INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE SECOND MEETING OF THE AIR NAVIGATION SYSTEMS IMPLEMENTATION GROUP

ANSIG/2

(Cairo, Egypt, 6 – 8 December 2016)

The views expressed in this Report should be taken as those of the ANSIG/2 Meeting 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 Air Navigation Systems Implementation Group (ANSIG/2) was held at the Meeting Room of the ICAO Middle East Regional Office in Cairo, Egypt, from 6 to 8 December 2016.

2. OPENING

2.1 The meeting was opened by Mr. Mohamed Khalifa Rahma, the ICAO Regional Director, Middle East Office, who welcomed the participants to Cairo and wished them a successful and fruitful meeting.

2.2 Mr. Rahma recalled that, in accordance with its Terms of Reference, ANSIG, as a Group responsible mainly of the implementation issues, should inter-alia, monitor the status of implementation of the priority 1 ASBU Block 0 Modules included in the MID Region Air Navigation Strategy, identify the associated difficulties and deficiencies and provide a progress report.

2.3 Mr. Rahma highlighted that, as part of the agenda, the meeting is expected to review and update the First Edition of the MID Air Navigation Report-2016, in order to consolidate the final version which will be presented to MIDANPIRG/16 for endorsement. He also recalled that, in accordance with the agenda, the meeting should review and propose updates, as deemed necessary, to the MID Air Navigation Strategy. He wished the meeting all the success.

3. ATTENDANCE

3.1 The meeting was attended by a total of thirty (30) participants from eight (8) States (Bahrain, Egypt, Iran, Jordan, Kuwait, Saudi Arabia, Sudan and United Arab Emirates) and three (3) Organizations/Industries (CANSO, IATA and MIDRMA). The list of participants is at **Attachment A.**

4. OFFICERS AND SECRETARIAT

4.1 The meeting was chaired by Mr. Adel H. Al-Aufi, Systems Planning Manager, Saudi Air Navigation Services (SANS), Saudi Arabia.

4.2 Mr. Mohamed Smaoui, ICAO Middle East Deputy Regional Director acted as the Secretary of the Meeting supported by:

Mr. Adel Ramlawi	-	Regional Officer, Aerodrome and Ground Aids (AGA)
Mr. Elie El Khoury	-	Regional Officer, Air Traffic Management and Search and Rescue (ATM/SAR)
Mr. Abbas Niknejad	-	Regional Officer, Aeronautical Information Management/Air Traffic Management (AIM/ATM)

5. LANGUAGE

5.1 The discussions were conducted in English. 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: Follow-up on the outcome of MIDANPIRG/15 and MSG/5 Conclusions and Decisions

Agenda Item 3: Air Navigation Global and Regional Developments

Agenda Item 4: Performance Framework for Regional Air Navigation Implementation

4.1 MID Region ASBU Implementation

- Status of implementation of the priority 1 ASBU Block 0 Modules
- MID Region Air Navigation Report-2016

4.2 Air Navigation Strategy and Planning

- MID eANP
- MID Region Air Navigation Strategy

4.3 Specific air navigation issues

- Outcome of the MIDANPIRG subsidiary bodies (Non-ASBU related issues

Agenda Item 5: Environmental Issues

- Review of the Report of the APM TF/3 meeting

Agenda Item 6: Air Navigation Deficiencies

Agenda Item 7: Future Work Programme

Agenda Item 8: Any other Business

7. CONCLUSIONS AND DECISIONS – DEFINITION

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

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

b) **Decisions** relate solely to matters dealing with the internal working arrangements of the Group and its Sub-Groups

8. LIST OF CONCLUSIONS AND DECISIONS

DRAFT CONCLUSION 2/1:	*MID REGION AIR NAVIGATION REPORT*
DRAFT CONCLUSION 2/2:	*SID AND STARS PHRASEOLOGY*
DRAFT CONCLUSION 2/3:	*GUIDANCE FOR AIM PLANNING AND IMPLEMENTATION IN THE MID REGION*
DRAFT CONCLUSION 2/4:	*AIRAC ADHERENCE MONITORING*
DRAFT CONCLUSION 2/5:	*SPECIAL AIR-REPORT TEST*
DRAFT DECISION 2/6:	*DISSOLUTION OF THE ATM PERFORMANCE MEASUREMENT TASK FORCE (APM TF)*
DRAFT CONCLUSION 2/7:	*ENVIRONMENTAL PROTECTION*
DRAFT DECISION 2/8:	*REVISED ANSIG TERMS OF REFERENCE*

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA

1.1 The meeting reviewed and adopted the Provisional Agenda as at Para 6 of the History of the Meeting.

REPORT ON AGENDA ITEM 2: FOLLOW-UP ON MIDANPIRG/15 AND MSG/5 CONCLUSIONS AND DECISIONS

2.1 The meeting reviewed the progress made with regard to the implementation of the MIDANPIRG/15 and MSG/5 Conclusions and Decisions as reflected in the Follow up Action Plans at **Appendices 2A** and **2B**, respectively. The meeting urged States and concerned stakeholders to take necessary measures to expedite the implementation of those Conclusions which have not yet been closed.

2.2 The meeting noted that further to the establishment of a MID Civil/Military Support Team through MIDANPIRG Conclusion 15/15, with a view to expedite the implementation of the Flexible Use of Airspace (FUA) Concept in the MID Region, no Team visit had been conducted so far. Accordingly, the meeting agreed that a State Letter should be issued by the ICAO MID Office to raise the awareness of States about the objective and benefits of the MID Civil/Military Support Team, in accordance with the objectives and working arrangements approved by MIDANPIRG/15; and to encourage them to ask ICAO to coordinate with concerned stakeholders the conduct of a Team visit to their State.

REPORT ON AGENDA ITEM 3: AIR NAVIGATION GLOBAL AND REGIONAL DEVELOPMENTS

3.1 The subject was addressed in WP/3 presented by the Secretariat. The meeting was apprised of the Global air navigation developments, in particular the update of the fifth edition of the Global Air Navigation Plan (GANP) which was endorsed by the ICAO Assembly 39 (Montréal, Canada, 27 September-7 October 2016) through the Assembly Resolution A39-12.

3.2 The meeting noted that the fifth edition of the GANP, while maintaining the stability of the document, includes a new organization of the aviation system block upgrades (ASBUs) in non-overlapping six-year increments, starting in year 2013 and continuing through 2031 and beyond to align with the triennial periodicity of the ICAO Assembly.

3.3 The meeting recalled that, as a follow up action to the AN-Conf/12 recommendations and requests from States, some new materials were also added to the GANP, such as the introduction of a performance-based approach for the ASBUs, financial and coordination aspects of implementation, notion of minimum path, global ATM logical architecture, documentation for the ASBUs and standardization roadmap. These additions do not change the ASBU philosophy and would assist in the understanding, planning and implementation of the Modules.

3.4 The meeting noted that the fifth edition of GANP as well as the ASBU Document and other related ASBU materials could be found on the GANP Webpage at:
http://www.icao.int/airnavigation/Pages/GANP-Resources.aspx

3.5 The meeting noted that the future update of the GANP in its sixth edition in 2019, at the beginning of Block 1, will undergo deeper amendments to provide more up-to-date planning timelines, technology adjustments and guidance for easier implementation. It was noted that the ICAO Air Navigation Commission will review the GANP as part of the triennial work programme, reporting to the Council one year in advance of each ICAO Assembly. The ANC report will provide a review of global progress made in achieving the GANP objectives and will consider lessons learned by States, industry and PIRGs. Moreover, the ANC report will consider possible changes in future aviation needs, the air navigation context and other influencing factors, proposing suitable adjustments to the GANP to accommodate these eventualities.

REPORT ON AGENDA ITEM 4: PERFORMANCE FRAMEWORK FOR REGIONAL AIR NAVIGATION IMPLEMENTATION

4.1 *MID Region ASBU Implementation*

4.1.1 The subject was addressed in WP/4, WP/5, WP/6 and WP/7 presented by the Secretariat and PPT/1 to 6 presented by Bahrain, Egypt, Iran, Jordan, Sudan and UAE, respectively. The meeting reviewed and updated the status of implementation of the 11 priority 1 ASBU B0 Modules. The meeting also received an update on the status of implementation of some priority 2 ASBU Block 0 Modules by States.

4.1.2 The meeting recalled that the MIDANPIRG/15, through Conclusion 15/19, agreed that the performance dashboards be expanded to include all the MID Region-specific indicators and targets included in the MID Region Air Navigation Strategy. As a follow-up action, the ICAO MID Office developed the MID Region Air Navigation Report to provide an overview of the implementation progress for the Priority 1 ASBU Block 0 Modules (with the associated elements) during the reporting year 2016. The meeting recalled that the development of the online dashboard is linked also to the eANP online platform (in particular for the management/monitoring of Volume III); therefore it should be closely coordinated with ICAO HQ.

4.1.3 The meeting reviewed and updated the Draft MID Air Navigation Report-2016, as at **Appendix 4A**. The meeting noted with appreciation that the Report includes also the ASBU Block 0 Implementation Outlook for 2020, which provides the status of implementation of the 18 ASBU Block 0 Modules foreseen to be achieved by the end of 2020, in accordance with the planning dates reported by States in the ICAO MID Region.

4.1.4 The meeting noted that Bahrain, Egypt, Jordan, Kuwait, Qatar, Saudi Arabia and UAE made a good progress in the implementation of the priority 1 ASBU Block 0 Modules. From a regional perspective, the meeting noted with appreciation that the progress for the implementation of B0-AMET and B0-ACAS is very good. However, it was noted with concern that the progress for the implementation of B0-APTA, B0-ACDM and B0-FRTO is slow.

4.1.5 With respect to B0-APTA the meeting noted the challenges identified by the PBN SG/2 meeting (Sharm El Sheikh, Egypt, 22-25 February 2016). The meeting emphasized that the MID Region Flight Procedure Programme (MID FPP) is the optimal solution that would support States to overcome most of the identified challenges, and will foster the PBN implementation in the MID Region. The MID FPP will be hosted in Lebanon and is planned to start operations in 2017, pending the States' signature of the Project Document with ICAO and securing the expenses of the MID FPP Manager for the first year. Accordingly, the meeting encouraged States and stakeholders to support the establishment of the MID FPP.

4.1.6 The meeting provided an opportunity for sharing experience through presentations by States. The meeting noted with appreciation the measures undertaken by States to meet the agreed targets and highlighted the lessons learnt, identified the main challenges and agreed to some recommendations, as follows:

Challenges:

- human resources and training issues;
- funding;

- culture and coordination issues;
- interoperability between different systems;
- Civil/Military coordination and FUA;
- geopolitical issues; and
- specific difficulties related to the implementation of some specific Modules/elements such as: LNAV/VNAV, A-CDM, eAIP, AIDC/OLDI, ATFM, CCO/CDO.

Lessons Learned/Recommendations:

- top Management Commitment
- clear understanding of the ASBU concept and National and Regional priorities, is key;
- involvement of all concerned stakeholders during the whole process of planning and implementation of the ASBU Modules;
- preparation of detailed national action plan is a prerequisite for successful implementation;
- good project management and strong leadership is vital; and
- the establishment of working groups for different subjects (ASBU Modules) has proven to be very useful and effective.
- cooperation of neighboring States, according to regional plan, is essential;
- sharing and exchanging of experiences during implementation can facilitate the progress of plan and reduce implementation time and costs; and
- learn from other States experiences/success stories.

