INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

Report of the Second Meeting of the Regional Air Navigation Plan/National Air Navigation Plan Task Force (RANP/NANP TF/2)

(Cairo, Egypt, 17 – 19 February 2025)

The views expressed in this Report should be taken as those of the MIDANPIRG RANP/NANP Task Force and not of the Organization. This Report will, however, be submitted to the MIDANPIRG and any formal action taken will be published in due course as a Supplement to the Report.

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

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PART I – HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1 The Second Meeting of the RANP/NANP Task Force was successfully held at the Meeting Room of the ICAO Middle East Regional Office in Cairo, Egypt, from 17 to 19 February 2025.

2. OPENING

2.1 Mr. Mohamed Smaoui, the Deputy Regional Director ICAO MID, welcomed the participants to Cairo and wished them a successful and fruitful meeting.

2.2 Mr. Smaoui recalled that the RANP/NANP Task Force was established by MIDANPIRG/20 through Decision 20/12 to ensure alignment of the MID Region Air Navigation Strategy and MID ANP Vol III with the latest edition of the GANP and assist States in developing their National Air Navigation Plans (NANPs). He highlighted that the meeting is expected to review and update the preliminary results of the MID Air Navigation Report 2024 in order to consolidate the final version that will be presented to MIDANPIRG/22 for endorsement; and review the MID Region Air Navigation Strategy and propose amendments, if deemed necessary, considering that major amendments will be left for the next Edition of the Strategy, which will be aligned with the 8th Edition of the GANP that will be endorsed by the 42nd Session of the ICAO General Assembly (23 September – 3 October 2025).

2.3 Mr. Smaoui further underlined that, in continuation of the work achieved by the RANP/NANP TF/1 meeting, the meeting is expected to review the progress achieved by States in the implementation of Performance Based Approach and development of NANP. He thanked the States that agreed to share their experience in developing a National Air Navigation Plan, in particular: Jordan, Qatar, Saudi Arabia and UAE.

2.4 In closing, Mr. Mohamed Smaoui thanked the participants for their presence and wished the meeting every success in its deliberations.

3. ATTENDANCE

3.1 The meeting was attended by a total of seventy (70) participants from ten (11) States (Bahrain, Egypt, Iraq, Jordan, Kuwait, Libya, Oman, Qatar, Saudi Arabia, UAE and Yemen) and one (1) Organizations (IFALPA). The list of participants is at **Attachment A** to the Report.

4. OFFICERS AND SECRETARIAT

4.1 The meeting was chaired by Mr. Nasser Al-Khalaf, Air Traffic Controller & ANS Advisor, Qatar Civil Aviation Authority (QCAA).

4.2 Mr. Mohamed Smaoui, Deputy Regional Director, was the Secretary of the meeting, supported by Mr. Ahmad Kaveh, Regional Officer Air Traffic Management.

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

Agenda Item 2: MID Air Navigation Report-2024

Agenda Item 3: Progress achieved by States in the implementation of Performance Based Approach (PBA) and development of National Air Navigation Plan (NANP)

Agenda Item 4: Review and update of the MID Air Navigation Strategy

Agenda Item 5: Review and update of the MID ANP Volume III

Agenda Item 6: Future Work Programme

Agenda Item 7: Any other Business

7. CONCLUSIONS AND DECISIONS – DEFINITION

7.1 All MIDANPIRG Sub-Groups and Task Forces record their actions in the form of Conclusions and Decisions with the following significance:

a) **Conclusions** deal with the matters which, in accordance with the Group's terms of reference, merit directly the attention of States on which further action will be initiated by ICAO in accordance with established procedures; and

b) **Decisions** deal with matters of concern only to the MIDANPIRG and its contributory bodies

8. LIST OF DRAFT CONCLUSIONS AND DRAFT DECISIONS

DRAFT DECISION 2/1: MID AIR NAVIGATION REPORT-2024

DRAFT DECISION 2/2: REGIONAL AIR NAVIGATION MONITORING DASHBOARD ACTION GROUP

DRAFT CONCLUSION 2/3: MID AIR NAVIGATION STRATEGY (EDITION MARCH 2024 REV 1)

DRAFT CONCLUSION 2/4: MID REGION AIR NAVIGATION REPORT (2025)

DRAFT CONCLUSION 2/5: MID AIR NAVIGATION PLAN VOLUME III (EDITION 2025)

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA

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

REPORT ON AGENDA ITEM 2: MID AIR NAVIGATION REPORT-2024

2.1 The subject was addressed in WP/2 presented by the Secretariat . The meeting recalled that MIDANPIRG/21 urged States to provide their inputs to the ICAO MID Office in a timely manner for the development of the MID Air Navigation Report-2024. As a follow up action, the ICAO MID Office issued State Letter AN 1/7 – 24/185 dated 15 December 2024 to collect the following information and updates from MID States:

a) update on the status of implementation of the priority 1 ASBU Threads/Elements;

b) progress achieved in the implementation of the Performance Based Approach and development of State National Air Navigation Plan (NANP), by completing the Questionnaire; and

c) State's major achievement(s)/success story(ies) in the air navigation field in 2024.

2.2 The meeting reviewed and updated the preliminary results of the MID Air Navigation Report-2024 as at **Appendix 2A**. The meeting also noted with appreciation the major achievements/success stories submitted by Qatar, Saudi Arabia and UAE in the air navigation field in 2024 as at **Appendix 2B**. The meeting encouraged the remaining States to share their success stories with the ICAO MID Office, as soon as possible, in order to be included in the Air Navigation Report-2024. The meeting agreed that additional updates to the Air Navigation Report-2024, including success stories, should be provided officially to the ICAO MID Office before 15 March 2025.

2.3 Based on the above, the meeting agreed that the Secretariat consolidate the MID Air Navigation Report-2024 to be presented to MIDANPIRG/22 for endorsement, based on all inputs received before 15 March 2025. Accordingly, the meeting agreed to the following Draft Decision:

DRAFT DECISION 2/1: MID AIR NAVIGATION REPORT-2024

*That, the Secretariat consolidate the MID Air Navigation Report-2024, for presentation to and endorsement by MIDANPIRG/22, based on the preliminary results at **Appendix 2A** and additional inputs received from States before **15 March 2025**.*

2.4 The meeting noted with appreciation the PPT/14 presented by Egypt related to Cairo FIR optimization. The meeting commended Egypt for all these achievements and requested Egypt to coordinate with MID Office for the inclusion of this success story in Air Navigation Report 2024. The summary of the achievements related to the improvement of the efficiency and safety of air navigation within Cairo FIR is summarized at ***Appendix 2B*.**

Air Navigation Monitoring Dashboard

2.5 The subject was addressed in WP/3, presented by Saudi Arabia.

2.6 The meeting recalled that the ICAO MID Regional Office monitors the progress related to the implementation of the ASBU elements described within the ICAO MID ANP Vol III and the MID Air Navigation Strategy (Doc 002), covering Priority 1 elements. Additionally, the meeting recalled that the MIDANPIRG sub-groups were tasked to follow up on the implementation of these items, along with other topics of interests of each technical group, such as reduced longitudinal separation, air navigation deficiencies, management of SSR codes and many other items.

2.7 The meeting also recalled that the ICAO MID invites the MID States by the end of each year to provide data, to monitor the progress made in the implementation of ASBU elements to support the development of the annual MID Air Navigation Report.

2.8 The meeting highlighted that the collection and analyzing of the data are substantial and complex, given the information provided by the ICAO MID States, considering the applicability areas and the implementation level. This generates challenges in presenting the information with potential risks of possible errors and inconsistencies during the submission, collection, and validation of data. The meeting recognized that the use of automation systems and modern tools to support this activity makes it more flexible and presents it in an easy-to-read visualization, which allows better understanding, optimizes the processing time, saves efforts, and keeps track of history.

2.9 The meeting noted the proposal from GACA/SANS to the ATM SG to develop a monitoring dashboard to support the activities of the ATM SG, which will include monitoring of topics considered by the ATM Sub Group, including but not limited to the elements of the ANP, Air Navigation Strategy and all the other matters reviewed by the ATM SG. The Dashboard could be used either offline (internal network) or published under the ICAO MID website with secure access. GACA/SANS presented a prototype of the initial version of the Dashboard, providing the status of implementation of the ASBU elements by Saudi Arabia. The Dashboard/tool provides also the information available on the GANP portal with a much better human-machine interface, display and easier access.

2.10 The meeting noted with appreciation that GACA/SANS wishes to extend the proposal related to the ATM dashboard to include the monitoring of all ASBU elements and ANS matters under one platform, to support the development of modern Air Navigation Report that meets the expectations of States and MIDANPIRG.

2.11 GACA/SANS stresses that the development of the dashboard as a monitoring and reporting tool is separate from the population of the information and data provided by the MID States, which will be the sole responsibility of the ICAO MID Office (Secretariat).

2.12 Based on all the above, the meeting appreciated the generous offer provided by GACA/SANS and supported in principle the initiative. Yet, the meeting agreed that Saudi Arabia present a Working Paper to the MIDANPIRG/22 meeting on the subject with more details about the subject and a proposal to establish an Action Group, led by Saudi Arabia, to address the subject from all perspectives and propose a clear Roadmap for implementation (scope, requirements, expectations, timelines, procedures, responsibilities, training, etc). The meeting was of the view that a step-by-step approach should be followed for the implementation of this project. Accordingly, the meeting agreed to the following Draft Decision:

DRAFT DECISION 2/2: REGIONAL AIR NAVIGATION MONITORING DASHBOARD ACTION GROUP

That,

a) the Air Navigation Monitoring Dashboard Action Group is established to develop a detailed Roadmap for the implementation of a Regional Air Navigation Monitoring Dashboard, based on the offer of GACA/SANS Saudi Arabia.

b) the Action Group is composed of:

- *Saudi Arabia (Chair/Rapporteur)*
- *Chairpersons of MIDANPIRG Sub-Groups*
- *Oman*
- *Kuwait*
- *Iraq*
- *Qatar*
- *Jordan*

- *UAE*
- *Egypt*
- *Yemen*
- *ICAO MID (as Secretariat).*

REPORT ON AGENDA ITEM 3: PROGRESS ACHIEVED BY STATES IN THE IMPLEMENTATION OF PERFORMANCE BASED APPROACH (PBA) AND DEVELOPMENT OF NATIONAL AIR NAVIGATION PLAN (NANP)

3.1 The subject was addressed in PPT/4, PPT/5, (PPT/6 & PPT/13) and PPT/7 presented respectively by Saudi Arabia, UAE, Qatar and Jordan.

3.2 The meeting received with appreciation the inputs provided by the States and noticed that each State provided a unique perspective on their respective NANP implementation progress. The meeting thanked Jordan, Qatar, Saudi Arabia and UAE for sharing their experience and emphasized that, in accordance with its Terms of Reference, the RANP/NANP TF provides a forum for discussion, coordination, cooperation and sharing of experiences and best practices amongst States and stakeholders, of subjects related to GANP implementation and development of National Air Navigation Plans (NANP).

3.3 In this regard, the meeting noted that across the presentations provided by Saudi Arabia, UAE, Jordan, and Qatar, several common challenges and priorities have been identified. The meeting noted that the challenges faced by MID States in implementing their National Air Navigation Plans (NANPs) revolve around the complexity of adopting a Performance-Based Approach (PBA), the lack of automated tools for tracking performance, and difficulties in coordination among stakeholders. The meeting highlighted that many aviation stakeholders, including regulators, ANSPs, military authorities, and airlines, struggle with fully understanding PBA concepts and shifting from traditional prescriptive approaches to a data-driven decision-making model. Additionally, there is a significant absence of automated tools to monitor Air Navigation Services (ANS) performance, making data collection inefficient and limiting the ability to measure Key Performance Indicators (KPIs) in real time. This challenge is further compounded by a lack of historical performance data, which makes it difficult to establish reliable benchmarks for tracking improvements.

3.4 In addition another major issue was highlighted, which is the limited human and financial resources available to implement new technologies, modernize CNS infrastructure, and train personnel for AI-based decision-making and air navigation performance management.

3.5 The meeting noted several key priorities to address these challenges, including enhancing stakeholder engagement and training, improving airspace resilience, and adopting advanced digitalization methods. To overcome the lack of understanding of PBA, the meeting emphasized on prioritizing structured training programs, national-level workshops, and stakeholder coordination frameworks. In addition, the meeting encouraged the integration of AI-based analytics, automated KPI tracking, and cloud-based monitoring tools which have been identified as a crucial step to improve performance monitoring and decision-making efficiency.

3.6 The meeting noted that an important pillar of the NANP is the governance and institutional framework, which includes inter-alia, the State’s vision, strategic objectives, approval and amendment process of the NANP, data-driven decision making-process, management commitment to provide necessary resources for the modernization of the air navigation system and monitoring of its performance, etc.

3.7 The meeting commended Saudi Arabia’s efforts in the area of air navigation performance monitoring and development of Saudi National Air Navigation Plan (SNAP). It was recognized that the SNAP represents one of the best practices in the Region and probably even worldwide. Considering Saudi Arabia's willingness and efforts to provide support to the States of the Region to improve the level of implementation of ICAO's requirements at the regional level (support to the NCLB initiative and MID Region NCLB Strategy), Saudi Arabia was requested to share the full PPT on SNAP, that was delivered the second day of the RANP/NANP TF, with the MID Office, in order to be posted on the ICAO MID website as part of the Documentation of the meeting, for a greater benefit for the other MID States.

3.8 The meeting urged States to foster the development of their NANPs, taking benefit of the different experiences and encouraged bi-lateral and multi-lateral cooperation, especially with those States that made good progress in the implementation of PBA and development of NANP. The meeting agreed also that for the RANP/NANP TF/3 meeting, States should provide detailed report on the progress achieved in the implementation of PBA and development of NANP highlighting the achievements, but also the challenges and the root causes for the delay in implementation, including those related to the low level of implementation of the priority 1 ASBU elements.

REPORT ON AGENDA ITEM 4: REVIEW AND UPDATE OF THE MID AIR NAVIGATION STRATEGY

4.1 The subject was addressed in WP/8 and WP/9, presented by the Secretariat.

4.2 The meeting agreed that for continuity purpose and consistent reporting, it is important that the amendment of the MID Air Navigation Strategy follow the amendment cycle of the GANP (minor changes every 3 years and major changes every 6 years). Since the 8th Edition of the GANP, which will be endorsed by the 42nd General Assembly of ICAO, will include major changes, the meeting agreed that the revised version of the MID Region Air Navigation Strategy, that will be proposed to MIDANPIRG/22 will include minor changes, considering the inputs of the different MIDANPIRG Sub-Groups. Major changes will be included in the next Edition of the Strategy (to be reviewed by RANP/NANP TF/3 and presented to MIDANPIRG/23 for endorsement), which will be aligned with the 8th Edition of the GANP and include additional priority 1 ASBU elements from Block 0, Block 1 and Block 2 (WP/9 refers).

4.3 Based on the above, the meeting reviewed and updated the MID Air Navigation Strategy (ICAO MID Doc 002) as at ***Appendix 4A***. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/3: MID AIR NAVIGATION STRATEGY (EDITION MARCH 2024 REV 1)

That, the MID Air Navigation Strategy (ICAO MID DOC 002, Edition March 2024, Revision February 2025) is endorsed and be published by the ICAO MID Office.

4.4 In WP/9, the meeting noted that as per the ASBU timeline detailed on the ICAO GANP portal, the implementation of Block 2 ASBU elements has become possible starting beginning of 2025.

4.5 The meeting reviewed the status of implementation by States of all ASBU elements from Block 0, 1 and 2 and noted the following:

a) 28 ASBU Block 0 elements out of 52 are priority 1; the regional averages of implementation of 20 of them (representing 72%) is below regional targets;
b) the average level of implementation of priority 1 ASBU block 0 elements is 68.94%;
c) 6 ASBU Block 1 elements out of 58 are priority 1; the regional average of implementation of all them is below regional targets; and
d) the average level of implementation of priority 1 ASBU block 1 elements is 63.60%.

4.6 The meeting underlined the need for the MIDANPIRG Sub Groups to allocate enough time in their agenda for the detailed discussion of the ASBU Threads/Elements relevant to their technical areas, including the identification of new priority 1 elements from Block 0, 1 and 2), definition of applicability areas, performance indicators, metrics.

4.7 The meeting further underlined that the ASBU elements identified as priority 1 at the regional level are included in the MID Air Navigation Strategy for monitoring and reporting purpose. However, States may identify additional ASBU elements (from B0, 1 and 2) as priority for implementation at National level, considering operational needs and based on the implementation of the Performance Based Approach (PBA).

4.8 The meeting noted that some States, including Qatar, Saudi Arabia an UAE have already implemented some ASBU elements, which have not been identified as priority 1 at the regional level. ***Appendix 4B***, provides information about the implementation by States of the different ASBU elements from Block 0, 1 and 2.

4.9 Based on the above, the meeting agreed that the MID Air Navigation Report-2025 should include information about the implementation of the different ASBU elements from Block 0, 1 and 2. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/4: MID REGION AIR NAVIGATION REPORT (2025)

That,

*a) States be invited to provide the ICAO MID Office with the following data for the development of the MID Region Air Navigation Report-2025 by **31 December 2025**:*

i. the status of implementation of priority 1 ASBU elements;

ii. major achievements and success stories

iii. information about any additional ASBU elements from Block 0, 1 and 2 that have been identified as a priority for implementation at National level; and

iv. progress achieved for the implementation of the Performance Based Approach and development of National Air Navigation Plan (NANP).

b) the MID Air Navigation Report (2025) be presented to the MIDANPIRG/23 for endorsement.

REPORT ON AGENDA ITEM 5: REVIEW AND UPDATE OF THE MID ANP VOL III

5.1 The subject was addressed in WP/10, presented by the Secretariat.

5.2 The meeting noted the progress achieved by States in the implementation of the Performance Based Approach (PBA) and development of their National Air Navigation Plans (NANP) as at ***Appendix 5A***.

5.3 Based on the inputs received from States and the MIDANPIRG Sub-Groups, the meeting reviewed and updated the MID Air Navigation Plan Volume III as at ***Appendix 5B***. The following changes have been incorporated in the revised version of Volume III:

- TABLE ASBU-MID-DAIM 3-1: *Automated Data-Centric Environment*;
- TABLE ASBU-MID- DAIM-3-2: Aeronautical Data Quality;
- TABLE ASBU-MID - DAIM-3-3: Provision of Digital Datasets
- KPI 04 is added to the list of MID Region KPIs in MID ANP Volume III Table 3
- the list of Performance Objectives and associated Operational Improvements (projects) proposed by States for inclusion in the MID ANP Volume III was updated
- a Column titled "Remarks/Progress" was added to the MID Region Air Navigation Systems Performance Based Framework/Template (Table) in order to allow the tracking/monitoring of the progress achieved

5.4 Based on the above, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/5: MID AIR NAVIGATION PLAN VOLUME III (EDITION 2025)

That, the MID Air Navigation Plan Volume III (Edition 2025) is endorsed and be published by the ICAO MID Office.

REPORT ON AGENDA ITEM 6: FUTURE WORK PROGRAMME

6.1 The subject was addressed in WP/11 and WP/12, presented by the Secretariat.

6.2 The meeting reviewed the RANP/NANP TF ToRs endorsed by MIDANPIRG/21 at ***Appendix 6A*** and agreed that they are still valid and do not need any amendment.

6.3 The meeting also reviewed and updated the list of the RANP/NANP TF Focal Points and Alternates as at ***Appendix 6B***.

6.4 The meeting agreed that the RANP/NANP TF/3 meeting be held in Q1-2026. The exact dates will be determined, after coordination between the ICAO MID Regional Office and the Chairpersons of the Task Force. The venue will be the ICAO MID Office at Cairo.

REPORT ON AGENDA ITEM 7: ANY OTHER BUSINESS

7.1 Nothing has been discussed under this Agenda Item.

APPENDICES

APPENDIX 2B

STATES ACHIEVEMENTS AND SUCCESS STORIES

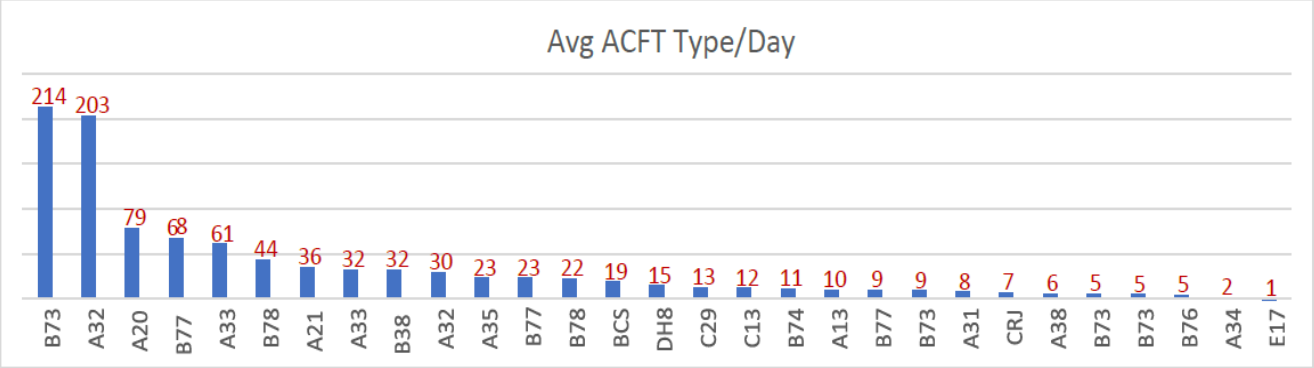
According to ICAO MID State Letter AN 1/7 – 24/185, dated 15 December 2024, the MID States reported the following major achievements and success stories.

Egypt

3.1 Cairo FIR optimization

3.1.1 The key findings from the Egypt Airspace Analysis regarding the type of aircraft operating in Cairo FIR:

- *Dominant Aircraft Types:* The Boeing 737-800 (B738) and Airbus A320 (A320) are the most prevalent aircraft in the Cairo FIR, followed by the Airbus A320neo (A20N).
- *Significant Wide-Body Traffic:* Boeing 777-300ER (B77W) and Airbus A330-300 (A333) aircraft exhibit substantial presence, with average daily frequencies of 68 and 61 respectively.
- *Boeing 787-9 Presence:* The Boeing 787-9 (B789) also contributes significantly, averaging 44 flights per day.
- *Other Notable Aircraft:* Airbus A321neo (A21N), Airbus A330-200 (A332), and Boeing 737 MAX (B38M) aircraft maintain a noticeable presence, albeit with lower daily frequencies.



3.1.2 As the majority of air traffic within the Cairo FIR consists of narrow-body aircraft, the optimization analysis will be conducted with a specific focus on the operational characteristics of the Boeing 737 and Airbus A320 series, which represent the most common aircraft types in this category.

a) A direct route between (BLT-DATOK) for inbound traffic from Nicosia FIR via entry point RASDA to Amman FIR via exit point ULINA.

Benefits and Expected Outcomes	
Distance Reduction	45.3 nm
Time Savings	Approx. 6 MINs
Fuel Efficiency	209.5 kg
Emissions Reduction per flight	662.1 kg
Emissions Reduction for the new ATS route per day	2648.24kg
Cost Savings per Flight	113 $
Cost Savings for the new ATS route per day	453 $

b) A direct route between (BLT-SISIK) for inbound traffic from Athens and Nicosia landing HESH to avoid the congested portion of (BLT-CVO-MENLI).

