) New 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.
 - 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 importance of transfer of knowledge from the current technical staff to their successors (when they reach the retirement); that could require a period of not less than 2 years; to secure the knowledge and expertise gained by the current MIDRMA team (succession plan).
 - e) The tools and software current available within the MIDRMA are sufficient for the coming 6 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.

4.13 The MSAG presented the initial draft of the “MIDRMA Business Continuity and sustainability Strategic Plan” as at **Appendix 4B**.

4.14 The meeting also considered the following notes by the 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/11 of this meeting.

4.15 The meeting 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 following: Duties and responsibilities: best practices. And the establishment and enhanced of the training manual.

4.16 Based on the above, the meeting agreed on the following Decision:

MIDRMA 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; and*
 - viii. ICAO MID; and*
- c) *the MSAG provides progress report to the MIDRMA Board/20 Meeting.*

Revised Funding Mechanism

4.17 The meeting noted that the current funding mechanism was endorsed by MIDANPIRG/15 through Conclusion 15/4.

4.18 The meeting recalled that MIDRMA Board/18 meeting had agreed that the MIDRMA conducts an assessment based on the current traffic volumes and size of fleet to review the MIDRMA Funding Mechanism (contributions by States), to be presented to the MIDRMA Board/19 meeting.

4.19 Since the endorsement of MIDANPIRG Conclusion 15/4, the MIDRMA's activities and responsibilities have undergone significant expansion. Given this transformation, it becomes imperative to reevaluate the workload of each member state in light of the prevailing circumstances. This reassessment takes into account factors such as air traffic volume within their respective FIRs and the number of RVSM approved aircraft. To facilitate this comprehensive evaluation, member states have been categorized, as per the guidelines outlined in this conclusion. Consequently, the table below presents a comparative analysis of member states' statuses in 2011, 2015, and 2023 highlighting the evolution of responsibilities managed by the MIDRMA in 2023.

Comparison between Years 2011 and 2022/2023							
Category	Member States	RVSM ACFT Jan 2011	RVSM TDS Jan 2011	RVSM ACFT Jan 2015	RVSM TDS Sep 2015	RVSM ACFT Apr 2023	RVSM TDS July 2023
1	Bahrain	58	24285	50	25676	62	30479
	Egypt	128	19229	125	29172	151	30715
	Iran	123	10479	205	39185	213	38703
	Oman	30	22520	51	37080	74	42082
	KSA	260	19228	205	40250	281	49280
	UAE	328	15868	549	25622	580	28327
2	Iraq	14	-	38	3296	47	22419
	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	2425
	Sudan	-	-	9	6297	15	5582 for 2022
	Syria	9	9774	6	1911	21	2894
Yemen	12	3490	9	-	6	4857	
	Qatar	107	-	205	-	276	3644
	Total	1162	139946	1572	215921	1911	280868

4.20 The funding mechanism logic of choosing more RVSM traffic in a Flight Information Region and the number of RVSM approved aircraft of a MIDRMA member state is based on the principle of fair burden-sharing and resource allocation. The implementation of RVSM requires a significant amount of supervision, monitoring, and coordination to ensure the safety and efficiency of airspace operations. By assigning a higher contribution to member states with more RVSM traffic and RVSM approved aircraft, the funding mechanism recognizes that greater resources and efforts are needed to effectively manage and oversee the implementation of RVSM in FIRs with higher air traffic volumes and size of fleet.

4.21 The rationale for the funding mechanism to allocate more RVSM traffic in a FIR and the number of RVSM-approved aircraft to a MIDRMA member state is a fair and practical approach. It recognizes the additional workload and resources needed to oversee and implement the RVSM system in the Middle East region as air traffic volumes increase. Therefore, it is necessary to review the member states in both categories to reflect the current workload status and make decisions for the present and the next six years.

4.22 The meeting noted that Libya has signed the MoU to join the MIDRMA, the payment contribution request will be issued starting next year.

4.23 Based on the above data analysis, the meeting agreed to move Qatar and Iraq from Category 2 to Category 1 as per the following table:

Category	Member States	Annual Contribution
1	Bahrain, Egypt, Iran, Iraq, Oman, Qatar, Saudi Arabia and UAE	US\$ 30,000 each
2	Jordan, Kuwait, Lebanon, Libya, Sudan, Syria, and Yemen	US\$ 10,000 each

Note: by moving Qatar and Iraq to Category 1, the total annual contribution from all Member States will be increased to USD 310,000 which is suitable to cover the annual expenditure for the MIDRMA (Cost recovery basis).

4.24 Based on the above, the MIDRMA Board agreed on the following Draft Conclusion:

DRAFT CONCLUSION 19/3: 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. *Category 1: Bahrain, Egypt, Iran, Iraq, Oman, Qatar, Saudi Arabia and UAE annual contribution is US\$ 30,000 each; and*
 - ii. *Category 2: Jordan, Kuwait, Lebanon, Libya, Sudan, Syria and Yemen annual contribution is US\$ 10,000 each.*
- e) *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.);*
- f) *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);*
- g) *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;*

-
- h) 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;*
 - i) the MIDRMA funding mechanism be revised by the MIDRMA Board, when necessary; and*
 - j) the MIDRMA is invited to explore additional funding and revenue sources to sustain the programme.*

4.25 Based on these annual contributions of Member States, there will be no anticipated financial issues regarding the MIDRMA annual budget to cover wages and expenses for the next six years.

REPORT ON AGENDA ITEM 5: RVSM MONITORING AND RELATED TECHNICAL ISSUES***Preliminary Results of the MID RVSM SMR 2023 (First Draft Version)***

5.1 The subject was addressed in WP/8, presented by the MIDRMA.

5.2 The meeting recalled the MIDANPIRG Conclusion 20/2 related to the development of the SMR 2023:

MIDANPIRG/19 CONCLUSION 20/2: MID RVSM SMR 2022

That, in order to support the MIDRMA in the timely development of the MID RVSM Safety Monitoring Report (SMR 2023):

- a) States are required to provide the MIDRMA with:
 - i. the FPL/traffic data for the period 1 – 30 June 2023 before 1 August 2023, and*
 - ii. LHD data for the period 1 January to 31 December 2023.**
- b) only the appropriate “Traffic Data Sample” form, available on the MIDRMA website (www.midrma.com), should be used for the provision of FPL/traffic data to the MIDRMA; and*
- c) the final version of the MID RVSM SMR 2023 be ready for presentation to and endorsement by the MIDANPIRG/21 meeting.*

5.3 The MIDRMA presented the initial results of the SMR 2023 at **Appendix 5A**. The meeting noted that based on the data provided to the MIDRMA (TDS and LHDs), the Safety Objectives continue to be met; The value computed for the overall risk is estimated **8.408 x 10⁻¹⁰**, which is below the ICAO overall TLS.

5.4 Despite the fact that MIDRMA Member States have submitted a small number of LHD reports to date and considering that the SMR cycle has not yet been completed (with three more months remaining), there is a possibility that the results presented for Safety Objective No. 2 could change if critical LHD reports were submitted.

5.5 The estimation of the total risk, encompassing Safety Objective 2, integrates the outcomes of Safety Objective 1 with the evaluation of risks originating from various other factors. This secondary component, often referred to as operational risk, is contingent on a multitude of factors, including airspace configuration, traffic density, ATC procedures, individual controller and pilot actions, and specific operational characteristics of sectors. The assessment of operational risk relies on the analysis of event magnitude and duration extracted from operational incident reports, which are subsequently transformed into Large Height Deviation reports.

5.6 MIDRMA has observed a decrease in Large Height Deviation (LHD) reporting from certain member states, particularly those with high traffic volumes, despite the continuous issuance of monthly reminders to all member states. The level of reporting has remained exceedingly low. The table below illustrates the reports received from all member states for the period from January 1st to September 30th, 2023.

RVSM Safety Protocol between Muscat and Mogadishu FIRs

5.7 MIDRMA continued to monitor the Large Height Deviation (LHD) reports along the eastern interface of the MID Region, as filed by Mumbai and Muscat ACCs. The MIDRMA wishes to

bring to the meeting's attention the ongoing status of the Muscat/Mumbai RVSM safety protocol, which has remained open since 2017. It is imperative that a decision be made to close this protocol, given that the associated risks should either be eliminated or reduced to the absolute minimum. Regrettably, MIDRMA does not perceive this happening without confirmation of the installation of OLDI/AIDC systems in both ACCs.

5.8 As elaborated in Appendix A of the SMR 2023, a comprehensive account of Large Height Deviation (LHD) reports, as filed by both Air Traffic Control Units (ATCUs), from January 1st to August 31st, 2023, is provided. It was noted that a significant and abrupt surge in LHD reporting from Mumbai related to Muscat, has been observed during this period. In light of this development, an official communication has been initiated with the Muscat Air Traffic Control, seeking an explanation for the underlying causes behind this sudden escalation. Furthermore, Oman has been formally requested to outline the corrective measures undertaken to address this longstanding issue.

5.9 The table below provides a comparison of the number of LHD reports submitted by Mumbai and Muscat ATCUs in 2022 and 2023.

YEAR	LHD Reported by Muscat	LHD Reported by Mumbai
2022	16	41
2023 As of 31 August 2023	25	79

Oman submitted IP/5 related to the progress made in the coordination with Mumbai ACCs; Oman appraised the meeting with the results of the investigation of LHD occurrences between Mumbai and Muscat and the measures implemented by Oman CAA to appropriately address the LHD reporting over the point RASKI which remained at alarming level. It was noted that the reported LHD by Mumbai were received late at Muscat ACC, as the mechanism of reporting through Monitoring Agency of Asia Region (MAAR) and the MIDRMA; This delay hindered the prompt investigation of LHD events and timely corrective actions. However, Oman CAA called for ATM coordination meeting in Aug 2023, Mumbai ACC is now sending monthly LHD report via email directly to Muscat ACC, which enabled a timely response to mitigate the raising issues. Additionally, Oman CAA has developed and implemented an internal mechanism for investigating LHD reports on a regular basis and is also following up on corrective actions with the relevant parties. Reference to the AIDC connection implementation between Mumbai and Muscat ACCs; AIDC tests were conducted in September 2019, March 2021, February 2023, and August 2023. the most recent test (involved testing ABI, EST, TOC, and AOC parameters) was reported success in all parameters tested except ABI. Next for AIDC test is pending the readiness of Mumbai ACC. Successful implementation of AIDC connection for flight information exchange between Muscat and Mumbai ATS units is considered effective in reducing such LHDs. Oman CAA and Airports Authority of India (AAI) agreed to organize coordination meetings in regular basis, to be address the LHD events in timely manner and to mitigate he route cause in timely manner.

RVSM Safety Protocol between Sana'a and Mogadishu FIRs

5.10 The MIDRMA Board/18 has decided to open an RVSM Safety Protocol between Sanaa and Mogadishu FIRs in response to the increasing number of LHD reports submitted by Sana'a ACC related to Mogadishu and to its neighbouring FIRs. It is worth noting that the first coordination meeting, organized by ICAO MID and attended by ICAO ESAF ARMA, MIDRMA, IATA and relevant ATM representatives near the Horn of Africa, discussed the surge in LHD reports from Sana'a ACC concerning its neighbouring FIRs. During this meeting, the ATM representatives attended this meeting were briefed of the escalating risk associated with the rising number of LHD reports and their impact on the overall ICAO TLS within the MID region. They were urged to promptly implement corrective measures to resolve this problem as soon as possible.

5.11 The table below displays all the LHD reports filed by Sana'a ACC related to its neighbouring ACCs, indicating a significant decrease in the number of reports compared to the year 2022.

5.12 No LHD reports were filed by Sana'a related to Mogadishu from January 1st until September 30th, 2023. Therefore, the meeting agreed to close this safety protocol.

Months	Addis Ababa	Asmara	Mogadishu	Djibouti	Jeddah	Mumbai	Muscat	Total
1-2023	1	0	0	2	1	1	9	14
2-2023	2	1	0	0	3	4	3	13
3-2023	0	1	0	4	3	0	16	24
4-2023	2	2	0	2	1	3	2	12
5-2023	2	2	0	2	1	0	0	7
6-2023	2	5	0	2	5	1	0	15
7-2023	3	10	0	2	6	4	0	25
8-2023	4	3	0	5	3	3	0	18
9-2023	3	0	0	1	2	1	1	8
Total Report	19	24	0	20	25	17	31	136

Assessment of Non-RVSM Approved Aircraft 2023

5.13 The meeting noted that the MIDRMA, in accordance with its role as a Regional Monitoring Agency (RMA), as specified in ICAO Doc 9937 and 9574, conducts systematic reviews to assess operator compliance with State RVSM approvals within the ICAO Middle East Region. This essential function is carried out to safeguard the safety of the RVSM airspace by identifying aircraft that operate within it without the required approvals.

5.14 While it would be ideal to conduct daily compliance monitoring across the entire ICAO Middle East airspace, challenges in collecting traffic information render this impractical. In alignment with the guidelines set forth in ICAO Doc 9937, the responsible RMA is mandated to monitor full airspace compliance for a minimum of 30 days annually. In fulfilling this obligation, MIDRMA conducts monthly assessments.

5.15 The meeting noted that the MIDRMA relies on RVSM traffic data from Bahrain, Baghdad, and Emirates FIRs as the primary source for monitoring non-RVSM approved aircraft within its area of responsibility. This approach is necessitated by the challenge of obtaining monthly traffic data from all Member States. In light of this, MIDRMA wishes to express its sincere appreciation to the Bahrain Civil Aviation Authority, the Iraq Civil Aviation Authority, and the UAE General Civil Aviation Authority for their unwavering commitment to providing their FIRs' RVSM traffic data on a monthly basis. The data received from these Member States is consistently comprehensive and conforms to the required format. And invites the other Member States to provide similar information on regular basis.

5.16 The meeting reviewed the latest MIDRMA Bulletin of Non-RVSM Approved aircraft and observed operating within the ICAO MID RVSM airspace and within the RVSM airspace of other RMAs, as at Appendix B of the SMR2023. The expectation derived from this analysis is that States exercising operational authority will take proactive steps to address approval issues well in advance, ensuring that approved aircraft operate within the RVSM airspace. This proactive approach aims to prevent undesirable actions against legitimate operators. Furthermore, it is expected that States encountering such aircraft operating within their airspace will take appropriate measures.