4.1.7 The meeting thanked those States that provided PowerPoint presentation on the status of ASBU implementation, using the template provided by the Secretariat. The meeting commended the MID Office for the development of the First MID Region Air Navigation Report; and urged States to provide necessary inputs/updates to the ICAO MID Office before 15 January 2017, in order to consolidate the Final version of the Report which will be presented to MIDANPIRG/16 for endorsement. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/1: MID REGION AIR NAVIGATION REPORT

That, States be urged to review the MID Region Air Navigation Report at ***Appendix 4A*** *and provide the ICAO MID Office with necessary inputs/updates before* ***15 January 2017*** *in order to consolidate the Final version of the Report for endorsement by MIDANPIRG/16.*

Note*: The* inputs/updates received after **15 January 2017** would not be considered.

4.2 *Air Navigation Strategy and Planning*

MID eANP

4.2.1 The subject was addressed in WP/8 presented by the Secretariat. The meeting recalled that the MID eANP VOL I and II were approved on 21 December 2015 and 14 February 2016, respectively. Taking into consideration the MIDANPIRG/15 endorsement of the MID eANP and the standard procedure for amendment (related to Volume III), the notification of approval of the MID eANP Volume III was issued on 15 February 2016. The meeting noted that the MID Region was the

first Region that completed the transition from the old Basic ANP and FASID to the new eANP format by 15 February 2016.

4.2.2 The MID eANP Volume I, II and III are available on the ICAO MID website at: http://www.icao.int/MID/Pages/MIDeANP.aspx

4.2.3 The meeting noted that a meeting of the Global eANP WG is tentatively scheduled for July 2017 in order to further review the eANP template approved by the ICAO Council and make proposals for improvement, as deemed necessary, in particular for the "General Regional Requirements" parts. The eANP WG would also identify the tools and features to be developed on the eANP online framework, taking into consideration stakeholders needs. The issue of FIRs/UIRs boundary coordinates (Tables ATM I-1 MID Region Flight Information Regions (FIRs)/ Upper Information Regions (UIRs) and SAR I-1 MID Region Search and Rescue Regions (SRRs); and the FIR Boundary coordinates/descriptions will be also addressed by the eANP WG at global level.

4.2.4 The meeting recalled that the MSG/5 meeting agreed that a mechanism for the amendment of the MID eANP Volume III Part II - "Air Navigation System Implementation" should be developed, endorsed by MIDANPIRG and reflected in the MIDANPIRG Procedural Handbook. The meeting agreed that the mechanism would be developed by ICAO, in coordination with concerned parties, and should include the following:

- Collection of information/initiation of amendment;
- Validation of the information (different layers of validation might be needed);
- Notification of change/consultation, as deemed necessary;
- Amend Volume III

4.2.5 The meeting noted that one of the objectives of the development of the new eANP was the provision of online tools which support the amendment of the dynamic data (with different layers of approval) in an easy and timely manner. Accordingly, the development of the mechanism for the amendment of the MID eANP Volume III Part II - "Air Navigation System Implementation" and its automation should be closely coordinated with ICAO HQ and all the ICAO Regions.

4.2.6 The meeting recalled that the MSG/5 meeting, through MSG Conclusion 5/2, agreed that in order to facilitate the coordination of all issues related to the MID eANP (collection and validation of information, notification of the changes/consultation, as deemed necessary, etc.), States should assign eANP focal point(s).

4.2.7 The meeting noted that as a follow-up action to the MSG Conclusion 5/2, the ICAO MID Office issued State Letter Ref.: AN 9/2.1-16/155 dated 9 June 2016, urging States to provide their eANP Focal Point (FPP), not later than 31 July 2016. However it was noted that only six (6) States (Egypt, Jordan, Kuwait, Saudi Arabia, Sudan and UAE) replied to the State Letter and nominated their eANP Focal Points. The meeting further urged States, that have not yet done so, to implement the provision of the MSG Conclusion 5/2 and provide the ICAO MID Office with their eANP Focal Point(s).

MID Region Air Navigation Strategy

4.2.8 The subject was addressed in WP/9 presented by the Secretariat. The meeting recalled that MIDANPIRG/15, through Conclusion 15/10, updated and endorsed the MID Region Air Navigation Strategy (MID Doc 002).

4.2.9 The meeting recalled that, in accordance with its Terms of Reference (TORs), ANSIG is required to keep under review the MID Region Air Navigation Strategy, and propose changes to MIDANPIRG/MSG, as appropriate.

4.2.10 The meeting recalled that the MSG/5 meeting agreed that, for a timely planning of the ASBU Block 1 Modules implementation, it would be necessary to start the consultation process between all stakeholders to identify those ASBU Block 1 Modules that are considered a priority for the Region, based on operational needs/improvements.

4.2.11 The meeting agreed that there's a need to align the timeframes for the ASBU Block Modules in the MID Region Air Navigation Strategy to align it with the fifth edition of the GANP endorsed by the ICAO Assembly 39.

4.2.12 The meeting recognized the need to harmonize the different timelines/targets in the MID Region Air Navigation Strategy.

4.2.13 Taking into consideration the current and future operational needs/requirements and the status of implementation of the ASBU Block 0 Modules by States (priority 1 Modules and some priority Modules), the meeting discussed if some of the current priority 2 Block 0 Modules should be changed to priority 1. In this respect, the meeting agreed to propose to MIDANPIRG/16 to change the B0-SNET from priority 2 to priority 1 with 2 main elements: Short-term conflict alert (STCA) and Minimum safe altitude warning (MSAW), which are being monitored also by the USOAP-CMA programme.

4.2.14 In connection with the above, the meeting agreed to propose the addition of a new column (Start Date) to the MID Region Air Navigation Strategy to reflect the start date of the newly assigned priority 1 Modules in the Strategy and to prepare for the future inclusion of additional Block 0 and Block 1 Modules.

4.2.15 The meeting agreed that the ATM Sub-Group should reconsider also the priority of the following Modules: B0-WAKE, B0-RSEQ and B0-ASUR. It was also underlined that the elements, Indicators, Metrics and Targets related to the B0-FRTO and B0-NOPS Modules should be completely reviewed by the ATM Sub-Group.

4.2.16 Based on all the above, the meeting agreed to the revised version of the MID Region Air Navigation Strategy at **Appendix 4B**, for consideration by MIDANPIRG/16.

4.3 Specific air navigation issues

ATM/SAR Issues

4.3.1 The subject was addressed in WP/10, presented by the Secretariat. The meeting noted that amendment to phraseology related to SIDs and STARs has been included in the latest version of ICAO Doc 4444 (PANS-ATM) with applicability date 10 November 2016. In this respect, the meeting encouraged States to take necessary measures for the implementation of the SIDs and STARs new phraseologies, using the guidance material available on the ICAO website: http://www.icao.int/airnavigation/sidstar/pages/changes-to-sid_star-phra-seologies.aspx. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/2: SIDS AND STARS PHRASEOLOGY

That, States be urged to:

a) implement the new provisions related to SIDs and STARs phraseology; and

b) report the planned implementation date to the ICAO MID Regional Office; and if any support is required.

4.3.2 The meeting was provided with an overview of the Call Sign Confusion Initiative, which is implemented under the framework of MAEP. The meeting noted with appreciation that five (5) airlines joined Etihad Airways in the second phase of trials. The meeting noted that a progress report will be presented to the MAEP Board/3 and MIDANPIRG/16 meetings. The meeting encouraged States to report any call sign similarity/confusion occurrence to ICAO MID Office and IATA MENA; and support the initiative, in particular during the trial phase.

4.3.3 The meeting was apprised of the activities related to ATS routes enhancements and contingency planning. The meeting noted with appreciation the successful implementation of several enhancements at the interfaces between the MID Region and adjacent Regions. The meeting encouraged States to support the coordination meetings related to the enhancement of the ATS route network and take necessary measures to implement their outcomes.

4.3.4 The meeting was apprised of the outcome of the ICAO AFI/APAC/MID Regional and Inter-regional SAR Workshop (Mahe, Seychelles, 19 - 22 July 2016). Accordingly, the meeting encouraged urged States to implement the relevant recommendations at **Appendix 4C**, emanating from the ICAO AFI/APAC/MID Inter-regional SAR Workshop.

4.3.5 The meeting recalled that the MID SAR Action Group established by the MSG/5 meeting, based on the outcome of the ATM SG/2 meeting, is working on the development of a MID Region SAR Plan including an action plan for a SAR regional/sub-regional exercise. The first draft will be presented to the ATM SG/3 meeting (Cairo, Egypt, 22-25 May 2017). Accordingly, the meeting encouraged States to support the work of the MID SAR Action Group.

RVSM Activities

4.3.6 The subject was addressed in WP/16 and WP/17, presented by the MIDRMA. The meeting reviewed the Draft MID RVSM Safety Monitoring Report (SMR) 2015, and noted with appreciation that the three (3) safety objectives set out by MIDANPIRG continue to be met. The meeting invited States to provide their comments, if any, to the MIDRMA by **10 January 2016**, in order to present the final version to MIDANPIRG/16 (Kuwait, 13-16 February 2017) for endorsement.

4.3.7 The meeting noted with appreciation that the MIDRMA managed to conduct GMU monitoring for **124** aircraft registered in the Middle East Region since MIDANPIRG/15, achieving a percentage of **94 %** of aircraft with known height monitoring results, which is the highest percentage of monitored aircraft globally.

4.3.8 The meeting commended the efforts of the MIDRMA mainly in the development of advanced tools in support of the RVSM safety monitoring, such as: hot-spots identification, MMR and LHD on line reporting tools, etc.

AIM Issues

4.3.9 The subject was addressed in WP/11, presented by the Secretariat. The meeting was apprised of the AIM issues in the MID Region through the review of the outcome of the AIM SG/2, MSG/5 and MIDANPIRG/15 meetings.

4.3.10 The meeting noted that, in order to support AIM Planning and Implementation in the MID Region, the Secretariat developed a Draft Guidance Material on the AIM Implementation: "*Guidance for AIM Planning and implementation in the MID Region"*. The meeting noted that the Document has gone through the AIM Sub-Group and consultation with States. The meeting reviewed the final Draft of the "*Guidance for AIM Planning and implementation in the MID Region"* at **Appendix 4D** and agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/3: GUIDANCE FOR AIM PLANNING AND IMPLEMENTATION IN THE MID REGION

That, the Guidance for AIM Planning and Implementation in the MID Region is endorsed as MID Doc 008.

4.3.11 The meeting noted that the AIM SG/2 meeting agreed on the need for continuous monitoring of AIRAC adherence. The meeting recalled that the ICAO MID Regional Office issued State Letter Ref.: ME 3/2.5 – 15/332 dated 6 December 2015 urging States to report the status of implementation of AIRAC adherence monitoring. The meeting noted that nine (9) States (Bahrain, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan and UAE) reported on their AIRAC adherence system. Only one State reported a case of non-adherence to AIRAC with regard to the publication of the AIRAC AIP Supplement related to Hajj Flight Operations 2015, caused by the late receipt of the raw data from the originator.

4.3.12 The meeting recalled that MIDANPIRG/15 , though Conclusion 15/17, urged States to take necessary measures for the signature of formal arrangements between AIS/AIM and the data originators, commensurate with the Aerodrome operators, Air Navigation Service Providers (ANSPs) and the Military Authority. In this respect, the meeting highlighted the need for AIS/AIM to raise the awareness of the Data Originators regarding the AIRAC provisions; and include necessary procedures related to AIRAC adherence in the arrangement with the Data Originators.