Benefits and Expected Outcomes	
Distance Reduction	21.3 NM
Time Savings	Approx. 3 MINs
Fuel Efficiency	98.8 kg
Emissions Reduction	311.3 kg
Emissions Reduction for the new ATS route per day	4358.2 kg
Cost Savings per Flight	53 $
Cost Savings for the new ATS route per day	745 $

c) A direct route between KUNKI and TANSA would generally result in:

Benefits and Expected Outcomes	
Distance Reduction	14.7 NM
Time Savings	Approx. 2 MINs
Fuel Efficiency	68 kg
Emissions Reduction	214.8 kg
Emissions Reduction for the new ATS route per day	1718.7 kg
Cost Savings per Flight (USD)	37 $
Cost Savings for the new ATS route per day	294 $

d) A direct route between (PAXIS-OBRAN) would generally result in:

Benefits and Expected Outcomes	
Distance Reduction	7.9 NM
Time Savings	Approx. 1 MINs
Fuel Efficiency per flight	36.5 kg
Emissions Reduction per flight	111.5 kg
Emissions Reduction for the new ATS route per day	3925.5 kg
Cost Savings per Flight (USD)	20 $
Cost Savings for the new ATS route per day	671 $

e) A direct route between (DASUM-FYM) would generally result in:

Benefits and Expected Outcomes	
Distance Reduction	19.5 NM
Time Savings	Approx. 3 MINs
Fuel Efficiency	90.2 kg
Emissions Reduction per flight	285 kg
Emissions Reduction for the new ATS route per day	13394.6kg
Cost Savings per Flight (USD)	49 $
Cost Savings for the new ATS route per day	2289 $

f) A direct route between (BRN-NUBAR) would generally result in:

Benefits and Expected Outcomes	
Distance Reduction	5.2 NM
Time Savings	Approx.1 MINs
Fuel Efficiency	24.1 kg
Emissions Reduction per flight	76 kg
Emissions Reduction for the new ATS route per day	1443.9 kg
Cost Savings per Flight (USD)	13 $
Cost Savings for the new ATS route per day	247 $

g) A direct route between (SML-MMA) would generally result in:

Benefits and Expected Outcomes	
Distance Reduction	10.6 NM
Time Savings	Approx. 1 MINs
Fuel Efficiency	49 kg
Emissions Reduction per flight	154.9 kg
Emissions Reduction for the new ATS route per day	774.6 kg
Cost Savings per Flight (USD)	26 $
Cost Savings for the new ATS route per day	132 $

h) A direct route between (SISID-KUNAK) would generally result in:

Benefits and Expected Outcomes	
Distance Reduction	7.3 NM
Time Savings	Approx. 1 MINs
Fuel Efficiency	33.8 kg
Emissions Reduction per flight	106.7 kg
Emissions Reduction for the new ATS route per day	746.8 kg
Cost Savings per Flight (USD)	18 $
Cost Savings for the new ATS route per day	128 $

i) A direct route between (LUGAV-AST) would generally result in:

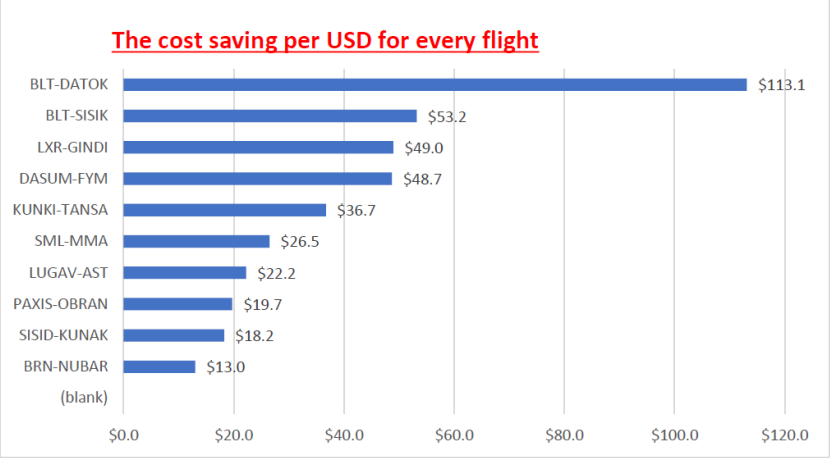
Benefits and Expected Outcomes	
Distance Reduction	8.9 nm
Time Savings	Approx. 1 MINs
Fuel Efficiency	41.2 kg
Emissions Reduction	130.1 kg
Emissions Reduction for the new ATS route per day	1170.6 kg
Cost Savings per Flight (USD)	22 $
Cost Savings for the new ATS route per day	200 $

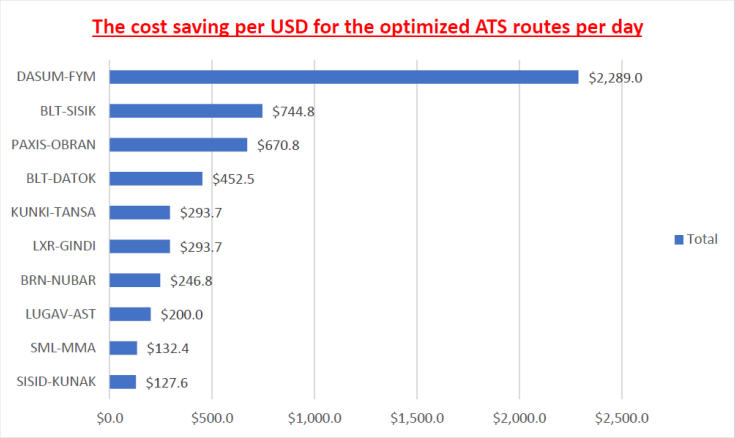
j) direct route between (LXR-GINDI) would generally result in:

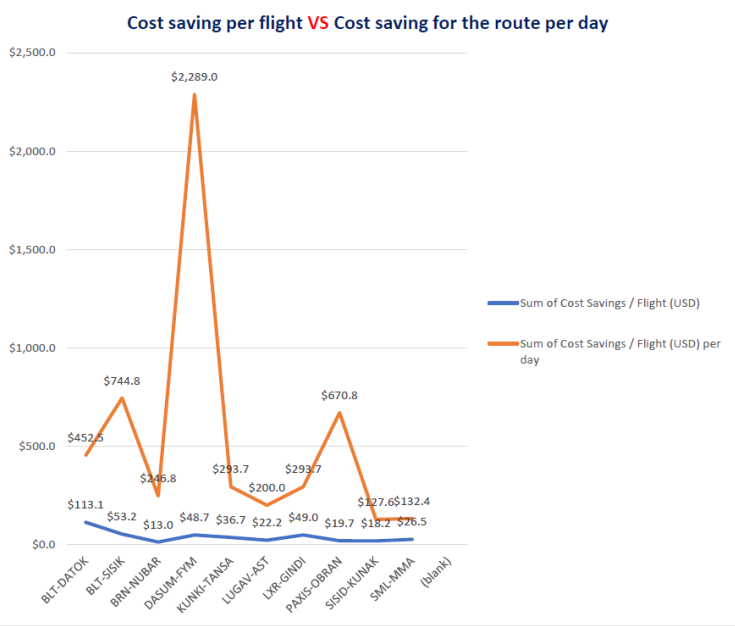
Benefits and Expected Outcomes	
Distance Reduction	19.6 nm
Time Savings	Approx. 3 MINs
Fuel Efficiency	90.6 kg
Emissions Reduction	338.1 kg
Emissions Reduction for the new ATS route per day	1718.7 kg
Cost Savings per Flight (USD)	49 $
Cost Savings for the new ATS route per day	294 $

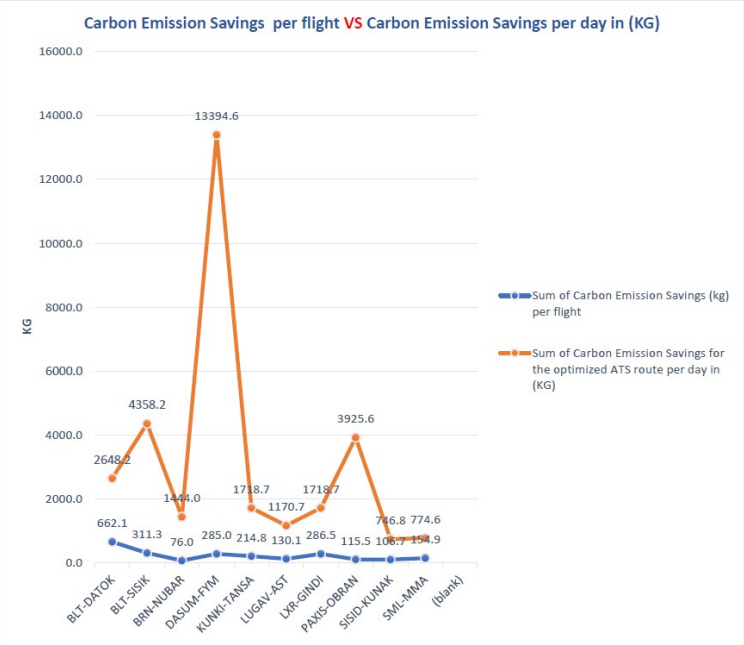
3.1.3 The dualization of A16 into two distinct routes, one for southbound and another for northbound traffic via waypoint AZMEY, offers several key advantages:

- Increased Airspace Capacity: By segregating traffic flow, dualization effectively doubles the capacity of the A16 corridor. This allows for a greater number of aircraft to transit the airspace safely and efficiently.
- Enhanced Safety: Separating conflicting flight paths significantly reduces the risk of mid-air collisions and other safety incidents. This is particularly beneficial for traffic converging from or diverging towards the Nicosia FIR.
- Reduced Controller Workload: The separation of traffic flow simplifies air traffic management, reducing the complexity of airspace coordination and minimizing the cognitive burden on air traffic controllers.
- Overall, the dualization of A16 represents a significant improvement in airspace management, enhancing safety, efficiency, and capacity within sector 2.




The cost saving per USD for the optimized ATS routes per day
DASUM-FYM
BLT-SISIK
PAXIS-OBRAN
BLT-DATOK
KUNKI-TANSA
LXR-GINDI
BRN-NUBAR
LUGAV-AST
SML-MMA
SISID-KUNAK
$2,289.0
$744.8
$670.8
$452.5
$293.7
$293.7
$246.8
$200.0
$132.4
$127.6
$0.0
$500.0
$1,000.0
$1,500.0
$2,000.0
$2,500.0
Total


Cost saving per flight VS Cost saving for the route per day
$2,500.0
$2,000.0
$1,500.0
$1,000.0
$500.0
$0.0
$2,289.0
$744.8
$670.8
$452.5
$246.8
$293.7
$293.7
$200.0
$127.6
$132.4
$113.1
$53.2
$13.0
$48.7
$36.7
$22.2
$49.0
$19.7
$18.2
$26.5
BLT-DATOK
BLT-SISIK
BRN-NUBAR
DASUM-FYM
KUNKI-TANSA
LUGAV-AST
LXR-GINDI
PAXIS-OBRAN
SISID-KUNAK
SML-MMA
(blank)
Sum of Cost Savings / Flight (USD)
Sum of Cost Savings / Flight (USD) per day



Iraq

3.2 FUA implementation Plan though Baghdad FIR (ORBB)

3.2.1 The FUA implementation plan was prepared by the ATS Dept. in the GCANS and case studies were made to explain the importance and necessity of the provision of more free airspace for civilian air traffic operations through the FIR throughout the shifting and reduction in the lateral and vertical limits of the segregated airspaces, those studies were demonstrated and given high priority especially in the areas nearing ATS routes.

3.2.2 A remarkable increase in the traffic density was noticed and continuous meetings are held to enhance the cooperation between civilian and military entities in charge of running the airspace.

3.2.3 Agreements on scheduling the airspace use for military training operations and understanding the importance of prioritizing civilian air traffic operations have led to the reduction in the risk and workload related to the co-use of airspace.

3.2.4 A daily schedule of military training is provided to the ATC operations unit and ATFM to update the ATFM Daily Plan (ADP) and to plan the flow of civilian air traffic in a safe an efficient manner.

Qatar

3.3 Approach and ACC unit

- CCO (New SIDs) TULUB 1A/LUBET 1A/ULIKA 1A New CCO SID Implementation 28 November 2024.
- Civil- Military Coordination Improvement.
- Flexible Use of Airspace (FUA) Improvements
- Qatar AIP Charts SID Initial Level Updates.
- Automation Systems Upgrades- Common Database (CDB), Flight Data Processing (FDP), Control and Monitoring System (CMS), Human Machine Interface (HMI) Improvements.
- Implementation of ATC Support Distance Base Separation Tool.
- Enhancement of Area Proximity Warning (APW) for FUA and Special Missions.
- RECAT6 Implementation.
- Enhancement of Contingency Plan to include New Qatar Air Traffic Control Center (QATCC) operations.
- Quick Reference Guidelines (Automation System and Voice Communication System) Updates for ATCOs.
- Redesignation of Missed Approach Procedures for OTHH.
- Redesignation of OTHH RNP Approaches (LNAV, LNAV/VNAV) to overlay the ILS LOC.
- Free Route Airspace (FRA) implementation.
- Digital platform implementation for Emergency/Abnormal Situations Checklists.
- Digital platform implementation for ATCOs to acknowledge operational instructions.
- QATCC – New Building. Transfer of the ACC Unit to a new building with state-of-the-art facilities.
- The seamless transition to a new building is testament to the Qatar Civil Aviation Authority (QCAA) extensive planning and commitment.
- To ensure minimal disruption, QCAA allocated comprehensive resources, including expert teams dedicated to managing logistics, equipment and communications.
- Importantly, extensive measures were implemented to mitigate any potential impact on neighboring units while ensuring the safety of the operations.
- Decrease in the number of ACC-APP related safety issues. The annual number of airspace incidents has significantly decreased, highlighting the improvements in both the performance of the Air Traffic Controllers and the overall aviation system.
- A new direct route between TOVOX and ULIKA has been implemented.
- A new route between ELIDU-SOLOB has been implemented in order to reduce the intensity of hot spots.
- Qatar implemented a shorter route for traffic departing Bahrain transiting into Kingdom of Saudi Arabia airspace to accommodate airline’s requirements.
- Publication of a new APP and ACC LATCIs.
- Fast and real-time simulation of a new airspace design, to better respond to the demand of the traffic.

- Hiring and training of new or existing staff in order to be ready for the assumption of the responsibility to provide Air Traffic Services in the Northern portion of the airspace after ICAO Council decision for Doha FIR Phase 2 implementation.

3.4 Hamad Tower unit

- Electronic Flight Progress Strip (EFPS) System Update, OTBD Integration and new procedures such as SID Confidence Check.
- RRSM 24H implementation.
- RECAT 6 implementation.
- DMAN updates and advancements.
- Unit Competency Scheme (UCS) introduction.
- Introduction of Electronic Logs for instructions and digital platform for manuals etc.
- Introduction of digital seating plan database.
- New helicopter routes and procedures.
- FOD barrier installation.
- Introduction of observational flights for ATCOs.
- Additional modes of operation implemented for runway balancing.
- New equipment installation in VCR including additional PC console, vaisala and meteorological enhancements.
- New LATCI publication.
- Implementation of new LVP procedures.

3.5 Doha Tower unit

- EFPS implementation.
- RECAT 6 implementation.
- NEW VFR routes and procedures. For Fixed Wings and Rotary Wings
- New Reporting Points
- Introduction of Competency based Training and Assessment including updated Unit Training Plan (UTP). New Training Objectives
- Introduction Of Operational and Work Instructions Manuals. Radio Telephony (RT) Manual

3.6 CNS unit

- Bi-yearly routine flight checks of all navigational aids (ILS, DVOR and DME) operational at OTHH and OTBD.
- GBAS: Ionospheric data collection, analysis and feasibility study report completed.
- On-the-job training for OTHH DVOR and HP DME.
- On-the-job training for QFIR Radios for Engineering personnel.
- ATSEP basic training for new Engineering personnel.
- Familiarization Training on GNSS and argumentation system (GBAS/SBAS/ABAS).
- Decommissioning of all OTHH MMs (34L, 34R, 16L and 16R).
- Special flight check was conducted for ILS Critical and Sensitive area of RWYs 34L and 16R.

- Installed/commissioned OTHH DVOR & collocated High Power DME (as a replacement due obsolescence of old DVOR & HP DME).
- Integrated Controller Working Position (ICWP) Improvements - L5, Full Implementation will be completed by December 2025.
- L band Radar installed and commissioned for QFIR.
- Additional Radios (RX and TX) were installed for QFIR.
- EFPS delivered to support operations at OTBD and OTHH.

3.7 Communication Operations

- Upgradation of IFPS "Integrated Initial Flight Plan Processing System", to share the 3rd Party ORMs (Operational Reply messages) with Flight Plan originator. Improvement of System functionality.
- Provision of pilot portal for airlines operator to file flight plan.
- Online platform (Web based) for Qatar Landing and Overfly permission. Implementation status: Testing phase.

3.8 AIM Unit

- Design and develop New SID CCO at OTHH.
- Design and develop New RNP instrument approach procedure.
- Revision of OTHH ILS Circling Minima.
- Revision of OTHH RWY 16L Intermediate MOCA.
- Modification of OTHH ILS missed approach procedure.
- Design and develop five (5) new STARs at OTHH
- Revision of fifteen (15) STARs at OTHH due to the new STAR procedures.

3.9 ATFM Unit

- Contacts on improvements and flight planning with Major Airline Operator.
- Doha AIM involvement in ATFM for the access of PFIB & updates of publications were established.
- Doha Communications involvement in ATFM was established.
- Training for all ACC controllers in ATFM Tool installed in ACC.
- Metron Aviation software provider & Doha ATFM follow up meetings and improvements, adaptations, and new software releases.
- Developed ATFM Daily Plan (ADP) and CDM contacts specifically with Kingdom of Saudi Arabia and UAE.
- ATFM Audit certification conducted by QCAA ANSI.
- Providing OTHH TWR with predicted Runway fix balancing information for three peak departure periods.
- Runway SID Balancing since 27th October 2024 Winter Schedule.

3.10 QMET

- Full implementation of Meteorological Watch Office (MWO) in OTHH.
- Installation & full operation of LIDAR for wind shear detection in OTHH.
- Successful conduction of QCAA Air Safety Department's audit on Meteorological Services.
- Development & Full Operation of Operational Webpage for Aeronautical Meteorological Services.

Saudi Arabia

3.11 Development of plan to enhance the Airport and TMA operations - Airport CDM (A-CDM)

3.11.1 Concept of Operation (CONOPS)

3.11.1.1 Airport Collaborative Decision Making (A-CDM) is a set of processes aimed at improving air traffic management through a greater exchange of information between all stakeholders (airport operators, ground handling agents, airlines, air traffic controllers, etc.).

3.11.1.2 The implementation of A-CDM represents a significant enhancement in airport operations. A-CDM aims to improve the efficiency, predictability, and resilience of airport operations by optimizing resource utilization and parking area utilization, departure sequencing, and minimizing ground delays and fuel consumption. Furthermore, it is also beneficial for the environment and reduces the workload of air traffic controllers.

3.11.1.3 With the rise of digital technologies and the Internet of Things (IoT), the future of A-CDM will involve more intricate data integration. Machine learning and AI will be used to predict operational disruptions and offer mitigation strategies. Moreover, as airports grow and the airspace becomes more congested, the principles of ACDM will be increasingly adopted regionally, ensuring a harmonized approach not just at individual airports, but across entire regions or airspaces.

3.11.2 The A-CDM implementation Strategy in KSA will follow a stepwise approach:

- *Pilot Implementation:* Pilot projects for A-CDM are already foreseen under SFAC Programme in Riyadh and Jeddah international airports, under Seamless Operations Programme and at Yenbo airport (OEYN).
- *Integration of Systems and Stakeholders:* Develop an integrated platform that collates and distributes planning, flight progress information, and event predictions among all airport stakeholders.
- *Training and Awareness:* Conduct extensive training and awareness programs for all involved parties to understand the benefits and functionalities of A-CDM.
- *Continuous Monitoring and Feedback:* Implement mechanisms for continuous monitoring and feedback to ensure the system's adaptability

3.11.3 Operational Improvement Steps (OIS) Solution

- Improved Operations in Adverse Conditions through Airport Collaborative Decision Making.
- Improved Turn-Round Process through Collaborative Decision Making.
- Collaborative Pre-departure Sequencing.
- Basic Departure Management (Pre-departure Management).
- Collaborative Airport Planning Interface (AOP fully integrated with NOP & local business rules).
- A-CDM Process Enhanced through Integration of Landside (passenger and baggage) Process Outputs.
- Consolidation and facilitation of Target Times between local ATFM, Airport CDM and Extended Arrival Management.
- Improved De-icing Operation through Collaborative Decision Making (if and where applicable)

3.11.4 Operational Performance Measures

Access and Equity	Not impacted	Global Interoperability	Not impacted
Capacity	KPI 09 - Airport Peak Capacity KPI 10 - Airport Peak Throughput KPI 11 - Airport Throughput Efficiency	Participation by the ATM Community	Not impacted
Cost-Effectiveness	KPI 01 - Departure punctuality KPI 02 - Taxi-out additional time KPI 13 - Taxi-in additional time KPI 15 - Flight time variability	Predictability	Not impacted
Efficiency	KPI 01 - Departure punctuality KPI 02 - Taxi-out additional time KPI 13 - Taxi in additional time KPI 15 - Flight time variability	Safety	KPI 20 – Number of aircraft accidents KPI 21 – Number of runway incursion KPI 22 – Number of runway excursions
Environment	KPI 02 - Taxi-out additional time KPI 13 - Taxi-in additional time KPI 15 - Flight time variability KPI 16 – Additional fuel burn	Security	Not impacted
Flexibility	KPI 15 - Flight time variability		

Direct Impact Indirect Impact No Impact

3.11.5 ASBU mapping with main architectural elements

ASBU THREAD	Element ID	ASBU Elements
ACDM	B0/1	Airport CDM Information Sharing (ACIS)
	B0/2	Integration with ATM Network function
	B1/1	Airport Operations Plan (AOP)
	B1/2	Airport Operations Centre (APOC)
	B2/3	Total Airport Management (TAM)
	B3/1	Full integration of ACDM and TAM in TBO
NOPS	B0/4	Initial Airport/ATFM slots and A-CDM Network Interface

3.12 Development of plan to Enhance the Airport and TMA operations - Advanced Surface Movement Guidance and Control System (A-SMGCS)

3.12.1 Concept of Operation (CONOPS)

3.12.1.1 Advanced Surface Movement Guidance and Control Systems (A-SMGCS) is a combination of visual and non-visual aids, procedures and tools for aerodrome's surface movement monitoring and control. It enhances situational awareness and airport capacity, ensuring a high level of safety and making ground operations more efficient in all weather conditions. The basic A-SMGCS consists of a surveillance service that provides the position, identification and tracking of mobiles.

3.12.1.2 The A-SMGCS system can include additional features, such as:

- Airport Safety Support Service: Runway Monitoring and Conflict Alerting (RMCA), Conflicting Air Traffic Control Clearances (CATC) alerts, Conformance Monitoring Alerts for Controllers (CMAC);
- Routing service generation and management of surface trajectories for aircraft and vehicles;
- Guidance service, automated switching of taxiway centreline lights (TCL), automated switching of stop bars and automated activation of advanced-visual docking guidance systems (A-VDGS).

3.12.1.3 To the benefit of controllers, the A-SMGCS provides:

- a representation of the actual aerodrome traffic on a display, independent of line-of-sight connection between the controller and the mobile;
- the position and identity of all cooperative mobiles, within the coverage volume independently of visibility conditions and the controller's line of sight;
- support to prevent collisions between all aircraft and vehicles, especially in conditions when visual contact cannot be maintained;
- detection and indication of the position of potential intruders;
- improved all-round management of traffic.

3.12.2 Operational Improvement Steps (OIS) Solution

- Airport Safety Nets for Controllers at A-SMGCS Airports.
- Ground Controller Situational Awareness in all Weather Conditions.
- Enhanced Ground Controller Situational Awareness in all Weather Conditions with ADS-B.
- Automated Alerting of Controller in Case of Runway Incursion or Intrusion into Restricted Areas.
- Automated Assistance to Controller for Surface Movement Planning and Routing
- Airport Safety Net for Vehicle Drivers.
- Airport Vehicle Driver's Traffic Situational Awareness.
- Enhanced Guidance Assistance to mobiles based on the automated switching of Taxiway lights and Stop bars

- according to the 'Airfield Ground Lighting'.
- Enhanced Runway Usage Awareness
- Improved Airport Safety with Better Prevention of Runway Excursions for Tower Controllers.
- Airport Safety Nets for Controllers at Secondary Airports.
- Enhanced safety in LVP through use of virtual block control.
- Extended Airport Safety Nets for Controllers at A-SMGCS Airports.
- Conflict Resolution for Tower Controllers.
- Airport Safety Enhanced by Prediction and by Detection of Adverse Traffic Patterns based on Ground Surveillance.
- Equivalent Visual Landing operations in Low Visibility Conditions with Head Mounted Display.
- Equivalent Visual Taxi operations in Low Visibility Conditions.
- Conformance Monitoring Safety Nets for Pilots.
- Traffic Alerts for Pilots during Runway and Taxiway Operations.
- Enhanced Runway Condition Awareness.
- Improved Safety with Better Prevention of Runway Excursions for Pilots.
- Datalink Services used for Provision of Ground-related Clearances and Information for trajectory-based operations.
- Guidance Assistance to Aircraft on the Airport Surface Combined with Routing for trajectory-based operations.