5.17 IATA informed the meeting that there is a number of B737Max Aircraft registered in the Region and requested to shift the B737Max from Category two (60%) to category one (2 Aircraft sample). The MIDRMA elaborated that there was not enough Altimetry System Error (ASE) data to proof the reliability of the system and to be presented to the Global RMA Coordination Group RMA CG to support the shift to Category One. The matter will be subject to further discussion during the coming RMA CG meeting planned in June 2024.

Status Report on the Monitoring of the Iranian and Syrian Aircraft (OFAC License)

5.18 The subject was addressed in WP/9, presented by the MIDRMA.

5.19 The meeting informed that due to the recently escalating number of operations of the RVSM-approved aircraft registered by the Syrian Civil Aviation Authority within the ICAO Middle East Region, MIDRMA formally submitted a request over a year ago for an OFAC License to both the FAA and the US Department of Treasury. This license is sought for the purpose of conducting RVSM height monitoring using Enhanced GMU equipment. Successfully, this license application was recently approved and the MIDRMA granted a permission to use the EGMU equipment to monitor the Syrian RVSM approved aircraft. Recently, the FAA representative achieved a significant milestone by successfully securing an OFAC license from the U.S. Department of the Treasury. This accomplishment comes after longstanding request to employ EGMU equipment for the purpose of height monitoring Syrian RVSM approved aircraft. It marks a highly positive step toward resolving the critical issue of height monitoring for Syrian RVSM-approved aircraft. While this newly obtained license holds great promise in addressing our height monitoring needs, it to be noted that its impact on Syrian aircraft may be limited, due to the proactive step by the Syrian Civil Aviation Authorities to ensure the timely monitoring of their registered aircraft by sending them to overfly HMUs (Height Monitoring Units) available in Europe to obtain height monitoring results. This pragmatic approach enabled the certificate holders to renew their RVSM Approvals without waiting for the OFAC license, the timing of which remained uncertain. Nevertheless, we express our profound gratitude to the FAA for their invaluable assistance and unwavering support in obtaining this license which is valid for two years.

5.20 The meeting noted that the process of securing an OFAC License from the Department of the US Treasury, specifically for the utilization of EGMU Equipment to monitor the Iranian RVSM approved aircraft, was initiated in October 2021. It is important to note that by January 2021, the OFAC license had already received approval, and the request for its renewal was diligently submitted well in advance of the impending expiration date, which was scheduled for January 31, 2023. Despite the early request, the MIDRMA faced significant challenges in obtaining updates regarding the license. Over the course of nearly 18 months, the MIDRMA continually inquires the FAA representative for updated information about the status of the license. This prolonged delayed communication led to growing concerns within the MIDRMA about the risk associated with the impending expiration of the license.

5.21 The meeting recalled this subject was formally addressed during the last MIDRMA Board/18 meeting held in Doha, Qatar, 19 - 20 September 2022. The primary agenda was the renewal request for the OFAC License and impending expiration of the license for the Iranian aircraft by the end of January 2023, and the status of the application pending since October 2021. During the meeting, exhaustive discussions took place to explore potential solutions to the problem. The FAA representative was invited to facilitate an urgent meeting with OFAC to convey the critical nature of the situation and the risks associated with the lack of known height monitoring. However, despite several attempts, the MIDRMA did not receive any update. While Iran Civil Aviation Authority (ICAA) has displayed a positive stance and readiness to conduct height monitoring for all their RVSM-approved aircraft, the MIDRMA remains unable to respond positively to Iranian request due to the absence of the OFAC license.

5.22 Based on all the above, the meeting noted that the MIDRMA's commitment to implementing RVSM Minimum Monitoring Requirements (MMR) endorsed by ICAO Regional Monitoring Agencies (RMAs) remains unwavering. The importance of RVSM Height Monitoring in ensuring aviation safety cannot be overstated, and our ongoing collaboration with MIDRMA Member

States has led to the publication of these requirements for the benefit of relevant authorities and operators.

5.23 The meeting agreed with the MIDRMA's efforts to secure an OFAC License for monitoring Iranian RVSM-approved aircraft have faced challenges, including limited communication and complexities in the renewal request. Despite these hurdles, the urgency of obtaining the license remains the utmost priority, given the increasing number of non-compliant aircraft each month operating within the RVSM airspace (monthly updated list is available under the MIDRMA webpage).

5.24 The meeting agreed that the lack of progress in securing the OFAC license has imposed a substantial challenge on the MIDRMA and presents an escalating risk to aviation safety. The increasing number of non-compliant aircraft amplifies these concerns, demanding swift resolution to this critical issue to ensure the integrity and safety of the RVSM layer.

Doha FIR Phase 2 pre-implementation RVSM Airspace Assessment

5.25 This subject was addressed in WP/10, presented by the MIDRMA. The meeting recalled MIDANPIRG/20 & RASG-MID/10 (Muscat, Oman, 14 – 17 May 2023) in particular Conclusion 20/16 related to IMPLEMENTATION OF C-DEC225: ESTABLISHMENT OF DOHA FIR/SRR, in which the MIDRMA was tasked to conduct Phase 2 pre-implementation RVSM Airspace Assessment.

5.26 Therefore, MIDRMA proposed provided the list of requirements to be provided by Bahrain and Qatar:

Data Requirements from both ATM Units:

- 1) Provide the coordinates for the new FIR boundaries for both Bahrain and Doha FIRs. Start from a specific point and end at the same point in sequence.

Note: MIDRMA only requires the FIR boundary using coordinates in WGS-84; do not include any text indicating territorial waters or sovereign boundaries between specific states.

- 2) The latest FIR routing options for all traffic arriving, departing, and overflying the RVSM airspace.
- 3) The latest AIP Pages of ENR 4.4 (Code Designators for Significant Points).
- 4) Provide the actual traffic data for all aircraft operating within the RVSM airspace, covering a minimum period of three months. The Excel sheet which is designed for this purpose is available on the MIDRMA website and can be downloaded from the following link: <https://midrma.com/assets/docs/forms/FlightPlanTrafficDataForm.xls>
- 5) All LHD reports must be submitted through the MIDRMA LHD online reporting system as early as possible.

5.27 A minimum period of three-month of TDS data will be required to conduct a representative RVSM safety assessment and agreed that a period of 15 days would be suitable for the MIDRMA to develop the assessment, accordingly.

5.28 The meeting noted that the assessment will be conducted exclusively for the RVSM Airspace. It will be based on the current air traffic flow and procedures valid in Bahrain and Doha FIRs. Additionally, MIDRMA expects not to receive any LHD reports during the assessment period and will only be able to calculate the ICAO Technical risk values for each month.

Note: Given that Qatar did not attend the meeting; Qatar provided by email their consensus with the requirements of Phase 2 RVSM Assessment and provided the initial batch of the data to be evaluated by the MIDRMA.

5.29 The meeting agreed to further communicate the requirements of the MID RVSM Assessment for Phase 2 implementation with the relevant States.

ADS-B Height Monitoring System (AHMS)

5.30 This subject was addressed in WP/11 and WP/12, presented by the MIDRMA and IATA, respectively.

5.31 The meeting noted that using ADS-B for height-keeping performance monitoring requires that the aircraft employ ADS-B Out and operate within the coverage area of an ADS-B ground station receiver. In comparison to other existing ground-based monitoring systems, such as the Height Monitoring Units (HMU) and Aircraft Geometric Height Monitoring Element (AGHME), which have a coverage area of 40 NM, the defined coverage area of the monitoring system utilizing ADS-B data is much larger. The coverage area for a single ADS-B ground station could reach approximately 200 NM. In this case, the ADS-B ground station potentially serves two purposes; providing information needed for ATC services and monitoring aircraft height-keeping performance.

5.32 ADS-B monitoring is undertaken by processing of large data sets of ADS-B messages captured in the coverage area of ADS-B Network. The data is processed to enable the calculation of Altimetry System Errors (ASEs) for each ADS-B message obtained from a specific aircraft or group of aircraft. The value is then assessed to calculate ASE for each observed aircraft.

5.33 There are two significant advantages to obtaining aircraft geometric height data through ADS-B:

- a. **Data Collection:** The process of collecting this data is entirely passive and does not necessitate any special arrangements with aircraft operators, as long as the aircraft comply with monitoring requirements. There is no need for direct interaction with flight crews. This passive data collection approach ensures flexibility and minimizes disruptions to regular flight operations. It allows for frequent ASE measurements without significantly affecting processing times.
- b. **Expansive Geographic Coverage:** The geographic scope within which flight data can be captured is virtually limitless, primarily determined by the extent of the ground station network. Ground stations are cost-effective and straightforward units, often co-located with existing CNS installations (like VHF antennas). As a result, the monitoring range can extend from a state-wide level to even broader areas. All ADS-B transmissions received by a ground station from equipped aircraft are typically archived. This rich dataset makes it possible to conduct aircraft height-keeping performance monitoring at a fleet level operating within the RVSM Airspace and generate comprehensive ASE history profiles for individual airframes.

Note: These advantages not only enhance the efficiency of ASE measurements but also facilitate comprehensive monitoring of aircraft height-keeping performance at the fleet level, benefiting both aviation authorities and operators alike.

5.34 The meeting noted the discussions held regarding the implementation of the ADS-B Height Monitoring System (AHMS) for the Middle East Region during the last MIDRMA Board/18 meeting. During this meeting, comprehensive information pertaining to the ADS-B coverage within the MID Region was presented, alongside an overview of the equipage status of fleets from certain member states. It should be noted that some of these member states had not provided the necessary data for the study conducted to assess the prevalence of ADS-B equipage in the Middle East Region.

5.35 The meeting was appraised with ADS-B Coverage and Aircraft Equipage in the Middle East Region:

- a) As far as the MIDRMA is aware, ADS-B is available for surveillance in the following MIDRMA Member States airspace:
- a) Bahrain.
 - b) Egypt (under installation).
 - c) Jordan (not used for separation).
 - d) Kuwait.
 - e) Oman.
 - f) Qatar.
 - g) Saudi Arabia (under Installation).
 - h) Sudan.
 - i) UAE.
- b) MIDRMA conducted a statistical study of all RVSM-approved aircraft registered in the ICAO Middle East region and has continued to update this study to verify the ADS-B equipage status of all MID RVSM-approved aircraft.
- c) The results of the study that was conducted for the updated MID RVSM approved aircraft database for all member states (depicted in the table below).

ADS-B	TOTAL	EQUIPPED	NOT EQUIPPED/ UNKNOWN	V2	V1	V0
BAHRAIN	63	63	0	60	0	0
IRAQ	58	30	28	30	0	0
JORDAN	42	41	2	40	0	0
KSA	300	291	9	279	6	6
KUWAIT	70	63	7	59	1	3
LEBANON	31	30	2	28	0	0
OMAN	79	75	4	75	0	0
LIBYA	49	34	15	34	0	0
QATAR	297	286	11	286	0	0
Syria	15	4	11	4	0	0
SUDAN	16	0	16	0	0	0
UAE	590	563	27	562	0	1
Egypt	160	35	125	35	0	0
Iran	190	18	172	9	0	9
Yemen	6	5	1	2	2	1
TOTAL	1966	1538	430	1503	9	20
%		78.3	21.9	76.5	0.5	1.1

- d) The study was targeting the equipage of ADS-B Out in the MID RVSM approved aircraft in order to know the benefit of conducting RVSM height monitoring by using the ADS-B Out archived data and to know what versions are installed in these aircraft which they should be as follows:
1. DO-260 (Version 0)
 2. DO-260A (Version 1)
 3. DO-260B (Version 2)
 4. DO-260C (Version 3), approved by December 2020

- e) The results of the statistical study are highly encouraging, indicating a substantial percentage of RVSM-approved aircraft equipped with ADS-B Out, which stands at an impressive 80%. Furthermore, a significant majority of these aircraft, amounting to 97.4%, are equipped with ADS-B Out Version 2, while only a negligible percentage is equipped with Version 0 and 1.

5.36 The successful implementation of this height monitoring method using ADS-B Out data will undoubtedly require a concerted effort, collaboration, and training. The meeting extended the appreciation and gratitude to the Monitoring Agency for Asia Region (MAAR) for generously offering their expertise and training resources. Their support is invaluable and greatly supported the development of this study, as it will play a pivotal role in ensuring the seamless adoption of this crucial technology within the MIDRMA member states.

5.37 Additionally, MIDRMA acknowledged the importance of coordination with the authorities responsible for providing archived ADS-B data for monitoring purposes. The MIDRMA understood the significance of their role in facilitating the smooth operation of this system. MIDRMA is committed to working closely with these authorities to establish effective data-sharing protocols and to provide the necessary training and briefing to the dedicated engineers from member states who have volunteered to contribute their ADS-B data. Together, through collaboration, training, and coordination, MIDRMA is confident that can usher in a new era of enhanced aviation safety and efficiency within the MID Region.

5.38 Based on the above, the MIDRMA proposed the following ADS-B Height Monitoring System Implementation Plan:

- a) MIDRMA to request all member States currently implementing ADS-B, to share the archived data for evaluation and analysis.
- b) MIDRMA to coordinate with MAAR for:
 - i. sharing their experience in evaluating and analyzing samples of the received ADS-B data.
 - ii. Providing required training related to AHMS implementation for MIDRMA Staff.
- c) MIDRMA to develop a mechanism and tools for submitting the ADS-B data by States.
- d) MIDRMA provides the required training for CNS engineers from member states responsible for extracting ADS-B data from their systems and submitting it to MIDRMA at regular, mutually agreed intervals.
- e) MIDRMA to develop and document all required processes and procedures for the AHMS implementation, to be incorporated in the MIDRMA Tasks and responsibilities.
- f) MIDRMA shall continue to provide GMU monitoring service until the AHMS is fully operational, and for the Aircraft not included in the MID-AHMS.

5.39 The MIDRMA is committed to provide regular updates on the progress on the implementation plan including timelines based on the responses of States and the availability of the tools and procedures within the MIDRMA.

5.40 IATA reiterated the benefits of the ADS-B usage for height monitoring and supported the implementation plan proposed by the MIDRMA.