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

DRAFT CONCLUSION 2/4: AIRAC ADHERENCE MONITORING

That:

a) States be urged to:

i. implement a system for AIRAC adherence monitoring; and

*ii. report on annual basis (by 31 December) to the ICAO MID Regional Office the case(s) of late publication of aeronautical information of operational significance and non-adherence to the AIRAC provisions, using the AIRAC Adherence Monitoring Questionnaire at Appendix **4E**.*

b) IATA report to the concerned State(s) and the ICAO MID Regional Office any case of late publication of aeronautical information of operational significance and non-adherence to the AIRAC provisions.

4.3.14 The meeting noted that Amendment 39 to Annex 15 and amendment 59 to Annex 4 were adopted with effective date 11 July 2016. The applicability dates for amendment 39A to Annex 15 and amendment 59 to Annex 4 is 10 November 2016. The meeting noted that the applicability date of the amendment 39B relating to the use of a global reporting format for assessing and reporting runway surface conditions is 5 November 2020; this is due to the nature and complexity of the proposal. Accordingly, the meeting confirmed the need for training/awareness programs to be

initiated on the preparation for implementing the use of a global reporting format for assessing and reporting runway surface conditions, including the new SNOWTAM format.

4.3.15 The meeting recalled that the Fourth Inter-Regional Coordination meeting between APAC, EUR/NAT and MID (IRCM/4) which was held in Bangkok, Thailand from 14 to 16 September 2015, agreed that an Interregional Seminar be held jointly between the APAC, EUR/NAT and MID Regions on "*Service Improvement through Integration of Digital AIM, MET and ATM Information*" in 2017. The meeting noted that the MSG/5 meeting encouraged States to participate in and support the Seminar. The meeting also noted that the Seminar is planned to be held in EUROCONTROL, Brussels, Belgium from 2 to 5 October 2017.

MID ROC

4.3.16 The subject was addressed in WP/12 presented by the Secretariat.

4.3.17 The meeting noted that ROC Jeddah reported that nine (9) States (Iraq, Lebanon, Libya, Jordan, Oman, Qatar, Saudi Arabia, Sudan and United Arab Emirates) have fully implemented the appropriate OPMET exchange scheme. Four (4) States (Bahrain, Egypt, Iran and Kuwait) have partially implemented this scheme, while two (2) States (Syria and Yemen) have not started implementation.

4.3.18 The meeting noted that the challenges in the implementation of the MID ROC include human resources and coordination needed in determining what OPMET data is needed from ROC Jeddah to meet the users' needs.

4.3.19 The meeting was informed that the ROC Jeddah could serve as a future translation centre for States that are not in a position to provide OPMET data in IWXXM, using basic principles in translating Traditional Alphanumeric Code (TAC) to IWXXM developed by the Meteorology Panel (METP) Working Group on Meteorological Information Exchange (METP WG-MIE) as one component to enable SWIM.

4.3.20 The meeting noted that the implementation of distributing special air-reports to ROC Jeddah will be assisted by a special air-report test expected for other phenomenon on 6 September 2017 and for volcanic ash on 7 September 2017. These tests will assist the Meteorological Watch Offices (MWO) to practice sending these reports to ROC Jeddah using ICAO and WMO provisions. Details will be provided in the invitation letter which will be issued at least one month prior to the test. It was highlighted that guidance on the format and dissemination of special air-reports will be adapted for the MID Region and provided as an attachment to the invitation. The end goal of the test is to have these special air-reports available to operators who could use this information in their safety risk assessments.

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

DRAFT CONCLUSION 2/5: SPECIAL AIR-REPORT TEST

That, States be encouraged to participate in the EUR Special Air-Report Test in order to identify deficiencies and associated solutions in the reporting and dissemination of these reports.

REPORT ON AGENDA ITEM 5: ENVIRONMENTAL ISSUES

Review of the Report of the APM TF/3 Meeting

5.1 The subject was addressed in WP/13 presented by the Secretariat. The WP presented the outcome of the APM TF/3 meeting held in Cairo, Egypt on 5 December 2016.

Global Developments

5.2 The meeting was apprised of the latest global developments related to environmental issues. The meeting noted that the ICAO 39th Assembly, Montreal, Canada, 27 September – 6 October 2016, agreed on Assembly Resolutions A39-1, A39-2 and A39-3 related to the Environmental Protection which superseded A38-17 and A38-18. It was noted that a provisional edition of the ICAO Assembly 39 Resolutions is available on the ICAO Website at:

http://www.icao.int/Meetings/a39/Pages/resolutions.aspx

5.3 The meeting recalled that five measures have been initiated by ICAO to reduced CO2 emissions from the international civil aviation, as follows:

a) aeroplane CO2 Standard;

b) Global Market-Based Measures (MBM) Scheme for International Aviation;

c) operational improvements;

d) sustainable alternative fuels for aviation; and

e) outreach

Environmental Activities in the MID Region

5.4 The meeting recalled that ICAO 39th Assembly, through Resolution 39-2 *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change*, encouraged States to submit voluntary action plans outlining respective policies and actions, and annual reporting on international aviation CO2 emissions to ICAO. The meeting noted that 104 States which represent 90.29% of global RTK have submitted their action plan on CO2 emission reduction.

5.5 The meeting recalled that the MIDANPIRG/14 meeting (Jeddah, Saudi Arabia, 15 - 19 December 2013) encouraged States to develop/update their Action Plans for CO2 emissions and submit them to ICAO through the APER website or the ICAO MID Regional Office.

5.6 The meeting noted with concern that only 6 States out of the 15 MID States (40%) have provided their Action Plan (Bahrain, Egypt, Iraq, Jordan, Sudan and UAE). It was also noted that thirteen (13) States have nominated their State's action plan/environmental Focal Points.

5.7 The meeting noted that quantification of expected results from the implementation of an action plan is an essential element. The Environmental Benefits Tool (EBT) has been developed by ICAO to assist States' Focal Points in order to generate the baseline, estimate the benefits from the selected mitigation measures using the Rules of Thumb. The EBT is available on the APER website (http://portal.icao.int, APER group).

5.8 The meeting recalled the MIDANPIRG/14 Conclusion 14/29 on the environmental protection; State's action plan on CO2 emission reduction and estimation of the environmental benefits accrued from operational improvements.

5.9 The meeting recalled that the First MID Region Air Navigation Environmental Report was endorsed by MIDANPIRG/14 meeting (Jeddah, Saudi Arabia, 15 - 19 December 2013).

5.10 The meeting recalled that the MIDANPIRG/15 meeting noted with concern that the provisions of the MIDANPIRG/14 Conclusion 14/29 have not been implemented, despite the follow-up actions undertaken by the ICAO MID Regional Office in order to collect data related to the environmental benefits accrued from the implementation of operational improvements, for the development of the Second MID Air Navigation Environmental Report, which was supposed to be finalized by the APM TF/2 meeting. However, the second MID Air Navigation Environmental report could not be developed due to low level of inputs from States and Users.

5.11 It was also recalled that the MIDANPIRG/15 meeting emphasized that the contribution of States and Users to the work programme of the APM TF is essential in particular for the development of the Air Navigation Environmental Report; and urged Sates and Users to support the Task Force and ensure the implementation of the provisions of the MIDANPIRG/14 Conclusion 14/29. Accordingly, the meeting agreed that the Second MID Region Air Navigation Environmental Report should be developed by the APM TF/3 meeting.

5.12 The meeting noted that the ICAO MID Regional Office issued State Letter Ref.: EN 1/1-16/230 dated 17 August 2016 urging States to provide inputs (estimation of the environmental benefits accrued from the identified operational improvements) to the Second MID Region Air Navigation Environmental Report, before 31 October 2016. The meeting noted with concern that no response/input was received from States to the State Letter and consequently the second MID Air Navigation Environmental Report could not be developed.

5.13 The meeting agreed with the APM TF/3 that States are facing the following challenges with regard to the environmental issues:

a) low or no priority for the aviation environmental issues at the State level;

b) lack of a dedicated structure (e.g. Department, Section, etc.) within the Civil Aviation Authorities dealing with aviation environmental issues;

c) lack of sufficient resources (human and financial) allocated to aviation environmental issues;

d) lack of or low level of internal coordination/communication between all involved parties at the State level (Regulator, ANSPs, Airport Operators, Airlines, etc); and

e) geopolitical issues.

5.14 Based on all of the above, the meeting agreed that the APM TF should be dissolved and that the environment-related tasks should be handled by the Air Navigation Systems Implementation Group (ANSIG). The meeting urged States that have not yet done so, to establish a dedicated structure dealing with aviation environmental issues, within their Civil Aviation Authorities (e.g. Department, Section, etc.). Accordingly, the meeting agreed to the following Draft Decision and Conclusion:

DRAFT DECISION 2/6: DISSOLUTION OF THE ATM PERFORMANCE MEASUREMENT TASK FORCE (APM TF)

That,

a) the APM TF is dissolved; and

b) the MIDANPIRG Organizational Structure contained in the MIDANPIRG Procedural Handbook (MID Doc 001) be amended accordingly.

DRAFT CONCLUSION 2/7: ENVIRONMENTAL PROTECTION

That, States that have not yet done so, be invited to:

a) provide the ICAO MID Regional Office with updated contact details of their State's CO2 Action Plan/Environment Focal Points;

b) develop/update their State Action Plans on CO2 emission reduction, using the guidelines contained in the ICAO Doc 9988; and submit them to ICAO through the APER website or the ICAO MID Regional Office; and

c) take necessary actions for the implementation of the mitigation measures included in their Action Plan, commensurate with the establishment of a dedicated structure (e.g. Department, Section, etc.) within the Civil Aviation Authorities dealing with aviation environmental issues.

5.15 The meeting agreed that to add a new Section in the MID Air Navigation Report related to environmental protection, to reflect the measures implemented/planned to be implemented by States and Users as well as some success stories with regard to the implementation of operational improvements which contributed to the reduction of CO2 emission.

REPORT ON AGENDA ITEM 6: AIR NAVIGATION DEFICIENCIES

6.1 The subject was addressed in WP/14 presented by the Secretariat.

6.2 The meeting recalled that MIDANPIRG/15 re-iterated that the identification and reporting of Air Navigation Deficiencies by User-Organizations contribute significantly to the enhancement of air navigation safety in the MID Region. Nevertheless, the meeting noted with concern that the use of the MID Air Navigation Deficiency Database (MANDD) is far below expectations. Accordingly, the meeting agreed to the following Conclusion:

CONCLUSION 15/35: AIR NAVIGATION DEFICIENCIES

That, States be urged to:

a) use the MID Air Navigation Deficiency Database (MANDD) for the submission of requests for addition, update, and elimination of Air Navigation Deficiencies, including the submission of a specific Corrective Action Plan (CAP) for each deficiency; and

b) submit a Formal Letter to the ICAO MID Regional Office containing the evidence(s) that mitigation measures have been implemented for the elimination of deficiency(ies) when requesting the elimination of deficiency(ies) from the MANDD.

6.3 The meeting noted that, as a follow-up action to the MIDANPIRG Conclusion 15/35, the ICAO MID Office issued State Letter Ref. AN 2/2 - 15/351 dated 29 December 2015 requesting States to take all necessary measures to implement the provisions of the above Conclusion and send their feedback on the actions taken to the ICAO MID Office, not later than 31 January 2016.