3.12.3 Operational Performance Measures

Access and Equity	Not impacted	Global Interoperability	Not impacted
Capacity	KPI 09 - Airport Peak Capacity KPI 10 - Airport Peak Throughput KPI 11 - Airport Throughput Efficiency	Participation by the ATM Community	Not impacted
Cost-Effectiveness	Indirect impact	Predictability	Not impacted
Efficiency	KPI 01 - Departure punctuality KPI 14 – Arrival punctuality KPI 02 - Taxi-out additional time KPI 15 - Flight time variability KPI 13 - Taxi in additional time	Safety	KPI 20 – Number of aircraft accidents KPI 21 – Number of runway incursion KPI 22 – Number of runway excursions
Environment	KPI 02 - Taxi-out additional time KPI 13 - Taxi in additional time KPI 16 – Additional fuel burn	Security	Not impacted
Flexibility	Indirect impact		

Direct Impact | Indirect Impact | No Impact

3.12.4 ASBU mapping with main architectural elements

ASBU THREAD	Element ID	ASBU Elements
ASUR	B0/1	Automatic Dependent Surveillance – Broadcast (ADS-B)
	B0/2	Multilateration cooperative surveillance systems (MLAT)
	B0/3	Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)

ASBU THREAD	Element ID	ASBU Elements
SURF	B0/1	Basic ATCO tools to manage traffic during ground operations
	B0/2	Comprehensive situational awareness of surface operations
	B0/3	Initial ATCO alerting service for surface operations
	B1/1	Advanced features using visual aids to support traffic management during ground operations
	B1/2	Comprehensive pilot situational awareness on the airport surface
	B1/3	Enhanced ATCO alerting service for surface operations
	B1/4	Routing service to support ATCO surface operations management
	B1/5	Enhanced vision systems for taxi operations
	B2/1	Enhanced surface guidance for pilots and vehicle drivers
	B2/2	Comprehensive vehicle driver situational awareness on the airport surface
	B2/3	Conflict alerting for pilots for runway operations
	B3/1	Optimization of surface traffic management in complex situations

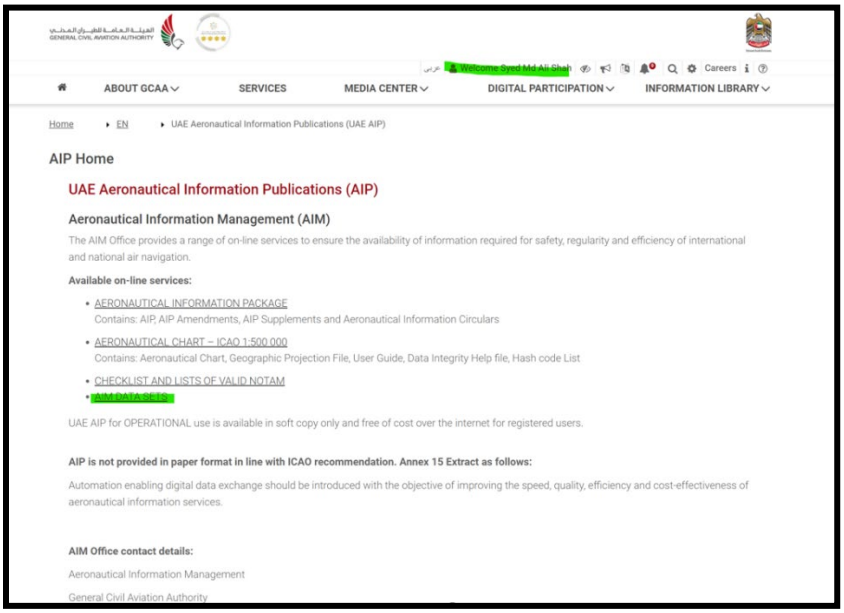
UAE

3.13 AIM - Automation of eTOD Data Area 1 and AIP Datasets Provision

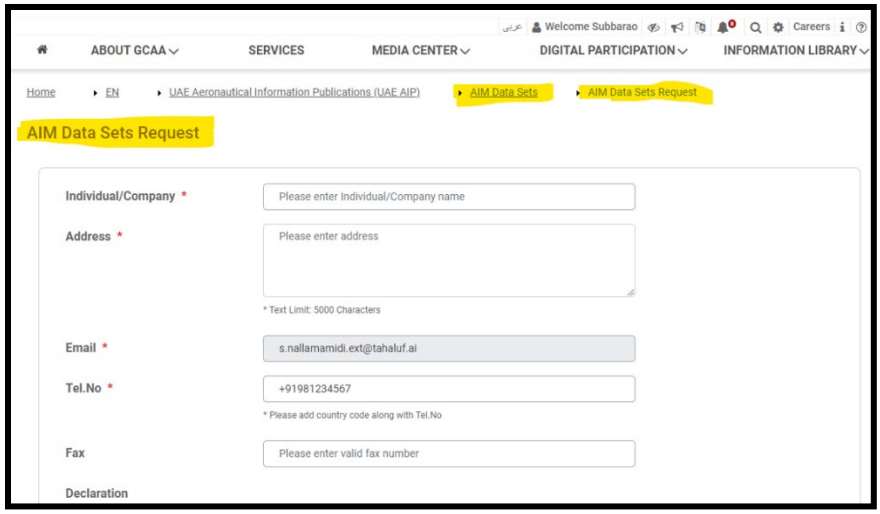
3.13.1 UAE GCAA AIM is delivering UAE ETOD Area 1 Datasets in industry standard exchange format i.e. AIXM 5.1. The Dataset is delivered in line with UAE Local Regulations and ICAO SARP's Annex 15, Doc. 10066 and Doc. 9881.

3.13.2 To acquire the data the customers had to fill and sign a Self-Declaration form in PDF format. In line with UAE GCAA Strategic Objectives for continuous improvement to Air Navigation Services, the form is replaced with an online HTML check box making it a one-click self-service.

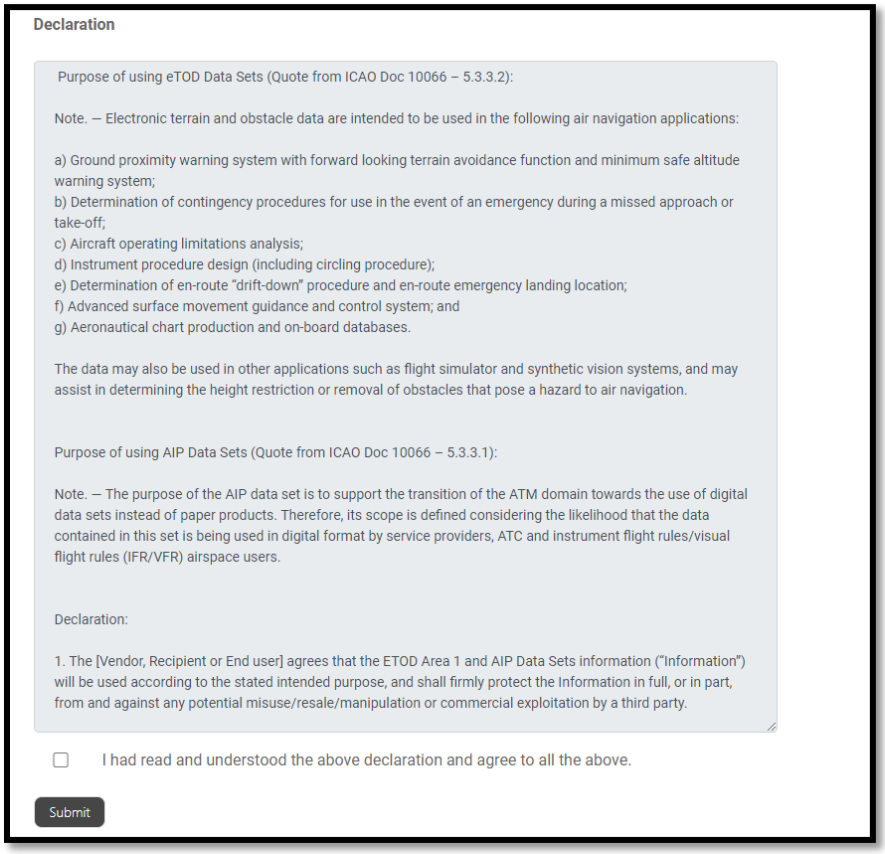
3.13.3 The online service has been expanded to include AIP Datasets as well. Screenshots of the enhancements are shown below:



AIM DATA SETS (included ETOD Area1 and AIP Datasets)



Details that can be filled online for requesting the service

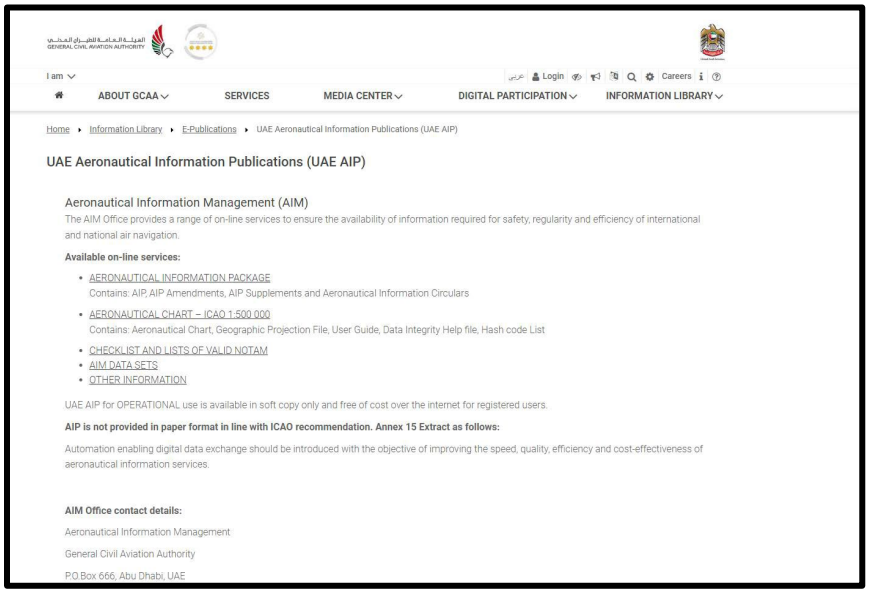


Replace with a one click HTML Web form

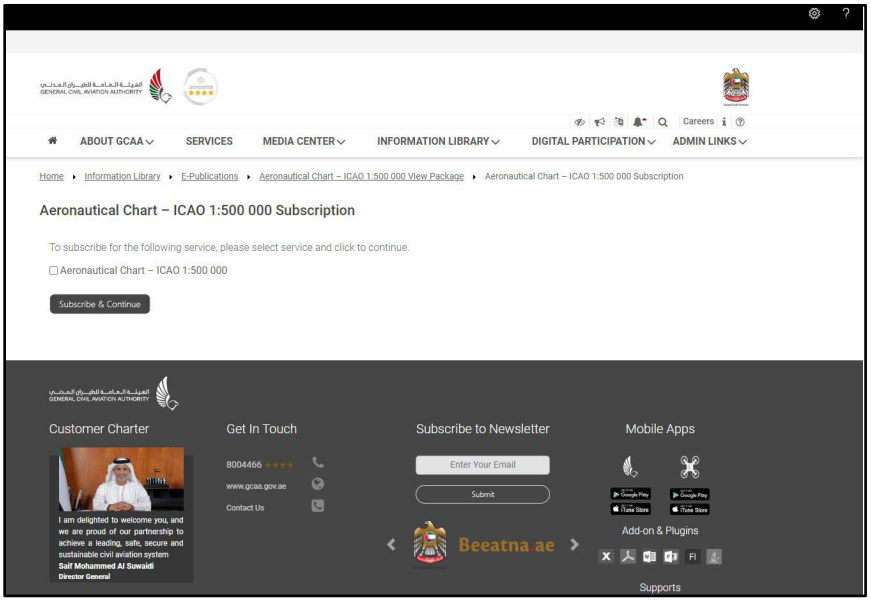
3.14 AIM - Provision of Aeronautical Chart ICAO – 1:500 000 Online

3.14.1 UAE GCAA AIM is delivering Aeronautical Chart ICAO – 1:500 000 in line with UAE Local Regulations and ICAO SARP's Annex 15, Doc. 8697. Aeronautical Chart was previously provided to customers in hard and soft copy only after filling a PDF request form.

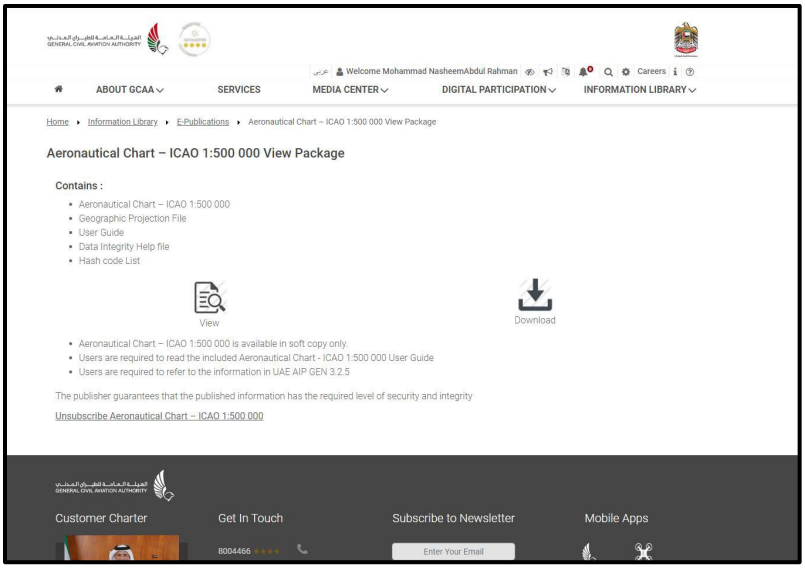
3.14.2 In line with UAE GCAA Strategic Objectives for continuous improvement to Air Navigation Services, UAE GCAA AIM has eliminated this manual process by delivering the chart in Electronic Format online free of cost to customers as a self-service.



Aeronautical Chart ICAO – 1:500 000 Online interface



Aeronautical Chart ICAO – 1:500 000 online subscription

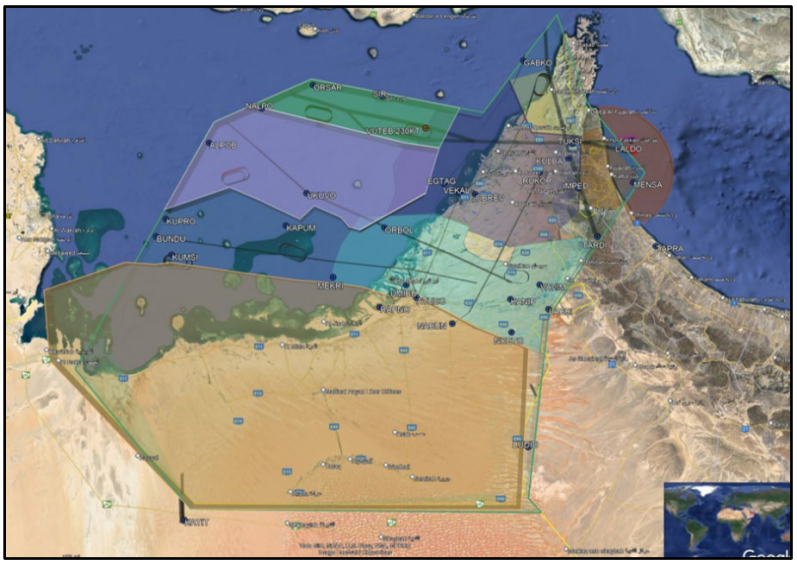


Aeronautical Chart ICAO – 1:500 000 Online view or download

3.15 ATM - UAE Airspace 3D Visualization Using Google Earth Pro

3.15.1 The UAE Airspace 3D Visualization is a diversified solution developed by the ATM team in the GCAA to improve airspace visualization with 3D capability. This tool offers a comprehensive, interactive representation of the Emirates FIR, empowering users to explore and analyze complex airspace data with precision and clarity.

3.15.2 By visualizing key elements of the Emirates FIR, the tool provides critical support for decision-making, operational planning, and stakeholder collaboration. The tool integrates detailed spatial data to present an intuitive and accessible 3D environment, addressing the needs of airspace planning, analyzing, and research.



Benefits:

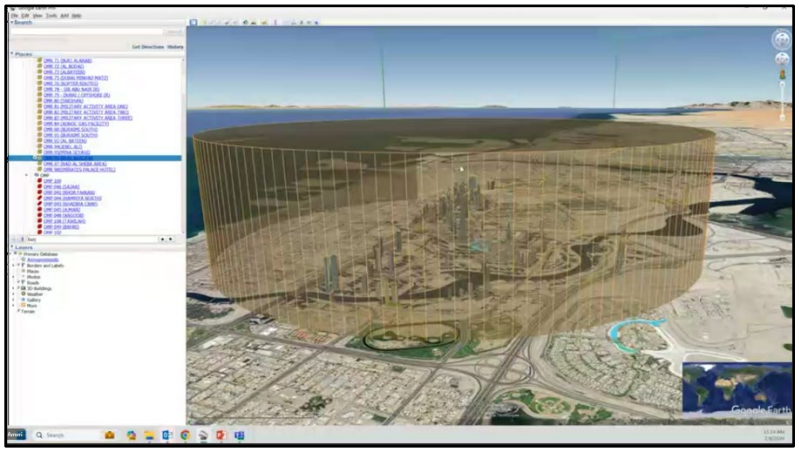
- Comprehensive 3D visualization of the UAE airspace.
- User-friendly interface for seamless interaction and analysis.

Coverage Details:

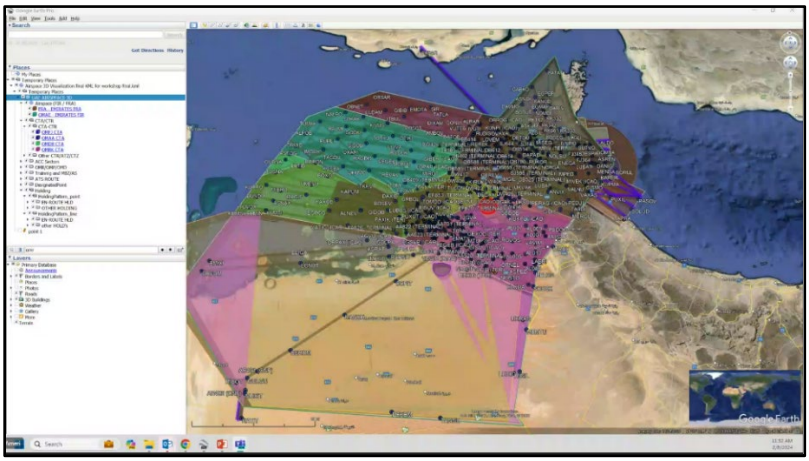
- Includes restricted, prohibited, dangerous, and training areas.
- Visualizes controlled traffic areas (CTAs) and military zones.
- Displays ICAO-designated names alongside local titles.

Additional Data:

- Provides heights and coordinates for key locations.
- Enables users to locate ICAO-designated points with ease.
- Facilitates navigation to terminal areas and airways.

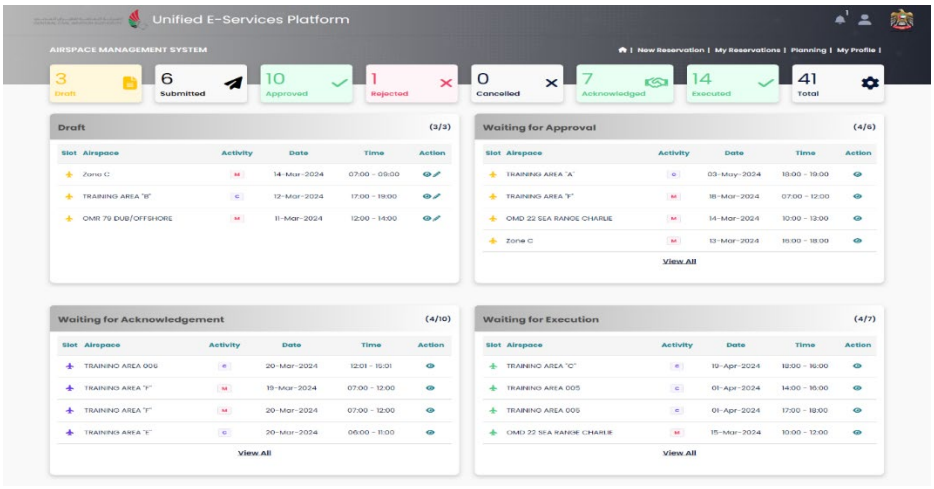


3.15.3 The UAE Airspace 3D Visualization has been instrumental in supporting strategic airspace planning, acts as one-stop shop for airspace volumes, and provides graphical data to be used in diversified practices. By simplifying complex airspace structures and providing detailed insights, the project has set an improved method in airspace management, aligning with the UAE's vision for innovative approaches in the work environment.

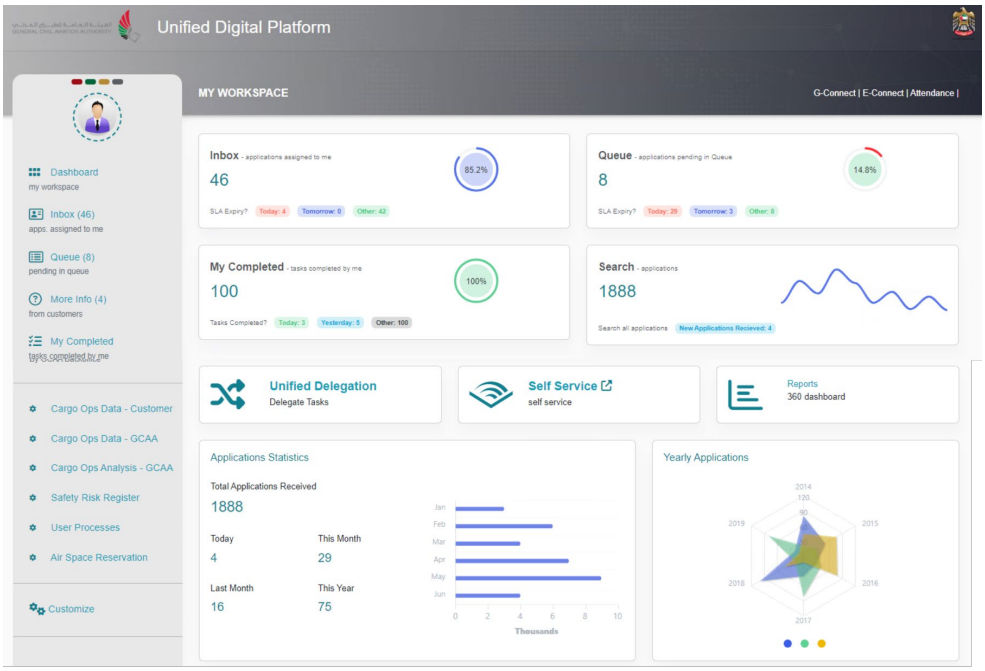


3.16 ATM - Airspace Reservation System

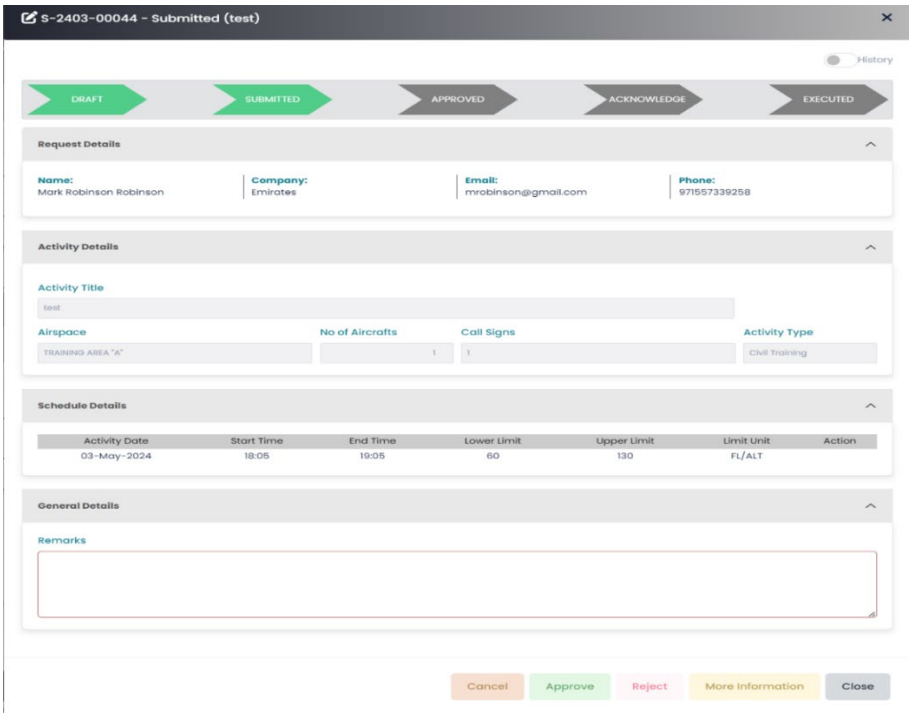
3.16.1 The newly developed airspace reservation system, created in-house by the GCAA, represents a significant technological achievement aimed at streamlining the process of reserving airspace training zones. This system, which is available to national operators and both civilian and military flight training academies, supports airspace management in line with the concept of Flexible Use of Airspace (FUA).



3.16.2 The system allows users from various entities to submit reservation requests for training areas with a high level of transparency. By providing advanced technical information, it enhances the user experience and simplifies the process.



3.16.3 Developed using internal capabilities and resources, the system aims to proactively address the needs of the airspace users, improving the efficiency of airspace planning. As a result, it's expected to reduce unexpected airspace volume requests to 0% and achieve a 100% in digital transformation of the process.



3.16.4 This achievement is a clear example of the GCAA's commitment to innovation, contributing to more efficient and transparent airspace management, and improving operational performance in the aviation sector.

3.17 ATM - RLAT – Reduced Lateral Separation

3.17.1 Emirates ACC has implemented Reduced Lateral Separation, or RLAT, below FL195 within Emirates FIR, reducing the lateral surveillance separation minima has reduced from 5 NM to 3 NM.