5.41 Based on all the above, the meeting agreed on the following Decision:

DRAFT DECISION 19/4: MID ADS-B HEIGHT MONITORING SYSTEM (MID AHMS)

That,

- a) *States implementing ADS-B to share the archived data with the MIDRMA for evaluation and analysis;*
- b) *MIDRMA to coordinate with MAAR for:*
 - i. *sharing their experience in evaluating and analyzing samples of the received ADS-B data; and*
 - ii. *providing required training related to AHMS implementation for MIDRMA Staff.*
- c) *MIDRMA to develop a mechanism and tools for submitting the ADS-B data by States;*
- d) *MIDRMA provides the required training for CNS engineers from member states responsible for extracting ADS-B data from their systems and submitting it to MIDRMA at regular, mutually agreed intervals;*
- e) *MIDRMA to develop and document all required processes and procedures to be reflected in the training Manuals for the AHMS implementation, to be incorporated in the MIDRMA Tasks and responsibilities;*
- f) *MIDRMA shall continue to provide GMU monitoring service until the AHMS is fully operational, and for the Aircraft not included in the MID-AHMS; and*
- g) *the funding mechanism (including services charges) might be revised accordingly (based on cost -recovery basis). In accordance with ICAO Policies on charges for Airports and Air Navigation Services (Doc 9082), in coordination with IATA.*

5.42 The MIDRMA is requested to present the MID-AHMS implementation plan timelines and the progress to the coming next Board meeting.

5.43 IATA expressed concern related to any additional costs that might be incurred on the Airspace users.

MIDRMA Awareness & Promotion Activities

5.44 The meeting recalled that the dedication of the MIDRMA to enhance RVSM safety in the Middle East region is evident through various initiatives and collaborative efforts. This section highlights some of MIDRMA's recent endeavors in promoting RVSM safety awareness and ensuring compliance with safety standards.

RVSM Awareness Workshop in Doha, Qatar (04 February 2023)

5.45 The meeting informed that the MIDRMA conducted an awareness workshop in Doha, Qatar, on February 4, 2023. This workshop was a significant success, drawing participation from a substantial number of Qatar's Air Traffic Control Officers (ATCOs), Communication, Navigation, and Surveillance (CNS) engineers, and Airworthiness Inspectors. The workshop provided a platform for knowledge exchange and discussions related to RVSM safety.

Briefing during GMU Monitoring Missions

5.46 The meeting noted MIDRMA's commitment to RVSM safety extends to Member States within its jurisdiction. During GMU monitoring missions, MIDRMA's team takes the opportunity to engage with responsible airworthiness inspectors. These interactions aim to clarify any monitoring requirements that may not be entirely clear to inspectors, ensuring a consistent and thorough evaluation of RVSM compliance. Effective communication between MIDRMA and Member States is essential to maintain a high standard of RVSM safety.

MID-RVSM Seminar

5.47 MIDRMA recognizes the importance of collaboration in promoting RVSM safety. To this end, MIDRMA has worked closely with the International Civil Aviation Organization (ICAO) Middle East office. This collaboration led to the organization of the MID RVSM seminar, held back-to-back with the MIDRMA Board/19 meeting. The seminar brought together a diverse group of RVSM experts from the European Regional Monitoring Agency, the Monitoring Agency in the Asia Region, and Nanyang Technological University – Singapore, in addition to MIDRMA, fostering discussions on best practices, challenges, and innovations in RVSM safety.

5.48 The meeting noted that the MIDRMA organized and delivered the MID RVSM Seminar 2023 (Manama, Bahrain, 9 October 2023). The main outcomes of the Seminar are as follows:

- a) Recall the Member State obligations towards the implementation of RVSM in reference to the ICAO Annexes and documents.
- b) Recall the MIDRMA tasks and responsibilities, and the requirements for Data provisions.
- c) Presentations on the available MIDRMA capabilities and tools (including the online reporting systems and the analysis tools).
- d) Regular monitoring requirements related to the Altimetry System Error.
- e) Outlook on further business related to RVSM implementation including the implantation of ADS-B Height Monitoring System and usage of Artificial Intelligence in Air Traffic management.

5.49 The meeting also noted that all the training material including video demonstrations is made available under the MIDRMA webpage, for further information and training of relevant personnels.

Development of MID RVSM SMR 2024

5.50 The meeting noted that the reporting cycle for SMR 2024 will span from 01st January till 31st December 2024. To facilitate this, the Traffic Data Sample (TDS) must be submitted in the prescribed format, utilizing the dedicated Excel sheet designed for the MIDRMA Risk Analysis Software (MIDRAS AI). All members are encouraged to download this Excel sheet, conveniently available on the MIDRMA website (www.midrma.com). This sheet has been meticulously crafted to gather the requisite real-time flight plan data for aircraft operating within the RVSM airspace (FL 290 to FL 410 inclusive).

5.51 The meeting agreed the following timeline for the collection of RVSM Traffic Data Sample (TDS) for SMR 2024 from all MIDRMA Member States:

- a) Collect RVSM Traffic Data Sample (TDS) for the period of 15 May till 15 June 2024 (during the Haj season) for SMR 2024 development and submit it to MIDRMA by 15 July 2024.
- b) Collect Large Height Deviation Reports for the SMR 2024 reporting cycle spanning from 01st January till 31st December 2024.

5.52 Based on the above, the meeting agreed on the following Conclusion related to the development of the SMR 2024:

DRAFT CONCLUSION 19/5: MID RVSM SMR 2024

That,

- a) the FPL/traffic data for the period 15 May – 15 June 2024 to be used for the development of the MID RVSM Safety Monitoring Report (SMR 2024);*
- b) only the appropriate Flight Data form available on the MIDRMA website (www.midrma.com) should be used for the provision of FPL/traffic data to the MIDRMA, by 15 July 2024; and*
- c) the final version of the MID RVSM SMR 2024 be ready for presentation and endorsement by the MIDANPIRG/22 Meeting.*

REPORT ON AGENDA ITEM 6: FUTURE WORK PROGRAMME***Revised Terms of Reference***

6.1 The meeting reviewed and agreed on the revised Terms of Reference (ToR) of the MIDRMA Board as at **Appendix 6A**.

Date and Venue of the next Meeting

6.2 The meeting recalled that the MIDRMA Board meetings should be hosted by the MIDRMA Member States on rotation basis.

6.3 The meeting agreed that the MIDRMA Board/20 meeting be held during October 2024, taking into account the Regional and Global events. The exact date would be coordinated with the MIDRMA Board Chairman and the MIDRMA team.

REPORT ON AGENDA ITEM 7: ANY OTHER BUSINESS

7.1 The meeting reviewed and updated the list of MIDRMA Board Members, Alternates and Focal Points (ATC and Airworthiness/Flight Operations) as at **Appendix 7A**.

APPENDICES

FOLLOW-UP ACTION PLAN ON MIDRMA/18 CONCLUSIONS AND DECISIONS

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY DELIVERABLE		TARGET DATE	STATUS/REMARKS
<p>MIDRMA BOARD CONCLUSION 18/1: PAYMENT OF ARREARS TO THE MIDRMA PROJECT</p> <p>That, the ICAO MID Office follow-up with concerned States to pay their arrears to the MIDRMA Project prior to 15 April 2023.</p>	<p>Payment of arrears</p>	<p>Payments received by ICAO CDI</p>	<p>Concerned States</p>	<p>15 April 2023</p>	<p>Actioned</p> <p>Communication with States is ongoing; many States requested to resend the Invoices and paid their contributions.</p> <p>Details will be discussed in WP/4</p>
<p>MIDRMA BOARD CONCLUSION 18/2: LACK OF HEIGHT MONITORING OF SYRIAN RVSM APPROVED AIRCRAFT</p> <p>That,</p> <p>a) ICAO MID Office to contact the Syrian Civil Aviation Authority and address the issue of lack of height Monitoring of their RVSM approved aircraft; and</p> <p>b) MIDRMA to circulate the status of the Syrian RVSM approved aircraft to all member States to advise all ATCUs regarding the status of the Syrian RVSM approved aircraft within their RVSM Airspace.</p>	<p>Lack of height monitoring of Syrian RVSM approved aircraft</p>	<p>Letter to Syrian CAA to address the issue.</p> <p>Letter to member States to highlight the status of Syrian RVSM approved aircraft.</p>	<p>Concerned States</p>		<p>Ongoing</p> <p>Details will be discussed in WP/9</p>
<p>DRAFT CONCLUSION 18/3: AWARENESS AND TRAINING ON RVSM SAFETY ASSESSMENT</p> <p>That, with a view to raise the awareness related to the requirements for sustained RVSM safety monitoring activities and improve the knowledge of the States' regulators, MIDRMA Focal Points, ATC and Air Operators personnel:</p> <p>a) the MIDRMA include in its work programme regular missions to the Member States, during which briefings on the MIDRMA activities</p>	<p>Lack of awareness related to the requirements for sustained RVSM safety monitoring activities</p>	<p>To provide briefings on the MIDRMA activities and RVSM safety monitoring requirements to the concerned personal by</p>	<p>MIDRMA</p>	<p>31 Dec 2023</p>	<p>Ongoing</p> <p>Details will be discussed in WP/13</p>

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY DELIVERABLE		TARGET DATE	STATUS/REMARKS
<p>and RVSM safety monitoring requirements be provided to concerned personnel;</p> <p>b) for improved effectiveness, the MIDRMA visit to a State be conducted, to the extent possible, back-to-back with the GMU height monitoring mission(s) related to the air operator(s) based in this State; and</p> <p>c) MIDRMA to issue on regular basis flyers and newsletters addressing trending and emerging challenges related to RVSM safety monitoring.</p>		<p>MIDRMA during its mission to the States.</p> <p>To issue on regular basis flyers and newsletters addressing trending and emerging challenges related to RVSM safety monitoring.</p>			
<p>DRAFT CONCLUSION 18/4: MID RVSM SAFETY ASSESSMENT SEMINAR</p> <p>That, with a view to raise the awareness related to the requirements for sustained RVSM safety monitoring and improve the knowledge of all involved parties, in particular with respect to the Vertical Collision Risk Methodology and Altimetry System Errors, the MIDRMA, in coordination with ICAO, organize a MID RVSM Safety Assessment Seminar, in 2023.</p>	<p>Lack of awareness related to the requirements for sustained RVSM safety monitoring activities</p>	<p>MID RVSM safety assessment seminar</p>	<p>MID States MIDRMA</p>	<p>31 Dec 2023</p>	<p>Completed (to be closed)</p>

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

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
C.19/3	<p>MID RAS UPGRADE PROJECT</p> <p>That, the MIDRMA Team and Board Chairman take necessary actions for the upgrade of the MID RAS Software, in accordance with the Business Case at Appendix 3.3B.</p>	<p>Necessity to Upgrade MID RAS Software</p>	<p>Upgraded the MID RAS Software</p>	<p>MIDRMA</p>		<p>Ongoing</p> <p>Details are available in IP/3</p>
C. 20/1	<p>MID RVSM SMR 2022</p> <p>That, the MID RVSM Safety Monitoring Report (SMR) 2022 at Appendix 4.2A, is endorsed.</p>	<p>Develop SMR 2022</p>	<p>SMR 2022</p>	<p>MID States MIDRMA</p>	<p>31 Dec 2022</p>	<p>Completed</p>
C. 20/2	<p>MID RVSM SMR 2023</p> <p>That, in order to support the MIDRMA in the timely development of the MID RVSM Safety Monitoring Report (SMR 2023):</p> <p>a) States are required to provide the MIDRMA with:</p> <ul style="list-style-type: none"> - the FPL/traffic data for the period 1 – 30 June 2023 before 1 August 2023, and - LHD data for the period 1 January to 31 December 2023. <p>b) only the appropriate “Traffic Data Sample” form, available on the MIDRMA website (www.midrma.com), should be used for the provision of FPL/traffic data to the MIDRMA; and</p> <p>the final version of the MID RVSM SMR 2023 be ready for presentation to and endorsement by the MIDANPIRG/21 meeting.</p>	<p>Develop SMR 2023</p>	<p>SMR 2023</p>	<p>MID States MIDRMA</p>	<p>31 Dec 2023</p>	<p>Ongoing</p> <p>Details will be discussed in WP/8</p>

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
C.20/3	<p>LACK OF HEIGHT MONITORING OF SYRIAN RVSM APPROVED AIRCRAFT</p> <p>That,</p> <p>a) ICAO MID Office to contact the Syrian Civil Aviation Authority and address the issue of lack of height Monitoring of their RVSM approved aircraft; and</p> <p>b) MIDRMA to circulate the status of the Syrian RVSM approved aircraft to all member States to advise all ATCUs regarding the updated status of the Syrian RVSM approved aircraft within their RVSM Airspace. In coordination with Syria and MIDRMA.</p>	<p>Lack of height Monitoring of Syrian RVSM approved aircraft</p>	<p>Letter to Syrian CAA to address the issue.</p> <p>Letter to member States to highlight the status of Syrian RVSM approved aircraft.</p>	<p>Concerned States</p>		<p>Ongoing</p> <p>Details will be discussed in WP/9</p>
C.20/4	<p>AWARENESS AND TRAINING ON RVSM SAFETY ASSESSMENT</p> <p>That, with a view to raise the awareness related to the requirements for sustained RVSM safety monitoring activities and improve the knowledge of the States' regulators, MIDRMA Focal Points, ATC and Air Operators personnel:</p> <p>a) the MIDRMA include in its work programme regular missions to the Member States, during which briefings on the MIDRMA activities and RVSM safety monitoring requirements be provided to concerned personnel;</p> <p>b) for improved effectiveness, the MIDRMA visit to a State be conducted, to the extent possible, back-to-back with the GMU height monitoring mission(s) related to the air operator(s) based in this State; and</p> <p>c) MIDRMA to issue on regular basis flyers and newsletters</p>	<p>Lack of awareness related to the requirements for sustained RVSM safety monitoring activities</p>	<p>To provide briefings on the MIDRMA activities and RVSM safety monitoring requirements to the concerned personal by MIDRMA during its mission to the States.</p> <p>To issue on regular basis flyers and newsletters</p>	<p>MIDRMA</p>	<p>31 Dec 2023</p>	<p>Ongoing</p> <p>Details will be discussed in WP/13</p>