6.4 The meeting noted the actions taken by the different MIDANPIRG Subsidiary bodies related to the list of air navigation deficiencies pertaining to their Terms of Reference (TORs). The list of air navigation deficiencies as updated by the different MIDANPIRG subsidiary bodies and the Secretariat (based on requests/information received from States) is available on the MANDD, which can be accessed through the following link: http://www.cairo.icao.int/

6.5 The meeting recalled that the MSG/5 meeting (Cairo, Egypt, 18 - 20 April 2016) noted with concern that the majority of deficiencies listed in the MANDD have no specific Corrective Action Plan (CAP) and urged States to implement the provisions of MIDANPIRG Conclusion 15/35. Accordingly, the meeting urged States to use the MANDD to update their Air Navigation Deficiencies, submit a CAP for each current deficiency, and request the deletion of those deficiencies for which required mitigation measures have been implemented, through formal correspondence with the ICAO MID Office with necessary evidences.

REPORT ON AGENDA ITEM 7: FUTURE WORK PROGRAMME

7.1 Taking into consideration the latest developments in the air navigation field, including the proposal to dissolve the APM Task Force, the meeting reviewed and updated the ANSIG Terms of Reference (TORs) as at **Appendix 7A** and agreed to the following Draft Decision:

DRAFT DECISION 2/8: REVISED ANSIG TERMS OF REFERENCE

That,

*a) the ANSIG Terms of Reference (TORs) be updated as at **Appendix 7A**; and*

b) the MIDANPIRG Procedural Handbook (MID Doc 001) be amended accordingly.

7.2 The meeting agreed that the ANSIG/3 meeting be tentatively planned for the second quarter of 2018; the venue will be Cairo, unless a State is willing to host the meeting.

REPORT ON AGENDA ITEM 8: ANY OTHER BUSINESS

8.1 Nothing has been discussed under this Agenda Item.

APPENDICES

APPENDIX 2A

FOLLOW-UP ACTION PLAN ON MIDANPIRG/15 CONCLUSIONS AND DECISIONS

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
DECISION 15/1: DISSOLUTION OF THE CALL SIGN CONFUSION AD-HOC WORKING GROUP That, the Call Sign Confusion Ad-hoc Working Group is dissolved.	Implement the Conclusion	MIDANPIRG/15	Dissolve CSC WG	Jun. 2015	Completed
CONCLUSION 15/2: CALL SIGN SIMILARITY PROVISIONS AND GUIDELINES That, States be urged to: a) take necessary measures to ensure that their Aircraft Operators (AOs) implement a mechanism to de-conflict call similarity between the same AO flights and thereafter between their local AOs and other Middle East AOs flights; b) report call sign similarity/confusion cases using the template at **Appendix 4.1C**; and c) develop a simplified mechanism to trigger the reporting of call sign similarity/confusion by ATCOs.	Implement the Conclusion	ICAO States	State Letter Feedback	July 2015 Sep. 2015	Actioned SL AN 6/34-15/189 dated 25 June 2015
CONCLUSION 15/3: MIDRMA REVISED MEMORANDUM OF AGREEMENT That, a) the revised version of the MIDRMA Memorandum of Agreement (MOA) dated 12 March 2014, at Appendix 4.2A is endorsed, to replace and supersede the MIDRMA MOA dated 27 February 2006; and b) the ICAO MID Regional Office follow-up with concerned States the signature of the revised MIDRMA MOA.	Implement the Conclusion	MIDANPIRG/15 States	Revised MIDRMA MOA Sign the revised MIDRMA MOA	Jun. 2015 Dec. 2016	Actioned Completed 10 States signed the revised MOA

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONCLUSION 15/4: MIDRMA FUNDING MECHANISM That, a) the activities of the MIDRMA be ensured through contributions from all MIDRMA Member States, which could be recovered in accordance with ICAO Policies on charges for Airports and Air Navigation Services (Doc 9082), in coordination with IATA; b) the MIDRMA Member States pay their contributions on a yearly basis not later than two (2) months after the issuance of the invoices by ICAO; c) ICAO issue the invoices related to States contribution to the MIDRMA Project on a yearly basis as decided by the MIDRMA Board or its Chairperson; d) the annual amounts to be paid by the MIDRMA Member States are, as follows: i) Bahrain, Egypt, Iran, Oman and Saudi Arabia annual contribution is US$ 30,000 each; and ii) Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Sudan, Syria and Yemen annual contribution is US$ 10,000 each; e) UAE is exempted from the payment of contributions to the MIDRMA for the first ten (10) years of operation (up-to end of 2015); f) the MIDRMA Member States comply with the payment instructions contained in the invoices sent by ICAO HQ (Project code, fund number, invoice number, Bank information, etc); g) in case a MIDRMA Member State does not pay the contribution to the MIDRMA Project in a timely manner, the MIDRMA Board might consider to take penalty measures against this State (exclusion from the MID RVSM Safety Monitoring Report, review of the Membership, etc); h) the MIDRMA Board Chairperson, in compliance with the Custodian Agreement and based on the agreed funding mechanism and the	Implement the Conclusion	MIDANPIRG/15	MIDRMA funding Mechanism	Jun. 2015	Completed (Replaced and superseded by MIDRMA Board Conc. 14/3)

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
estimation of the yearly operating budget of the MIDRMA, be delegated the authority to certify on behalf of the MIDRMA Member States the requests for advance payment from the MIDRMA account managed by ICAO HQ to the MIDRMA Bank account in Bahrain, as decided by the MIDRMA Board; i) the bills related to the MIDRMA expenses be certified by the MIDRMA Board Chairperson and reviewed by the MIDRMA Board at each of its meetings; and j) the MIDRMA funding mechanism be revised by the MIDRMA Board, when necessary.					
CONCLUSION 15/5: ONLINE REPORTING OF LARGE HEIGHT DEVIATION (LHD) That, States: a) be urged to use only the online tool at (http://www.midrma.com/lhd) for reporting LHDs; and b) be encouraged to provide feedback to the MIDRMA for further improvement of the tool.	Implement the Conclusion	ICAO States	State Letter Feedback	Jul.2015 Oct. 2015	Actioned SL AN 6/5.10.15A – 15/190 dated 28 June 2015
CONCLUSION 15/6: SIMPLIFIED LARGE HEIGHT DEVIATION (LHD) REPORTING PROCEDURE That, States be urged to implement a procedure within their ACCs to easily trigger the LHD reporting process and provide the ICAO MID Regional Office with an update on the action(s) undertaken.	Implement the Conclusion	ICAO States	State Letter Feedback	Jul.2015 Oct. 2015	Actioned SL AN 6/5.10.15A – 15/190 dated 28 June 2015
CONCLUSION 15/7: MID RVSM SAFETY MONITORING REPORT (SMR) 2014 That, the MID RVSM Safety Monitoring Report (SMR) 2014 is endorsed.	Implement the Conclusion	MIDANPIRG/15	MID RVSM SMR 2015	Jun. 2015	Completed

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONCLUSION 15/8: MID RVSM SAFETY MONITORING REPORT (SMR) 2015					Actioned
That,	Implement the Conclusion	ICAO	State Letter	Sep.2015	SL AN 6/5.10.15A – 15/244 dated 7 Sep. 2015
a) the FPL/traffic data for the period **1 – 30 September 2015** be used for the development of the MID RVSM Safety Monitoring Report (SMR 2015);					
b) only the appropriate Flight Data form available on the MIDRMA website (www.midrma.com) should be used for the provision of FPL/traffic data to the MIDRMA; and		States	Traffic data	Oct. 2015	Preliminary results presented to ANSIG/2 and final SMR to be presented to MIDANPIRG/16
c) the final version of the MID RVSM SMR 2015 be ready for presentation to and endorsement by MIDANPIRG/16.		MIDRMA	SMR 2015	Dec. 2016	
CONCLUSION 15/9: AVIATION STATISTICS AND TRAFFIC FORECASTS					Ongoing
That,	Issue State Letter and organize the Seminar				
a) States be urged to:		ICAO	State Letter	Q1-2016	SL AT 5/3 - 16/120 dated 7 April 2016
i. nominate to ICAO Focal Points for aviation statistics;					
ii. provide the statistics required by ICAO in a timely manner and to the extent possible in an electronic format		States	Focal Point and statistics		
b) ICAO organise a Second Aviation Data Analyses Seminar in 2016 to keep the momentum and further enhance the technical knowledge of States.		ICAO	Seminar	Dec. 2016	Seminar planned for 20-23 Feb.17
CONCLUSION 15/10: MID REGION AIR NAVIGATION STRATEGY					Actioned
That,	Implement the Conclusion				SL AN 1/7– 15/191 dated 25 June 2015
a) the revised MID Region Air Navigation Strategy:					
i. is endorsed as the framework identifying the regional air		MIDANPIRG/15	MID AN Strategy		

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
navigation priorities, performance indicators and targets; and ii. be published as MID Doc 002. b) MID States be urged to: i. develop their National Air Navigation Performance Framework, ensuring the alignment with and support to the MID Region Air Navigation Strategy; and ii. provide the ICAO MID Regional Office, on an annual basis (by the end of November), with relevant data necessary for regional air navigation planning, reporting and monitoring.		ICAO ICAO States States	MID Doc 002 State Letter National Performance Framework Feedback	 Nov. 2015 Nov. 2015	MID Doc 002 published
CONCLUSION 15/11: ENDORSEMENT OF THE MID eANP That, a) the new MID ANP VOL I, II and III available at: http://www.icao.int/MID/MIDANPIRG/Pages/Final%20Report/MID-eANP.aspx are endorsed; and b) the ICAO MID Regional Office process the necessary Proposals for Amendment, in accordance with the procedure for amendment approved by the Council, for formal approval by the end of 2015.	Issue Proposals for Amendment	ICAO	Proposals for Amendment	Dec. 2015	Completed MID eANP Vol I, II and III, approved and published on the ICAO MID Website
DECISION 15/12: DISSOLUTION OF THE ANP AD-HOC WORKING GROUP That, the ANP Ad-Hoc Working Group is dissolved.	Implement the Conclusion	MIDANPIRG/15	Dissolve ANP WG	Jun. 2015	Completed
CONCLUSION 15/13: MID FLIGHT PROCEDURE PROGRAMME (FPP) WORKSHOP That, as part of the ICAO support for the establishment of the MID FPP, a Workshop be organized back-to-back with the MAEP SC/2 meeting to be held in October 2015 in order to develop a framework for the establishment of the MID FPP.	Implement the Conclusion	ICAO	Conduct of MID FPP Workshop	Oct. 2015	Completed Workshop held (18-19 Oct. 2015)