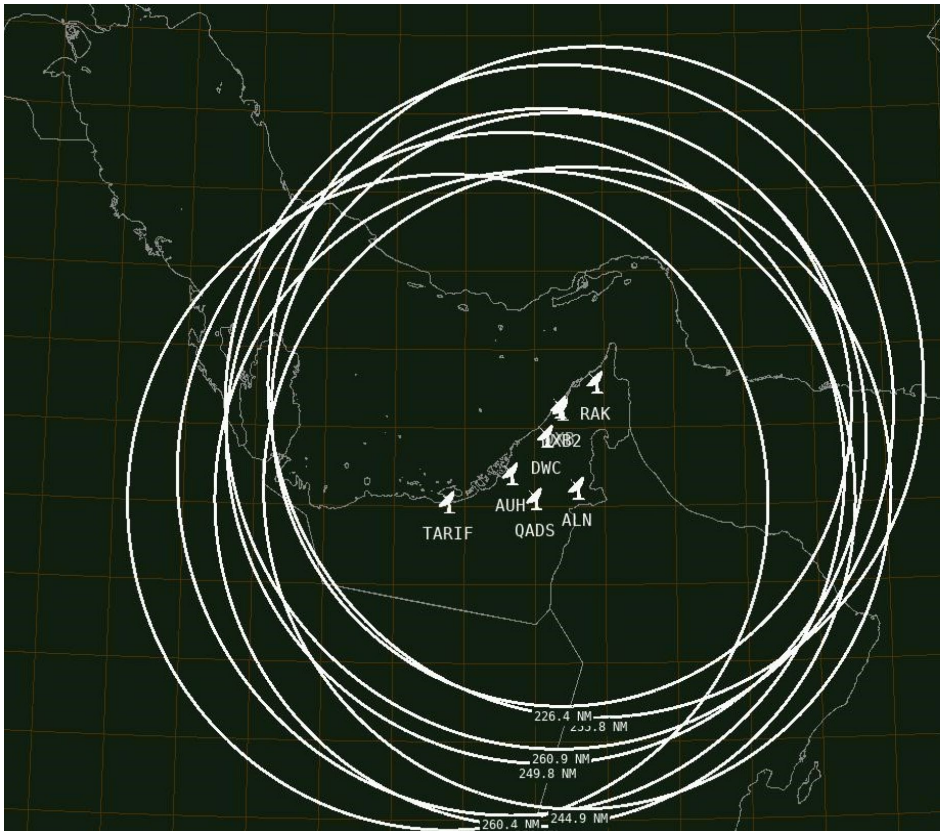
3.17.2 The current phase of RLAT implementation facilitates the ATCOs using 3 NM surveillance separation on a tactical basis, while the next phase will enable capacity enhancements.

3.17.3 RLAT paves the way for significant capacity and efficiency enhancements within Emirates FIR. These advancements will enable the handling of a greater number of aircraft within the FIR, reducing congestion and minimizing delays. Additionally, by optimizing flight paths and improving air traffic flow, CO2 emissions can be lowered, contributing to a more sustainable aviation industry.

3.17.4 RLAT implementation is a crucial step towards meeting the General Civil Aviation Authority's vision of creating a safe, competitive, and sustainable civil aviation system. Commitment

to safety remains a top priority, and with RLAT, GCAA is maintaining the highest safety standards while embracing technological advancements.

3.17.5 Being the first in the region to introduce RLAT in area control, Emirates ACC is proud to lead the way in aviation innovation. We believe this will not only benefit our operations but also set a new benchmark for air traffic management in the region.



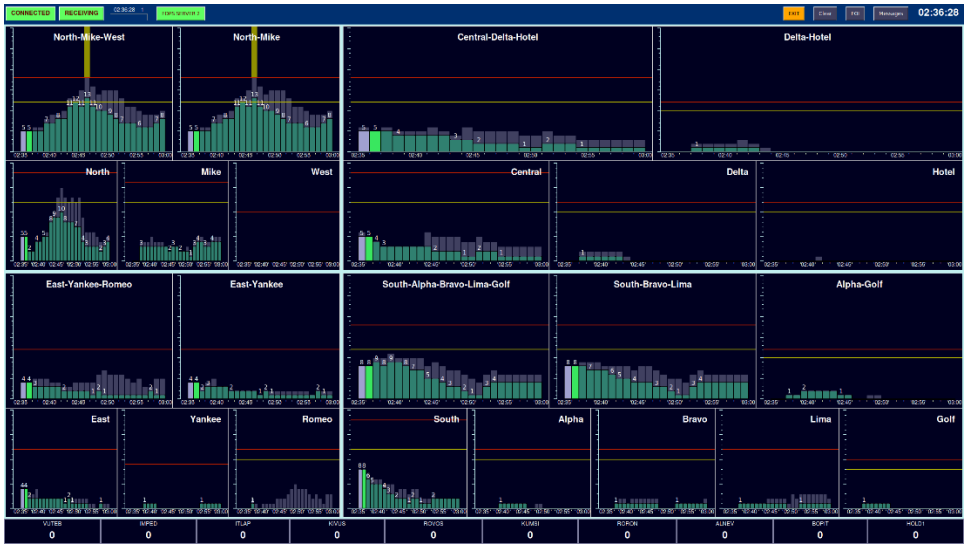
3.18 ATM - TRAMON

3.18.1 TRAMON is traffic capacity monitoring system develop to aid operational supervisors in their decision making. TRAMON provides information on the exact number of aircraft currently under the control of each sector volume, and a short-term prediction for the expected demand for each sector. Information is presented in a graphical and intuitive manner.

3.18.2 TRAMON displays historic, actual and predicted demand in relation to simultaneous occupancy within each sector and combination of sectors. Demand is displayed by bar charts in one-minute intervals, and updated in real time. TRAMON presents colour coded alerts when capacity limits for sector volumes are met or exceeded, both in real time, and forecasted demand.

3.18.3 TRAMON also displays the actual number of aircraft currently in any of the enroute holds within the FIR.

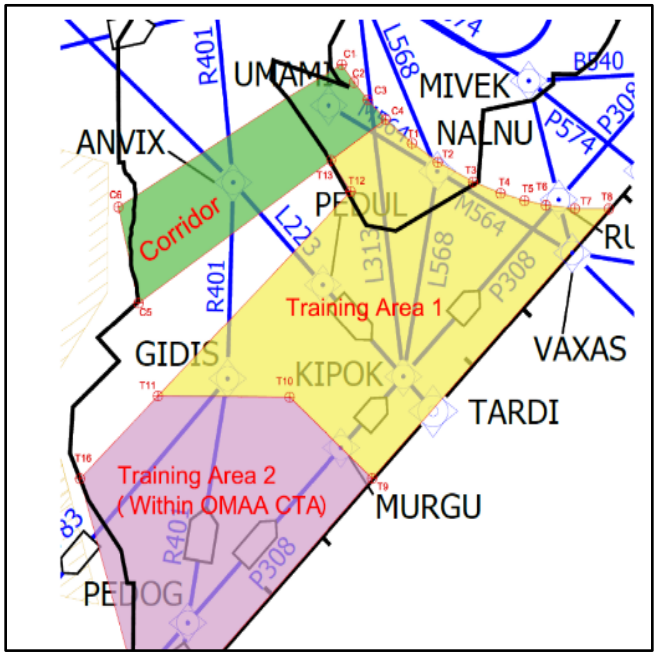
3.18.4 TRAMON enables efficient resource utilization by dynamic opening and combining of ACC sectors.



UAE & Oman

3.19 ATM - Enhancing Regional Airspace Management and Reopening Training Areas for Aviation Training Academies

3.19.1 In a landmark achievement reflecting the spirit of regional collaboration, the UAE and Oman successfully enhanced airspace management and reopened critical training areas to support aviation training academies. This initiative aligns with the shared commitment of both states to uphold the principles of seamless and efficient airspace use, as advocated by the ICAO.

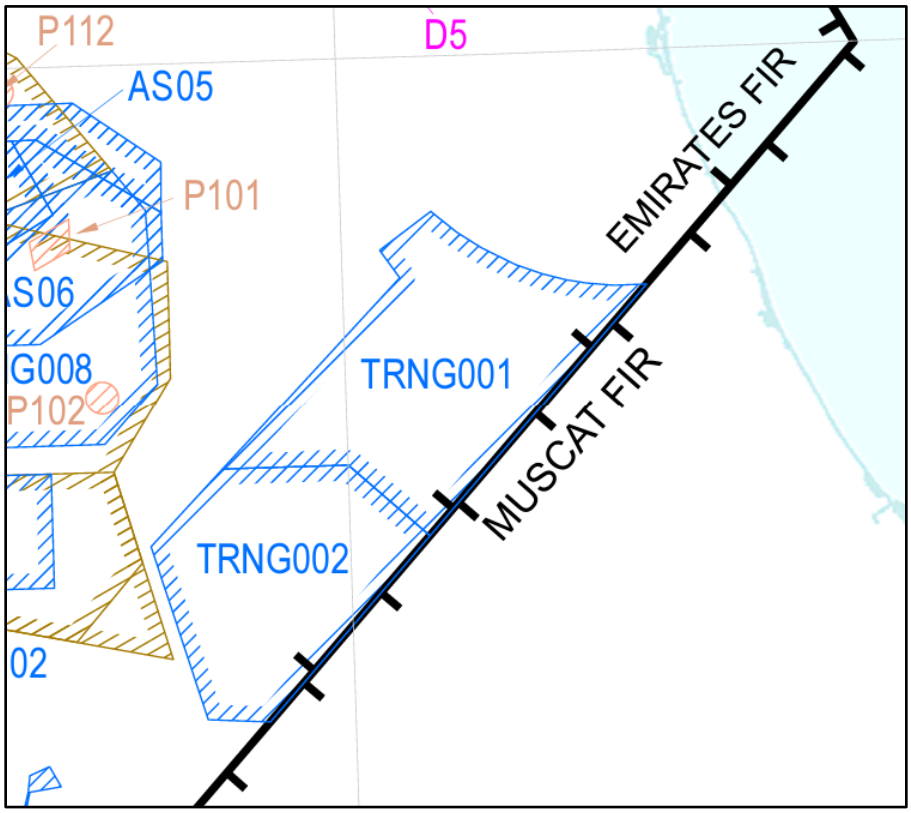


3.19.2 Addressing the Need for Optimized Airspace

3.19.2.1 With the growing demand for skilled aviation professionals, the availability of dedicated training areas has become increasingly vital. However, airspace complexities and competing demands for its use posed challenges to sustaining adequate access for training purposes. Recognizing this, the UAE and Oman embarked on a collaborative effort to resolve these issues, ensuring the safe and efficient use of airspace while supporting the growth of the aviation industry.

3.19.2.2 Key challenges included:

- **Congested Airspace**: The shared airspace faced increasing congestion due to escalating operational demands and limited areas for non-commercial use.
- **Operational Efficiency**: The need to optimize traffic flow while maintaining access for training operations in a manner consistent with both states provisions for safety and efficiency.
- **Economic and Educational Impact**: The lack of suitable training zones risked slowing the development of aviation professionals essential to supporting future industry growth.

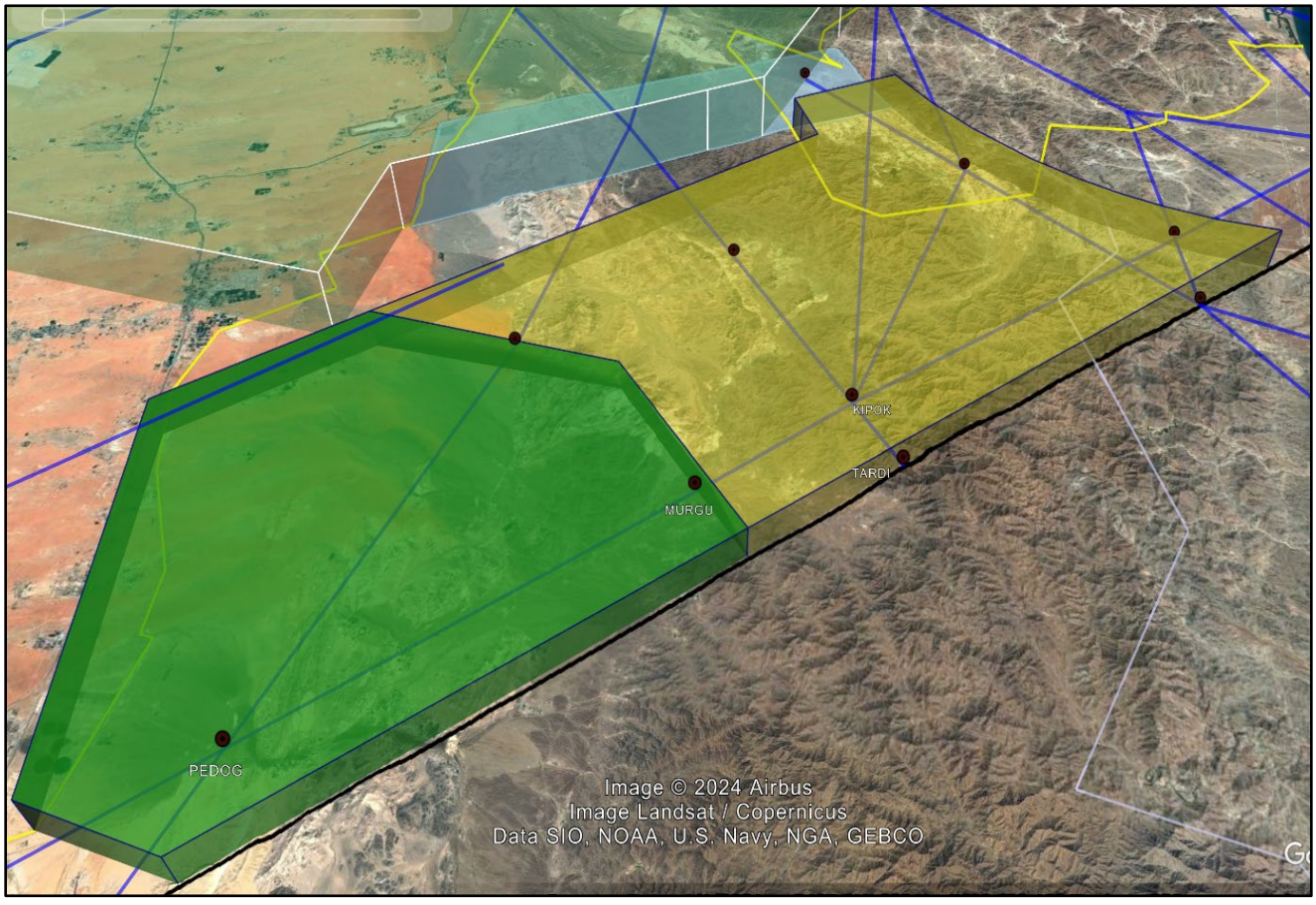


3.19.3 Collaborative Solutions for Shared Progress

3.19.3.1 To address these challenges, the UAE and Oman engaged in detailed negotiations and airspace design initiatives. The result was a mutually beneficial agreement that reopened critical airspace segments for use by training academies in both states while maintaining operational integrity for all airspace users.

3.19.3.2 The key outcomes of this initiative include:

- **Designated Training Areas**: Dedicated zones for aviation academies were strategically reopened, ensuring uninterrupted access for training while adhering to national standards for airspace management.
- **Enhanced Coordination**: Both States implemented harmonized airspace management practices, fostering seamless operations and reducing coordination complexities between ANSPs.
- **Support for ICAO Strategic Objectives**: The initiative directly supports ICAO's strategic objectives of enhancing global aviation safety, optimizing airspace capacity, and fostering the development of human resources in aviation.



3.19.4 Impact and Future Benefits

3.19.4.1 The reopening of training areas between the UAE and Oman stands as a testament to the power of regional cooperation in advancing global aviation goals. This initiative not

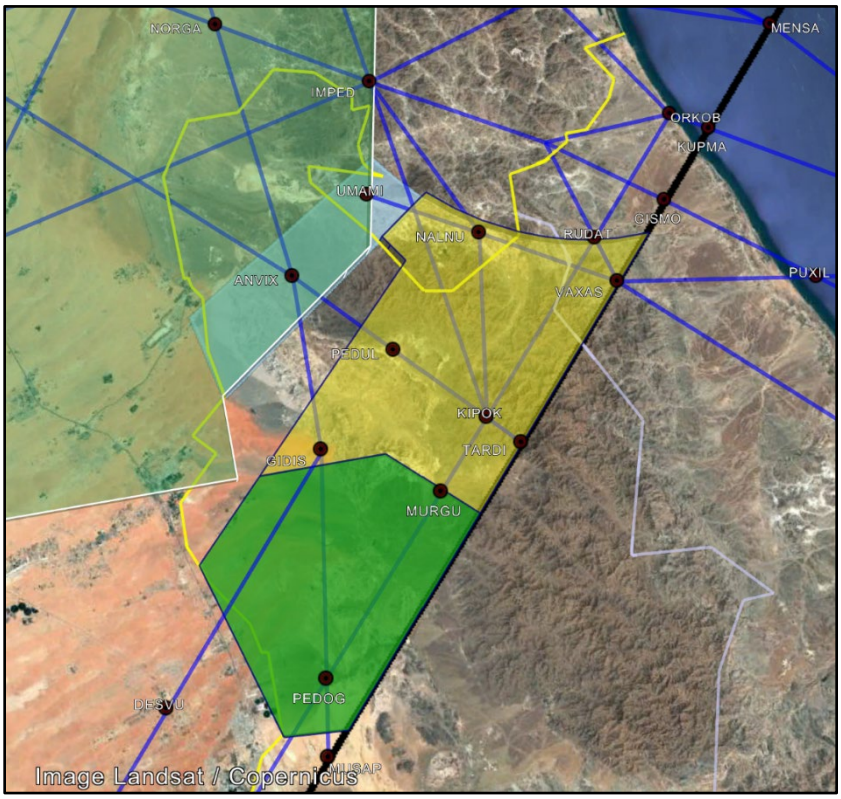
only addresses immediate operational needs but also contributes to the long-term growth of the aviation sector by:

- **Building Capacity**: Ensuring aviation academies have the resources necessary to train future professionals, thereby addressing the forecasted demand for pilots and other critical personnel.
- **Strengthening Safety**: Aligning operational practices with ICAO's Standards and Recommended Practices (SARPs) to uphold the highest safety levels in the shared airspace.
- **Driving Economic Growth**: Supporting the aviation industry as a key driver of economic prosperity for both nations.

3.19.5 Conclusion

3.19.5.1 The UAE and Oman have demonstrated the value of collaboration in overcoming challenges and fostering innovation in airspace management. This success story exemplifies the ICAO spirit of cooperation, highlighting how shared vision and action can enhance the global aviation system while promoting safety, efficiency, and sustainability.

3.19.5.2 This achievement sets a precedent for future collaborative endeavors, inspiring other regions to adopt similar approaches to address shared airspace challenges.



RANP/NANP TF/2-REPORT
Appendix 4A

MID DOC 002

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

MID REGION

AIR NAVIGATION STRATEGY

EDITION ~~MARCH, 2024~~ XXXX

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AIR NAVIGATION PRIORITIES AND MONITORING OF THE STATUS OF IMPLEMENTATION

AIR NAVIGATION PRIORITIES AND MONITORING OF THE STATUS OF IMPLEMENTATION

1. Introduction

1.1 As traffic volume increases throughout the world, the demands on air navigation service providers in a given airspace increase, and air traffic management becomes more complex.

1.2 It is foreseen that the implementation of the components of the ATM operational concept will provide sufficient capacity to meet the growing demand, generating additional benefits in terms of more efficient flights and higher levels of safety. Nevertheless, the potential of new technologies to significantly reduce the cost of services will require the establishment of clear operational requirements.

1.3 Taking into account the benefits of the ATM operational concept, it is necessary to make many timely decisions for its implementation. An unprecedented cooperation and harmonization will be required at both global and regional level.

1.4 ICAO introduced the Aviation System Block Upgrades (ASBU) framework as a systemic manner to achieve a harmonized implementation of the air navigation services. An ASBU designates a set of improvements that can be implemented globally from a defined point in time to enhance the performance of the ATM system.

1.5 In accordance, with the Resolutions of the 40th Session of the ICAO Assembly, particularly Resolution A40-1 "ICAO global planning for safety and air navigation", the ICAO Assembly urged States and PIRGs to utilize the guidance provided in the GANP for planning and implementation activities which establish priorities, targets and indicators consistent with globally-harmonized objectives, taking into account operational needs. In response to this, the MID Region developed the MID Region Air Navigation Strategy – Part 1, which is aligned with the GANP and ASBU Framework.

1.6 Stakeholders including service providers, regulators, airspace users and manufacturers are facing increased levels of interaction as new, modernized ATM operations are implemented. The highly integrated nature of capabilities covered by the block upgrades requires a significant level of coordination and cooperation among all stakeholders. Working together is essential for achieving global harmonization and interoperability.

2. Strategic Air Navigation Capacity and Efficiency Objective

2.1 The Strategic Objective related to Air Navigation Capacity and Efficiency is to realize sound and economically-viable civil aviation system in the MID Region that continuously increases in capacity and improves in efficiency with enhanced safety while minimizing the adverse environmental effects of civil aviation activities.

3. MID Air Navigation Objectives

3.1 The MID Region air navigation objectives are set in line with the global air navigation objectives and address specific air navigation operational improvements identified within the framework of the Middle East Regional Planning and Implementation Group (MIDANPIRG).

3.2 Blocks ‘0’ and “1” feature Elements are characterized by operational improvements, which have already been developed and implemented in many parts of the world. The MID Region priority 1 Block 0 & 1 Elements are reflected in **Table 1** below.

3.3 The MID Region Air Navigation Strategy aims to maintain regional harmonisation. The States should develop their National Air Navigation Plan (NANP), including action plans for the implementation of relevant priority 1 ASBU Elements and other ASBU elements or non ASBU solutions based on the States’ operational requirements and cost benefits analysis.

3.4 The implementation of the ASBU Block 0 Elements in the MID Region started before 2013 and is continuing. For the short and medium term, the MID Region priorities include identified ASBU Elements from Block 0 and Block 1.

4. MID Region ASBU Threads/Elements Prioritization and Monitoring

4.1 On the basis of operational requirements and taking into consideration the associated benefits, **Table 1** below shows the priority associated for each ASBU element from Block 0 and Block 1, as well as the MIDANPIRG subsidiary bodies that will be monitoring and supporting the implementation of these Threads/Elements:

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

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

Priority 1 Thread: *Any Thread with at least one priority 1 element*

Table 1. MID REGION ASBU THREADS & ELEMENTS (BLOCK 0 & 1) PRIORITIZATION AND MONITORING

Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
Information Threads							
DAIM							
DAIM	**B1/1**	Provision of quality-assured aeronautical data and information	**1**	2021	AIM SG and AIMDP TF	RANP/ NANP TF	
	B1/2	Provision of digital Aeronautical Information Publication (AIP) data sets	~~2~~1	2025	AIM SG and ~~AIMDP~~ TF	RANP/ ~~NANP TF~~	
	B1/3	Provision of digital terrain data sets	**1**	2021	AIM SG and AIMDP TF	RANP/ NANP TF	
	B1/4	Provision of digital obstacle data sets	**1**	2021	AIM SG and AIMDP TF	RANP/ NANP TF	
	B1/5	Provision of digital aerodrome mapping data sets	2				
	B1/6	Provision of digital instrument flight procedure data sets	2				
	B1/7	NOTAM improvements	2				
AMET							
AMET	**B0/1**	Meteorological observations products	**1**	2014	MET SG	RANP/ NANP TF	
	B0/2	Meteorological forecast and warning products	**1**	2014	MET SG	RANP/ NANP TF	

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Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
	B0/3	Climatological and historical meteorological products	**1**	2014	MET SG	RANP/ NANP TF	
	B0/4	Dissemination of meteorological products	**1**	2014	MET SG	CNS SG RANP/ NANP TF	
	B1/1	Meteorological observations information	2				
	B1/2	Meteorological forecast and warning information	2				
	B1/3	Climatological and historical meteorological information	2				
	B1/4	Dissemination of meteorological information	2				
FICE							
FICE	**B0/1**	Automated basic inter facility data exchange (AIDC)	**1**	2014	CNS SG ATM SG	RANP/ NANP TF	
Operational Threads							
APTA							
APTA	**B0/1**	PBN Approaches (with basic capabilities)	**1**	2014	PBN SG	ATM SG AIM SG CNS SG RANP/ NANP TF	
	B0/2	PBN SID and STAR procedures (with basic capabilities)	**1**	2014	PBN SG	ATM SG AIM SG RANP/ NANP TF	
	B0/3	SBAS/GBAS CAT I precision approach procedures	2				
	B0/4	CDO (Basic)	**1**	2014	PBN SG	ATM SG RANP/ NANP TF	
	B0/5	CCO (Basic)	**1**	2014	PBN SG	ATM SG RANP/ NANP TF	
	B0/6	PBN Helicopter Point in Space (PinS) Operations	2				
	B0/7	Performance based aerodrome operating minima – Advanced aircraft	**1**	2021	PBN SG	AIM SG CNS SG ASPIG RANP/ NANP TF	

Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
	B0/8	Performance based aerodrome operating minima – Basic aircraft	2				
	B1/1	PBN Approaches (with advanced capabilities)	2				
	B1/2	PBN SID and STAR procedures (with advanced capabilities)	2				
	B1/4	CDO (Advanced)	2				
	B1/5	CCO (Advanced)	2				
FRTO							
	B0/1	Direct routing (DCT)	~~2~~1	2026	ATM SG and ASM WG	RANP/ NANP TF	
	B0/2	Airspace planning and Flexible Use of Airspace (FUA)	**1**	2014	ATM SG and ASM WG	RANP/ NANP TF	
	B0/3	Pre-validated and coordinated ATS routes to support flight and flow	1~~2~~	2027	ATM SG and ASM WG	RANP/ ~~NANP TF~~	
	B0/4	Basic conflict detection and conformance monitoring	**1**	2014	ATM SG	CNS SG RANP/ NANP TF	
	B1/1	Free Route Airspace (FRA)	1~~2~~	2028	ATM SG and ASM WG	RANP/ ~~NANP TF~~	
FRTO	**B1/2**	Required Navigation Performance (RNP) routes	2				
	B1/3	Advanced Flexible Use of Airspace (FUA) and management of real time airspace data	2				
	B1/4	Dynamic sectorization	1~~2~~	2028	ATM SG and ASM WG	RANP/ ~~NANP TF~~	
	B1/5	Enhanced Conflict Detection Tools and Conformance Monitoring	2				
	B1/6	Multi-Sector Planning	2				
	B1/7	Trajectory Options Set (TOS)	2				
NOPS							
NOPS	**B0/1**	Initial integration of collaborative airspace management with air traffic flow management	**1**	2015	ATM SG ATFM TF	RANP/ NANP TF	