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
	addressing trending and emerging challenges related to RVSM safety monitoring.		addressing trending and emerging challenges related to RVSM safety monitoring.			
C.20/5	<p>MID RVSM SAFETY ASSESSMENT SEMINAR</p> <p>That, with a view to raise awareness related to the requirements for sustained RVSM safety monitoring and improve the knowledge of all involved parties, in particular with respect to the Vertical Collision Risk Methodology and Altimetry System Errors, the MIDRMA, in coordination with ICAO, organize a MID RVSM Safety Assessment Seminar, in 2023.</p>	Lack of awareness related to the requirements for sustained RVSM safety monitoring activities	MID RVSM safety assessment seminar	MID States MIDRMA	31 Dec 2023	Completed (to be closed)
D.20/6	<p>MIDRMA SUSTAINABILITY ACTION GROUP</p> <p>That:</p> <p>a) the MIDRMA Sustainability Action Group is established to develop a Strategic Plan for the MIDRMA to ensure business continuity and sustainability; and</p> <p>b) the Action Group is composed of members designated by:</p> <ol style="list-style-type: none"> i. Bahrain; ii. Jordan; iii. Oman; iv. UAE (Rapporteur); v. MIDRMA; and vi. ICAO MID. 	Lack of Strategic Plan for continuity and sustainability of MIDRMA	Strategic Plan for the MIDRMA to ensure business continuity and sustainability	Action group members	Progress report to the Board/19 meeting	Ongoing Details will be discussed in WP/5

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
C.20/16	<p>IMPLEMENTATION OF C-DEC225: ESTABLISHMENT OF DOHA FOR/SRR</p> <p>That,</p> <ul style="list-style-type: none"> a) the ICAO MID Office to monitor the implementation of the C-DEC225/10 and facilitate coordination between the States concerned, as required; b) States to carry out bilateral and multilateral coordination to finalize the operational and technical requirements, including the necessary letters of agreement; c) MIDRMA to conduct a safety Monitoring assessment for the RVSM airspace within Bahrain and Doha FIRs, highlighting bottlenecks, hotspots and areas of traffic congestion; d) Qatar to provide inputs for the development of the required proposal(s) for amendment to the MID ANP; e) States and other Stakeholders to provide implementation feedback and comments to the MID Office on a quarterly basis for review by the ATM SG; and f) the ATM SG to agree on necessary measures for the conduct of the technical study necessary to support the decision-making for the implementation of Phase 2 and develop a roadmap for the implementation of phase 2 to be presented to MIDANPIRG for endorsement. 	<p>safety Monitoring assessment for the RVSM airspace within Bahrain and Doha FIRs</p>	<p>safety assessment report</p>	<p>MIDRMA</p>		<p>Ongoing</p> <p>Details will be discussed in WP/10</p>

Status of States' Contributions to the MIDRMA Project

(As of 30 September 2023) Note. Currency in US Dollars

State	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bahrain	Paid 30,000	Paid 20,000	Paid 30,000	Paid 30,000	Paid 30,000	Paid 29,978 27 Oct 11	Paid 30,000 29 Aug 12	Paid 30,000 15 Apr 13	Paid 29,975 6 May 15	Paid 29,975 13 May 15	Paid 30,000 18 Feb 16	Paid 30,000 16 May 17	Paid 29,975 12 Mar 18	Paid 29,975 13 Jan 20	Paid 30,000 2 July 20	Paid 30,000 9 Sep 21	Paid 30,000 31 Mar 22
Egypt	Paid 30,000	Paid 20,000	Paid 30,000	Paid 30,000	Paid 30,000	Paid 29,960 9 Sep 10	Paid 29,960 17 Jan 12	Paid 29,983 30 Jan 13	Paid 29,940 8 Apr 14	Paid 29,940 24 Feb 15	Paid 29,935 24 Dec 15	Paid 29,935 2 Jun 17	Paid 29,935 16 Jan 18	Paid 29,965 18 Feb 20	Paid 30,000 11 Aug 21	Paid 29,935 19 Jan 22	
Iran	Paid 30,000	Paid 20,000	Paid 30,000	Paid 30,000	Paid 30,000	Paid 29,946 27 Jul 13	Paid 29,935 27 Jul 13	Paid 89,965 4 Apr 16			Paid 29,960 12 May 16	Paid* 29,960 10 Mar 17 not received	Not Paid 30,000	Not Paid 30,000	Not Paid 30,000	Not Paid 30,000	Not Paid 30,000
Iraq	N/A	N/A	N/A	N/A	N/A	Paid 10,000 on 16 Sep 11	Paid 10,000 on 5 Jul 12	Paid 10,000 5 Sep 13	Paid 10,000 22 Sep 14	Paid 10,000 23 Apr 15	Paid 10,000 1 Sep 16	Paid 10,000 20 Jun 17	Paid 10,000 20 Aug 18	Paid 10,000 20 Aug 19	Paid 10,000 07 Dec 20	Not Paid 10,000	Not Paid 10,000
Jordan	Paid 30,000	N/A	Paid 1,250	Paid 10,000	Paid 10,000	Paid 10,000 on 10 Aug 10	Paid 10,000 on 28 Nov 11	Paid 10,000 04 Dec 12	Paid 9,924 4 Aug 14	Paid 9,924 3 Feb 15	Paid 9,924 11 Dec 15	Paid 10,000 19 May 17	Paid 9,921 16 Mar 18	Paid 9,984.93 6 Dec 19	Paid 9,984.93 4 June 20	Paid 9,984.93 12 Nov 21	Paid 9,984.93 30 Dec 21
Kuwait	Paid 30,000	N/A	Paid 1,250	Paid 10,000	Paid 10,000	Paid 10,000 on 27 Sep 10	Paid 9,849 on 21 Feb 12	Paid 10,000 20 Mar 13	Paid 10,000 5 May 14	Paid 10,000 12 Mar 15	Not Paid 10,000	Paid 10,000 28 Jul 17	Paid 10,000 14 Feb 18	Paid 10,000 4 Dec 19	Not Paid 10,000	Paid 10,000 27 Sep 21	Not Paid 10,000
Lebanon	Paid 30,000	N/A	Paid 1,250	Paid 10,000	Paid 10,000	Paid 10,000 on 4 Feb 11	Paid 9,960 18 Dec 12	Paid 9,960 10 May 13	Paid 10,000 25 Jul 14	Paid 9,970 15 Dec 15	Paid 9,970 18 Oct 16	Paid 9,915 30 Jul 18	Not Paid 10,000	Paid 10,000 29 Dec 20	Paid 10,000 1 Apr 21	Paid 10,000 1 Apr 21	Not Paid 10,000
Libya	Libya didn't sign the MIDRMA MOA yet.																
Oman	Paid 30,000	Paid 20,000	Paid 30,000	Paid 30,000	Paid 30,000	Paid 30,000 13 Sep 11	Paid 30,000 11 Jan 12	Paid 30,000 28 Feb 13	Paid 30,000 14 Mar 14	Paid 30,000 16 Dec 15	Paid 30,000 9 Mar 16	Paid 30,000 27 Apr 17	Paid 30,000 12 Feb 18	Paid 30,000 16 Dec 19	Paid 30,000 24 June 20	Paid 30,000 29 July 21	Not Paid 30,000
Qatar	Qatar joined the MIDRMA on 28 April 2015										Paid 9,978 19 Nov 15	Paid 9,970 10 Apr 17	Paid 9,978 20 Feb 18	Paid 10,000 7 Oct 19	Paid 10,000 14 Apr 20	Paid 9,978.00 18 Oct 21	Paid 10,000 25 Sep 23
Saudi Arabia	Paid 30,000	Paid 20,000	Paid 30,000	Paid 30,000	Paid 30,000	Paid 30,000 4 Mar 11	Paid 30,000 12 Jan 12	Paid 30,000 13 Mar 13	Paid 30,000 21 May 14	Paid 30,000 21 May 15	Paid 30,000 13 Apr 16	Paid 30,000 16 June 17	Paid 30,000 20 May 22	Paid 30,000 27 Nov 19	Paid 30,000 20 May 22	Paid 30,000 13 Aug 21	Paid 30,000 18 Mar 22
Sudan	Sudan joined the MIDRMA on 26 May 2014									Paid 9,607 17 Feb 15	Paid 9,278 10 Nov 15	Paid 10,000 16 May 17	Paid 9,863 2 Mar 18	Paid 9,974.73 20 Nov 19	Paid 10,133.86 11 June 20	Paid 20,265.61 8 Nov 22	
Syria^(*)	Paid 30,000	N/A	Paid 1,250	Paid (US\$ 1,250 + 42,789 +11,862+10,374 +7,778+9,970) = 84,023								Not Paid 10,000	Not Paid 10,000	Not Paid 10,000	Not Paid 10,000	Not Paid 10,000	Not Paid 10,000
UAE	Exempted from payment up-to end of 2015										Paid 29,933 26 Apr 16	Paid 29,933 26 Apr 17	Paid 29,931 26 Feb 18	Paid 29,931 9 Oct 19	Paid 30,000 16 July 20	Paid 30,000 9 July 21	Paid 30,000 21 July 22
Yemen	Paid 30,000	N/A	Paid 1,250	Paid 10,000	Paid 10,000	Paid 10,000 17Aug10	Paid 9,975 17Apr12	Paid 19,973 for 2 years 26 Mar 15		Paid 9,987 26 Mar 15	Paid 69,044.70 for 7 years 14 Oct 22						

State	2023																
Bahrain	Paid 30,000 7 Sep 23																
Egypt	Paid 29,935 10 May 23																
Iran	Not Paid 30,000																
Iraq	Paid 10,000 30 May 23																
Jordan	Paid 9,984.22 14 July 23																
Kuwait	Not Paid 10,000																
Lebanon	Not Paid 10,000																
Libya	MOA Signed 8Aug2023																
Oman	Paid 30,000 13 Apr 23																
Qatar	Paid 9,978 25 Sep 23																
Saudi Arabia	Paid 30,000 4 May 23																
Sudan	Not Paid 10,000																
Syria(*)	Not Paid 10,000																
UAE	Paid 30,000 14 Apr 23																
Yemen	Not Paid 10,000																



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 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:

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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
Duties and responsibilities			
1			
2	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 Appendix A .	
3	Host State Responsibilities (MoA)	No action required.	
4	MIDRMA Board responsibilities (ToR)	Revised ToR to be presented to the Board meeting for review and to MIDANPIRG for endorsement, as at Appendix C .	
5	Member States Responsibilities	Reiterate MIDANPIRG Conclusion 14/35 and include the Member States' list of responsibilities in the ToR of the MIDRMA Board, as at Appendix C .	
Financial aspects			
6	Funding mechanism	Revised funding mechanism Conclusion to be presented to the Board meeting for review and endorsement.	
MIDRMA Human Resources			
7	Assessment of staffing needs	No action required.	
8	Manpower/Succession Plan (retirement, recruitment, retention, and training)	Encourage Bahrain (Host) to provide candidates to support the MIDRMA Succession Plan.	
Technical subjects			
9	MIDRMA Tools	No action required.	
10	MIDRMA Operating Manual and Guidance material for continued RVSM safety monitoring of the MID Region	MIDRMA to further work on the MIDRMA Training Manual ...	
11	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.	
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Draft

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

Draft Version 0.53

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:

MIDRMA Business continuity and sustainability, Strategic Plan (2024 - 2030)	
1	Duties and responsibilities
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
2	Financial	
	2.1	Funding mechanism
	2.2	Incomes and expenses
	2.3	Wages
3	MIDRMA Human Resources	
	3.1	Assessment of staffing needs
	3.2	Manpower/Succession Plan (Retirement, Recruitment, retention and training)
4	Technical	
	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.

	Proposed action	Champion	Timeline
	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 Appendix A .	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:

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.

	Proposed action	Champion	Timeline
	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.

	Proposed action	Champion	Timeline
	Revised ToR to be presented to the Board meeting for review and to MIDANPIRG for endorsement, as at Appendix C .	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.

	Proposed action	Champion	Timeline
	Reiterate MIDANPIRG Conclusion 14/35 and include the Member States' list of responsibilities in the ToR of the MIDRMA Board, as at Appendix C .	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*
Total	1162	139946	1572	215921	1911	236279

*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

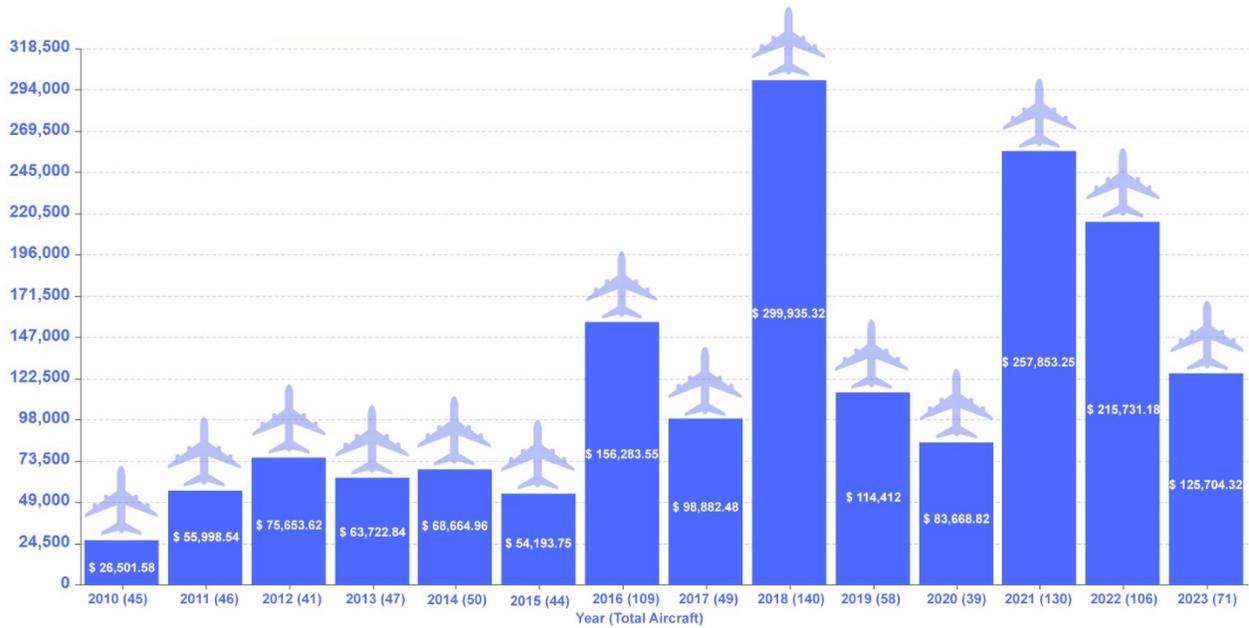
The Total of arrears (States' contributions) as of September 2023 is **460,000 USD**.