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
DECISION 15/14: DISSOLUTION OF THE MPST That, the MID PBN Support Team (MPST) is dissolved.	Implement the Conclusion	MIDANPIRG/15	Dissolve the MPST	Jun.2015	Completed
CONCLUSION 15/15: MID CIVIL/MILITARY SUPPORT TEAM That, a MID Civil/Military Support Team be established with a view to expedite the implementation of the Flexible Use of Airspace (FUA) Concept in the MID Region.	Implement the Conclusion	MIDANPIRG/15	Establishment of MID Civil/Military Support Team	Jun.2015	Actioned No request for a Team visit received
DECISION 15/16: COLLABORATIVE AIR TRAFFIC FLOW MANAGEMENT (ATFM-CDM) That, the ATM Sub-Group develop a Preliminary Project Proposal addressing the necessity, feasibility, and timelines related to the eventual implementation of a regional/sub-regional ATFM system, for consideration by the MAEP Steering Committee.	Implement the Conclusion	ATM SG	ATM Sub-Group develop a Preliminary Project Proposal	Dec. 2015	To be closed MAEP SC/2 meeting deferred the discussion on the project to 2017
CONCLUSION 15/17: FORMAL AGREEMENTS BETWEEN AIS AND DATA ORIGINATORS That, States be urged to: a) take necessary measures for the signature of formal arrangements between AIS/AIM and the data originators, commensurate with the Aerodrome operators, Air Navigation Service Providers (ANSPs) and the Military Authority; and b) inform the ICAO MID Regional Office of the actions taken before **31 December 2015**.	Implement the Conclusion	ICAO States	State Letter Feedback	Dec. 2015	Actioned SL AN 8/4.1-15/205 dated 6 July 2015 Very few replies received; to be followed-up by the AIM SG
CONCLUSION 15/18: MID REGIONAL GUIDANCE FOR IMPLEMENTATION OF AIDC/OLDI That, the MID Region guidance for the implementation of AIDC/OLDI (Edition 1.1, June 2015) is endorsed as MID Doc 006.	Implement the Conclusion	MIDANPIRG/15	MID Region Guidance for AIDC/OLDI3	Jun. 2015	Competed MID Doc 006 endorsed

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONCLUSION 15/19: REGIONAL PERFORMANCE DASHBOARDS That, ICAO expedite the expansion of the regional performance dashboards to include the MID Region-specific indicators, metrics and targets, for which the necessary data is available**.**	Implement the Conclusion	ICAO	Dashboards with Regional indicators, metrics and targets	Dec. 2015	Ongoing MID AN Report developed, pending development of web-based tool
CONCLUSION 15/20: MID REGION ATM CONTINGENCY PLAN That, the MID Region ATM Contingency Plan (Edition June 2015): a) is endorsed as MID Doc 003; and b) be used by States and concerned stakeholders to ensure the orderly flow of international air traffic in the event of disruptions of air traffic services and related supporting services and to preserve the availability of major world air routes within the air transportation system in such circumstances.	Implement the Conclusion	MIDANPIRG/15	MID Region ATM Contingency Plan MID Doc 003	Jun. 2015	Completed MID Doc 003 published
CONCLUSION 15/21: MID REGION ACCS LETTER OF AGREEMENT TEMPLATE That, States be encouraged to use the MID Region Area Control Centres (ACCs) Letter of Agreement Template (Edition June 2015) available on the ICAO MID website, to ensure the harmonization of coordination procedures between ACCs.	Implement the Conclusion	ICAO	State Letter	Jul. 2015	Actioned SL AN 6/2.1 – 15/192 dated 28 Jun. 2015
CONCLUSION 15/22: MID REGION HIGH LEVEL AIRSPACE CONCEPT That, the MID Region High Level Airspace Concept (Edition June 2015) is endorsed as MID Doc 004.	Implement the Conclusion	MIDANPIRG/15	MID Region High Level Airspace Concept	Jun. 2015	Completed Endorsed as MID Doc 004

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONCLUSION 15/23: MID SSR CODE MANAGEMENT PLAN (CMP) That, a) the Middle East Secondary Surveillance Radar Code Management Plan (MID SSR CMP) (Edition June 2015) is endorsed as MID Doc 005; b) States (regulator and service provider) be urged to: i. take necessary measures to ensure strict compliance with the procedures included in the MID SSR CMP; and ii. report interference/conflict cases, if any, to the ICAO MID Regional Office related to the misuse of SSR codes.	Implement the Conclusion	MIDANPIRG/15 ICAO States	MID SSR CMP State Letter Feedback	Jun. 2015 Jul. 2015 periodically	Completed Endorsed as MID Doc 005 SL AN 6/17 – 15/193 dated 25 Jun. 2015
DECISION 15/24: MID REGIONAL/SUB-REGIONAL SEARCH AND RESCUE TRAINING EXERCISES That, the ATM Sub-Group develop an action plan for the conduct of regional/sub-regional SAR training exercises.	Implement the Conclusion	ATM SG	Action Plan for SAR training exercises	Dec. 2015	Actioned ATM SG/2 established a SAR AG to develop the action plan
CONCLUSION 15/25: MIDAD SUPPORT TEAM (MIDAD ST) That, the MIDAD Support Team (MIDAD ST) a) be composed of members from Bahrain, Jordan, Iran, Kuwait, Oman, Qatar, Saudi Arabia, Sudan, UAE and the ICAO MID Regional Office; and b) provide necessary support to the MIDAD Task Force to successfully complete Phase 2 of the MIDAD Project.	MIDAD ST to provide necessary support	MIDANPIRG/15	MIDAD ST composition		Actioned MIDAD ST Focal Points list is completed

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONCLUSION 15/26: EAD-MIDAD MEMORANDUM OF COOPERATION (MOC) That, a Memorandum of Cooperation (MOC) on sharing/exchange of Aeronautical Information/Services between EAD and MIDAD be signed by the ICAO MID Regional Director (on behalf of MIDAD States) with EUROCONTROL.	Sign MOC	ICAO	MOC signed	Dec. 2015	Actioned EAD-MIDAD Coord meeting held Dec2015
CONCLUSION 15/27: SUPPORT ICAO POSITION TO WRC-15 That, States be urged to: a) support the ICAO Position to the WRC-15; b) make necessary arrangements for the designated Civil Aviation Personnel to participate actively in the preparatory work for WRC-15 at the national level; and c) attend the preparatory regional spectrum management groups meetings and WRC-15 to support and protect aviation interests.	Implement the Conclusion	States ICAO	States attendance and support State Letter	 July 2015	Completed SL AN 7/30.15.1-15/208 dated 07 Jul. 2015
CONCLUSION 15/28: GNSS RADIO FREQUENCY INTERFERENCE That, States be invited to use the guidance at **Appendix 5.2.2E** for the development/amendment of their regulatory provisions related to the use of GNSS and associated threats.	Implement the Conclusion	ICAO	State Letter	Dec 2015	Completed AN 7/30.21 – 15/345 dated 22 Dec.2015
CONCLUSION 15/29: WORKSHOP ON THE USE OF THE ICAO FREQUENCY FINDER That, a Workshop on the use of the new Frequency Finder software be scheduled for 2016.	Organize Workshop	ICAO	Workshop	2nd half 2016	Completed Workshop held Oct. 2016

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONCLUSION 15/30: AFTN/CIDIN AFS CONNECTIVITY AND AMHS IMPLEMENTATION That States be urged to: a) refrain from establishing new AFTN and CIDIN connections at the International level; b) gradually phase out the current connections based on AFTN or CIDIN standards; and c) expedite their AMHS implementation.	Implement the Conclusion	ICAO	State Letter	July 2015	Actioned SL AN 7/5.1-15/209 dated 8 Jul. 2015
CONCLUSION 15/31: MIDAMC ACCREDITATION PROCEDURE That, the accreditation procedure for registering in the MIDAMC be amended as at **Appendix 5.2.2G**.	Amend the procedure	MIDANPIRG/15	The procedure amended	June 2015	Completed
CONCLUSION 15/32: MID REGION PROCESS FOR MODE S IC CODES ALLOCATION That, the Eurocontrol Document "Requirements process for the coordinated allocation and use of Mode S Interrogator Codes in the ICAO Middle East Region" (Edition 1.02 dated August 2014), be used for the allocation of the Mode S IC codes.	Implement the Conclusion	MIDANPIRG/15	Procedure adopted	June 2015	Completed
CONCLUSION 15/33: OPMET EXCHANGE SCHEME That States be urged to update their OPMET exchange scheme in coordination with ROC Jeddah and back-up ROC Bahrain in order to complete MID ROC implementation by **30 September 2015**.	Implement the Conclusion	ICAO/States	State letter Updated OPMET exchange scheme	Sep 2015	Actioned SL Ref: AN 10/11-15/206 issued 8 Jul 2015 Status: 8 States FI 5 States PI 2 States NI

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
CONCLUSION 15/34: SINGLE ENGINE TAXI OPERATIONS That, States be encouraged to: a) consider the implementation of Single Engine Taxi Operations at their International Aerodromes,; as a possible measure for the reduction of CO_2 emissions, as practicable (decision to be supported by a safety assessment); and b) share their experience on the subject with other States, as required.	Implement the Conclusion	ICAO State	State Letter Feedback	Jul. 2015	Actioned SL AN 6/17 – 15/194 dated 28 Jun. 2015
CONCLUSION 15/35: AIR NAVIGATION DEFICIENCIES That, States be urged to: a) use the MID Air Navigation Deficiency Database (MANDD) for the submission of requests for addition, update, and elimination of Air Navigation Deficiencies, including the submission of a specific Corrective Action Plan (CAP) for each deficiency; and b) submit a Formal Letter to the ICAO MID Regional Office containing the evidence(s) that mitigation measures have been implemented for the elimination of deficiency(ies) when requesting the elimination of deficiency(ies) from the MANDD.	Implement the Conclusion	ICAO States	State Letter CAP and necessary updates/ evidences	When necessary	Actioned SL AN 2/2 – 15/351 dated 29 Dec. 2015

APPENDIX 2B

FOLLOW-UP ACTION PLAN ON MSG/5 CONCLUSIONS AND DECISIONS

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
MSG CONCLUSION 5/1: SEMINAR/WORKSHOP ON PANS-AERODROMES That, a Seminar/Workshop on the implementation of PANS-Aerodromes (Doc 9981) be organized by ICAO in 2017.	Seminar planned for 2017	ICAO	Seminar outcomes	Nov. 2017	Ongoing
MSG CONCLUSION 5/2: MID eANP FOCAL POINTS That, States be urged to assign a MID eANP focal point to be the main point of contact for all issues related to the MID eANP, including the validation of amendments to Volume III Part II – "Air Navigation System Implementation".	Implement the Conclusion	ICAO States	State Letter Feedback	July 2016	Actioned Ref.: AN 9/2.1-16/155 dated 9 Jun 2016 6 States replied (Egypt, Jordan, Kuwait, Saudi Arabia, Sudan and UAE)
MSG CONCLUSION 5/3: IMPLEMENTATION OF THE TOP SIX ATS ROUTES That, concerned States be urged to take necessary measures to implement the identified routes at Appendix 5B and provide the ICAO MID Regional Office with an update on the actions undertaken by 15 November 2016, for review by the ANSIG/2 meeting.	Implement the Conclusion	ICAO States	State Letter Feedback	Dec 2016 Jan 2016	Actioned SL Ref.: AN 6/5.8-16/337 dated 1 Dec 2016
MSG CONCLUSION 5/4: MID REGION ATM CONTINGENCY PLAN That, the revised version of the MID Region ATM Contingency Plan (MID Doc 003, Edition April 2016) is endorsed.	Implement the Conclusion	MSG/5	MID Doc 003	Apr 2016	Completed
MSG CONCLUSION 5/5: PUBLICATION OF FIR BOUNDARY POINTS That, States by urged to: a) take into consideration the Guidelines at Appendix 5D for the description of their FIR boundaries;	Implement the Conclusion	ICAO States	State Letter Feedback	Dec 2016 Mar 2017	Actioned SL Ref.: AN 6/3-16/338 dated 1 Dec 2016