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Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
	B0/2	Collaborative Network Flight Updates	2				
	B0/3	Network Operation Planning basic features	2				
	B0/4	Initial Airport/ATFM slots and A-CDM Network Interface	2				
	B0/5	Dynamic ATFM slot allocation	2				
	B1/1	Short Term ATFM measures	2				
	B1/2	Enhanced Network Operations Planning	2				
	B1/3	Enhanced integration of Airport operations planning with network operations planning	2				
	B1/4	Dynamic Traffic Complexity Management	2				
	B1/5	Full integration of airspace management with air traffic flow management	2				
	B1/6	Initial Dynamic Airspace configurations	12	2028	ATM SG and ASM WG	RANP/ NANP TF	
	B1/7	Enhanced ATFM slot swapping	2				
	B1/8	Extended Arrival Management supported by the ATM Network function	2				
	B1/9	Target Times for ATFM purposes	2				
	B1/10	Collaborative Trajectory Options Program (CTOP)	2				
ACAS							
ACAS	**B1/1**	ACAS Improvements	**1**	2014	ATM SG CNS SG	RANP/ NANP TF	
SNET							
SNET	**B0/1**	Short Term Conflict Alert (STCA)	**1**	2017	ATM SG	CNS SG RANP/ NANP TF	
	B0/2	Minimum Safe Altitude Warning (MSAW)	**1**	2017	ATM SG	CNS SG RANP/ NANP TF	
	B0/3	Area Proximity Warning (APW)	**1**	2020	ATM SG	CNS SG RANP/ NANP TF	
	B0/4	Approach Path Monitoring (APM)	2				

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Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
	B1/1	Enhanced STCA with aircraft parameters	2				
	B1/2	Enhanced STCA in complex TMA	2				
GADS							
GADS	**B1/1**	Aircraft Tracking	2				
	B1/2	Operational Control Directory	**1**	2021	ATM SG	RANP/ NANP TF	
RSEQ							
RSEQ	**B0/1**	Arrival Management	**1**	2021	ATM SG ATFM TF	CNS SG ASPIG RANP/ NANP TF	
	B0/2	Departure Management	2				
	B0/3	Point merge	2				
	B1/1	Extended arrival metering	2				
SURF							
SURF	**B0/1**	Basic ATCO tools to manage traffic during ground operations	**1**	2014	ASPIG	ATM SG CNS SG RANP/ NANP TF	
	B0/2	Comprehensive situational awareness of surface operations	**1**	2014	ASPIG	ATM SG CNS SG RANP/ NANP TF	
	B0/3	Initial ATCO alerting service for surface operations	**1**	2021	ASPIG	ATM SG CNS SG RANP/ NANP TF	
	B1/1	Advanced features using visual aids to support traffic management during ground operations	2				
	B1/2	Comprehensive pilot situational awareness on the airport surface	2				
	B1/3	Enhanced ATCO alerting service for surface operations	2				
	B1/4	Routing service to support ATCO surface operations management	2				
	B1/5	Enhanced vision systems for taxi operations	2				
ACDM							
ACDM	**B0/1**	Airport CDM Information Sharing (ACIS)	**1**	2014	ASPIG	CNS SG, AIM SG, ATM SG,	

Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
						RANP/ NANP TF	
	B0/2	Integration with ATM Network function	**1**	2014	ASPIG	CNS SG, AIM SG, ATM SG, RANP/ NANP TF	
CSEP	**B1/1**	Basic airborne situational awareness during flight operations (AIRB)	**2**				
	B1/2	Visual Separation on Approach (VSA)	**2**				
	B1/3	Performance Based Longitudinal Separation Minima	**2**				
	B1/4	Performance Based Lateral Separation Minima	**2**				
DATS	**B1/1**	Remotely Operated Aerodrome Air Traffic Services	**2**				
OPFL	**B0/1**	In Trail Procedure (ITP)	**2**				
	B1/1	Climb and Descend Procedure (CDP)	**2**				
TBO	**B0/1**	Introduction of time-based management within a flow centric approach	**2**				
	B1/1	Initial Integration of time-based decision making processes	**2**				
Technology Threads							
ASUR							
ASUR	**B0/1**	Automatic Dependent Surveillance – Broadcast (ADS-B)	**1**	2021	CNS SG	ATM SG, ASPIG, RANP/ NANP TF	
	B0/2	Multilateration cooperative surveillance systems (MLAT)	**1**	2021	CNS SG	ATM SG, ASPIG, RANP/NA NP TF	
	B0/3	Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	**1**	2021	CNS SG	ATM SG, ASPIG, RANP/ NANP TF	
	B1/1	Reception of aircraft ADS-B signals from space (SB ADS-B)	2				
NAVS							
NAVS	**B0/1**	Ground Based Augmentation Systems (GBAS)	2				

Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
	B0/2	Satellite Based Augmentation Systems (SBAS)	2				
	B0/3	Aircraft Based Augmentation Systems (ABAS)	**1**	2021	CNS SG	PBN SG, ATM SG, AIM SG, RANP/ NANP TF	
	B0/4	Navigation Minimal Operating Networks (Nav. MON)	**1**	2021	CNS SG	PBN SG, RANP/ NANP TF	
	B1/1	Extended GBAS	2				
COMI							
COMI	**B0/1**	Aircraft Communication Addressing and Reporting System (ACARS)	2				
	B0/2	Aeronautical Telecommunication Network/Open System Interconnection (ATN/OSI)	2				
	B0/3	VHF Data Link (VDL) Mode 0/A	2				
	B0/4	VHF Data Link (VDL) Mode 2 Basic	2				
	B0/5	Satellite communications (SATCOM) Class C Data	2				
	B0/6	High Frequency Data Link (HFDL)	2				
	B0/7	AMHS	**1**	2014	CNS SG	RANP/ NANP TF	
	B1/1	Ground-Ground Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS)	**1**	2021	CNS SG	RANP/ NANP TF	
	B1/2	VHF Data Link (VDL) Mode 2 Multi-Frequency	2				
	B1/3	SATCOM Class B Voice and Data	2				
	B1/4	Aeronautical Mobile Airport Communication System (AeroMACS) Ground-Ground	2				
COMS							

Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
COMS	**B0/1**	CPDLC (FANS 1/A & ATN B1) for domestic and procedural airspace	2				
	B0/2	ADS-C (FANS 1/A) for procedural airspace	2				
	B1/1	PBCS approved CPDLC (FANS 1/A+) for domestic and procedural airspace	2				
	B1/2	PBCS approved ADS-C (FANS 1/A+) for procedural airspace	2				
	B1/3	SATVOICE (incl. routine communications) for procedural airspace	2				

5. Implementation and Monitoring of the priority 1 ASBU Elements

5.1 The monitoring of air navigation performance and its enhancement is achieved, inter-alia, through identification of relevant air navigation Metrics and Indicators as well as the adoption and attainment of air navigation system Targets. The monitoring of the priority 1 ASBU Threads/Elements is carried out through the MID eANP Volume III.

5.2 MIDANPIRG through its activities under the various subsidary bodies will continue to update and monitor the implementation of the ASBU Threads and elements to achieve the air navigation targets.

5.3 The priority 1 Threads/Elements along with the associated elements, applicability, performance Indicators, supporting Metrics, and performance Targets are shown in the **Table 2** below.

***Note**: Further details on the ASBU elements objectives, description, implementation requirements and performance impact assessment can be found on the ICAO GANP Portal https://www4.icao.int/ganpportal/ASBU*

6. Governance

6.1 Progress report on the status of implementation of the different priority 1 Threads/Elements should be developed by MIDANPIRG Subsidary bodies. A consolidated MID Air Navigation Report showing the status of implementation of the different priority 1 ASBU Elements by Thread will be developed by the RANP/NANP TF on annual basis and presented to MIDANPIRG for endorsement.

6.2 The MIDANPIRG will be the governing body responsible for the review and update of the MID Region Air Navigation Strategy.

6.3 The MID Region Air Navigation Strategy will guide the work of MIDANPIRG and its subsidary bodies and all its member States and partners.

6.4 Progress on the implementation of the MID Region Air Navigation Strategy and the achievement of the agreed air navigation targets will be reported to the ICAO Air Navigation Commission (ANC), through the review of the MIDANPIRG Reports, MID Air Navigation Reports, etc.; and to the stakeholders in the Region within the framework of MIDANPIRG.

Table 2. MONITORING THE IMPLEMENTATION OF THE PRIORITY 1 ASBU THREADS/ELEMENTS (Block 0 & 1) IN THE MID REGION

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
Information Threads							
DAIM							
DAIM B1/1	Provision of quality-assured aeronautical data and information	All States	Indicator*: Regional average implementation status of DAIM B1/1 (provision of quality-assured aeronautical data and information). Supporting Metrics: 1. Number of States that have migrated to AIM automated data-centric environment based on (AIXM V5.1+)~~Number of States that have implemented an AIXM-based AIS database (AIXM V5.1+)~~ 2. Number of States Implementing Quality Assurance and Quality Control (QA/QC) Processes ~~1.~~ ~~2.~~3. Number of States that have established formal arrangements with at least 50% of their AIS data originators.	(2023) 53%	80%	Dec 2024	N/A
DAIM B1/2	Provision of digital Aeronautical Information Publication (AIP) data sets	Egypt, Jordan, Oman, Qatar, Saudi Arabia and UAE	Indicator*: Regional average implementation status of DAIM B1/2 (Provision of digital Aeronautical Information Publication (AIP) data set). Supporting Metrics: Number of States that provide digital Aeronautical Information Publication (AIP) data sets	15%	75%	Dec 2027	N/A
DAIM B1/3	Provision of digital terrain data sets	All States	Indicator*: Regional average implementation status of DAIM B1/3 (Provision of Terrain digital datasets). Supporting Metric: Number of States that provide required Terrain digital datasets.	(2022) 35%	60%	Dec 2024	N/A
DAIM B1/4	Provision of digital obstacle data sets	All States	Indicator*: Regional average implementation status of	(2022) 35%	60 %	Dec 2024	N/A

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Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
			DAIM B1/4(Provision of obstacle digital datasets). Supporting Metric: Number of States that provide required obstacle digital datasets.				
AMET							
AMET B0/1	Meteorological observations products	All states	Indicator*: Regional average implementation status of B0/1 (Meteorological observations products). Supporting Metrics: Number of States that provide the following Meteorological observations products, as required: 1. Automatic Weather Observation System (AWOS) information (including real-time exchange of wind and RVR data) 2. Local reports (MET REPORT/SPECIAL) 3. Aerodrome reports (METAR/SPECI) 4. Lightning Information 5. Ground-based weather radar information. 6. Meteorological satellite imagery 7. Aircraft meteorological report (ie. ADS-B, AIREP, etc.) 8. Vertical wind and temperature profiles 9. Wind shear alerts	(2022) 65%	80%	Dec 2021	N/A
AMET B0/2	Meteorological forecast and warning products	All states	Indicator*: Regional average implementation status of B0/2 (Meteorological forecasts and warning products) Supporting Metrics: Number of States that provides the following Meteorological forecast and warning products, as required: 1. World Area Forecast System (WAFS) gridded products. 2. Significant Weather (SIGWX)	(2022) 60%	90%	Dec 2021	N/A

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
			3. Aerodrome Forecast (TAF) 4. Trend Forecast (TREND) 5. Take-off Forecast 6. SIGMET 7. Aerodrome Warning 8. Wind Shear Warning				
AMET B0/3	Climatological and historical meteorological products	All states	Indicator: % of States that provide Climatological and historical meteorological products, as required. Supporting Metric: Number of States that provide Climatological and historical meteorological products, as required.	(2022) 60%	85%	Dec 2021	N/A
AMET B0/4	Dissemination of meteorological products	All states	Indicator: % of States disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM) Supporting Metric: Number of States disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM)	(2022) 60%	85%	Dec 2021	N/A
FICE							
FICE B0/1	Automated basic inter facility data exchange (AIDC)	According to the MID Region AIDC/OLDI Priority 1 Applicability Area	Indicator*: % of priority 1 AIDC/OLDI Interconnection have been implemented. Supporting metric: Number of AIDC/OLDI interconnections implemented between adjacent ACCs.	(2023) 26%	70%	Dec 2026	N/A
Operational Threads							
APTA							
APTA B0/1	PBN Approaches (with basic capabilities)	All RWYs ENDs at International Aerodromes	Indicator: % of Runway ends at international aerodromes served by PBN approach procedures with basic functionalities - down to LNAV or LNAV/VNAV minima. Supporting metric: Number of Runways ends at	(2017) 46.7%	100%	Dec 2018	Capacity/ KPI 10

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
			international aerodromes served by PBN approach procedures with basic functionalities - down to LNAV or LNAV/VNAV minima.				
APTA B0/2	PBN SID and STAR procedures (with basic capabilities)	All RWYs ENDs at International Aerodromes	Indicator: % of Runway ends at international aerodromes provided with PBN SID and STAR (basic capabilities). Supporting Metric: Number of Runway ends at international aerodromes provided with PBN SID and STAR (basic capabilities).	(2022) 55%	70%	Dec 2022	Efficiency Capacity/ KPI 10 KPI 11 KPI 17 KPI 19/
APTA B0/4	CDO (Basic)	OBBI, OIIE, OIKB, OIFM, OJAI, OLBA, OOMS, OTHH, OTBD, OEJN, OEMA, OEDF, OERK, HSSK, HSPN, OMAA, OMAL, OMAD, OMDW, OMDB, OMSJ, OMRK and OMFJ	Indicator*: % of International Aerodromes with CDO implemented and published as required. Supporting Metric: Number of International Aerodromes with CDO implemented and published as required. *As per the applicability area	(2022) 65%	100%	Dec 2022	Efficiency/ KPI 19
APTA B0/5	CCO (Basic)	OBBI, OIIE, OIKB, OIFM, OJAI, OLBA, OOMS, OTHH, OTBD, OEJN, OEMA, OEDF, OERK, HSSK, HSPN, OMAA, OMAL, OMAD, OMDW, OMDB, OMSJ, OMRK and OMFJ	Indicator*: % of International Aerodromes with CCO implemented and published as required. Supporting Metric: Number of International Aerodromes with CCO implemented and published as required. *As per the applicability area	(2022) 65%	100%	Dec 2022	Efficiency/ KPI 17
APTA B0/7	Performance based aerodrome operating minima – Advanced aircraft	All States	Indicator: % of States authorizing Performance-based Aerodrome Operating Minima for Air operators operating Advanced aircraft. Supporting Metric: Number of States 1- having provisions for operational credits to enable lower minima based on advanced aircraft capabilities. (Reference: Annex 6 Part I para. 4.2.8.2.1) 2- Number of States	(2022) 50%	80%	Dec 2025	Capacity/ KPI 10

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
			Putting in place an approval process for the operational credit to Aircraft operator conducting PBAOM operations for low visibility operations (Reference: Doc 9365 (AWO Manual)), as applicable.				
FRTO							
FRTO B0/1	Direct routing (DCT)	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan, UAE	Indicator*: % of ACCs using and implementing appropriate means (procedures and tools (automation)) to support implementation of Direct routing to improve efficiency of Airspace. Supporting metric: Number of ACCs using and implementing appropriate means (procedures and tools (automation)) to support implementation of Direct routing to improve efficiency of Airspace. * As per the applicability area	30% (2024)	80%	Dec 2028	Efficiency KPI 04
FRTO B0/2	Airspace planning and Flexible Use of Airspace (FUA)	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia (2 ACCs), Sudan, UAE	Indicator*: % of ACCs using and implementing appropriate means (procedures and tools (automation)) to support Airspace planning and FUA and improve data exchange between Civil and Military to improve efficiency of Airspace. Supporting metric: Number of ACCs using and implementing appropriate means (procedures and tools (automation)) to support Airspace planning and FUA and improve data exchange between Civil and Military to improve efficiency of Airspace. * As per the applicability area	(2022) 63%	70%	Dec 2022	Efficiency Access and equity/ KPI 04 KPI 05 KPI 17 KPI 18/ KPI 19
FRTO B0/3	Pre-validated and coordinated ATS routes to support flight and flow	Bahrain, Egypt, Iran, Iraq, Jordan, Oman, Qatar, Saudi Arabia, UAE	Indicator*: % of ACCs using Playbook routes that ATC can utilize to fit a particular set of circumstances, when the preferred routes are not available to improve capacity and flexibility of Airspace. Supporting metric: Number of ACCs using Playbook routes that ATC can utilize to	10% (2024)	50%	Dec 2028	Capacity Flexibility

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
			fit a particular set of circumstances, when the preferred routes are not available to improve capacity and flexibility of Airspace. * As per the applicability area				
FRTO B0/4	Basic conflict detection and conformance monitoring	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia (2 ACCs), Sudan, UAE	Indicator*: % States that implemented MTCD and MONA, for ACCs, as required. Supporting metric: The number of States that implemented MTCD and MONA for ACCs, as required. * As per the applicability area	(2022) 63%	100%	Dec 2022	Capacity/ KPI 06 Safety/ KPI 20 KPI 23
FRTO B1/1	Free Route Airspace (FRA)	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan, UAE	Indicator*: % of ACCs using and implementing appropriate means (procedures and tools (automation)) to support implementation of Free Route Airspace to improve efficiency of Airspace. Supporting metric: Number of ACCs using and implementing appropriate means (procedures and tools (automation)) to support implementation of Free Route Airspace to improve efficiency of Airspace. * As per the applicability area	20% (2024)	80%	Dec 2028	Efficiency KPI 04
FRTO B1/4	Dynamic sectorization	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Sudan, UAE	Indicator*: % of ACCs using and implementing appropriate means (procedures and tools (automation)) to real-time support supervisor to select the most appropriate sector configuration (change of the ATC sector shapes by adding/removing the elementary sectors based on traffic demand and complexity. Supporting metric: Number of ACCs using and implementing appropriate means (procedures and tools (automation)) to real-time support supervisor to select the most appropriate sector configuration (change of the ATC sector shapes by adding/removing the elementary sectors based on	20% (2024)	60%	Dec 2028	Capacity

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
			traffic demand and complexity. * As per the applicability area				
NOPS							
NOPS B0/1	Initial integration of collaborative airspace management with air traffic flow management	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan, UAE	Indicator*: % of States implementing ASM/ATFM techniques, procedures and tools for the initial establishment of an integrated collaborative airspace management and air traffic flow and capacity management process. Supporting metric: number of States implementing ASM/ATFM techniques, procedures and tools for the initial establishment of an integrated collaborative airspace management and air traffic flow and capacity management process. * As per the applicability area	(2022) 42%	70%	Dec 2022	Efficiency Capacity/ KPI 04 KPI 05 KPI 17 KPI 18 KPI 19/
NOPS B1/6	Initial Dynamic Airspace configurations	Bahrain, Oman, Qatar, Saudi Arabia, UAE	Indicator*: % of ACCs using and implementing appropriate means (procedures and tools (automation)) to support ASM solutions and initial dynamic airspace configurations for ATFM planning, synchronisation of traffic flows and demand/capacity balancing. Supporting metric: Number of ACCs using and implementing appropriate means (procedures and tools (automation)) to support ASM solutions and initial dynamic airspace configurations for ATFM planning, synchronisation of traffic flows and demand/capacity balancing. * As per the applicability area	10% (2024)	50%	Dec 2028	Capacity
ACAS							
ACAS B1/1	ACAS Improvements Operational	All States	Indicator: % of States requiring carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons	(2022) 87%	100%	Dec 2024	Safety/ KPI 20 KPI 23

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
			Supporting metric: Number of States requiring carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons				
SNET							
SNET B0/1	Short Term Conflict Alert (STCA)	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan, UAE	Indicator*: % of States that have implemented Short-term conflict alert (STCA) Supporting metric: number of States that have implemented Short-term conflict alert (STCA) * As per the applicability area	(2018) 100%	100%	Dec 2018	Safety/ KPI 20 KPI 23
SNET B0/2	Minimum Safe Altitude Warning (MSAW)	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan, UAE	Indicator*: % of States that have implemented Minimum safe altitude warning (MSAW) Supporting metric: number of States that have implemented Minimum safe altitude warning (MSAW) * As per the applicability area	(2018) 100%	100%	Dec 2018	Safety/ KPI 20
SNET B0/3	Area Proximity Warning (APW)	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan, UAE	Indicator*: % of States that have implemented Area Proximity Warning (APW) for ACCs, as required. Supporting metric: number of States that have Implemented Area Proximity Warning (APW) for ACCs, as required. * As per the applicability area	(2022) 67%	100%	Dec 2022	Safety/ KPI 20
GADS							
GADS B1/2	Operational Control Directory	All States	Indicator: % of States that provided GADSS Point of Contact (PoC) information Supporting Metric: Number of States that provided GADSS Point of Contact (PoC) information.	(2022) 73%	100%	Dec 2022	N/A
RSEQ							
RSEQ B0/1	Arrival Management	OBBI, HECA, HEBA, HELX, HESN, HESH, OTBD, OTHH,	Indicator*: % of Aerodromes that have implemented arrival manager (AMAN), where required/applicable. Supporting Metric: Number of Aerodrome that have	(2022) 36%	80%	Dec 2024	Capacity Efficiency/ KPI 08 KPI 10 KPI 11 KPI 14/

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
		OEJN, OEDF, OEMA, OERK OMDB, OMAA	implemented arrival manager (AMAN), where required/ applicable. * As per the applicability area				
SURF							
SURF-B0/1	Basic ATCO tools to manage traffic during ground operations	All International Aerodromes	Indicator: % of Aerodromes having implemented Basic ATCO tools to manage traffic during ground operations Supporting metric: Number of Aerodromes having implemented Basic ATCO tools to manage traffic during ground operations	(2022) 90%	100%	Dec 2022	Efficiency/ KPI 02 KPI 13 Safety/ KPI 20 KPI 21
SURF-B0/2	Comprehensive situational awareness of surface operations	OBBI, HECA, OIII, OOMS, OTBD, OTHH, OEDF, OEJN, OERK, OEMA, OMDB, OMAA.	Indicator*: % of Airports having implemented the surveillance service of A-SMGCS Supporting metric: Number of Airports having implemented the surveillance service of A-SMGCS * As per the applicability area	(2022) 61%	80%	Dec 2022	Safety/ KPI 20 KPI 21
SURF-B0/3	Initial ATCO alerting service for surface operations	OBBI, HECA, OIII, OOMS, OTBD, OTHH, OEDF, OEJN, OERK, OEMA, OMDB, OMAA.	Indicator*: % of Airports having implemented the A-SMGCS alerting service. Supporting metric: Number of Airports having implemented the A-SMGCS alerting service. * As per the applicability area	(2022) 74%	80%	Dec 2022	Safety/ KPI 20
ACDM							
ACDM B0/1	Airport CDM Information Sharing (ACIS)	HECA, OBBI, OIII, OKKK, OOMS, OTHH, OEJN, OERK, OMDB, OMAA	Indicator*: % of Airports having implemented ACIS. Supporting metric: number of Airports having implemented ACIS. * As per the applicability area	(2022) 75%	90%	Dec 2024	N/A
ACDM B0/2	Integration with ATM Network function	HECA, OBBI, OIII, OKKK, OOMS, OTHH, OEJN, OERK, OMDB, OMAA.	Indicator*: % of Airports having integrated ACDM with the ATM Network function. Supporting metric: Number of Airports having integrated ACDM with the ATM Network function	(2022) 25%	50%	Dec 2024	N/A

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
			* As per the applicability area				
Technology Threads							
ASUR							
ASUR B0/1	Automatic Dependent Surveillance – Broadcast (ADS-B)	Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, , Sudan, UAE	Indicator*: % of States that have implemented ADS-B to improve surveillance coverage/capabilities for provision of ATS. Supporting Metric: Number of States that have implemented ADS-B to improve surveillance coverage/capabilities for provision of ATS. * As per the applicability area	(2022) 60%	80%	Dec 2022	N/A
ASUR B0/2	Multilateration cooperative surveillance systems (MLAT)	Bahrain, , Kuwait, Oman, Qatar, Saudi Arabia, UAE	Indicator*: % of States that have implemented Multi-lateration (M-LAT) for provision of ATS. Supporting Metric: Number of States that have implemented Multi-lateration (M-LAT) for provision of ATS. Indicator*: % of States that have implemented ADS-B to improve surveillance coverage/capabilities for provision of ATS. Supporting Metric: Number of States that have implemented ADS-B to improve surveillance coverage/capabilities for provision of ATS. * As per the applicability area	(2022) 63%	80%	Dec 2022	N/A
ASUR B0/3	Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	Bahrain, Egypt, Iran, Iraq, Kuwait, Lebanon, Jordan, Oman, Qatar, Saudi Arabia, Sudan and UAE	Indicator*: % of States that have implemented Downlink of Aircraft Parameters (SSR-DAPS) Supporting Metric: Number of States that have implemented Downlink of Aircraft Parameters (SSR-DAPS) * As per the applicability area	(2022) 83%	90%	Dec 2023	N/A
NAVS							

Element		Applicability	Performance Indicators/ Supporting Metrics	Baseline	Target	Timeline	KPA/ KPI
NAVS B0/3	Aircraft Based Augmentation Systems (ABAS)	All States	Indicator: % of States requiring Aircraft Based Augmentation System (ABAS) equipage for aircraft with a max certificated take-off mass greater than 5,700 Kg to enable PBN Operations Supporting metric: Number of States requiring Aircraft Based Augmentation System (ABAS) equipage for aircraft with a max certificated take-off mass greater than 5,700 Kg to enable PBN Operations	(2022) 40%	70%	Dec 2022	N/A
NAVS B0/4	Navigation Minimal Operating Networks (Nav. MON)	All States	Indicator: % of States that have developed a plan of rationalized conventional NAVAIDS network to ensure the necessary levels of resilience for navigation Supporting metric: Number of States that have developed a plan of rationalized conventional NAVAIDS network to ensure the necessary levels of resilience for navigation.	(2022) 47%	70%	Dec 2022	N/A
COMI							
COMI B0/7	ATS Message Handling System (AMHS)	All States	Indicator: % of States that have established AMHS interconnections with adjacent COM Centres Supporting metric: Number of States that have established AMHS interconnections with adjacent COM Centres	(2022) 73%	90%	Dec 2022	N/A
COMI B1/1	Ground-Ground Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS)	All States	Indicator: % of States that have established National IP Network for voice and data communication Supporting metric: Number of States that have established National IP Network for voice and data communication	(2022) 60%	80%	Dec 2022	N/A

STATES STATUS REGARDING IMPLEMENTATION OF PBA & DEVELOPMENT OF NANP

According to State Letter AN 1/7 – 24/185, dated 15 December 2024, and as detailed in Attachment B, the current status of MID States regarding the implementation of the PBA concept and the development of the NANP is as follows:

State	PBA implemented	Details related to the 6 steps approach provided	Example of performance initiatives shared with ICAO MID for inclusion in ANP Volume III	NANP developed	Remarks
Bahrain	No	No	No	No	No reply to attachment B
Egypt	No	No	No	No	Planned to conduct NANP workshop in Q2 2025
Iran	No	No	No	On-going	NANP workshop conducted 2-5 February 2025
Iraq	No	No	No	No	Planned to conduct NANP workshop in Q3 2025
Jordan	Yes	No	No	On-going	NANP workshop conducted 27-29 May 2024
Kuwait	Yes	Yes	Yes	First edition developed and approved	NANP workshop conducted 28 May-1 June 2023
Lebanon	No	No	No	No	No reply to attachment B
Libya	No	No	No	No	Planned to conduct NANP workshop in Q3 2025
Oman	No	No	No	No	No reply to attachment B
Qatar	Yes	Yes	Yes	First edition developed and approved	Planned to conduct NANP workshop in Q3 2025
Saudi Arabia	Yes	Yes	Yes	First edition developed and approved	The link will be shared with ICAO MID Office
Sudan	No	No	No	No	No reply to attachment B
Syria	No	No	No	No	No reply to attachment B
UAE	Yes	No	Yes	On-going	-
Yemen	No	No	No	No	No reply to attachment B

APPENDIX 5B

MID AIR NAVIGATION PLAN

VOLUME III

(~~March 2023~~February 2025)

MID AIR NAVIGATION PLAN

VOLUME III

TABLE OF CONTENTS

MID ANP, VOLUME III

PART 0 – INTRODUCTION

1. INTRODUCTION

1.1 The background to the publication of ANPs in three volumes is explained in the Introduction of Volume I. The procedure for amendment of Volume III is also described in Volume I. Volume III contains dynamic/flexible plan elements related to the application of a performance-based approach for a cost-effective and benefit-driven modernization of the air navigation system in line with the Global Air Navigation Plan (GANP).