2.2 Incomes and Expenses

2.2.1 Incomes

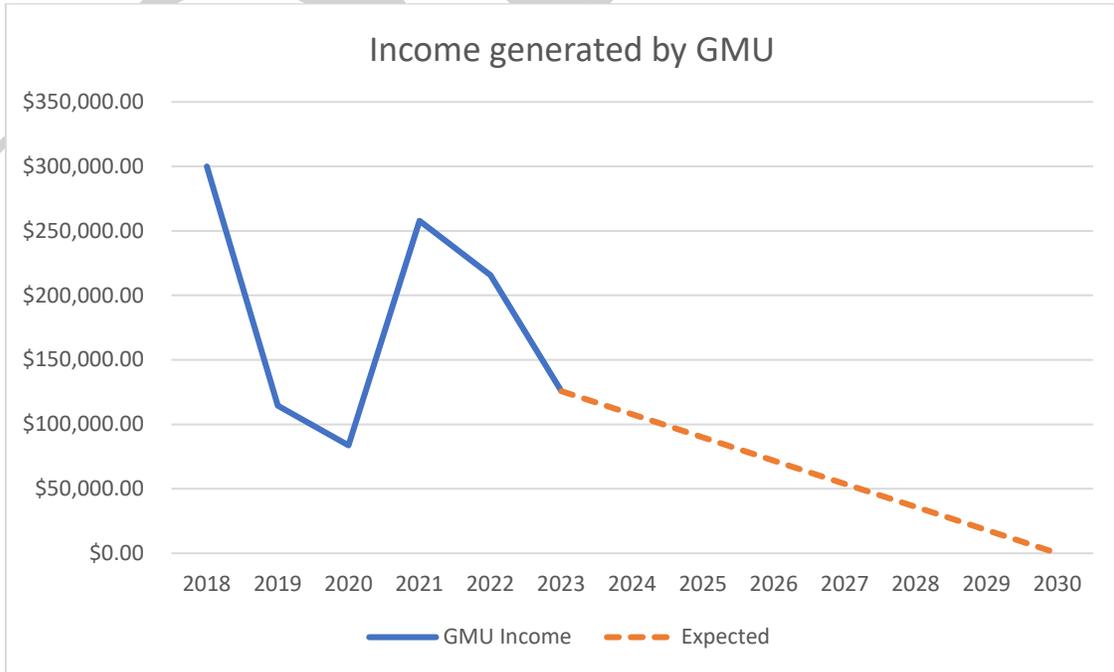
The total income from the annual contributions (6 States category 1 and 9 States category 2) is 270,000 USD. The income from performing the required ICAO RVSM height monitoring using E2GMU for the past years is as follows:

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.

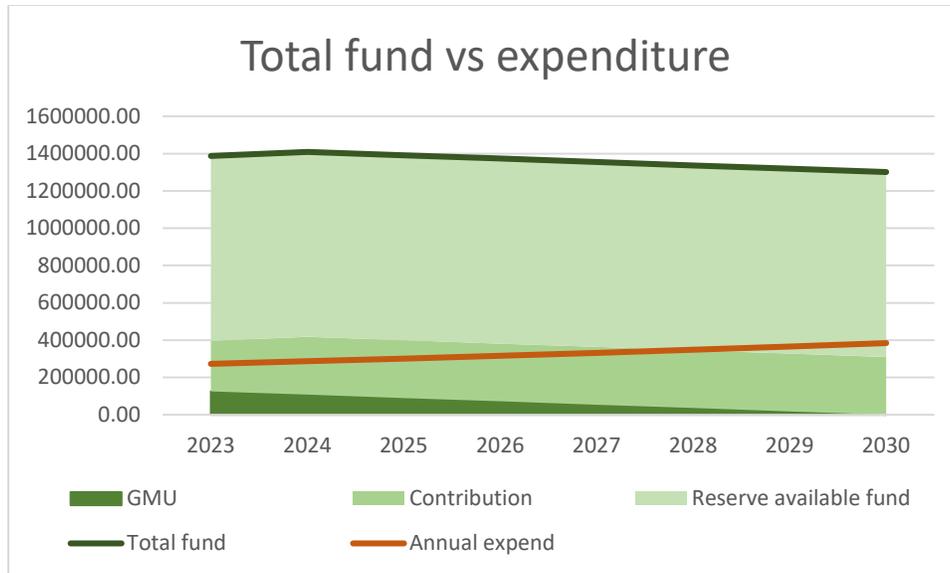
The yearly estimated variable costs are USD 20,300; these costs may increase or decrease depending on the inputs or outputs of the required MIDRMA tasks.

2.3 Wages

Through the MIDRMA Board/13 DRAFT CONCLUSION 13/4, the MIDRMA Board agreed that as of 1st 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

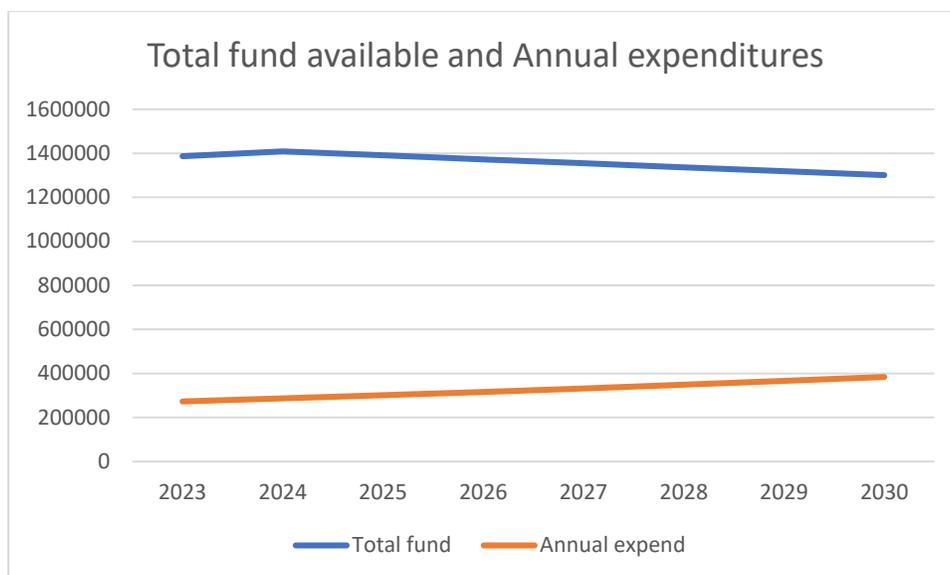
2.5.1 The MIDRMA Funding mechanism endorsed by the MIDRMA Board and MIDANPIRG is based on 2 main criteria: the volume of RVSM traffic in a Flight Information Region and the number of RVSM approved aircraft registered in each Member State. The experience shows that this mechanism has been working very 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**.

	Proposed action	Champion	Timeline
	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.

	Proposed action	Champion	Timeline
	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.

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

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.

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.

	Proposed action	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.

	Proposed action	Champion	Timeline
	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.

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.

	Proposed action	Champion	Timeline
	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

Appendix A

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

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Appendix C

MIDRMA Board Terms of Reference

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.
2. The Board shall elect a Chairperson.
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 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. The Board meetings should be hosted by the member States on rotation basis.
6. 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.
7. The Board shall promote effective communication channels between the MIDRMA and the member States.
8. 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.
9. 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.
10. 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.
8. Present annual financial statement to the board meetings.
9. 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 (as requested by the MIDRMA Board);
 - d) radar data as, when and where required; and
 - e) 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.

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 host.
2. Develop meeting Agendas.
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 report 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.

PRELIMINARY RESULTS OF THE MID RVSM SMR 2023

1.1 Preliminary Results of the MID RVSM SMR 2023 (First Draft Version)

1.1.1 Implementation of RVSM should be based on a safety assessment that demonstrates the continued fulfillment of all RVSM safety objectives outlined in the MID-RVSM Safety Policy, in accordance with ICAO Doc 9574, within the operational services of the Middle East RVSM airspace.

1.1.2 The results calculated for the MID RVSM SMR 2023 provide evidence that, based on the data and methods employed, the three safety objectives have been met thus far. However, it is worth noting that the level of reporting of LHD by some member states is unsatisfactory, particularly those with high volumes of traffic. Therefore, the results do not support a high level of confidence, and we shall await further data until the end of this year in 2023, which marks the completion of the SMR reporting cycle.

Objective 1 The risk of collision in MID RVSM airspace due solely to technical height-keeping performance meets the ICAO target level of safety (TLS) of 2.5×10^{-9} fatal accidents per flight hour.

The value computed for technical height risk is estimated 1.019×10^{-10} this meets RVSM Safety Objective 1.

Objective 2 The overall risk of collision due to all causes which includes the technical risk and all risk due to operational errors and in-flight contingencies in the MID RVSM airspace meets the ICAO overall TLS of 5×10^{-9} fatal accidents per flight hour.

The value computed for the overall risk is estimated 8.408×10^{-10} this is below the ICAO overall TLS.

Objective 3 Address any safety-related issues raised in the SMR by recommending improved procedures and practices; and propose safety level improvements to ensure that any identified serious or risk-bearing situations do not increase and, where possible, that they decrease. This should set the basis for a continuous assurance that the operation of RVSM will not adversely affect the risk of en-route mid-air collision over the years.

Middle East RVSM Airspace			
Average Aircraft Speed = 440.3 kts			
Risk Type	Risk Estimation	ICAO TLS	Remarks
Technical Risk	1.019×10^{-10}	2.5×10^{-9}	Below ICAO TLS
Overall Risk	8.408×10^{-10}	5×10^{-9}	Below ICAO TLS

Conclusions:

- (i) The estimated risk of collision associated with aircraft height- keeping performance is **1.019 x 10⁻¹⁰** and meets the ICAO TLS of **2.5 x 10⁻⁹** fatal accidents per flight hour (RVSM Safety Objective 1).
- (ii) The estimated overall risk of collision due to all causes which includes the technical risk and all risk due to operational errors and in-flight contingencies is **8.408 x 10⁻¹⁰** this value is below the ICAO overall TLS of **5x10⁻⁹** fatal accidents per flight hour (RVSM Safety Objective 2)
- (iii) based on currently available information (Except for Tripoli, Khartoum, and Beirut FIRs), there is no evidence available to MIDRMA that the continued operations of RVSM adversely affects the overall vertical risk of collision in the first nine months of the SMR reporting cycle.
- (iv) The vertical risk estimation due to atypical errors has been demonstrated to be the major contributor in the overall vertical-risk estimation for the MID RVSM airspace, The final conclusions of the data processed so far have been severely limited by the continued NIL reporting of Large Height Deviations (LHDs) from some members which does not support a high confidence in the result, the MIDRMA is reiterating the importance of submitting such reports especially from FIRs with high volume of traffic.

1.1.3 The MIDRMA continuously stressed the importance of all MIDRMA member states to submit the required data to adequately assess and calculate all relevant safety parameters and factors, however the MIDRMA still suffers problems with some member States due to the late submission of the traffic data and due to the corrupted data, which caused excessive delay for calculating the SMR safety parameters.

1.1.4 Scope:

The geographic scope of the MID RVSM Safety Monitoring Report covers the MID RVSM airspace, which comprises the following FIRs/UIRs:

Amman	Bahrain	Beirut*	Baghdad	Cairo	Damascus	Emirates
Jeddah	Kuwait	Khartoum*	Muscat	Sana'a	Tehran	Tripoli*
			Doha			

T-1: FIRs/UIRs of the Middle East RVSM Airspace

***Note: Beirut and Khartoum FIRs excluded from the RVSM safety analysis due to lack of TDS, while Tripoli FIR excluded due to lack of their routing options.**