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
b) review the Table ATM I-1 MID Region Flight Information Regions (FIRs)/ (FIRs)/Upper Information Regions (UIRs) at Appendix 5E and coordinate with neighboring States, as appropriate, the definition of common boundaries; and c) provide the ICAO MID Regional Office with their updates and comments before 15 October 2016.					
MSG DECISION 5/6: MID SEARCH AND RESCUE ACTION GROUP That, a MID SAR Action Group be established to: a) carry out a Gap Analysis related to the status of implementation of SAR services in the MID Region; b) develop a SAR Plan for the MID Region based on the Asia/Pacific experience and other best practices; and c) develop an action plan for the conduct of regional/sub-regional SAR training exercises.	Implement the Conclusion	MSG/5 SAR Action Group	Establishment of MID SAR Action Group Draft MID Region ATM SAR Plan Action Plan for regional/sub-regional SAREX.	Apr 2016 May 2017	Actioned
MSG CONCLUSION 5/7: TRANSITION PLAN FOR THE RNAV TO RNP INSTRUMENT APPROACH CHART DEPICTION That, States be urged to provide their transition plan for the RNAV to RNP Instrument Approach Chart Depiction (Chart Title) to the ICAO MID Regional Office before 31 October 2016, taking into consideration the provisions/timelines set forth in Amendment 6 to PANS-OPS, Volume II, Part III, Section 5, Chapter 1 and the ICAO Circular 336.	Implement the Conclusion	ICAO States	State Letter Feedback	Apr 2016 January 2017	Actioned SL Ref.: AN 6/29 - 16/336 dated 1 Dec 2016
MSG CONCLUSION 5/8: MID REGION PBN IMPLEMENTATION PLAN That, the revised version of the MID Region PBN Implementation Plan (MID Doc 007, Edition April 2016) is endorsed.	Implement the Conclusion	MSG/5	MID Doc 007	Apr 2016	Completed

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
MSG DECISION 5/9: MID REGION ADS-B IMPLEMENTATION PLAN That, the CNS SG be tasked to develop a MID Region ADS-B Implementation plan including the ADS-B monitoring Template.	Develop Plan	CNS SG	ADS-Plan	TBD	Ongoing ADS-B Monitoring Template developed
MSG CONCLUSION 5/10: NATIONAL AIM IMPLEMENTATION ROADMAP That, States be urged to: a) take into consideration the "MID Region AIM implementation Roadmap" at Appendix 5I in planning for the transition from AIS to AIM in a prioritized manner; and b) provide the ICAO MID Regional Office with their updated National AIM Implementation Roadmap on an annual basis (by end of December), using the Template at Appendix 5H.	Implement the Conclusion	ICAO States	State Letter Feedback	Dec 2016	Actioned Ref.: AN 8/4 - 16/261 dated 22 Sep 2016; Total 12 States provided Roadmaps. Updated Versions (2016) received from Bahrain, Egypt, Iran, Iraq, Kuwait, Lebanon, Oman, Qatar and UAE.
MSG CONCLUSION 5/11: INTERREGIONAL SEMINAR ON "SERVICE IMPROVEMENT THROUGH INTEGRATION OF DIGITAL AIM, MET AND ATM INFORMATION That, a) ICAO organize an Interregional Seminar on "Service improvement through integration of digital AIM, MET and ATM Information" in 2017; and b) States be encouraged to attend and support the Seminar.	Implement the Conclusion	ICAO States	Organize Seminar Support the Seminar	Oct 2017	Actioned Seminar scheduled to be held in Brussels, 2-5 Oct. 2017

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
MSG CONCLUSION 5/12: MID REGIONAL REQUIREMENTS FOR HALF-HOURLY METAR That, States provide the ICAO MID Regional Office with proposed changes to the MET Part of Volume II related to the criteria used for determining which AOP aerodromes should issue half-hourly METAR, by 30 June 2016.	Implement the Conclusion	ICAO States	State Letter Feed Back	Mar 2016	Closed Ref.: ME 3/2.3-16/075 dated 21 Mar 2016 2 States replied
MSG CONCLUSION 5/13: MID eANP VOLUME III – B0-AMET That, a) the MID eANP Volume III – B0-AMET be amended to reflect the changes at Appendix 5K; and b) the notification of the amendment of the MID eANP Volume III – B0-AMET be sent to the MID eANP Focal Points.	Implement the Conclusion	MIDANPIRG/16 ICAO	eANP VOL III Notification	Feb 2017	Ongoing
MSG CONCLUSION 5/14: WORKSHOP ON ASBU BLOCK 1 MODULES IMPLEMENTATION That, a Workshop on ASBU Block 1 Modules implementation be organized by ICAO in 2017.	Organize the Seminar	ICAO	Seminar	2017	Ongoing Planned for 2018
MSG DECISION 5/15: MIDANPIRG PROCEDURAL HANDBOOK (MID DOC 001) That, the MIDANPIRG Procedural Handbook (MID Doc 001) Edition April 2016 (Appendix 7C) is endorsed.	Publish the Handbook Edition April 2016	ICAO	Handbook posted on the Website	Apr 2016	Completed
DRAFT CONCLUSION 5/1: ACTION PLAN FOR A-CDM IMPLEMENTATION That, States be urged to develop their action plan for A-CDM implementation in line with the MID Air Navigation Strategy.	Implement the Conclusion	States	Action Plan	Feb 2017	Ongoing
DRAFT CONCLUSION 5/2: ESTABLISHMENT OF HELIPORTS DATABASE That, States be urged to establish and maintain a database for Heliports with information about location and type of use, as a minimum	Implement the Conclusion	States	Database	Feb 2017	Ongoing

CONCLUSIONS AND DECISIONS	FOLLOW-UP	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	REMARKS
DRAFT CONCLUSION 5/3: FTBP TESTING DOCUMENT That, the First Edition of File Transfer Body Part (FTBP) Trial and Testing Document at Appendix 5G is endorsed; and be published as MID Document.	Endorse and publish FTBP Doc.	MIDANPIRG	Doc. endorsed and published	Feb 2017	Ongoing
DRAFT CONCLUSION 5/4: MID REGION AIR NAVIGATION STRATEGY That, the revised MID Region Air Navigation Strategy (MID Doc 002, Edition April 2016) is endorsed.	Implement the Conclusion	MIDANPIRG	MID Region Air Navigation Strategy (MID Doc 002, Edition April 2016)	Feb 2017	Ongoing
DRAFT CONCLUSION 5/5: MIDANPRIG TORS That, ICAO takes necessary measures to update the PIRGs Terms of Reference (TORs) to keep pace with latest developments.	Implement the Conclusion	ICAO	Revised TORs	TBD	Ongoing

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INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

MID REGION

AIR NAVIGATION REPORT

DRAFT

2016 EDITION

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Coordinated Approach to Air Navigation Planning and Implementation

Air transport today plays a major role in driving sustainable economic and social development. It directly and indirectly supports the employment of 58.1 million people, contributes over $2.4 trillion to global Gross Domestic Product (GDP), and carries over 3.3 billion passengers and $6.4 trillion worth of cargo annually.

A fully harmonized global air navigation system built on modern performance-based procedures and technologies is a solution to the concerns of limited air traffic capacity and unnecessary gas emissions being deposited in the atmosphere.

The GANP represents a rolling, 15-year strategic methodology which leverages existing technologies and anticipates future developments based on State/ industry agreed operational objectives. The Global Air Navigation Plan's Aviation System Block Upgrades (ASBU) methodology is a programmatic and flexible global system's engineering approach that allows all Member States to advance their Air Navigation capacities based on their specific operational requirements. The Block Upgrades will enable aviation to realize the global harmonization, increased capacity, and improved environmental efficiency that modern air traffic growth now demands in every region around the world.

The GANP's Block Upgrades are organized in six-year time increments starting in 2013 and continuing through 2031 and beyond. The GANP ASBU planning approach also addresses airspace user needs, regulatory requirements and the needs of Air Navigation Service Providers and Airports. This ensures a single source for comprehensive planning. This structured approach provides a basis for sound investment strategies and will generate commitment from States, equipment manufacturers, operators and service providers.

The resultant framework is intended primarily to ensure that the aviation system will be maintained and enhanced, that ATM improvement programmes are effectively harmonized, and that barriers to future aviation efficiency and environmental gains can be removed at a reasonable cost. In this sense, the adoption of the ASBU methodology significantly clarifies how the ANSP and airspace users should plan for future equipage.

Although the GANP has a worldwide perspective, it is not intended that all Block Modules be required to be applied in every State and Region. Many of the Block Upgrade Modules contained in the GANP are specialized packages that should be applied only where the specific operational requirement exists or corresponding benefits can be realistically projected. The inherent flexibility in the ASBU methodology allows States to implement Modules based on their specific operational requirements. Using the GANP, Regional and State planners should identify those Modules which provide any needed operational improvements. Although the Block Upgrades do not dictate when or where a particular Module is to be implemented, this may change in the future should uneven progress hinder the passage of aircraft from one region of airspace to another.

The regular review of implementation progress and the analysis of potential impediments will ultimately ensure the harmonious transition from one region to another following major traffic flows, as well as ease the continuous evolution towards the GANP's performance targets.

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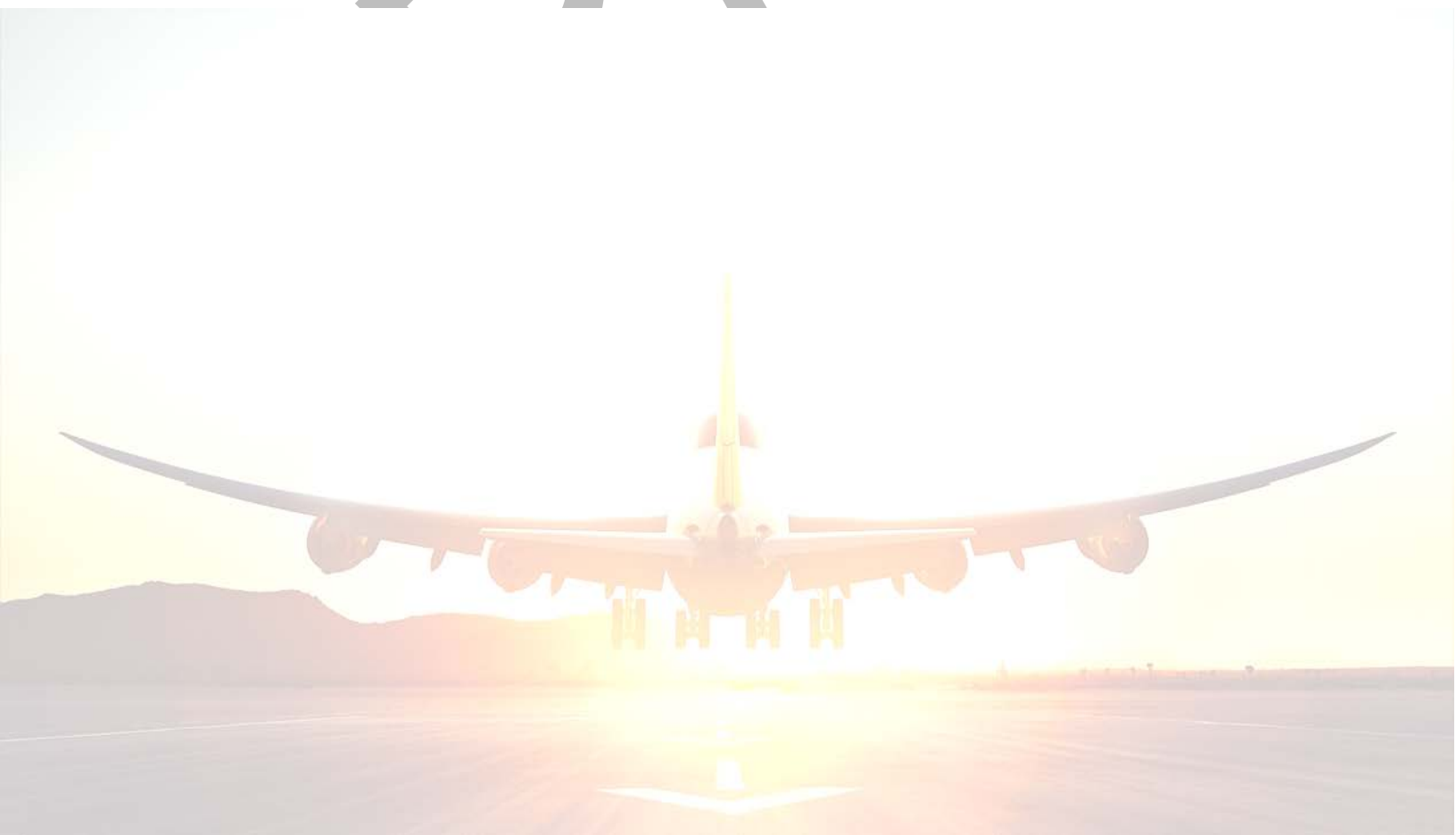