1.2 Collaborative decision-making is key for a cost-effective modernization of the air navigation system and ensures that all concerned aviation stakeholders are involved and given the opportunity to influence decisions in order to reach defined performance objectives. Volume III guides the aviation community in the application of performance management process and identification of relevant and timely operational improvements to a given region's air navigation system including some within the Aviation System Block Upgrade (ASBU) framework.

1.3 The information contained in Volume III is, therefore, related to:

- Planning: objectives, priorities, targets and needs planned at regional or sub-regional levels;
- Monitoring and reporting: performance and implementation monitoring of the agreed targets. This information should be used as the basis for reporting purposes (i.e.: global and regional air navigation reports and performance dashboards); and/or
- Guidance: providing regional guidance material for the implementation of specific system/procedures in a harmonized manner.

1.4 MIDANPIRG is responsible for managing and updating Volume III on a regular basis.

1.5 Whereas ICAO addresses the planning strategy at the global and regional levels, planning at the national level is the responsibility of States. A national planning framework should be developed by each State based on its needs and in collaboration with regional and global partners. This will ensure to the greatest extent possible that solutions are internationally harmonized and integrated.

1.6 National air navigation plans, as well as other national plans dealing with other aspects of aviation such as safety, security and facilitation, should all be linked together in a broader national aviation plan to ensure an integrated strategic approach at the State level. This broader plan can be considered as a civil aviation "master plan" addressing all aspects of air transport at the State level. The objective is to provide a clear and comprehensive planning and implementation strategy for the future development of the entire civil aviation sector in terms of policies, legislation, objectives, facilities, equipment, organization and capacity-building.

1.7 The master plan should also emphasize the importance of air transport for the economic development of the State. As such, the master plan should be linked to the State's overarching national development plan, where applicable, in order to mobilize public and private resources and partnerships for the implementation of the plan and to strengthen the civil aviation sector.

1.8 A clearly defined relationship between national air navigation plans aligned with the global and regional plans (GANP and RANP), civil aviation master plans and States' national development plans will enable the prioritization and optimum allocation of resources for all planned projects within States and across all sectors of activity.

MID ANP, VOLUME III

PART I - GENERAL PLANNING ASPECTS (GEN)

1. PLANNING METHOD

1.1 Planning for the modernization of the air navigation system must begin with a thorough understanding of user system requirements and take into account traffic density and complexity, and the level of sophistication required for the provision of necessary services, among other elements.

1.2 The Thirteenth Air Navigation Conference recommended that ICAO encourage the planning and implementation regional groups (PIRGs) to embrace a performance-based approach (PBA) for implementation and adopt the six-step performance management process, as described in the Manual on Global Performance of the Air Navigation System (Doc 9883), by reflecting the process in Volume III of all regional air navigation plans. Recommendation 4.3/1 — Improving the performance of the air navigation system, refers.

1.3 A PBA is results-oriented, helping decision makers set priorities and determine appropriate trade-offs that support optimum resource allocation while maintaining an acceptable level of safety performance and promoting transparency and accountability among stakeholders.

1.4 A PBA is a decision-making method based on three principles: strong focus on desired/required results; informed decision-making driven by those desired/required results; and reliance on facts and data for decision-making. The PBA is a way of organizing the performance management process.

1.5 Although there are several ways to apply a PBA, ICAO advocates for a globally harmonized performance management process based on six well-defined steps. The goal of this cyclic six-step method is to identify optimum solutions based on operational requirements and performance needs so that the expectations of the aviation community can be met by enhancing the performance of the air navigation system and optimizing allocation and use of the available resources.

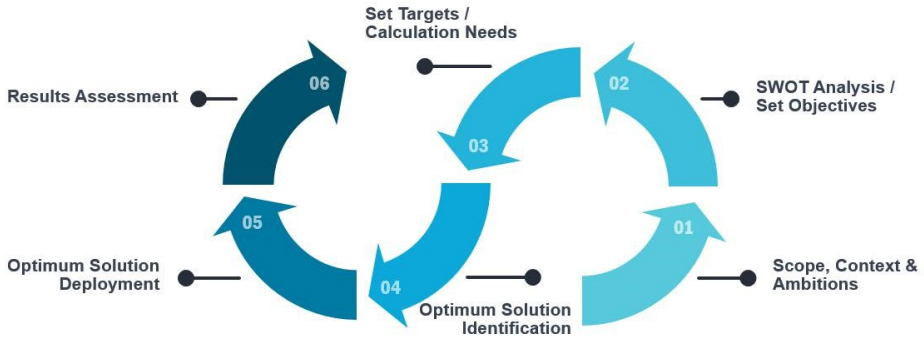

Figure 1 Six-step performance management process

1.6 Steps 1 and 2 serve to know the air navigation system, its strengths, weakness, opportunities and threats as well as how it is performing in order to set objectives. The catalogue of performance objectives that is part of the GANP global performance framework facilitates the definition of objectives.

1.7 Based on these objectives, targets can be set in step 3. An analysis of this data leads to the identification of potential solutions, in step 4, to achieve the targets by addressing the weaknesses and threats of the system. Once a set of potential solutions have been identified, a cost-benefits analysis, environmental impact assessment, safety assessment and human factor assessment should be performed to identify the optimum solution. In the GANP performance framework, a list of KPIs, linked to the relevant objectives in the performance objectives catalogue, is provided to set targets though the quantification of objectives **(See list below)**.

KPI 01	Departure punctuality	**KPI 13**	Taxi-in additional time
KPI 02	Taxi-out additional time	**KPI 14**	Arrival punctuality
KPI 03	ATFM Slot adherence	**KPI 15**	Flight time variability
KPI 04	Filed flight plan en-route extension	**KPI 16**	Additional fuel burn
KPI 05	Actual en-route extension	**KPI 17**	Level-off during climb
KPI 06	En-route airspace capacity	**KPI 18**	Level capping during cruise
KPI 07	En-route ATFM delay	**KPI 19**	Level-off during descent
KPI 08	Additional time in terminal airspace	**KPI 20**	Number of Aircraft Accidents
KPI 09	Airport peak capacity	**KPI 21**	Number of RWY Incursions
KPI 10	Airport peak throughput	**KPI 22**	Number of RWY Excursions
KPI 11	Airport throughput efficiency	**KPI 23**	Number of Airprox/TCAS Alert/Loss of separation/Near mid Air Collisions/Mid Air Collisions
KPI 12	Airport/Terminal ATFM delay		

1.8 Step 5 manages a coordinated deployment of the agreed solution by all stakeholders based on the previous steps. Regional plans might need to be developed for the deployment of solutions by drawing on supporting technology requirements.

1.9 Finally, step 6 consists of monitoring and reporting the performance of the system after the full deployment of the solution.

1.10 This is an iterative planning process, which may require repeating several steps until a final plan with specific targets is in place. This planning method requires full involvement of regulators (CAAs), service providers, airspace users and other stakeholders, thus ensuring commitment by all for implementation.

2. Review and evaluation of air navigation planning and reporting and monitoring results

2.1 The progress and effectiveness against the priorities set out in the National and Regional Air Navigation Plan should be annually reported to ICAO using a consistent reporting format.

2.2 Performance monitoring requires a measurement strategy. Data collection, processing, storage and reporting activities supporting the identified regional/national/local performance metrics are fundamental to the success of performance-based approaches.

2.3 The air navigation planning and implementation performance framework prescribes reporting, monitoring, analysis and review activities being conducted on a cyclical, annual basis.

2.4 Reporting and monitoring results will be used to develop the MID Annual Air Navigation Reports. They will be analyzed by MIDANPIRG to steer the air navigation improvements, recommend corrective actions and review the agreed objectives, priorities and targets, if needed. The results will also be used by ICAO to develop the annual Global Air Navigation Report. The Report results will provide an opportunity for the international civil aviation community to compare progress across different ICAO Regions in the establishment of air navigation infrastructure and performance-based procedures.

2.5 The Report will also provide the ICAO Council with detailed annual results on the quality of service provided worldwide as well as the performance areas, which require more attention. This will serve as input for the triennial policy adjustments to the GANP and its priorities.

MID ANP, VOLUME III

PART II – PERFORMANCE MANAGEMENT PLANNING (PMP) AND ANS IMPLEMENTATION

1. STEP 1: DEFINE SCOPE, CONTEXT AND SET AMBITIONS/EXPECTATIONS

1.1 The purpose of Step 1 is to reach a common agreement on the scope and (assumed) context of the "system" on which the performance management process will be applied, as well as a common view on the general nature of the expected performance improvements. An important part of the PBA is the development of cause-effect relationships between these technical performance characteristics and the selected higher level KPAs from the eleven key performance areas (KPAs) as identified in the Global Air Traffic Management Operational Concept (Doc 9854).

1.2 Scope definition is important to avoid misunderstandings, in particular about the performance (improvement) which can be expected within the given scope. By defining the scope of the performance management activity, the limits of responsibility and accountability are also defined. Geographically, the scope could be an Aerodrome, FIR, TMA, CTA, etc., but the scope definition could include additional details such as type of traffic (international, overflight, IFR, VFR), etc.

1.3 Within a given scope, the purpose of identifying general ambitions and expectations is to develop a strategic view on the (performance) results that are expected.

1.4 States are requested to define the scope and context of the required performance improvements to the national air navigation system as well as the nature of the expected performance improvements.

1.5 The expectations of the global aviation community are defined in 11 Key Performance Areas (KPAs). The GANP considers all these areas through the performance ambitions. Although all these areas are equally important, as they are interrelated and cannot be considered in isolation, some areas are more visible to society than others.

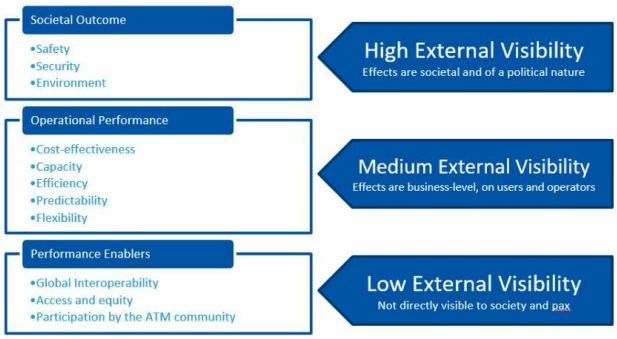

Figure 2 The 11 KPAs of the GANP

1.6 A Summary of the GANP Performance Ambitions is provided hereafter:

SUMMARY OF THE GANP PERFORMANCE AMBITIONS "A high performing system by 2040 and beyond"	
KPA	**Ambition**
ACCESS AND EQUITY	No aviation community member excluded or treated unfairly.
CAPACITY	Nominal capacity easily scalable with demand.
	Disruptive events do not interrupt service provision and do not significantly affect the performance of the system.
COST-EFFECTIVENESS	No increase of total direct ANS cost while maintaining the safety and quality of service.
	Significant increase of ANS productivity, irrespective of demand.
EFFICIENCY	Reduction of the gap between the flight efficiency achieved and the desired optimum trajectory of airspace users.
ENVIRONMENT	ANS-induced inefficiencies to be progressively removed to contribute to the global ICAO aspirational goals for CO_2 emissions.
	To benefit from achieved flight efficiency gains.
FLEXIBILITY	To absorb required changes to individual business and operational trajectories.
INTEROPERABILITY	Essential at an operational and technical level.
PARTICIPATION BY THE ATM COMMUNITY	Pre-agreed level of participation to make the maximum shared use of the air navigation resources.
PREDICTABILITY	No increase in ANS delivery variability including asset availability.
SAFETY	Zero ANS-related accidents and a significant (50%) reduction of ANS-related serious incidents.
SECURITY	Zero significant disruptions due to cyber incidents

Achieving the above ambitions and realizing the GANP vision will require a series of transformational changes.

2. STEP 2: KNOW YOUR SYSTEM – IDENTIFY OPPORTUNITIES, ISSUES AND SET OBJECTIVES

2.1 The purpose of Step 2 is to develop a detailed understanding of the performance behaviour of the system (this includes producing a list of opportunities and issues), and to decide which specific performance aspects are essential for meeting the general expectations. The essential performance aspects are those which need to be actively managed (and perhaps improved) by setting performance objectives.

2.2 Based on the scope, context and general ambitions/expectations which were agreed to during the previous step, the system should be analysed in order to develop an inventory of present and future opportunities and issues (weaknesses, threats) that may require performance management attention. This part of the process is generally known as the SWOT (strengths, weaknesses, opportunities and threats) analysis.

2.3 A SWOT analysis, requires the identification of:

- *Strengths*: internal attributes of a system or an organization that can help in the realization of ambitions or in meeting expectations.
- *Weaknesses*: internal attributes of a system or an organization that are a detriment to realizing ambitions or meeting expectations.
- *Opportunities*: are external conditions that help in the realization of ambitions or in meeting expectations.

- *Threats*: external conditions that are a detriment or harmful to realizing ambitions or meeting expectations.

2.4 Once the strengths, weakness, opportunities and threats are identified, action can be taken to target and exploit or remove these factors. The SWOT analysis should be conducted at local/national level.

Regional objectives

2.5 Based on regional performance and operational needs, differences, constraints and opportunities, MIDANPIRG is responsible for defining regional planning and implementation priorities, aligned with the GANP.

2.6 Considering the global objectives defined in the GANP and those identified by States, within the key performance areas prioritized in step 1, MIDANPIRG may set common objectives to be pursued by the States within the Region and to be monitored at regional level.

3. STEP 3: QUANTIFY OBJECTIVES AND SET TARGETS

3.1 The principle of "reliance on facts and data for decision-making" implies that objectives should be specific, measurable, achievable, relevant and time-bound (SMART). The purpose of Step 3 in the process is to ensure that these aspects are properly addressed.

3.2 During this step, the current/past performance (Perfromance Baseline), expected future performance, as well as actual progress in achieving performance objectives is quantitatively expressed by means of Key Performance Indicators (KPIs).

3.3 KPIs are not often directly measured. They are calculated from supporting metrics according to clearly defined formulas. Performance measurement is therefore done through the collection of data for the supporting metrics.

3.4 Data collection should take place at the most detailed level of granularity that can be afforded because the availability of detailed data greatly increases the effectiveness of the performance-based approach.

3.5 Performance targets are closely associated with performance indicators (KPIs) as they represent the values of performance indicators that need to be reached or exceeded to consider a performance objective as being fully achieved.

3.6 To understand how challenging it is to reach a target, one should know the baseline performance. The difference between the baseline and the target is called the performance gap. The determination of the baseline performance (calculation of baseline indicator values) is done based on the previous iteration of the process (historical data).

List of regional indicators

3.7 The GANP includes a series of KPIs linked to the catalogue of performance objectives within the 11KPAs. At the Regional level, MIDANPIRG defines regional performance objectives, using the key performance indicators (KPIs) of the GANP, to achieve regional performance ambitions. The list of KPIs to be used for the regional level is as follows:

Table 3. MID Air Navigation KPIs

KPI (KPAs)	Title / Definition	Measurement Units	Variants
KPI01 (predictability)	**Departure punctuality** Percentage of flights departing from the gate on-time (compared to schedule).	% of flights	Variant to be selected from those available in the GANP
KPI02 (Efficiency Environmental Impact)	**Taxi-out additional time** Actual taxi-out time compared to an unimpeded/reference taxi-out time.	Excess taxi-out time in Minutes/flight	Variant to be selected from those available in the GANP
KPI 04 (Efficiency)	**Filed flight plan en-route extension** Flight planned en-route distance compared to a reference ideal trajectory distance.	% excess distance	Variant, using a 40 NM cylinder around the departure airport and a 100 NM cylinder around the destination airport as the start/end of en-route airspace.
KPI06 (Capacity)	**En-route airspace capacity** The maximum volume of traffic an airspace volume will safely accept under normal conditions in a given time period.	Movements/hr	Variant to be selected from those available in the GANP
KPI09 (Capacity)	**Airport peak capacity** The highest number of operations an airport can accept in a one-hour time frame (also called declared capacity). Can be computed for arrivals, departures or arrivals + departures.	Number of arrivals / hour	Variant to be selected from those available in the GANP
KPI13 (Efficiency Environmental Impact)	**Taxi-in additional time** Actual taxi-in time compared to an unimpeded/reference taxi-in time	Excess taxi-in time in Minutes/flight	Variant to be selected from those available in the GANP
KPI14 (predictability)	**Arrival punctuality** Percentage of flights arriving at the gate on-time (compared to schedule)	% of flights	Variant to be selected from those available in the GANP
KPI20 (Safety)	**Number of Aircraft Accidents** Accident' is defined in ICAO Annex 13, Chapter 1-Definitions; ADREP: Accident Data Report	Number of accidents / year	Variant 1 (GASP): Aircraft MTOW > 2 250 kg 1.1 National accident occurrence level
KPI21 (Safety)	**Number of RWY Incursions** Number of occurrences at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take-off of aircraft. (CICTT Taxonomy definition)	Number of runway incursions / year	None
KPI22 (Safety)	**Number of RWY Excursions** Number of veer offs or overruns of the runway surface.	Number of runway excursions / year	None
KPI23 (Safety)	**Number of Airprox/TCAS Alert/Loss of separation/Near mid Air Collisions/Mid Air Collisions** Number of airproxes, TCAS alerts, loss of separation as well as near collisions or collisions between aircraft in flight.	Number of airprox/TCAS alert/loss of separation/near midair collisions/midair collisions (MAC)/ year	Variants to be selected from those available in the GANP

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3.8 The measurement of these KPIs, as well as the progress in achieving performance objectives will be monitored at the regional level. Yet, States, as part of their national air navigation plan, should use additional KPIs to measure the progress in achieving all their performance objectives.

4. STEP 4: SELECT SOLUTIONS

4.1 The purpose of this step is to combine the knowledge of baseline performance, opportunities and issues with the performance objectives and targets, in order to make decisions in terms of priorities, trade-offs, selection of solutions and resource allocation. The aim is to optimize the decisions to maximize the achievement of the desired/required (performance) results.

4.2 This is the part of the process where decision-makers need to know their options for mitigating pre-identified issues and therefore to exploit available opportunities. The list then needs to be analyzed in a performance oriented way, to assess/quantify the impact of drivers, constraints, impediments, etc., on the objectives under consideration. The solution might be ASBU or non-ASBU solution. Depending on the nature of the project, the output of this process is either a single preferred solution or a roadmap of selected solutions. In any case, decision-makers need to gain a good understanding of the strategic fit, the benefits, cost and feasibility of each option for operational improvement.

4.3 States should consider the operational improvements (ASBU elements) within the ASBU framework as potential solutions to improve the selected objectives/KPIs in the operational environment under analysis. In order to help States with this task, ICAO has developed the Air Navigation System Performance Analysis (AN-SPA) tool, available for free at:
https://www4.icao.int/ganpportal/ANSPA/Reports

4.4 Considering the identified needs at regional level, the ICAO SARPs linked to the ASBU framework, the required performance improvements, the States' needs and capabilities and users' requirements, MIDANPIRG sets in the MID Region Air Navigation Strategy (MID Doc 002) available at: *https://www.icao.int/MID/MIDANPIRG/Pages/MID-Docs.aspx*, the list of priority 1 ASBU Threads/Elements with their associated areas of applicability and targets, for implementation by States and monitoring at the regional level.

4.5 In addition to the priority 1 ASBU Elements, States should report to ICAO all the optimum solutions that they have identified for the achievement of the agreed performance objectives, in order to be included in the annual Web-based MID Air Navigation Report available at: *https://www.icao.int/MID/MIDANPIRG/Pages/MID-AN.aspx.*

5. STEP 5: IMPLEMENT SOLUTIONS

5.1 Step 5 is the execution phase of the performance management process. This is where the changes and improvements that were decided upon during the previous steps are organized into detailed plans, implemented, and begin delivering benefits.

5.2 Once the optimum solution/s has/have been identified, it is the moment to start the execution phase of the performance management process. The changes and improvements that have been identified as the optimum solution for the problem during the previous steps are organized into plans, implemented and begin delivering services to achieve the expected performance. During this execution phase, it is important to keep track of the project deployments (time, budget, etc.).

6. STEP 6: ASSESS ACHIEVEMENTS

6.1 The purpose of Step 6 is to continuously keep track of performance and monitor whether performance gaps are being closed as planned and expected.

6.2 Once the project is implemented, it is time to assess the benefits from the implementation. This means measuring the performance of the operational environment under analysis once the solution/s has/have been deployed.

6.3 First and foremost, this implies data collection to populate the supporting metrics with the data needed to calculate the performance indicators. The indicators are then compared with the targets defined during Step 3 to draw conclusions on the speed of progress in achieving the objectives.

6.4 This step also includes monitoring progress of the implementation projects, particularly in those cases where the implementation of solutions takes several years, as well as checking periodically whether

all assumptions are still valid and the planned performance of the solutions is still meeting the (perhaps changed) requirements.

6.5 With regard to the review of actually achieved performance, the output of this step is simply an updated list of performance gaps and their causes. In practice, the scope of the activity is often interpreted as being much wider and includes recommendations to mitigate the gaps.

6.6 This is then called performance monitoring and review, which in addition to this step, includes step 1, 2 and 3.

6.7 For the purpose of organizing performance monitoring and review, the task can be broken down into five separate activities:

- Data collection
- Data publication
- Data analysis
- Formulation of conclusions; and
- Formulation of recommendations.

6.8 As part of the process to assess the achievements, States should calculate/estimate the benefits accrued from the implementation of the solutions implemented in step 5.

6.9 States should also report to ICAO on annual basis the status of implementation of the selected solutions and progress achieved. The updates will be reflected in the annual Web-based MID Air Navigation Report available at: icao.int/MIDANReport/Pages/default.aspx; which will reflect also the priority 1 ASBU Threads/Elements implementation status against the objectives and targets as set forth in the MID Air Navigation Strategy (MID Doc 002), available at: MID Docs (icao.int).

6.10 The following Tables available in the **Appendix** are used for the collection of detailed information related to the implementation of associated priority 1 ASBU Threads/Elements, which are used also for the determination of the performance indicators included in the MID Region Air Navigation Strategy (MID Doc 002): DAIM 3-1, DAIM 3-2, DAIM 3-3, DAIM 3-4, AMET 3-1, AMET 3-2, AMET 3-3, AMET 3-4, APTA 3-1, ACAS 3-1 and ASUR 3-1. Other Tables might be developed for other Threads/Elements.