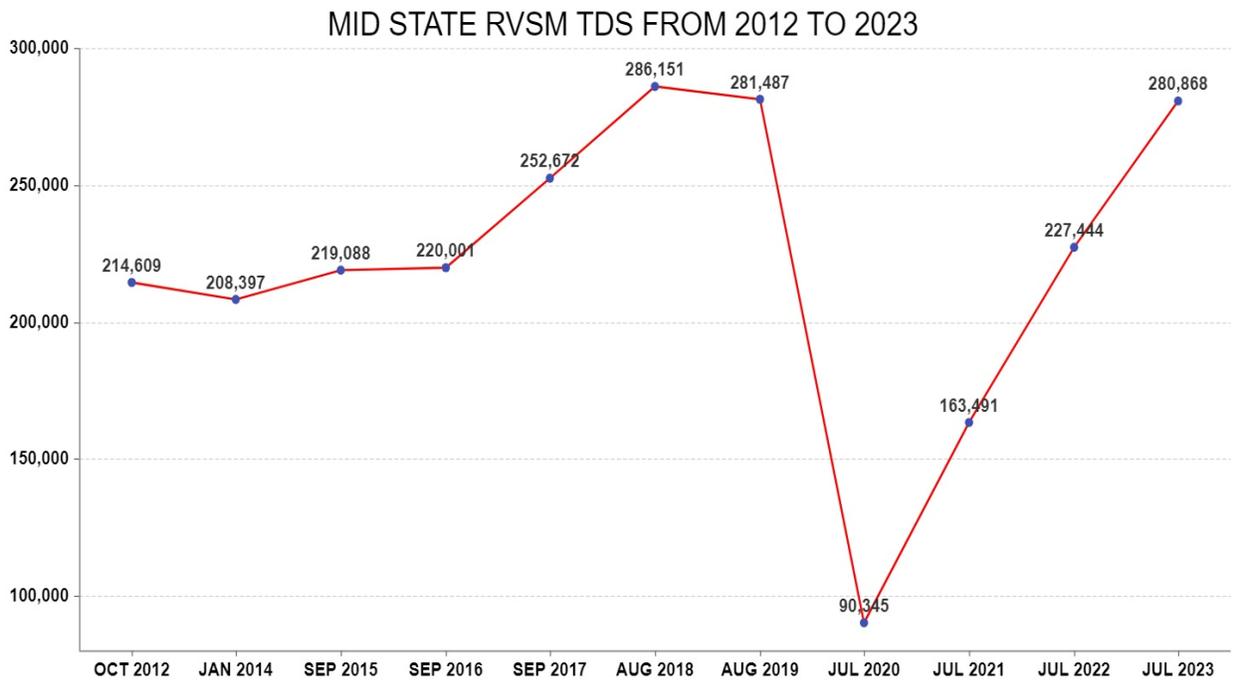
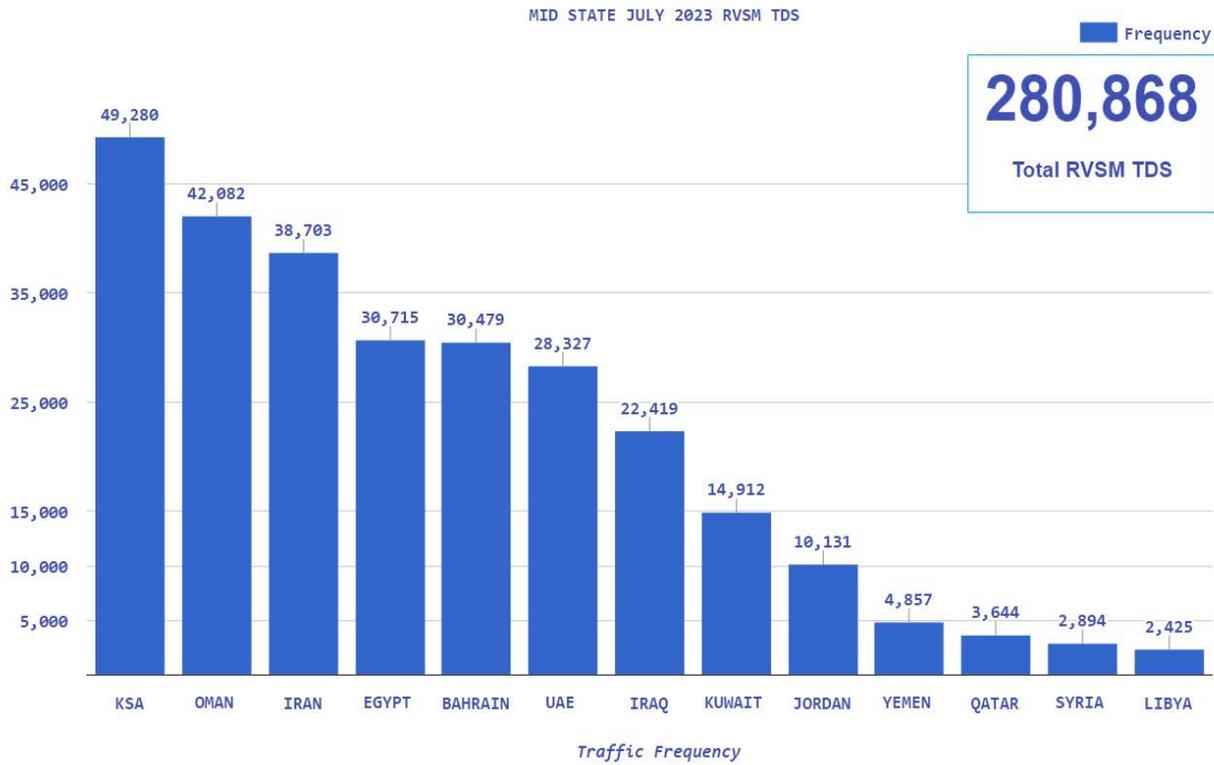
1.1.5 The Data Sampling periods covered by SMR 2023 are as displayed in the below table

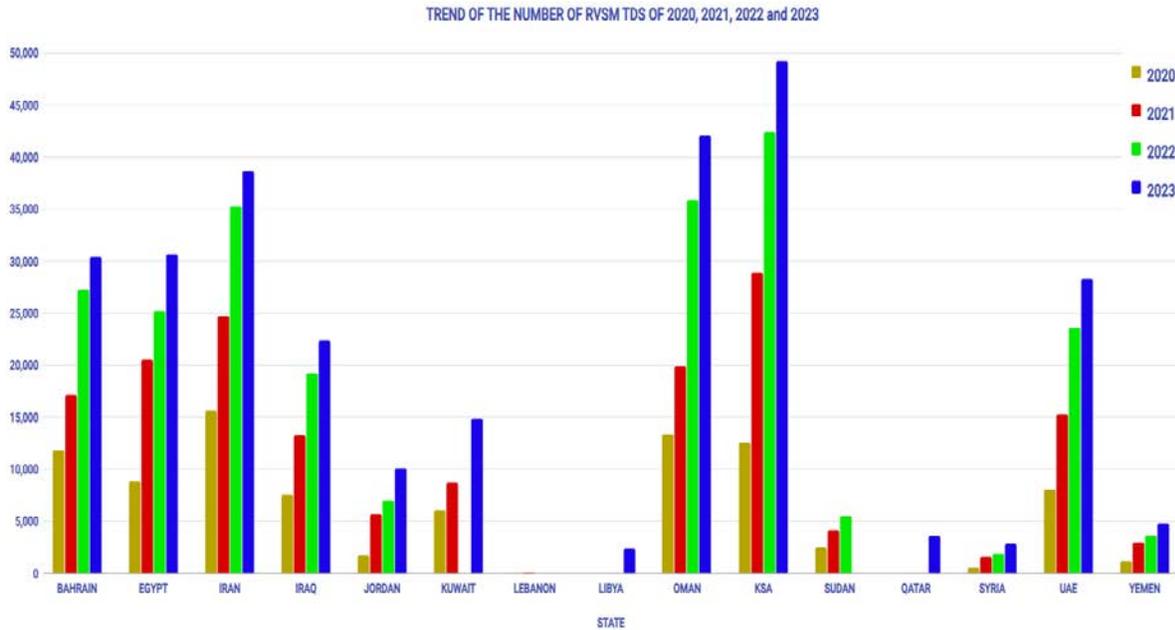
Report Elements	Time Period
Traffic Data Sample	01/06/2023 - 30/06/2023
Operational & Technical Errors	01/01/2023 - 30/09/2023

1.1.6 The descriptions of the traffic data collected from each MIDRMA Member State are depicted in table below:

MID States	No. of Flights	Received Date	Status
BAHRAIN	30479	2023-07-09	
EGYPT	30715	2023-08-06	
IRAN	38703	2023-09-25	
IRAQ	22419	2023-07-07	
JORDAN	10131	2023-07-05	
KUWAIT	14912	2023-07-03	
LEBANON			No Data Submitted
LIBYA	2425	2023-08-01	
OMAN	42083	2023-07-30	
KSA	49280	2023-08-01	
QATAR	3644	2023-08-07	
SUDAN			No Data Submitted
SYRIA	2894	2023-07-12	
UAE	28327	2023-07-25	
YEMEN	4857	2023-08-02	
Total	279656		

JUNE 2023 TDS Statistics





2.2 Large Height Deviation Reports (LHDs) 2023

2.2.1 The estimation of the total risk, encompassing Safety Objective 2, integrates the outcomes of Safety Objective 1 with the evaluation of risks originating from various other factors. This secondary component, often referred to as operational risk, is contingent on a multitude of factors, including airspace configuration, traffic density, ATC procedures, individual controller and pilot actions, and specific operational characteristics of sectors. The assessment of operational risk relies on the analysis of event magnitude and duration extracted from operational incident reports, which are subsequently transformed into Large Height Deviation reports.

2.2.2 MIDRMA has observed a decrease in Large Height Deviation (LHD) reporting from certain member states, particularly those with high traffic volumes, despite the continuous issuance of monthly reminders to all member states. The level of reporting has remained exceedingly low. The table below illustrates the reports received from all member states for the period from January 1st to September 30th, 2023.

MID FIRs	No. of Reported LHDs	No. of Related LHDs
Bahrain	-	-
Baghdad	1	-
Amman	2	2
Tehran	-	-
Cairo	24	10
Damascus	-	1
Khartoum	1	4
Kuwait	-	-
Muscat	68	33

Jeddah/ Riyadh	9	59
Tripoli	-	-
Emirates	4	4
Sana'a	136	8

Large Height Deviation Received from Member States
from 01st Jan 2023 until 30th Sep 2023

Note: In reference to the table above in 2.2.2, there are member states that didn't report any LHD for a long time, such as Bahrain, Kuwait, and Iran, while Iraq ATC reported only ONE LHD since the beginning of 2023.

2.2.3 Despite the fact that MIDRMA Member States have submitted a small number of LHD reports to date, and considering that the SMR cycle has not yet been completed (with three more months remaining), there is a possibility that the results presented for Safety Objective No. 2 could change if critical LHD reports are submitted.

Note: The extreme majority of the received LHD reports are related to ATC transfer of control coordination errors due to human factors (Cat. E) and did not have severe impact on the RVSM airspace operations.

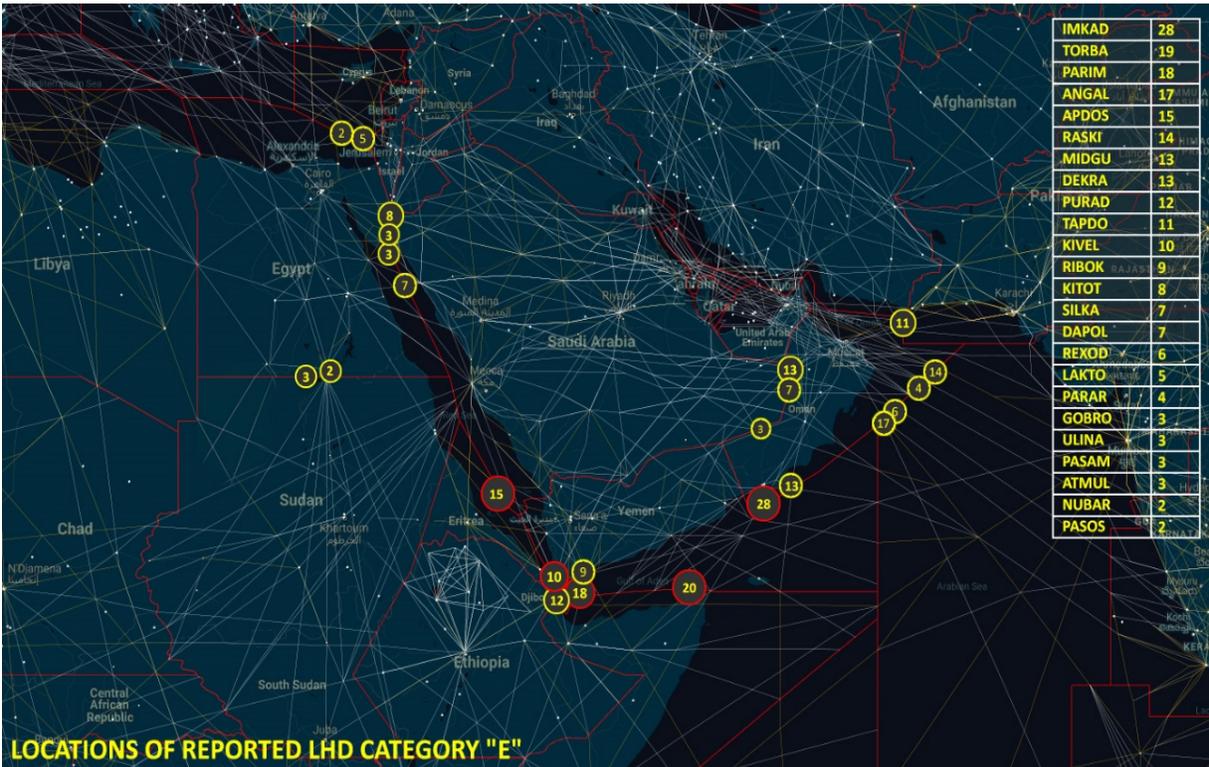
2.2.4 The table below provides a summary of operational risk associated with Large Height Deviation (LHD) reports, categorized by LHD categories. These reports are used to calculate the overall vertical collision risk, which is presented for Safety Objective No. 2.

LHD Cat.	Large Height Deviation (LHD) Categories	No. of LHDs	LHD Duration (Sec.)
A	Flight crew fails to climb or descend the aircraft as cleared	-	-
B	Flight crew climbing or descending without ATC clearance	-	-
C	Incorrect operation or interpretation of airborne equipment	4	65
D	ATC system loop error	5	280
E	ATC transfer of control coordination errors due to human factors	-	-
F	ATC transfer of control coordination errors due to technical issues	-	-
G	Aircraft contingency leading to sudden inability to maintain level	-	-
H	Airborne equip. failure and unintentional or undetected FL change	-	-
I	Turbulence or other weather-related cause	1	10
J	TCAS resolution advisory and flight crew correctly responds	-	-
K	TCAS resolution advisory and flight crew incorrectly responds	-	-
L	ACFT being provided with RVSM separation is not RVSM approved	-	-
M	Other		
	Total	10	355

Summary of Operational Risk associated with Large Height Deviation Reports

5A-7

2.2.5 During the last MIDRMA Board meeting, MIDRMA highlighted the issue of non-responsiveness to the received Large Height Deviation (LHD) reports, particularly in relation to the feature allowing direct responses to the reporting unit. This feature is crucial for ensuring that all responses are properly documented and can be readily referenced when necessary. Regrettably, the vast majority of Member States persist in neglecting the utilization of this feature and do not make the effort to investigate and provide replies to the LHD reports they receive.



2.2.6 RVSM Safety Protocol at the Eastern Boundaries of Muscat FIR and the increased Number of LHD reports submitted by Mumbai ATCU related to Muscat ATCU:

2.2.6.1 MIDRMA has maintained its vigilance in monitoring the Large Height Deviation (LHD) reports along the eastern boundaries of Muscat FIR, as filed by Mumbai and Muscat ACCs. The MIDRMA wishes to bring to the meeting's attention the ongoing status of the Muscat/Mumbai RVSM safety protocol, which has remained open since 2017. It is imperative that a decision be made to close this protocol, given that the associated risks should either be eliminated or reduced to the absolute minimum. Regrettably, MIDRMA does not perceive this happening without confirmation of the installation of OLDI/AIDC systems in both ACCs.

2.2.6.2 In **Appendix A** of this working paper, a comprehensive account of Large Height Deviation (LHD) reports, as filed by both Air Traffic Control Units (ATCUs), from January 1st to August 31st, 2023, is provided. It is noteworthy that a significant and abrupt surge in LHD reporting from Mumbai related to Muscat, has been observed during this period. In light of this development, an official communication has been initiated with the Muscat Air Traffic Control, seeking an explanation for the underlying causes behind this sudden escalation. Furthermore, Oman has been formally requested to outline the corrective measures undertaken to address this longstanding issue.

2.2.6.3 The table below provides a comparison of the number of LHD reports submitted by Mumbai and Muscat ATCUs in 2022 and 2023.