1. INTRODUCTION

1.1 Objectives

The MID Region Air Navigation Report presents an overview of the planning and implementation progress for the Priority 1 ASBU Block 0 Modules (and its detailed elements) within the ICAO MID Region during the reporting year 2016.

The implementation progress information covers the 15 ICAO MID States.

GANP states that the regional national planning process should be aligned and used to identify those Modules which best provide solutions to the operational needs identified. Depending on implementation parameters such as the complexity of the operating environment, the constraints and the resources available, regional and national implementation plans will be developed in alignment with the GANP. Such planning requires interaction between stakeholders including regulators, users of the aviation system, the air navigation service providers (ANSPs), aerodrome operators and supply industry, in order to obtain commitments to implementation.

Accordingly, deployments on a global, regional and sub-regional basis and ultimately at State level should be considered as an integral part of the global and regional planning process through the Planning and Implementation Regional Groups (i.e. MIDANPIRG). The PIRG process will further ensure that all required supporting procedures, regulatory approvals and training capabilities are set in place. These supporting requirements will be reflected in regional online Air Navigation Plan (MID eANPs) developed by MIDANPIRG, ensuring strategic transparency, coordinated progress and certainty of investment. In this way, deployment arrangements including applicability dates can also be agreed and collectively applied by all stakeholders involved in the Region. The MID Region Air Navigation Report which contains all information on the implementation process of the Priority 1 ASBU Modules of the MID Region Air Navigation Strategy (MID Doc 002) is the key document for MIDANPIRG and its Subsidiary Bodies to monitor and analyze the implementation within the MID Region.

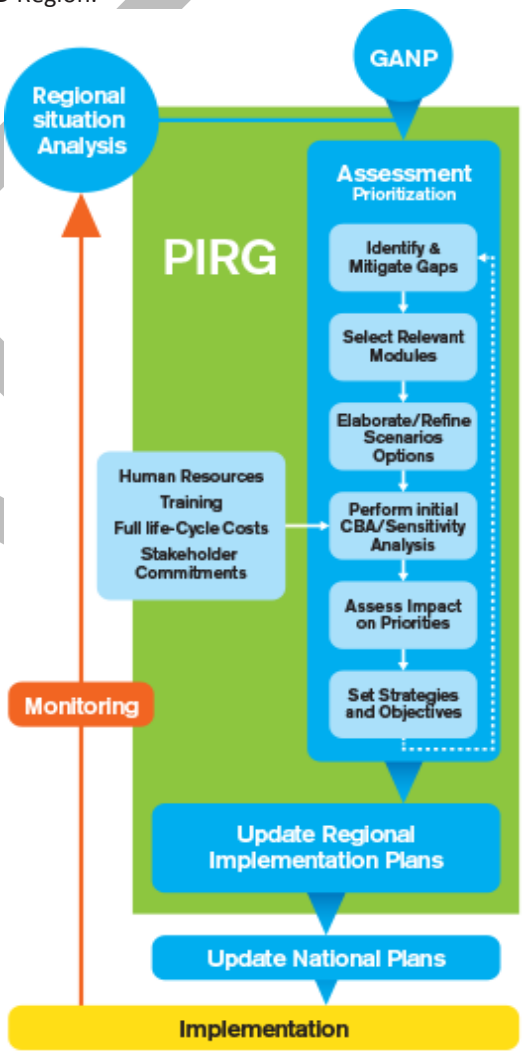

Figure 1. Regional Planning

Following the formal MIDANPIRG endorsement, the MID Region Air Navigation Report will be submitted for inclusion into the annual ICAO Global Air Navigation Report, so that the regional developments/deployment actions can be coordinated across the regions and global interoperability can be ensured at the highest level.

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1.2 Background

Following the discussions and recommendations from the Twelfth Air Navigation Conference (AN-Conf/12), the Fourth Edition of the Global Air Navigation Plan (GANP) based on the Aviation Systems Block Upgrades (ASBU) approach was endorsed by the 38th Assembly of ICAO in October 2013. The Assembly Resolution 38-02 which agreed, amongst others, to call upon States, planning and implementation regional groups (PIRGs), and the aviation industry to provide timely information to ICAO (and to each other) regarding the implementation status of the GANP, including the lessons learned from the implementation of its provisions and to invite PIRGs to use ICAO standardized tools or adequate regional tools to monitor and (in collaboration with ICAO) analyze the implementation status of air navigation systems.

The Fourth meeting of the MIDANPIRG Steering Group (MSG/4) which was held in Cairo, Egypt from 24 to 26 November 2014 endorsed the MID Region Air Navigation Strategy. The Strategy was later endorsed by MIDANPIRG/15 and published as MID Doc 002. The Strategy includes 11 priority 1 Block 0 Modules and their associated performance indicators and targets.
MIDANPIRG and its Subsidiary Bodies (in particular ANSIG) monitor the progress and the status of implementation of the ASBU Block 0 Modules in the MID Region.

The MID Region Air Navigation Report is an integral part of the air navigation planning and implementation process in the MID Region.

1.3 Scope

This MID Air Navigation Report addresses the implementation status of the priority 1 ASBU Block 0 Modules for the year 2016.

The Report covers the fifteen (15) ICAO MID States:

Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Sudan, Syria, United Arab Emirates and Yemen.

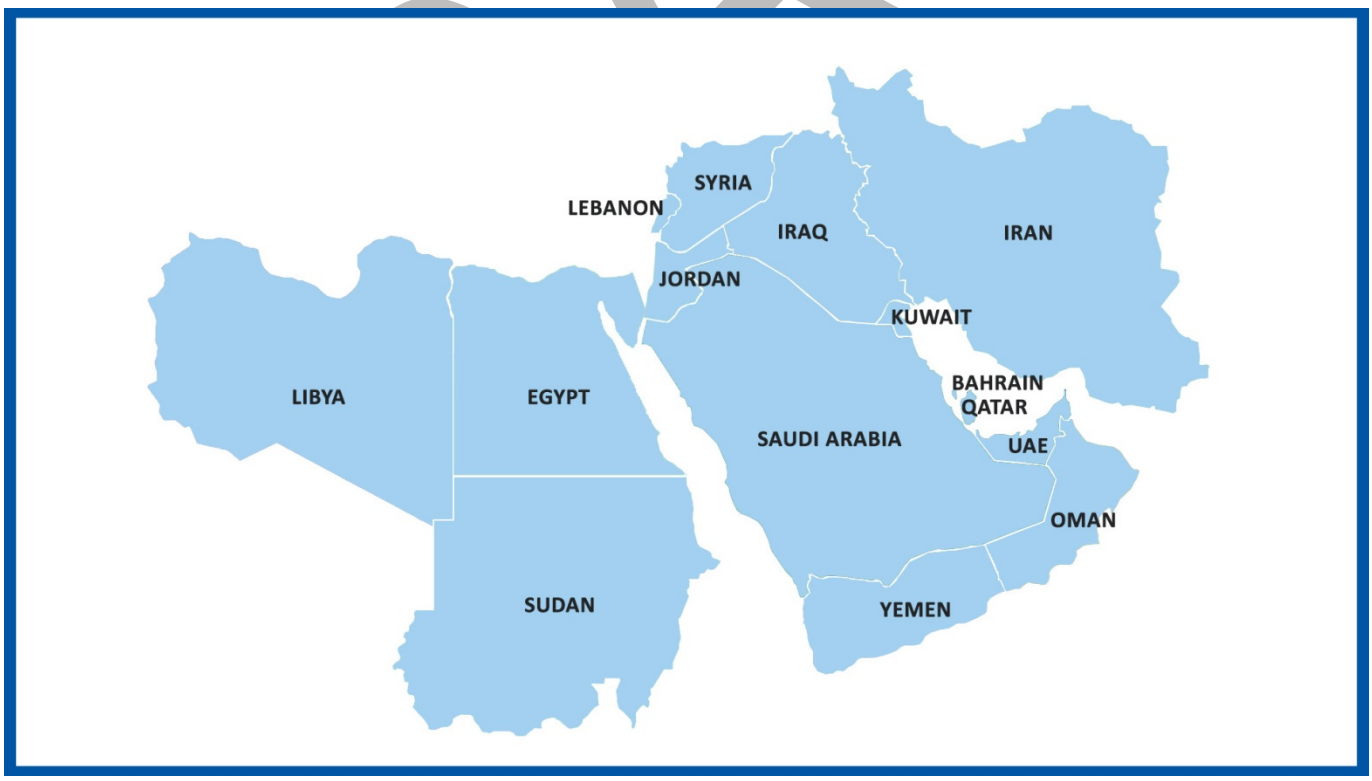

Figure 2. ICAO MID Region

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1.4 Collection of data

The necessary data for the MID Air Navigation Report was collected mainly through the MIDANPIRG Subsidiary Bodies and the MID eANP Volume III.

Where the required data was not provided, it is indicated in the Report by color coding (Missing Data).

1.5 Structure of the Report

Section 1 (Introduction) presents the objective and background of the report as well as the scope covered and method of data collection.

Section 2 lists the priority 1 ASBU Block 0 Modules in the MID Region and presents the status of their implementation in graphical and numeric form.

Section 3 presents the ASBU Block 0 implementation outlook for 2020 in the MID Region.

Section 4 provides a summary of the initiatives on the environmental protection in the MID Region.

Section 5 provides conclusion on the Report and lists some recommendations for future editions of the Report.

Appendix A provides detailed status of the implementation of Priority 1 Block 0 Modules and their associated Elements for the MID States.