6.11 The monitoring of these Tables is assigned to the relevant MIDANPIRG Sub Groups.

7. MID Region Air Navigation Systems Performance Based Framework

7.1 The following Template could support States in the development of their National Air Navigation Plans (NANPs). It is used also to collect information from States on the implementation of the performance based approach (6 step approach) for the measurement of their air navigation system performance; and for the reporting and monitoring at regional level.

MID Region Air Navigation Systems Performance Based Framework/Template

Column

(1) Scope of Performance Improvement
(2) KPA (from the ICAO defined 11 Key Performance Areas (KPAs))
(3) Performance Objectives (ambition/expectations)
(4) KPIs based on the ICAO list of KPIs and associated variant
(5) The Baseline of each KPI
(6) The target of the KPI
(7) Selected ASBU element(s) /Enabler(s) and/or Non ASBU solution(s) for each operational improvement
(8) Target Implementation date
~~(8)~~(9) Remarks/Progress

Note: The following is just a Sample

Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/ Progress
1	2	3	4	5	6	7	8	
Aerodrome	Predictability (Punctuality)	Maximize departure punctuality	**KPI 01** (Departure punctuality) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	
Aerodrome	Efficiency (Flight time/ distance)	Minimize Taxi-out time	**KPI 02** (Taxi-out additional time) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	
Aerodrome	Capacity (Capacity, throughput & utilization)	Increase airport peak arrival capacity	**KPI 09** (Airport peak capacity) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	
Aerodrome	Efficiency (Flight time/ distance)	Minimize Taxi-in time	**KPI 13** (Taxi-in additional time) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	
Aerodrome	Predictability (Punctuality)	Maximize Arrival punctuality	**KPI 14** (Arrival punctuality) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/ Progress
1	2	3	4	5	6	7	8	
Aerodrome	Safety	Minimize Number of RWY Incursions Incidents & Accidents	**KPI 21** (Nr. of RWY Incursions)	TBD for each State/Airport	TBD for each State/Airport	TBD by each State/Airport	TBD by each State/Airport	
Aerodrome	Safety	Minimize Number of RWY Excursions Incidents & Accidents	**KPI 22** (Nr. of RWY Excursions)	TBD for each State/Airport	TBD for each State/Airport	TBD by each State/Airport	TBD by each State/Airport	
ATC (ACC Sectors)	Capacity (Capacity, throughput & utilization)	Enhance capacity of ACC Sectors	**KPI 06** (En-route Airspace capacity) **Variant X**	TBD for each ACC Sector	TBD for each ACC Sector	TBD for each ACC	TBD for each ACC	
State/FIR	Safety	Minimize Number of Aircraft Accidents	**KPI 20** (Number of Aircraft Accidents) **Variant X**	TBD for each State/FIR	TBD for each State/FIR	TBD for each State/FIR	TBD for each State/FIR	
FIR	Safety	Minimize Number of Airprox/TCAS Alert/Loss of separation/Near mid Air Collisions/Mid Air Collisions	**KPI 23** (Number of Airprox/TCAS Alert/Loss of separation/Near mid Air Collisions/Mid Air Collisions) **Variants X, Y, Z**	TBD for each FIR	TBD for each FIR	TBD for each FIR	TBD for each FIR	

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MID Region Air Navigation Systems Performance Based Framework Template (Sample)

Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/Variant	KPI Baseline	KPI Target	Operational Improvements/ (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/ Progress
3	1	2	4	5	6	7	8	
Aerodrome	Predictability (Punctuality)	Maximize departure punctuality	**KPI 01** (Departure punctuality) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	
Aerodrome	Efficiency (Flight time/ distance)	Minimize Taxi-out time	**KPI 02** (Taxi-out additional time) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	
Cairo Airport-Egypt (HECA)	Efficiency (Flight time & distance)	Avoid taxi-out additional time resulting from adverse conditions	**KPI 02** **Variant 1** – basic (computed without departure gate and runway data) **Reference Taxi Time:** 15 min	5 Minutes 4 Seconds	4 Minutes	• SURF-B1/4 • AMET-B0/1 • SURF-B1/5 • Applying new procedures	end of 2025 end of 2024 end of 2025 end of 2025	
Erbil Airport-Iraq (ORER)	Efficiency (Flight time/ distance)	Minimize Taxi-out time	**KPI 02** **Variant 1** – basic (computed without departure gate and runway data) **Reference Taxi Time:** 10 min	4min.	2min.	RSEQ B0/2 SURF B1/1 SURF B1/4 Layout improvement	Dec 2024 Dec 2024 Dec 2026 Dec 2026	
Aerodrome	Capacity (Capacity, throughput & utilization)	Increase airport peak arrival capacity	**KPI 09** (Airport peak capacity) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/Variant	KPI Baseline	KPI Target	Operational Improvements/ (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/ Progress
3	1	2	4	5	6	7	8	
Aerodrome	Efficiency (Flight time/ distance)	Minimize Taxi-in time	**KPI 13** (Taxi-in additional time) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	
Aerodrome	Predictability (Punctuality)	Maximize Arrival punctuality	**KPI 14** (Arrival punctuality) **Variant X**	TBD for each Airport	TBD for each Airport	TBD by each State/Airport	TBD for each Airport	
Khartoum Airport Sudan (HSSK)	Predictability (Punctuality)	Increase the number (%) of scheduled flights adhering to the scheduled on-block time	**KPI14 Variant 2A** – % of arrivals within ± 15 minutes of scheduled time of arrival	50%	80%	• RSEQ-B0/1 • New rapid exit taxiway	end of 2025 end of 2026	
Aerodrome	Safety	Minimize Number of RWY Incursions Incidents & Accidents	**KPI 21** (Nr. of RWY Incursions)	TBD for each State/Airport	TBD for each State/Airport	TBD by each State/Airport	TBD by each State/Airport	
Aerodrome	Safety	Minimize Number of RWY Excursions Incidents & Accidents	**KPI 22** (Nr. of RWY Excursions)	TBD for each State/Airport	TBD for each State/Airport	TBD by each State/Airport	TBD by each State/Airport	
ATC (ACC Sectors)	Capacity	Enhance capacity of ACC Sectors	**KPI 06** (En-route airspace capacity)	TBD for each ACC Sector	TBD for each ACC Sector	TBD for each ACC	TBD for each ACC	

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/Variant	KPI Baseline	KPI Target	Operational Improvements/ (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/ Progress
3	1	2	4	5	6	7	8	
	(Capacity, throughput & utilization)		**Variant X**					
Jordan Amman ACC North Sector	Capacity	Enhance capacity of Amman ACC North Sector	**KPI 06** **Variant 1** – airspace throughput (entry flow rate)	30 Mvts per hour	50 Mvts per hour	COMI B0/4 NAV B0/3 CSEP B1/3	Dec 2024 Dec 2024 Dec 2026	
State/FIR	Safety	Minimize Number of Aircraft Accidents	**KPI 20** (Number of Aircraft Accidents) **Variant X**	TBD for each State/FIR	TBD for each State/FIR	TBD for each State/FIR	TBD for each State/FIR	
FIR	Safety	Minimize Number of Airprox/TCAS Alert/Loss of separation/Near mid Air Collisions/Mid Air Collisions	**KPI 23** (Number of Airprox/TCAS Alert/Loss of separation/Near mid Air Collision/Mid Air Collision) **Variants**	TBD for each FIR	TBD for each FIR	TBD for each FIR	TBD for each FIR	
Iraq – Baghdad FIR (ORBB)	Safety	To reduce number of TCAS alerts & loss of separation	**KPI 3** **Variant 2**: TCAS alerts **Variant 3**: loss of separation	50 TCAS alerts/year 30 Loss of separation/year	30 TCAS alerts/year 20 Loss of separation/year	• Applying new procedures • Develop advanced training program	end of 2025 end of 2025	

Note: - The collection and processing of data related to Columns 1 to 7 is reflected in the MID Annual Air Navigation Reports: ***[****https://www.icao.int/MID/MIDANPIRG/Pages/MID-AN.aspx****.]***

- The monitoring of the priority 1 ASBU elements implementation is governed by the MID Region Air Navigation Strategy (MID Doc 002): ***[****https://www.icao.int/MID/MIDANPIRG/Pages/MID-Docs.aspx****]*** and the status of `implementation of the priority 1 ASBU elements is provided through the MID Annual Air Navigation Reports ***[****https://www.icao.int/MID/MIDANPIRG/Pages/MID-AN.aspx.****]***

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The list of Performance Objectives and associated Operational Improvements (projects) proposed by MID States to be included in the MID ANP Volume III ~~for regional monitoring.~~

Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/progress
1	2	3	4	5	6	7	8	9
Kuwait ANS Performance Based framework	Capacity	Increase Planned En-route Airspace Capacity	KPI06/ Movements/ hour	79 Per hour	30 %	Reduce lateral separation through the implementation of RNAV1 parallel routes	2025	
						FICE B0/1 with Bahrain, Iraq and Saudi Arabia	2025	
						Increase individual sector capacity by reducing ATCO workload FRTO B0/4	2026	
						FRTO B0/4 – Basic conflict detection and conformance monitoring	2026	
						Improve ATS routes network interface with Iraq	2026	
						Increase maximum sector configuration by Application of vertical sector splitting	2026	
	Predictability / Punctuality	Improve Departure Punctuality	KPI01/ % of departures within ± 15 minutes of	52%	90%	Prevent early takeoffs by delaying pushback of flights ready at the gate/stand	2025	

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/progress
1	2	3	4	5	6	7	8	9
			scheduled time of departure			Airport runway expansion (Third runway)	2026	
						Optimize the number of scheduled flights adhering to the push-back tolerance window by reducing the number of scheduled flights with push-back before the tolerance window	2025	
						NOPS B0/1 - Initial integration of collaborative airspace management with air traffic flow management Enablers: AMET B0/1(implemented) FRTO B0/2 (Not implemented)	2026	
						~~Reduce Taxi-out time by implementing SURF B0/1~~	~~Implemented~~	
						Delay take-off clearance for flights arriving too early at the departure RWY	2025	
						RSEQ B0/2– Departure Management	2026	
	Safety	Maintain or improve	KPI14/ % of arrivals within ± 15	97.2%	98%	No action is required at this stage, the performance will be		

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/progress
1	2	3	4	5	6	7	8	9
		Arrival Punctuality	minutes of scheduled time of arrival			monitored regularly, and appropriate action(s) will be identified when needed.		
		Reduce the risk of non collision related occurrences associated with incorrect or unsafe usage of runways	KPI21/ Number of runway incursion	14	0	~~SURF B0/1 – Basic ATCO Tools to manage traffic during ground Operations~~	~~Implemented~~	
						SURF B0/2 - Comprehensive situational awareness of surface operations	2025	
						SURF B1/5 - Enhanced vision systems for taxi operations	2026	
						SURF B2/2 - Comprehensive vehicle driver situational awareness on the airport surface	2028	
		Maintain or improve safety in the air	KPI23/ TCAS Alert	8 Pear	0	~~SNET B0/1: Short Term Conflict Alert Enablers (ASUR B0/1 or ASUR B0/2)~~	~~Implemented~~	
						~~SNET B1/1: Enhanced STCA with aircraft parameters~~	~~Implemented~~	
						~~SNET B1/2: Enhanced STCA in complex TMA~~	~~Implemented~~	
						~~ACAS B1/1~~	~~Implemented~~	

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/progress
1	2	3	4	5	6	7	8	9
						FRTO B0/4: Basic conflict detection and conformance monitoring Enabler FRTO B0/1 (implemented)	2026	
~~Doha FIR~~	~~Capacity (Capacity, throughput & utilization)~~	~~Enroute airspace capacity~~	~~KPI 06 Variant 2: airspace occupancy count~~	~~35 movements/hr.~~	~~56 movements/hr.~~	~~Enhanced Airspace and FIR implementation; FRTO B0/4; FRTO B1/1~~	~~Implemented~~	
~~OTHH~~	~~Capacity (Capacity, throughput & utilization)~~	~~Airport peak throughput~~	~~KPI 10 Variant AD: IFR Operations (arrivals + departures)~~	~~75 movements/hr.~~	~~86 movements/hr.~~	~~Independent Parallel Operations; Re-Categorization Wake Turbulence Separation Minima; Visual Guided Approach (Qatar Airway); Reduced Runway Separation Minima; High Intensity Runway Operation; Distance Based Separation Tool; APTA B0/1; APTA B0/2; APTA B0/7; RSEQ B0/1; RSEQ B0/2~~	~~Implemented~~	
~~OTBD OTHH~~	~~Efficiency (Flight time & distance)~~	~~Reduce taxi-out additional time~~	~~KPI 02 Variant 2: Advanced (computed with departure gate and runway data)~~	~~7.88 mins/flight 9.24 mins/flight~~	~~7 mins 8 mins~~	~~SURF B0/1; RSEQ B0/2~~	~~Implemented~~	
~~OTBD OTHH~~	~~Efficiency (Flight time & distance)~~	~~Reduce taxi-in additional time~~	~~KPI 13 Variant 2: Advanced (computed with~~	~~2.88 mins/flight 1.31 mins/flight~~	~~2.5 mins 1 min~~	~~SURF B0/1~~	~~Implemented~~	

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/progress
1	2	3	4	5	6	7	8	9
			landing runway and arrival gate data)					
OTBD OTHH	Predictability (Punctuality)	Increase the number (%) of scheduled flights adhering to the scheduled off-block time.	KPI 01 Variant 2A: % of departures within ± 15 minutes of scheduled time of departure	52% of flights 72% of flights	50% of flights 90% of flights	RSEQ B0/2	Implemented	
OTBD OTHH	Predictability (Punctuality)	Increase the number (%) of scheduled flights adhering to the scheduled on-block time.	**KPI 14** Variant 2A: % of arrivals within ± 15 minutes of scheduled time of arrival	44% of flights 52% of flights	50% of flights 90% of flights	ACDM B0/1; ACDM B0/2	Implemented	
FIR	Safety (Maintain or improve safety) Note: Occurrences where ATC was the main cause or a major contributory factor	Maintain or improve operational safety outcomes	**KPI 20** Variant 2.1 National accident occurrence level	0 accident/year	0 accident/year	SURF B0/1; SURF B0/2 SURF B0/3; SNET B0/1 SNET B0/2 SNET B0/3 SNET B0/4; ACAS B1/1; FRTO B0/4	Implemented	
OTBD OTHH	Safety (Maintain or improve safety) Note: Occurrences where ATC was the main cause or a major contributory factor	Reduce number of runway incursions	**KPI 21** The actual number of runway incursions at an aerodrome	OTBD: 6 incursions/year OTHH: 3 incursions /year	0.1 (1 per 10,000 mvts)	SURF B0/1; SURF B0/2	Implemented	
OTBD OTHH	Safety (Maintain or improve safety) Note: Occurrences where ATC was the main cause or a major contributory factor	Reduce number of runway excursions	**KPI 22** The actual number of runway excursions at an aerodrome	OTBD: 0 excursions/year OTHH: 0 excursions/year	OTBD: 0 excursions/year OTHH: 0 excursions/year	SURF B0/3	Implemented	
FIR	Safety (Maintain or improve safety) Note: Occurrences where ATC was the main cause or a major contributory factor	Maintain or improve safety in the air	**KPI 23** Variant 1: Number of airproxes Variant 2: TCAS alerts	5 airprox/year 4 TCAS alerts/year	SPIs alert levels	Procedures review Safety Nets review Training improvement Random sampling by Standard and Competency Unit	Implemented	

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/progress
1	2	3	4	5	6	7	8	9
To allow the use of airspace which would otherwise be segregated (i.e. special use airspace) along with flexible routing adjusted for specific traffic patterns. This will allow greater routing possibilities, reducing potential congestion on trunk routes and busy crossing points, resulting in reduced flight length and fuel burn.	KPA 02 — Capacity KPA-04 – Efficiency	Flexible use of airspace (FUA	**N/A**	Increase in the FUA concept in coordination with the State stakeholders	30% of the current D/P/R to be converted to FUA	B0 – FRTO Improved Operations through Enhanced En-Route Trajectories	On Going	
To use performance-based airspace and arrival procedures allowing	KPA 04 — Efficiency	To use performance-based airspace and arrival procedures allowing aircraft to fly their optimum	Indicator: % Aerodromes/TMA with PBN STAR implemented	60%	100%	APTA-B0/4 CDO : Improved Flexibility and Efficiency in Descent Profiles PBN STARs	2026	

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Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/progress	
1	2	3	4	5	6	7	8	9	
aircraft to fly their optimum profile using continuous descent operations (CDOs). This will optimize throughput, allow fuel efficient descent profiles and increase capacity in terminal areas		profile using continuous descent operations (CDOs). This will optimize throughput, allow fuel efficient descent profiles and increase capacity in terminal areas.	Supporting Metric: Number of International Aerodromes/TMAs with PBN STAR implemented						
Manage arrivals and departures (including time-based metering) to and from a multi-runway aerodrome or locations with multiple dependent runways at closely proximate aerodromes, to efficiently utilize the inherent runway capacity. / Runways and terminal manoeuvring area	KPA 01 — Access and equity KPA 04 — Efficiency	Arrival Manager (AMAN) & Departure Manager (DMAN)	Indicator: % of Aerodromes that are managed by AMAN/DMAN systems Supporting metric: Number of Aerodromes that are managed by AMAN/DMAN systems	N/A	100%	B0 – RSEQ Improved Traffic Flow through	On-going		

Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date	Remarks/progress
1	2	3	4	5	6	7	8	9
in major hubs and metropolitan areas will be most in need of these improvements. The improvement is least complex – runway sequencing procedures are widely used in aerodromes globally. However, some locations might have to confront environmental and operational challenges that will increase the complexity of development and implementation of technology and procedures to realize this Module.								

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APPENDICES

DAIM Digital Aeronautical Information Management

In order to assist States in the planning for the transition from AIS to AIM in an expeditious manner, the following Tables, should be used:

1- **Table DAIM 3-1** sets out the requirements for the Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID). It reflects the transition from the current product centric AIS to data centric AIM. For the future digital environment, it is important that the authoritative databases are clearly designated and such designation must be published for the users. This is achieved with the concept of the Integrated Aeronautical Information Database (IAID), a single access point for one or more authoritative databases (AIP, Terrain, Obstacles, AMDB, data-driven charting, etc.) for which the State is responsible. This Table will be used for the monitoring of the GANP and MID Region Air Navigation Strategy element DAIM-B1/1.

2- **Table DAIM 3-2** sets out the requirements for aeronautical data quality. It will be used for the monitoring of the GANP and MID Region Air Navigation Strategy element DAIM-B1/1.

3- **Table DAIM 3-3** sets out the requirements for the implementation of the World Geodetic System – 1984 (WGS-84). The requirement to use a common geodetic system remains essential to facilitate the exchange of data between different systems. The expression of all coordinates in the AIP and charts using WGS-84 is an important first step for the transition to AIM. This Table will be used for the monitoring of the GANP and MID Region Air Navigation Strategy element DAIM-B1/1.

4- **Table DAIM 3-4-1** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 1 and Area 4. It will be used for the monitoring of the GANP and MID Region Air Navigation Strategy elements DAIM-B1/3 and DAIM-B1/4.

5- **Table DAIM 3-4-2** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 2. It will be used for the monitoring of the GANP and MID Region Air Navigation Strategy elements DAIM-B1/3 and DAIM-B1/4.

6- **Table DAIM 3-4-3** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 3 and implementation of Airport Mapping Databases (AMDB). It will be used for the monitoring of the GANP and MID Region Air Navigation Strategy elements DAIM-B1/3, DAIM-B1/4 and B1/5.

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Table DAIM 3-1

Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID)

EXPLANATION OF THE TABLE

Column:

1 Name of the State or territory for which the provision of AIS/AIM products and services based on the IAID is required.

2 Requirement for the implementation and designation of the authoritative IAID, shown by:
- FI – Fully Implemented
- PI – Partially Implemented
- NI – Not Implemented

Note 1 – The IAID of a State is a single access point for one or more databases (AIP, Terrain, Obstacles, AMDB, etc.). The minimum set of databases which should be integrated is defined in Annex 15.

Note 2 – The information related to the designation of the authoritative IAID should be published in the AIP (GEN 3.1)

3 Requirement for an IAID driven AIP production, shown by:
- FI – Fully Implemented (eAIP: Text, Tables and Charts)
- PI – Partially Implemented
- NI – Not Implemented

Note 3 – AIP production includes, production of AIP, AIP Amendments and AIP Supplements

Note 4 – Charts' GIS based database should be interoperable with AIP database

4 Requirement for an IAID driven NOTAM production, shown by:
- FC – Fully Compliant
- NC – Not Compliant

5 Requirement for an IAID driven SNOWTAM processing, shown by:
- FI – Fully Implemented
- NI – Not Implemented

6 Requirement for an IAID driven PIB production, shown by:
- FC – Fully Compliant
- PC – Partially Compliant
- NC – Not Compliant

7 Requirement for Procedure design systems to be interoperable with the IAID, shown by:
- FI – Fully Implemented
- PI – Partially Implemented
- NI – Not Implemented

Note 5 – full implementation includes the use of the IAID for the design of the procedures and for the storage of the encoded procedures in the IAID

8 Requirement for ATS systems to be interoperable with the IAID, shown by:
- FI – Fully Implemented
- PI – Partially Implemented
- NI – Not Implemented

9 Action Plan – short description of the State's Action Plan with regard to the provision of AIM products and services based on the IAID, especially for items with a "PC", "PI", "NC" or "NI" status, including planned date(s) of full compliance, as appropriate.

10 Remarks – additional information, including detail of "PC", "NC", "PI" and "NI", as appropriate.

~~TABLE DAIM 3-1~~

~~Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID)~~

~~State~~	~~IAID~~	~~AIP~~	~~NOTAM~~	~~SNOWTAM~~	~~PIB~~	~~Procedure Design~~	~~ATS~~	~~Action Plan~~	~~Remarks~~
~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~	~~8~~	~~9~~	~~10~~

TABLE ASBU-MID-DAIM 3-1
Automated Data-Centric Environment

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EXPLANATION OF THE TABLE

Column:

1 Name of the State or territory.

2 *Level of Automation*, shown by:

0 – Manual

1 – Data Centric

2 – Automated Workflow

3 – Full AIM Integration

Note 1 – Guidance on automation and description of different levels of automation are contained in Doc 8126 (Aeronautical Information Services Manual), Part II, Chapter 7 (7.4).

3 Implementation of *Automated processes - Data collection (interfaces with data originators)*, shown by:

FI – Fully Implemented: *when Data collection is at level 3 automation*

PI – Partially Implemented: *when Data collection is at level 1 or 2 automation*

NI – Not Implemented: *when Data collection is at level 0 automation*

Note 2 — Guidance on the levels of automation are contained in Doc 8126 (Aeronautical Information Services Manual), Part II, 7.4.

Note 3 — Additional guidance on the components of an automated AIM system (Data Input) are contained in Doc 8126 (Aeronautical Information Services Manual), Part II, 7.5.1.

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4 Implementation of *Automated processes - Data processing*, shown by:

FI – Fully Implemented: *when Data processing is at level 3 automation*

PI – Partially Implemented: *when Data processing is at level 1 or 2 automation*

NI – Not Implemented: *when Data processing is at level 0 automation*

Note 5 — Guidance on the levels of automation are contained in Doc 8126 (Aeronautical Information Services Manual), Part II, 7.4.

Note 6 — Additional guidance on the components of an automated AIM system (Core Processing System and Data Storage) are contained in Doc 8126 (Aeronautical Information Services Manual), Part II, 7.5.2 and 7.5.3.

5 Implementation of *Automated processes - Data provision/distribution*, shown by:

FI – Fully Implemented: *when Data provision/distribution is at level 3 automation* PI – Partially Implemented: *when Data provision/distribution is at level 1 or 2 automation*

NI – Not Implemented: *when Data provision/distribution is at level 0 automation*

Note 7 — Guidance on the levels of automation are contained in Doc 8126 (Aeronautical Information Services Manual), Part II, 7.4

State	Level of Automation (Overall)	Automated Processes			Automated data-centric environment based on (AIXM V5.1+)	Action Plan	Remarks
		Data collection (interfaces with data originators)	Data Processing	Data provision/ distribution			
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*

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~~Table DAIM-3-2~~
~~Aeronautical Data Quality~~

~~**EXPLANATION OF THE TABLE**~~

~~Column:~~

~~1 Name of the State or territory.~~

~~2 Compliance with the requirement for implementation of QMS for Aeronautical Information Services including safety and security objectives, shown by:~~
- ~~FC – Fully compliant~~
- ~~NC – Not compliant~~

~~3 Compliance with the requirement for the establishment of formal arrangements with approved data originators concerning aeronautical data quality, shown by:~~
- ~~FC – Fully compliant~~
- ~~PC – Partially compliant~~
- ~~NC – Not compliant~~

~~4 Implementation of digital data exchange with originators, shown by:~~
- ~~FI – Implemented~~
- ~~PI – Partially Implemented~~
- ~~NI – Not implemented~~

~~*Note 1 – Information providing detail of "PI" and "NI" should be given in the Remarks column (percentage of implementation).*~~

~~5 Compliance with the requirement for metadata, shown by:~~
- ~~FC – Fully compliant~~
- ~~PC – Partially compliant~~
- ~~NC – Not compliant~~

~~6 Compliance with the requirements related to aeronautical data quality monitoring (accuracy, resolution, timeliness, completeness), shown by:~~
- ~~FC – Fully compliant~~
- ~~PC – Partially compliant~~
- ~~NC – Not compliant~~

~~7 Compliance with the requirements related to aeronautical data integrity monitoring, shown by:~~
- ~~FC – Fully compliant~~
- ~~PC – Partially compliant~~
- ~~NC – Not compliant~~

~~8 Compliance with the requirements related to the AIRAC adherence, shown by:~~
- ~~FC – Fully compliant~~
- ~~NC – Not compliant~~

~~9 Action Plan – short description of the State's Action Plan with regard to aeronautical data quality requirements implementation, especially for items with a "PC", "PI", "NC" or "NI" status, including planned date(s) of full compliance, as appropriate.~~

~~10~~1 ~~Remarks – additional information, including detail of "PC", "NC", "PI" and "NI", as appropriate.~~

~~TABLE DAIM 3-2~~

~~Aeronautical Data Quality~~

~~State~~	~~QMS~~	~~Establishment of formal agreements~~	~~Digital data exchange with originators~~	~~Metadata~~	~~Data quality monitoring~~	~~Data integrity monitoring~~	~~AIRAC adherence~~	~~Action Plan~~	~~Remarks~~
~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~	~~8~~	~~9~~	~~10~~

TABLE ASBU-MID- DAIM-3-2

Aeronautical Data Quality

EXPLANATION OF THE TABLE

Column:

1 Name of the State or territory.

2 Implementation of Quality Assurance and Quality Control, shown by: FC – Fully Compliant PC – Partially Compliant NC – Not Compliant

Note 1 – Guidance on the implementation of Quality Assurance and Quality Control are contained in Doc 8126 (Aeronautical Information Services Manual), Part II, Chapter 6.