YEAR	LHD Reported by Muscat	LHD Reported by Mumbai
2022	16	41
2023	25	79

2.2.7 RVSM Safety Protocol between Sanaa and Mogadishu FIRs.

2.2.7.1 The MIDRMA Board/18 has decided to open an RVSM Safety Protocol between Sanaa and Mogadishu FIRs in response to the increasing number of LHD reports submitted by Sana'a ACC related to Mogadishu and to its neighbouring FIRs. It is worth noting that the first coordination meeting, organized by ICAO MID and attended by ICAO ESAF ARMA, MIDRMA, IATA and relevant ATM representatives near the Horn of Africa, discussed the surge in LHD reports from Sana'a ACC concerning its neighbouring FIRs. During this meeting, the ATM representatives attended this meeting were briefed of the escalating risk associated with the rising number of LHD reports and their impact on the overall ICAO TLS within the MID region. They were urged to promptly implement corrective measures to resolve this problem as soon as possible.

2.2.7.2 The table below displays all the LHD reports filed by Sanaa ACC related to its neighbouring ACCs, indicating a significant decrease in the number of reports compared to the year 2022.

2.2.7.3 No LHD reports were filed by Sanaa related to Mogadishu from January 1st until September 30th, 2023. Therefore, MIDRMA sees no reason to keep the safety protocol open and requests to close it.

Months	Addis Ababa	Asmara	Mogadishu	Djibouti	Jeddah	Mumbai	Muscat	Total
1-2023	1	0	0	2	1	1	9	14
2-2023	2	1	0	0	3	4	3	13
3-2023	0	1	0	4	3	0	16	24
4-2023	2	2	0	2	1	3	2	12
5-2023	2	2	0	2	1	0	0	7
6-2023	2	5	0	2	5	1	0	15
7-2023	3	10	0	2	6	4	0	25
8-2023	4	3	0	5	3	3	0	18
9-2023	3	0	0	1	2	1	1	8
Total Report	19	24	0	20	25	17	31	136

2.3 Assessment of Non-RVSM Approved Aircraft 2023

2.3.1 The MIDRMA, in accordance with its role as a Regional Monitoring Agency (RMA), as specified in ICAO Doc 9937 and 9574, conducts systematic reviews to assess operator compliance with State RVSM approvals within the ICAO Middle East Region. This essential function is carried out to safeguard the safety of the RVSM airspace by identifying aircraft that operate within it without the required approvals.

2.3.2 While it would be ideal to conduct daily compliance monitoring across the entire ICAO Middle East airspace, challenges in collecting traffic information render this impractical. In alignment with the guidelines set forth in ICAO Doc 9937, the responsible RMA is mandated to monitor full airspace compliance for a minimum of 30 days annually. In fulfilling this obligation, MIDRMA conducts monthly assessments.

2.3.3 MIDRMA relies on RVSM traffic data from Bahrain, Baghdad, and Emirates FIRs as the primary source for monitoring non-RVSM approved aircraft within its area of responsibility. This approach is necessitated by the challenge of obtaining monthly traffic data from all Member States. In light of this, MIDRMA wishes to express its sincere appreciation to the Bahrain Civil Aviation Authority, the Iraq Civil Aviation Authority, and the UAE General Civil Aviation Authority for their unwavering commitment to providing their FIRs' RVSM traffic data on a monthly basis. The data received from these Member States is consistently comprehensive and conforms to the required format. And invites the other Member States to provide similar information on regular basis.

2.3.4 The tables in **Appendix B** of this working paper reflect the MIDRMA Bulletin of Non-RVSM Approved aircraft observed operating within the ICAO MID RVSM airspace and within the RVSM airspace of other RMAs. The expectation derived from this analysis is that States exercising operational authority will take proactive steps to address approval issues well in advance, ensuring that approved aircraft operate within the RVSM airspace. This proactive approach aims to prevent undesirable actions against legitimate operators. Furthermore, it is expected that States encountering such aircraft operating within their airspace will take appropriate measures.

APPENDIX A

LHD Reports Submitted by Muscat related to Mumbai

#	ID	Date of Occ	Reported By	Related to	Location	Nature of the occurrence:	Category
1	11226	Mar 03, 2023	Muscat	Mumbai	PARAR	Revised FL Not Coordinated	E
2	11227	Mar 03, 2023	Muscat	Mumbai	PARAR	Revised FL Not Coordinated	E
3	11228	Apr 04, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
4	11229	Apr 04, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
5	11230	Apr 04, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
6	11231	Apr 07, 2023	Muscat	Mumbai	KITAL	ACFT Entered FIR Without Coordination	E
7	11232	Apr 12, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
8	11375	Aug 03, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
9	11376	Aug 04, 2023	Muscat	Mumbai	PARAR	Revised FL Not Coordinated	E
10	11377	Aug 05, 2023	Muscat	Mumbai	RASKI	ACFT Entered FIR Without Coordination	E
11	11378	Aug 06, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
12	11379	Aug 07, 2023	Muscat	Mumbai	REXOD	Revised FL Not Coordinated	E
13	11380	Aug 08, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
14	11381	Aug 09, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
15	11382	Aug 09, 2023	Muscat	Mumbai	REXOD	ACFT Entered FIR Without Coordination	E
16	11383	Aug 10, 2023	Muscat	Mumbai	RASKI	ACFT Entered FIR Without Coordination	E
17	11384	Aug 12, 2023	Muscat	Mumbai	REXOD	Revised FL Not Coordinated	E
18	11385	Aug 16, 2023	Muscat	Mumbai	RASKI	ACFT Entered FIR Without Coordination	E
19	11386	Aug 18, 2023	Muscat	Mumbai	RASKI	Revised FL Not Coordinated	E
20	11387	Aug 19, 2023	Muscat	Mumbai	REXOD	ACFT Entered FIR Without Coordination	E
21	11388	Aug 22, 2023	Muscat	Mumbai	RASKI	ACFT Entered FIR Without Coordination	E
22	11389	Aug 28, 2023	Muscat	Mumbai	PARAR	ACFT Entered FIR Without Coordination	E
23	11390	Aug 30, 2023	Muscat	Mumbai	REXOD	ACFT Entered FIR Without Coordination	E
24	11391	Aug 30, 2023	Muscat	Mumbai	RASKI	ACFT Entered FIR Without Coordination	E
25	11392	Aug 30, 2023	Muscat	Mumbai	REXOD	ACFT Entered FIR Without Coordination	E

LHD Reports Submitted by Mumbai related to Muscat

#	ID	Date of Occ	Reported By	Related to	Location	Nature of the occurrence	Category
1	LHD001819	06/01/2023	Mumbai	Muscat	KITAL	No or late estimate time revision	E
2	LHD001820	15/01/2023	Mumbai	Muscat	TOTOX	No or late FL revision	E
3	LHD001859	02/02/2023	Mumbai	Muscat	BIBGO	No transfer information (i.e. 'negative transfer')	E
4	LHD001863	08/02/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
5	LHD001864	14/02/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
6	LHD001865	16/02/2023	Mumbai	Muscat	KITAL	No or late FL revision	E
7	LHD001866	19/02/2023	Mumbai	Muscat	PARAR	No transfer information (i.e. 'negative transfer')	E
8	LHD001867	10/03/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
9	LHD001868	14/03/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
10	LHD001869	16/03/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E
11	LHD001870	16/03/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E
12	LHD001877	16/03/2023	Mumbai	Muscat	TOTOX	No or late FL revision	E
13	LHD001878	19/03/2023	Mumbai	Muscat	KITAL	No or late FL revision	E
14	LHD001879	20/03/2023	Mumbai	Muscat	LOTAV	No transfer information (i.e. 'negative transfer')	E
15	LHD001880	24/03/2023	Mumbai	Muscat	PARAR	No or late route revision	E
16	LHD001881	24/03/2023	Mumbai	Muscat	PARAR	No or late route revision	E
17	LHD001882	24/03/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
18	LHD001883	24/03/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
19	LHD001884	24/03/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E
20	LHD001885	26/03/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
21	LHD001886	29/03/2023	Mumbai	Muscat	KITAL	No or late FL revision	E
22	LHD001887	31/03/2023	Mumbai	Muscat	REXOD	No or late FL revision	E
23	LHD001963	08/04/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
24	LHD001964	17/04/2023	Mumbai	Muscat	SAPNA	No transfer information (i.e. 'negative transfer')	E
25	LHD001965	18/04/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
26	LHD001966	27/04/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
27	LHD001967	30/04/2023	Mumbai	Muscat	TOTOX	No or late FL revision	E
28	LHD002011	04/05/2023	Mumbai	Muscat	RASKI	No transfer information (i.e. 'negative transfer')	E
29	LHD002012	13/05/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
30	LHD002013	18/05/2023	Mumbai	Muscat	ANGAL	No or late FL revision	E
31	LHD002014	23/05/2023	Mumbai	Muscat	TOTOX	No or late FL revision	E
32	LHD002015	25/05/2023	Mumbai	Muscat	TOTOX	No or late FL revision	E
33	LHD002016	25/05/2023	Mumbai	Muscat	TOTOX	No or late FL revision	E
34	LHD002017	30/05/2023	Mumbai	Muscat	KITAL	No or late FL revision	E
35	LHD002018	31/05/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E
36	LHD002019	06/06/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
37	LHD002020	19/06/2023	Mumbai	Muscat	KITAL	No or late FL revision	E
38	LHD002021	23/06/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
39	LHD002022	26/06/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E

MIDRMA Board/19-REPORT
APPENDIX 5A

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40	LHD002038	04/07/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E
41	LHD002039	05/07/2023	Mumbai	Muscat	TOTOX	No or late FL revision	E
42	LHD002040	21/07/2023	Mumbai	Muscat	PARAR	No transfer information (i.e. 'negative transfer')	E
43	LHD002041	26/07/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
44	LHD002042	29/07/2023	Mumbai	Muscat	ORLID	No or late estimate time revision	E
45	LHD002043	29/07/2023	Mumbai	Muscat	ORLID	No or late estimate time revision	E
46	LHD002091	05/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
47	LHD002092	07/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
48	LHD002093	08/08/2023	Mumbai	Muscat	REXOD	No or late FL revision	E
49	LHD002094	10/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
50	LHD002095	13/08/2023	Mumbai	Muscat	REXOD	No or late FL revision	E
51	LHD002096	14/08/2023	Mumbai	Muscat	PARAR	No transfer information (i.e. 'negative transfer')	E
52	LHD002097	15/08/2023	Mumbai	Muscat	TOTOX	No or late estimate time revision	E
53	LHD002098	15/08/2023	Mumbai	Muscat	REXOD	No or late FL revision	E
54	LHD002099	16/08/2023	Mumbai	Muscat	ORLID	No transfer information (i.e. 'negative transfer')	E
55	LHD002101	17/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
56	LHD002102	17/08/2023	Mumbai	Muscat	REXOD	No or late FL revision	E
57	LHD002103	18/08/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
58	LHD002104	19/08/2023	Mumbai	Muscat	ORLID	No or late estimate time revision	E
59	LHD002105	20/08/2023	Mumbai	Muscat	RASKI	No or late estimate time revision	E
60	LHD002106	20/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
61	LHD002107	20/08/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E
62	LHD002108	21/08/2023	Mumbai	Muscat	KITAL	No or late estimate time revision	E
63	LHD002109	22/08/2023	Mumbai	Muscat	ANGAL	No transfer information (i.e. 'negative transfer')	E
64	LHD002110	23/08/2023	Mumbai	Muscat	KITAL	No or late FL revision	E
65	LHD002111	23/08/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
66	LHD002112	23/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
67	LHD002113	23/08/2023	Mumbai	Muscat	TOTOX	No or late FL revision	E
68	LHD002114	24/08/2023	Mumbai	Muscat	ORLID	No or late FL revision	E
69	LHD002115	24/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
70	LHD002116	24/08/2023	Mumbai	Muscat	ORLID	No or late FL revision	E
71	LHD002117	24/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
72	LHD002118	25/08/2023	Mumbai	Muscat	KITAL	No or late FL revision	E
73	LHD002119	25/08/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E
74	LHD002120	25/08/2023	Mumbai	Muscat	RASKI	No or late estimate time revision	E
75	LHD002121	27/08/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
76	LHD002122	29/08/2023	Mumbai	Muscat	LOTAV	No or late FL revision	E
77	LHD002123	29/08/2023	Mumbai	Muscat	PARAR	No or late FL revision	E
78	LHD002124	31/08/2023	Mumbai	Muscat	RASKI	No or late FL revision	E
79	LHD002125	31/08/2023	Mumbai	Muscat	KITAL	No or late estimate time revision	E

APPENDIX B

NON-RVSM approved aircraft – Responsibility of MIDRMA Member States

#	Observed Operating RVSM in	ACFT Reg.	ICAO Type	First Observed on	Responsible State
1	Jeddah	STALL	CRJ1	11-06-2022	SUDAN
2	EURRMA	5ALEX	BE200	09-07-2022	LIBYA

NON-RVSM approved aircraft – Responsibility of other RMAs

#	ACFT Reg.	ICAO Type	First Observed on	Responsible RMA
1	PKSJH	A320	06-11-2022	AAMA
2	PKLSW	B739	08-03-2023	AAMA
3	PKBGZ	B738	13-12-2022	AAMA
4	PKSTD	A320	19-01-2023	AAMA
5	PKLVF	B739	20-01-2023	AAMA
6	PKLSV	B739	21-12-2022	AAMA
7	40001A	C17	25-01-2020	AAMA
8	PKLSU	B739	27-11-2022	AAMA
9	PKSTH	A320	27-11-2022	AAMA
10	60208A	C17	30-03-2020	AAMA
11	PKBKM	A320	30-11-2022	AAMA
12	ZSCQP	CRJ9	07-07-2020	AFIRMA
13	ETATF	B350	08-07-2020	AFIRMA
14	5YWBH	C56X	14-07-2020	AFIRMA
15	5YFAN	CRJ2	15-07-2020	AFIRMA
16	5NBOD	GLF4	28-01-2022	AFIRMA
17	CCBGV	B789	08-06-2022	CARSAM
18	FAB2857	KC39	22-05-2022	CARSAM
19	21140	IL76	19-06-2022	CHINARMA
20	URAZN	B753	01-02-2022	EURRMA
21	URAZO	B753	01-02-2022	EURRMA
22	URSQO	B738	02-12-2021	EURRMA
23	URAZR	B77W	03-02-2022	EURRMA
24	EW550TH	IL76	04-12-2021	EURRMA
25	URFSC	IL76	05-12-2021	EURRMA
26	URFSA	IL76	09-05-2021	EURRMA
27	URFSE	IL76	11-12-2022	EURRMA
28	ICJSN	C25C	15-05-2023	EURRMA
29	UR11316	AN12	22-07-2020	EURRMA