3 Establishment of formal arrangements with originators, shown by: FC – Fully Compliant PC – Partially Compliant NC – Not Compliant

Note 4 – Provisions and guidance on formal arrangements with originators are contained in Annex 15, 2.1.5 and Doc 8126, 3.3.

Note 5 – Fully compliant (FC) means that the AIS has established formal arrangements with all data originators.

Note 6 – Relevant data quality requirements should be considered in the formal arrangements with originators. Since the Aeronautical Data Catalogue contains all the data elements that the AIS manages, each one being assigned an owner, the AIS can use the Aeronautical Data Catalogue to systematically establish and document formal arrangements with all

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identified data originators.
Note 7 – Formal arrangements with originators should include requirements related to the provision of metadata.

4 Action Plan – short description of the State's Action Plan with regard to aeronautical data quality requirements implementation and the establishment of formal arrangements with originators, especially for items with a "PC" or "NC" status, including planned date(s) of full compliance, as appropriate.

5 Remarks – additional information, including detail of "PC" and "NC", as appropriate.

State	Quality Assurance /Quality Control	Formal Arrangement with Originators	Action Plan	Remarks
1	*2*	*3*	*4*	*5*

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Table DAIM-3-3

World Geodetic System-1984 (WGS-84)

EXPLANATION OF THE TABLE

Column:

1 Name of the State or territory for which implementation of WGS-84 is required.

2 Compliance with the requirements for implementation of WGS-84 for FIR and En-route points, shown by:
- FC – Fully compliant
- PC – Partially compliant
- NC – Not compliant

3 Compliance with the requirements for implementation of WGS-84 for Terminal Areas (arrival, departure and instrument approach procedures), shown by:
- FC – Fully compliant
- PC – Partially compliant
- NC – Not compliant

4 Compliance with the requirements for implementation of WGS-84 for Aerodrome, shown by:
- FC – Fully compliant
- PC – Partially compliant
- NC – Not compliant

5 Compliance with the requirements for implementation of Geoid Undulation, shown by:
- FC – Fully compliant
- PC – Partially compliant
- NC – Not compliant

6 Action Plan – short description of the State's Action Plan with regard to WGS-84 implementation, especially for items with a "PC", "PI", "NC" or "NI" status, including planned date(s) of full compliance, as appropriate.

7 Remarks – additional information, including detail of "PC" and "NC", as appropriate.

~~TABLE DAIM 3-3~~
~~World Geodetic System 1984 (WGS-84)~~

~~State~~	~~FIR/ENR~~	~~Terminal~~	~~AD~~	~~GUND~~	~~Action Plan~~	~~Remarks~~
~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~

TABLE ASBU-MID - DAIM-3-3
Provision of Digital Data Sets

EXPLANATION OF THE TABLE

Column

1 Name of the State

2 Terrain Data Set for area 1

3 Terrain Data Sets for airports (area 4, as applicable)

4 Terrain Data Sets for airports (area 2a)

5 Terrain Data Sets for airports (TOFP area)

6 Terrain Data Sets for airports (OLS)

7 Obstacle Data Set for area 1

8 Obstacle Data Sets for airports (area 4, as applicable)

9 Obstacle Data Sets for airports (area 2a)

10 Obstacle Data Sets for airports (TOFP area)

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11 Obstacle Data Sets for airports (OLS)

12 AIP data sets

12 Action plan — short description of the State's Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets "PC" and "NC" status.

13 Remarks— additional information, including detail of "PC" and "NC"

Note – when status of implementation is reflected in the table, it is shown by: FC (Fully Compliant), PC (Partially Compliant), NC (Not Compliant), N/A (Not Applicable)

State	Terrain data sets					Obstacle data sets					AIP data sets	Action Plan	Remarks
	Area 1	Area 4	Area 2a	TOFP	OLS	Area 1	Area 4	Area 2a	TOFP	OLS			
1	2	3	4	5	6	7	8	9	10	11	12	13	14

~~Table DAIM-3-4-1~~
~~Provision of Terrain and Obstacle data sets for Areas 1 and 4~~

~~**EXPLANATION OF THE TABLE**~~

~~Column~~

~~1~~ ~~Name of the State or territory for which Terrain and Obstacle data sets for Areas 1 and 4 are required.~~

~~2~~ ~~Compliance with requirement for the provision of Terrain data sets for Area 1, shown by:~~
- ~~FC – Fully Compliant~~
- ~~PC – Partially Compliant~~
- ~~NC – Not Compliant~~

~~3~~ ~~Compliance with requirement for the provision of Terrain data sets for Area 4, shown by:~~
- ~~FC – Fully Compliant~~
- ~~PC – Partially Compliant~~
- ~~NC – Not Compliant~~
- ~~N/A – Not Applicable~~

~~4~~ ~~Compliance with requirement for the provision of Obstacle data sets for Area 1, shown by:~~
- ~~FC – Fully Compliant~~
- ~~PC – Partially Compliant~~
- ~~NC – Not Compliant~~

~~5~~ ~~Compliance with requirement for the provision of Obstacle data sets for Area 4, shown by:~~
- ~~FC – Fully Compliant~~
- ~~PC – Partially Compliant~~
- ~~NC – Not Compliant~~
- ~~N/A – Not Applicable~~

~~6~~ ~~Action plan – short description of the State's Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets for Areas 1 and 4, especially for items with a "PC" or "NC" status, including planned date(s) of full compliance, as appropriate.~~

~~7~~ ~~Remarks – additional information, including detail of "PC" and "NC", as appropriate.~~

~~TABLE DAIM 3-4-1~~

~~Provision of Terrain and Obstacle data sets for Areas 1 and 4~~

~~State~~	~~Terrain data sets~~		~~Obstacle data sets~~		~~Action Plan~~	~~Remarks~~
	~~Area 1~~	~~Area 4~~	~~Area 1~~	~~Area 4~~		
~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~

Table DAIM-3-4-2
Provision of Terrain and Obstacle data sets for Area 2, the take-off flight path area (TOFP) and the obstacle limitation surfaces (OLS)

EXPLANATION OF THE TABLE

Column

1 Name of the State or territory for which Terrain and Obstacle data sets for Area 2 are required.

2 Compliance with requirement for the provision of Terrain data sets for Area 2a, shown by:
- FC – Fully Compliant
- PC – Partially Compliant
- NC – Not Compliant

3 Compliance with requirement for the provision of Terrain data sets for Area 2b, shown by:
- FI – Fully Implemented
- PI – Partially Implemented
- NI – Not implemented
- N/A – Not Applicable

4 Compliance with requirement for the provision of Terrain data sets for Area 2c, shown by:
- FI – Fully Implemented
- PI – Partially Implemented
- NI – Not Implemented
- N/A – Not Applicable

5 Compliance with requirement for the provision of Terrain data sets for Area 2d, shown by:
- FI – Fully Implemented
- PI – Partially Implemented
- NI – Not Implemented
- N/A – Not Applicable

6 Compliance with requirement for the provision of Terrain data sets for the take-off flight path area (TOFP), shown by:
- FI – Fully Implemented
- PI – Partially Implemented
- NI – Not Implemented
- N/A – Not Applicable

7 Compliance with requirement for the provision of Terrain data sets for the obstacle limitation surfaces (OLS) shown by:
- FI – Fully Implemented
- PI – Partially Implemented
- NI – Not Implemented
- N/A – Not Applicable

8 Compliance with requirement for the provision of Obstacle data sets for Area 2a, shown by:
FC – Fully Compliant
PC – Partially Compliant
NC – Not Compliant

9 Compliance with requirement for the provision of Obstacle data sets for Area 2b, shown by:
FI – Fully Implemented
PI – Partially Implemented
NI – Not implemented
N/A – Not Applicable

10 Compliance with requirement for the provision of Obstacle data sets for Area 2c, shown by:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

11 Compliance with requirement for the provision of Obstacle data sets for Area 2d, shown by:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

12 Compliance with requirement for the provision of Obstacle data sets for the take-off flight path area (TOFP), shown by:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

13 Compliance with requirement for the provision of Obstacle data sets for the obstacle limitation surfaces (OLS), shown by:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

14 Action plan — short description of the State's Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets for Area 2, especially for items with a "PC", "PI", "NC" or "NI" status.

15 Remarks— additional information, including detail of "PC", "PI" and "NC", "NI", as appropriate.

TABLE DAIM-3-4-2

Provision of Terrain and Obstacle data sets for Area 2, the take-off flight path area (TOFP) and the obstacle limitation surfaces (OLS)

State	Terrain data sets						Obstacle data sets						Action Plan	Remarks
	Area 2a	Area 2b	Area 2c	Area 2d	TOFP	OLS	Area 2a	Area 2b	Area 2c	Area 2d	TOFP	OLS		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table DAIM-3-4-3
Provision of Terrain and Obstacle data sets for Area 3 and Airport Mapping Databases (AMDB)

EXPLANATION OF THE TABLE

Column

1 Name of the State or territory for which Terrain and Obstacle data sets for Area 3 and AMDB are required.

2 Compliance with requirement for the provision of Terrain data sets for Area 3, shown by:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

3 Compliance with requirement for the provision of Obstacle data sets for Area 3, shown by:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

4 Implementation of AMDB, shown by:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

5 Action plan — short description of the State's Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets for Area 3 and AMDB implementation, especially for items with a "PC", "PI", "NC" or "NI" status.

6 Remarks— additional information, including detail of "PI" and "NI", as appropriate.

TABLE DAIM-3-4-3

Provision of Terrain and Obstacle data sets for Area 3 and Airport Mapping Databases (AMDB)

State	Terrain data sets (Area 3)	Obstacle data sets (Area 3)	AMDB	Action Plan	Remarks
1	2	3	4	5	6

Table AMET 3-1

Meteorological observations products

EXPLANATION OF THE TABLE

Column

1 Name of the State

2 Status of implementation of Automatic Weather Observation System (AWOS) information, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

3 Status of implementation of Local reports (MET REPORT/SPECIAL), where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

4 Status of implementation of Aerodrome reports (METAR/SPECI), where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

5 Status of implementation of Lightning Information, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

6 Status of implementation of Ground-based weather radar information, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

7 Status of implementation of Meteorological satellite imagery, where:
FI – Fully Implemented

PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

8 Status of implementation of Aircraft meteorological report (ie. ADS-B, AIREP, etc.), where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

9 Status of implementation of Vertical wind and temperature profiles, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

10 Status of implementation of Wind shear alerts, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

11 Remarks

State	Implementation									Remarks
	AWOS	MET REPORT/SPECIAL	METAR/SPECI	Lightning Information	Ground-based weather radar information	Meteorological satellite imagery	Aircraft meteorological report	Vertical wind and temperature profiles	Wind shear alerts	
1	2	3	4	5	6	7	8	9	10	11

Table AMET 3-2

Meteorological forecast and warning products

EXPLANATION OF THE TABLE

Column

1 Name of the State

2 Status of implementation of World Area Forecast System (WAFS) gridded products, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

3 Status of implementation of Significant Weather (SIGWX), where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

4 Status of implementation of Aerodrome Forecast (TAF), where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

5 Status of implementation of Trend Forecast (TREND), where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

6 Status of implementation of Take-off Forecast, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

7 Status of implementation of SIGMET, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

8 Status of implementation of Aerodrome Warning, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

9 Status of implementation of Wind Shear Warning, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
N/A – Not Applicable

10 Remarks

State	Implementation								Remarks
	WAFS	SIGWX	TAF	TREND	Take-off Forecast	SIGMET	Aerodrome Warning	Wind Shear Warning	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

Table AMET 3-3

Climatological and historical meteorological Products

EXPLANATION OF THE TABLE

Column

1 Name of the State
2 Status of availability of Aerodrome climatological tables, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
3 Status of availability of Aerodrome climatological summaries, where:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented
4 Remarks

State	Implementation		Remarks
	Aerodrome climatological tables;	Aerodrome climatological summaries	
1	2	3	4

Table AMET 3-4

Dissemination of meteorological products

Column

1	Name of the State
2	Dissemination of meteorological products using TAC, where: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented
3	Dissemination of meteorological products using Gridded, where: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented
4	Dissemination of meteorological products using Graphical, where: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented
5	Dissemination of meteorological products using BUFR code, where: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented
6	Dissemination of meteorological products using IWXXM (in XML/GML), where: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented
7	Dissemination means includes AFTN, where: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented
8	Dissemination means includes AMHS, where: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented
9	Dissemination means includes ssecure internet services (WIFS/SADIS), where: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented
10	Remarks

State	Dissemination of meteorological products								Remarks
	Formats					Means			
1	(TAC) 2	(Gridded) 3	(Graphical) 4	(BUFR) 5	(IWXXM) 6	(AFTN) 7	(AMHS) 8	(WIFS/SADIS) 9	10
BAHRAIN	FI	FI	FI	FI	NI	FI	NI	FI	
EGYPT	FI	NI	NI	NI	NI	FI	NI	FI	
IRAN	FI	NI	FI	NI	NI	FI	NI	NI	

APTA : Improve arrival and departure operations

TABLE -APTA 3-1

EXPLANATION OF THE TABLE

Column	
1	Name of the State / International Aerodromes' Location Indicator
2	Runway Designator
3, 4, 5	Conventional Approaches (ILS / VOR or NDB)
6, 7, 8, 9	Elements of APTA B0/1 PBN Approaches with basic capabilities (Status of PBN Plan and implementation of LNAV, LNAV/VNAV), where: Y – Yes, implemented N – No, not implemented
10	PBN Runway: where any type of PBN approach is implemented
12, 15	Elements of APTA B0/2 PBN SID and STAR procedures (with basic capabilities) Y – Yes, implemented N – No, not implemented
11, 13	Elements of APTA B0/5 CCO basic (Status of implementation of CCO) per runway end and per aerodrome, where: Y – Yes, implemented N – No, not implemented
14, 16	Elements of APTA B0/4 CDO basic (Status of implementation of CDO) per runway end and per aerodrome, where: Y – Yes, implemented N – No, not implemented
17	Elements of APTA B0/7 Performance based aerodrome operating minima – Advanced aircraft (Compliance with the requirements for **PB AOM**) per State, where: FC – Fully compliant NC – Not compliant
18	Remarks

Int'l AD (Ref. MID ANP) (1)	RWY (2)	Conventional Approaches (3)			APTA (6)				CCO (11)				CDO (14)				PB AOM (17)	Remarks (18)
		Precision (4)		VOR or NDB (5)	PBN PLAN (7)	LNAV (8)	LNAV / VNAV (9)	PBN RWY (10)	RNAV SID (12)		CCO (13)		RNAV STAR (15)		CDO (16)		AOP (17)	
		xLS	CAT		Update date				RWY	AD	RWY	AD	RWY	AD	RWY	AD	RWY	

ACAS Airborne Collision Avoidance System (ACAS)

Table ACAS 3-1

EXPLANATION OF THE TABLE

Column

1 Name of the State

2 Status of implementation:
Y – Fully Implemented
N – Not Implemented

3 National Regulation(s) Reference(s)

4 Remarks

State	Status	Regulation Reference	Effective Date	Remarks
1	2	3	4	5

ASUR Surveillance systems

Table ASUR 3-1

Surveillance Implementation Monitoring Table

EXPLANATION OF THE TABLE

Column	
1	Name of the State / ATS Units where Radar service provided
2	Surveillance Gap Y – Yes, non-radar covered area (GAP) exist N – No, GAP areas not existed
3	Multi- Surveillance Data processing capability Y – Yes, implemented N – No, not implemented
4	Surveillance Sensor used Y – Yes, implemented N – No, not implemented
5	Dual Surveillance sources Y – Yes, available N – No, not available
6	Issuance of ADS-B Carriage Mandate N – No, not issued Date – effective date of ADS-B carriage mandate Reference - link to mandate regulation

State/ ATS Units Served	Surveillance Gaps	Multi-Surveillance Data Processing Capability	Surveillance Sensor Used						Dual Surveillance Sources	ADS-B carriage mandate	
			PSR	SSR Mode A/C	SSR Mode S	MLAT	ADS-B	Data Sharing		Date	Reference
1	2	3	4						5	6	
State											

- END -

TERMS OF REFERENCE (TOR) OF THE MIDANPIRG RANP/NANP TASK FORCE (RANP/NANP TF)

I. TERMS OF REFERENCE

1.1 The terms of reference of the RANP/NANP Task Force are:

a) monitor the status of implementation of the priority 1 ASBU Threads/Elements included in the MID Region Air Navigation Strategy;

b) identify the difficulties and challenges associated with the implementation of the MID Region priority 1 ASBU Threads/Elements and provide progress reports, as required;

c) consolidate the MID Region Annual Air Navigation Report prior to its submission to MIDANPIRG for endorsement;

d) keep under review the MID Region Air Navigation Strategy, and considering global and regional developments and the inputs from States and the MIDANPIRG Sub-Groups, propose changes to the MID Region Air Navigation Strategy for final review and endorsement by MIDANPIRG;

e) support the implementation of the GANP, its framework and timelines ensuring harmonization and coordination of efforts aimed at improving international civil aviation capacity and efficiency including establishment of priorities, targets and indicators consistent with globally-harmonized objectives, taking into account operational needs;

f) provide a forum for discussion, coordination, cooperation and sharing of experiences and best practices amongst States and stakeholders, of subjects related to GANP implementation and development of National Air Navigation Plans (NANP);

g) promote the implementation of the Performance Based Approach (PBA) and the six-step performance management process described in the Manual on Global Performance of the Air Navigation System (Doc 9883);

h) support MID States in the development and maintenance of their National Air Navigation Plans (NANP) based on a Performance Based Approach (PBA) as described in the Manual on Global Performance of the Air Navigation System (Doc 9883) and the MID Air Navigation Plan (Volume III);

i) promote the need for automated processes/tools for the collection of data and reporting related to the implementation of the Performance Based Approach (PBA), including the status of ASBU implementation by each member State;

j) consolidate all feedback and proposed amendments/improvements received from MIDANPIRG Sub-Groups on the GANP implementation;

k) report its activities/outcomes directly to MIDANPIRG; and

l) review periodically its Terms of Reference and propose amendments, as necessary.

II. COMPOSITION

2.1 The Task Force is composed of:

a) ANS regulatory, technical and operational experts from MIDANPIRG Member States;

b) concerned International and Regional Organizations, as observers; and

c) other representatives from provider States and Industry may be invited on ad hoc basis, as observers, when required.

III. WORKING ARRANGEMENTS

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

3.2 Face-to-face meetings for the review and coordination of deliverables will be conducted on annual basis.

RANP/NANP Task Force

LIST OF MAIN FOCAL POINT AND ALTERNATES

STATE	MAIN FOCAL POINT	ALTERNATE
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ATTACHMENT A

ICAO MID

ATTACHMENT A

RANP/NANP TF/2

(Cairo, Egypt, 17 – 19 February 2025)

LIST OF PARTICIPANTS

State Org/Ind.		Name	Title
Bahrain	1.	Sara Husain	Sr. Telecommunications Eng.
Egypt	2.	Waheed Sulaiman Ahmed	Director of Cairo Navigation Aids Systems
	3.	Mohamed Farghaly Mohamed	General Manager of R&D Directorate
	4.	Ahmed I. Youssef Tantawi	Aeronautical Information Officer
	5.	Mohamed Ibrahim A. Salem	Communication Management
	6.	Mohamed Mostafa Osman	General Manager of Airspace Planning & Design
	7.	Raef Elsayed Doghda	ATC
	8.	Fouad Elsayed A. Ibrahim	ATC
	9.	Amr Saber Iraqi	ATC
	10.	Ahmed Mohamed Saber	ATC
	11.	Marwa Mohamed Naguib	ATC
	12.	Mohamed Nabil Ibrahim	ATC
	13.	Mohamed Essam Elnayeb	ATS Inspector
	14.	Waheed Ahmed Gaafar	CNS General Manager
	15.	Ahmed Farouk Sayed	ATC
	16.	Ahmed Mostafa Mohamed Arman	ANS/CNS Inspector
	17.	Sameh Samir M. Ahmed	ANS Inspector
	18.	Mohamed Mohamed Mostafa	ACC GD
	19.	Maged Mohamed Hassan	Aeronautical Information Officer
	20.	Reem Hammad Madany	ANS/ATS Inspector
	21.	Ahmed Nasr Shady	ACC Safety Manager
	22.	Ahmed Mohamed El Gnainy	Navigational Procedure Designer Inspector
	23.	Mohamed Mohamed Wady	Engineer Satellite
	24.	Sherif Abdel Razek Aql	ANS/COM Inspector

State Org/Ind.		Name	Title
	25.	Rana Mohammad Abd El-Raheem	ATC Inspector
	26.	Taha Mohamed Taha	Procedure Designer
	27.	Eslam E. Abdel Fattah Ali	AIS Supervisor
IRAQ	28.	Sirwan Ahmed Mohammed	CNS/ATM Manager – Sulimaniyah Int'l Airport
	29.	Choman Abubakir Ahmed	ATC Manager
	30.	Sirwan Hamalaw Rosam	AIS Manager
	31.	Srud Mohammed Hussein	MET Manager
	32.	Mohammed Alaa M. Al-Bakri	Approach Manager
	33.	Haidar Abdulsattar Jabbar Al-Ani	CNS
	34.	Maher Hasan Mohammed	SAR Coordinator
	35.	Mudher Thamer Hasan Bahr	ATS Director
JORDAN	36.	Bassam Abdul-Rahman Refai Abed	Director Quality and Safety Management System (ANS)
KUWAIT	37.	Ahmad Mohammad Butaiban	Head of Radar Ops
	38.	Ahmad Mousa Almousa	Head of Standard
LIBYA	39.	Salah Aldeen Mohammed Ammar	ANSP
Oman	40.	Hilal Ali Al-Maqbali	ATM Director
	41.	Ibrahim Said Al Hajri	ATM System Chief
Qatar	42.	Nasser Al-Khalaf	Air Traffic Controller Consultant & ANS Advisor
	43.	Nayif Al Jaber	Acting Head of ANS Inspectorate
	44.	Erdal Yesilbas	Acting Head of Safety and Risk Management
	45.	Ramy Saad	ANS Inspector
	46.	Gonca Demiroz	Deputy Head of Approach
	47.	Mohamed A. Al-Asmakh	Head of AIM
SAUDI ARABIA	48.	Abdullah Mohamed Albathi	Director, Air Navigation Service
	49.	Khalid Saleh Algobaisy Alshehri	Air Navigation Meteorology Inspector
	50.	Ahmed M. Saigal	Jeddah Control Center Chief
	51.	Bander S. Alshammari	Operation Development Manager
	52.	Ehab Raslan Abdelgalil	Operation Planning and Requirements Supervisor
	53.	Ibrahim M. Alnashri	Riyadh Control Centre Chief

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	55.	Mohammed H. Zaitooni	Operations Planning & Performance Manager
	56.	Saleh Ali Alsaedi	Meteorological Aviation Forecast
	57.	Sami Mansour Alwafi	Directorate of Meteorological Aviation
	58.	Sameer Abdulrahman Qttlan	Planning Engineering Manager
UAE	59.	Saqr Almarashda	Senior Manager Airspace Management
	60.	Ahmed Saleh Al Shehhi	Senior Manager Airspace
	61.	Ahmed Rahma Alshamsi	Airspace Analyst
YEMEN	62.	Abdullah Mohamed Abdullah	Director Air Navigation CNS
	63.	Ashhab Shehab Saeed Omar	Director Air Navigation Operations
Organizations/Industries			
IFALPA	64.	Capt. Arnaud du Bédat	Senior Technical Officer
	65.	Yousef Hussein Wahby	Captain Egyptair
ICAO MID	66.	Mr. Mohamed Smaoui	Deputy Regional Director
	67.	Mr. Mohamed Iheb Hamdi	Regional Officer, Aerodromes and Gound Aids
	68.	Mr. Ahmad Amireh	Regional Officer, Air Traffic Manager and Search and Rescue
	69.	Mr. Ahmad Kaveh	Regional Officer, Air Traffic Management
	70.	Mrs. Manal Wissa	Programme Analysis Associate

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