30	URFSD	IL76	24-12-2021	EURRMA
31	KJ3452	IL76	03-08-2020	MAAR
32	IN307	IL38	03-12-2020	MAAR
33	KJ3454	IL76	16-03-2020	MAAR
34	K3604	E35L	17-07-2020	MAAR
35	80002A	C17	23-07-2020	MAAR
36	CB8004	C17	24-07-2020	MAAR
37	CB8001	C17	29-07-2020	MAAR
38	N411VP	EA50	01-05-2022	NAARMO
39	N267LG	GLF4	02-01-2023	NAARMO
40	N981DB	H25B	05-04-2022	NAARMO
41	N980BA	GLEX	05-11-2022	NAARMO
42	N44UA	CL60	07-06-2020	NAARMO
43	N685MF	GLF4	08-12-2021	NAARMO
44	N800AJ	CL60	10-02-2023	NAARMO
45	N605AS	PC12	11-04-2022	NAARMO
46	N866G	GALX	14-02-2022	NAARMO
47	N298RB	GLF4	14-05-2021	NAARMO
48	N28JV	PRM1	15-05-2023	NAARMO
49	N1112B	B350	16-07-2020	NAARMO
50	XAASP	CL60	17-11-2022	NAARMO
51	N920SA	F2TH	18-02-2021	NAARMO
52	N651CV	C650	21-11-2022	NAARMO
53	N145DB	E35L	22-01-2022	NAARMO
54	N46HB	F9000	22-08-2022	NAARMO
55	N320MK	GLF3	24-09-2022	NAARMO
56	N890DA	GLF5	25-02-2023	NAARMO
57	N604DT	CL60	26-02-2022	NAARMO
58	XAAYL	GLEX	26-04-2023	NAARMO
59	N405LL	H25B	29-05-2022	NAARMO

MIDDLE EAST REGIONAL MONITORING AGENCY (MIDRMA) BOARD

TERMS OF REFERENCE

THE TERMS OF REFERENCE OF THE MIDRMA BOARD ARE AS FOLLOWS:

1. The Board is responsible for overall supervision, direction, and management of the MIDRMA project.
2. The Board shall elect a Chairperson.
3. The elected Chairperson acts as the contact point/coordinator on behalf of the MID RMA Board members to oversee the MIDRMA project in coordination with ICAO.
4. The Board shall review and update the MIDRMA work plan on a yearly basis and/or whenever required.
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 funding mechanism, costs, accounting, etc; and
 - iii. the duties, responsibilities and scope of the MIDRMA.
6. The MIDRMA Board meetings should be hosted by Participating States on rotation basis.
7. The Board reports its activity to MIDANPIRG through the ATM/SAR/AIS Sub-Group.

COMPOSITION:

The MIDRMA Board shall consist of focal points nominated by each Participating MID Region State as signatories on their behalf with ICAO Technical Cooperation Bureau (TCB) in relation with the MIDRMA project.

The MIDRMA Board meetings will be attended by:

- The Board Members;
- ICAO Regional Office, as permanent observer; and
- Other Organizations (EUROCONTROL, IATA, etc.) as observes on ad-hoc basis and as required.

LIST OF MIDRMA BOARD MEMBERS/ALTERNATES AND FOCAL PONTS

STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
BAHRAIN	<p>Mr. Ahmed Mohammed Bucheery ? Chief Air Traffic Management Civil Aviation Affairs P.O. Box 586 BAHRAIN</p> <p>Fax: +973 17 329977 Tel: +973 17 321117 Mobile: +973 39522696 E-mail: a.ali@mtt.gov.bh</p>	<p>Mr. Isa Al-Khamiri Safety Manager Civil Aviation Affairs P.O. Box 586 – BAHRAIN</p> <p>Fax: +973 17 329977 Tel: +973 17 321118 Mobile: +973 3644768 E-mail: alkhamiri@mtt.gov.bh</p>	<p>Same as MEMBER</p>	<p>Eng. Abdulrazzaq Abdulwahid Aircraft Registration Specialist Civil Aviation Affairs P.O. Box 586 BAHRAIN Tel: +973 17 32 9031 E-mail: a.mohammed@mtt.gov.bh</p>
EGYPT	<p>Mr. Tayseer Mohamed Abdelkareem General Manager of ATS Egyptian Civil Aviation Authority (ECAA) General Manager of ATS Cairo – Egypt</p> <p>Fax: +202 2268 7849 Tel: +202 2267 8883 Mobile: +20100 522 8675 E-mail: tayseerkasem73@gmail.com tayseer.mohamed@civilaviation.gov.eg</p>	<p>Mr. Ehab Raslan Mohamed General Manager R&D National Air Navigation Services Company (NANSC) Cairo Airport Road Cairo - EGYPT</p> <p>Office: +20222680929 / ext: 6690 Mobile: +201011 2699 0000 Email: ehab.raslan@nansceg.net</p>	<p>Mr. Walid Saeed Rawash ATCO and R&D Specialist National Air Navigation Services Company (NANSC) Cairo Airport Road Cairo - EGYPT</p> <p>Mobile: +20100 242 7931 Email: walid.rawash@nansceg.net</p> <p>-----</p> <p>ALTERNATE</p> <p>Mrs. Asmaa Ahmed Attiya ATCO and R&D Specialist National Air Navigation Services Company (NANSC) Cairo Airport Road Cairo - EGYPT</p> <p>Mobile: +20100 5861615 Email: asmaa.ahmed@nansceg.net</p>	<p>Eng. Ahmed Abdelaziz Mohamed Egyptian Civil Aviation Authority Cairo Airport Road Cairo - EGYPT</p> <p>Mobile: +20100 272750 Email: ahmed.salama@civilaviation.gov.eg</p> <p>-----</p> <p>ALTERNATE</p> <p>Eng. Ahmed Mohamed Ead Airworthiness Senior Inspector Egyptian Civil Aviation Authority Cairo Airport Road Cairo - EGYPT</p> <p>Mobile: +20100 3765057 Email: ahmed.ead@civilaviation.gov.eg</p>

STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
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STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
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JORDAN	<p>Mr. Marwan Hani Ibrahim Al-Masri Air Traffic Control Officer ATCO/QA&IA Civil Aviation Regulatory Commission Queen Alia Airport</p> <p>Tel: +962-6 445 1672 Mobile: +962 795 990 890 Fax: +962-6 445 1667 Email: marwan.al-masri@carc.gov.jo</p>	<p>Same as MEMBER</p>	<p>-</p>	<p>Eng. Abdalah Alhajel Airworthiness Inspector Civil Aviation Regulatory Commission P.O. Box 7547/11110 Amman - JORDAN</p> <p>Fax: (962-6) 487 4710 Tel: (962-6) 489 2282 Ext 3735 Mobile: +962-796117729 E-mail: Abdalah.Alhajel@CARC.GOV.JO</p>

STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
KUWAIT	-	-	<p>Mr. Mustafa A. Al-tarrah Head of Air Navigation Services Inspectors Aviation Safety Department Directorate General of Civil Aviation P.O. Box 17 – Safat 13001 – Safat – Kuwait</p> <p>Tel.: +965 244336699 Ext. 12370 Mob: +965 999 77440 E-mail: ma.altarrah@dgca.gov.kw</p>	<p>Engr. Hassan Alshatti Airworthiness Inspector Directorate General of Civil Aviation P.O. Box 17 – Safat 13001 – Safat – Kuwait</p> <p>Tel.: +965 24336699 Ext. 12360 Tel.: +9765 99723243 E-mail: h.alshatti@dgca.gov.kw</p>
LEBANON	<p>Mr. Kamal Nassereddine Chief Air Navigation Department Directorate General of Civil Aviation Beirut Airport Beirut – LEBANON</p> <p>Fax: +961-1 629 023 Tel: +961-1 628 178 Mobile: +961 3 331974 +961 71 309409 E-mail: atm@beirutairport.gov.lb</p>	<p>Mr. Tarek Mrad Head Division ACC Directorate General of Civil Aviation (DGCA) Raffic Harriri Int'l Airport Beirut – LEBANON</p> <p>Tel: +961 11 629026 Mobile: +961 3824719 E-mail: intorganisations@beirutairport.gov.lb</p>	<p style="text-align: center;">Same as ALTERNATE</p>	<p>Dr. Omar Kaddouha Chief of Safety Department Directorate General of Civil Aviation (DGCA) Raffic Harriri Int'l Airport Beirut – LEBANON</p> <p>Tel: +961 1 628185 Mobile: +961 1 629106 Email: okaddouha@beirutairport.gov.lb</p>
LIBYA	-	-	<p>Mr. Omar Abudabar Civil Aviation Authority (CAA)</p> <p>E-Mail: omar.aboudabar@caa.gov.ly ans@caa.gov.ly</p>	<p>Mr. Younis Amaara Civil Aviation Authority (CAA)</p> <p>E-Mail: yonos.amarh@caa.gov.ly ops@flightsafety.caa.gov.ly</p>

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STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
OMAN	<p>Eng. Saleh Abdullah Al-Harathi Director General of Air Navigation Civil Aviation Authority P.O. Box 1. P.C 111 SEEB</p> <p>Tel: +968 24354860/866 Mobile: +968 95205073 Email: saleh@caa.gov.om</p>	<p>Mr. Hilal Ali Al-Maqbali Director of ATC Civil Aviation Authority P.O. Box 1. P.C 111 SEEB</p> <p>Tel: +968 24354867 Mobile: +968 95338685 E-mail: h.almaqbali@caa.gov.om</p>	<p>Mr. Nasser Salim Al'Tuweya ATC Supervisor Civil Aviation Authority P.O. Box 1. P.C 111 SEEB</p> <p>Fax: +968 24354506 Tel: +968 24519305 Mobile: +968 95180233 E-mail: nass2008@caa.gov.om</p>	<p>Mr. Mohammed Saif Al-Bimani ? Civil Aviation Authority</p> <p>Fax: +968 24354506 Tel: +968 24354075 Mobile: +968 99417381 E-mail: m.albimani@caa.gov.om</p>
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STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
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STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
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STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
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	Ms. Leena Alkooheji	Chief, Airports & Air Navigation Audit
	Ms. Maisa Hazeem	Director Air Traffic Management
	Mr. Mohammed Khalid Al-Marzouqi	Sr. Air Navigation Audit Specialist / ATS Inspector
	Mr. Paul Kelly	Advisor, Bahrain ASSD
EGYPT	Mr. Ehab Raslan Mohamed	General Manager of R&D Directorate
	Mr. Mohamed Ali Mohamed Ali	General Manager of Air Traffic Services - ECAA
	Mr. Walid Said Ahmed Rawash	R&D Directorate - NANSC
IRAQ	Mr. Ahmed Saad Muneer	Safety Manager - GCANS
	Mr. Mohanad Ali M. Jawad	ATFM Manager / MIDRMA Focal Point
JORDAN	Mr. Ahmad Odeh	Air Navigation Director / Queen Alia Airport
	Mr. Marwan AlMasri	MIDRMA Board Member / ATCO
LIBYA	Mr. Abdulmonaam Ahmad Abaza	Director of Air Navigation Service Department - LYCAA
	Mr. Abdurrahman Milad Ben Yousef	President Assistance of LYCAA
OMAN	Mr. Ali Juma Al-Rasbi	Airworthiness Inspector
	Mr. Hilal Ali Al-Maqbali	Acting ATC Director
	Mr. Hamad Mohammed Al-Affani	Senior Air Traffic Controller
	Mr. Nasser Salim Al Tuwaiya	ATC Supervisor
SAUDI ARABIA	Mr. Abdulhalim H. Bukhari	Continuous Airworthiness Director - GACA
	Mr. Ahmad Sami Mohammad Abu-Ghallab	Air Traffic Flow & Capacity Management Chief - SANS

State	Name	Title
	Mr. Mohammed Sulaiman S Alsaif	Air Safety Inspector - GACA
	Mr. Saleh A. Al-Zahrani	ATM Executive Director - SANS
UAE	Mr. Ahmed Ibrahim Al Jallaf	Assistant Director General - Air Navigation Services
	Mr. Omar Abdouli	Senior Manager Air Traffic Operations
YEMEN	Mr. Abdullah Nasser Salem Hussein	General Director of Airworthiness Department, CAMA
	Dr. Younis Saeed Ahmed Al-Khader	Director General of Air Navigation

Org. / Industry	Name	Title
AEROTHAI, THAILAND	Ms. Saifon Obromsook	Director, Safety Management Department - Aeronautical Radio of Thailand
	Ms. Chantima Sritiapetch	Head Engineer of AHMS, AEROTHAI Safety Management Department
ARMA	Mrs. Nonjabulo Gumede	Head ARMA
CHAM WINGS, SYRIA	Mr. Jamal Al Daghestani	OCC Supervisor - Cham Wings Airlines
	Mr. Mousa Boutros	Chief Operating Officer / MIDRMA Airworthiness Response Manager
EUROCONTROL	Mr. Andrew Lewis	Manager EUR RMA
IATA	Mr. Jehad Faqir	Head Regional Safety Africa and Middle East
NTU, SINGAPORE	Dr. Sameer Alam	Professor, Nanyang Tech. University
SAUDIA AIRLINES	Mr. Basim G Abdulmalik	Senior Specialist, Flight Operations, Saudia Airlines Co.
	Mr. Khalil Mohamed Hasan Kolaibi	SVA Director of Maintenance - Saudia Airlines
MIDRMA	Mr. Fareed AL Alawi	MIDRMA Manager
	Mr. Fathi Al-thawadi	MIDRMA Officer
	Mr. Amal Jo Antony	Data Analyst

Org. / Industry	Name	Title
ICAO MID	Mr. Mohamed Abubaker Farea	Regional Director (RD)
	Mr. Ahmad Amireh	Regional Officer, Air Traffic Management and Search and Rescue (RO/ATM/SAR)
	Mr. Ahmed Kavehfirouz	Regional Officer, Air Traffic Management (RO/ATM)
	Ms. Dina El Karimy	Technical Assistant (ATM/SAR & ASF)

- END -

ATTACHMENT A