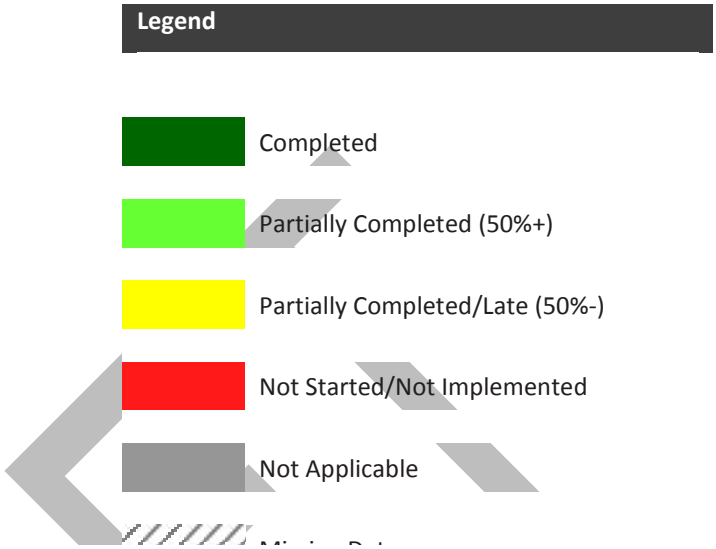
Appendix B illustrates the detailed status of implementation of ASBU Block 0 Modules in the MID States by 2020.

2. STATUS OF IMPLEMENTATION

The ICAO Block Upgrades refer to the target availability timelines for a group of operational improvements (technologies and procedures) that will eventually realize a fully-harmonized global Air Navigation System. The technologies and procedures for each Block have been organized into unique Modules which have been determined and cross-referenced based on the specific Performance Improvement Area to which they relate.

Block 0 Modules are characterized by operational improvements which have already been developed and implemented in many parts of the world. It therefore has a near-term implementation period of 2013–2018, whereby 2013 refers to the availability of all components of its particular performance modules and 2018 refers to the target implementation deadline. ICAO has been working with its Member States to help each determine exactly which capabilities they should have in place based on their unique operational requirements.

The following color scheme is used for illustrating the status of implementation:



2.1 MID Region ASBU Block 0 Modules Prioritization

This report covers eleven (out of eighteen) ASBU Block 0 Modules that have been determined by MIDANPIRG/MSG as priority 1 for the MID Region (MID Doc 002 Edition June 2015, refers).

Module Code	Module Title	Priority	Monitoring		Remarks
			Main	Supporting	
***Performance Improvement Areas (PIA) 1*: Airport Operations**					
B0-APTA	Optimization of Approach Procedures including vertical guidance	1	PBN SG	ATM SG, AIM SG, CNS SG	
B0-WAKE	Increased Runway Throughput through Optimized Wake Turbulence Separation	2			
B0-RSEQ	Improve Traffic flow through Runway Sequencing (AMAN/DMAN)	2			
B0-SURF	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)	1	ANSIG	CNS SG	Coordination with RGS WG
B0-ACDM	Improved Airport Operations through Airport-CDM	1	ANSIG	CNS SG, AIM SG, ATM SG	Coordination with RGS WG
***Performance Improvement Areas (PIA) 2* Globally Interoperable Systems and Data Through Globally Interoperable System Wide Information Management**					
B0-FICE	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	1	CNS SG	ATM SG	
B0-DATM	Service Improvement through Digital Aeronautical Information Management	1	AIM SG	-	
B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	1	MET SG	-	
***Performance Improvement Areas (PIA) 3* Optimum Capacity and Flexible Flights – Through Global Collaborative ATM**					
B0-FRTO	Improved Operations through Enhanced En-Route Trajectories	1	ATM SG		
B0-NOPS	Improved Flow Performance through Planning based on a Network-Wide view	1			
B0-ASUR	Initial capability for ground surveillance	2			
B0-ASEP	Air Traffic Situational Awareness (ATSA)	2			
B0-OPFL	Improved access to optimum flight levels through climb/descent procedures using ADS-B	2			
B0-ACAS	ACAS Improvements	1	CNS SG		
B0-SNET	Increased Effectiveness of Ground-Based Safety Nets	2			
***Performance Improvement Areas (PIA) 4* Efficient Flight Path – Through Trajectory-based Operations**					
B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDO)	1	PBN SG		
B0-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route	2	ATM SG	CNS SG	
B0-CCO	Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)	1	PBN SG		

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2.2 ASBU Implementation Status in the MID Region

2.2.1 B0-APTA

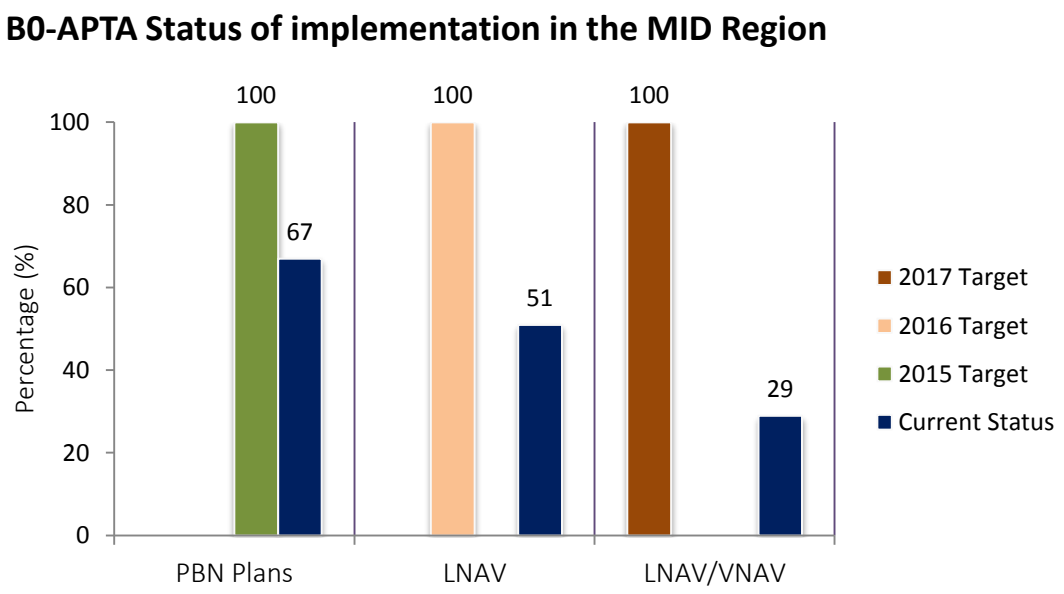
2.2.1.1 B0-APTA Elements and Performance Targets

The use of performance-based navigation (PBN) and ground-based augmentation system (GBAS) landing system (GLS) procedures will enhance the reliability and predictability of approaches to runways, thus increasing safety, accessibility and efficiency. This is possible through the application of Basic global navigation satellite system (GNSS), Baro vertical navigation (VNAV), satellite-based augmentation system (SBAS) and GLS. The flexibility inherent in PBN approach design can be exploited to increase runway capacity.

B0 – APTA: Optimization of Approach Procedures including vertical guidance			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
States' PBN Implementation Plans	All States	Indicator: % of States that provided updated PBN implementation Plan Supporting metric: Number of States that provided updated PBN implementation Plan	80 % by Dec. 2014 100% by Dec. 2015
LNAV	All RWYs Ends at International Aerodromes	Indicator: % of runway ends at international aerodromes with RNAV(GNSS) Approach Procedures (LNAV) Supporting metric: Number of runway ends at international aerodromes with RNAV (GNSS) Approach Procedures (LNAV)	All runway ends at Int'l Aerodromes, either as the primary approach or as a back-up for precision approaches by Dec. 2016
LNAV/VNAV	All RWYs Ends at International Aerodromes	Indicator: % of runways ends at international aerodromes provided with Baro-VNAV approach procedures (LNAV/VNAV) Supporting metric: Number of runways ends at international aerodromes provided with Baro-VNAV approach procedures (LNAV/VNAV)	All runway ends at Int'l Aerodromes, either as the primary approach or as a back-up for precision approaches by Dec. 2017

2.2.1.2 B0-APTA Status of Implementation

The following chart provides the regional status of implementation of B0-APTA against the performance targets agreed in the MID Air Navigation Strategy:



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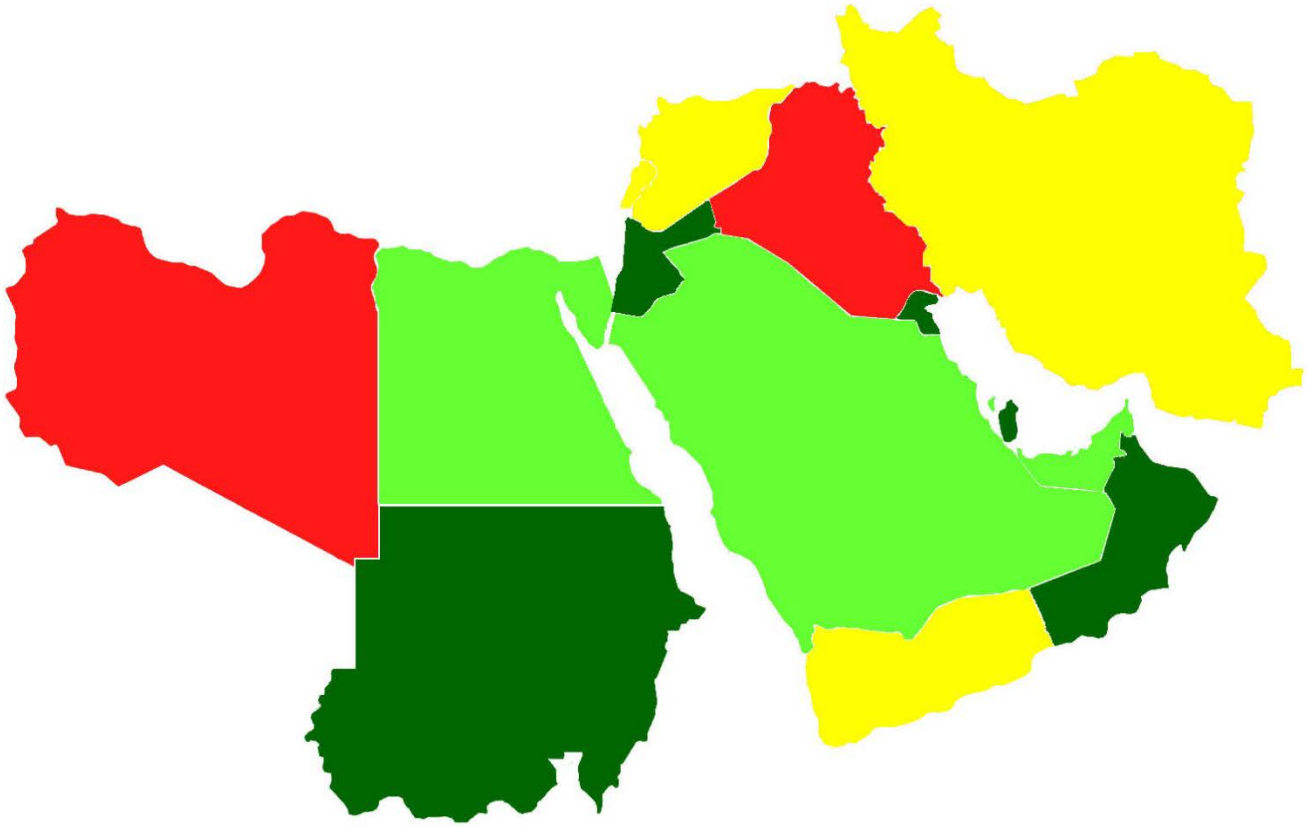
The Table and map below provide the status of implementation of B0-APTA in each of the MID States:

Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-APTA	PBN Plan															
	LNAV															
	LNAV/VNAV															

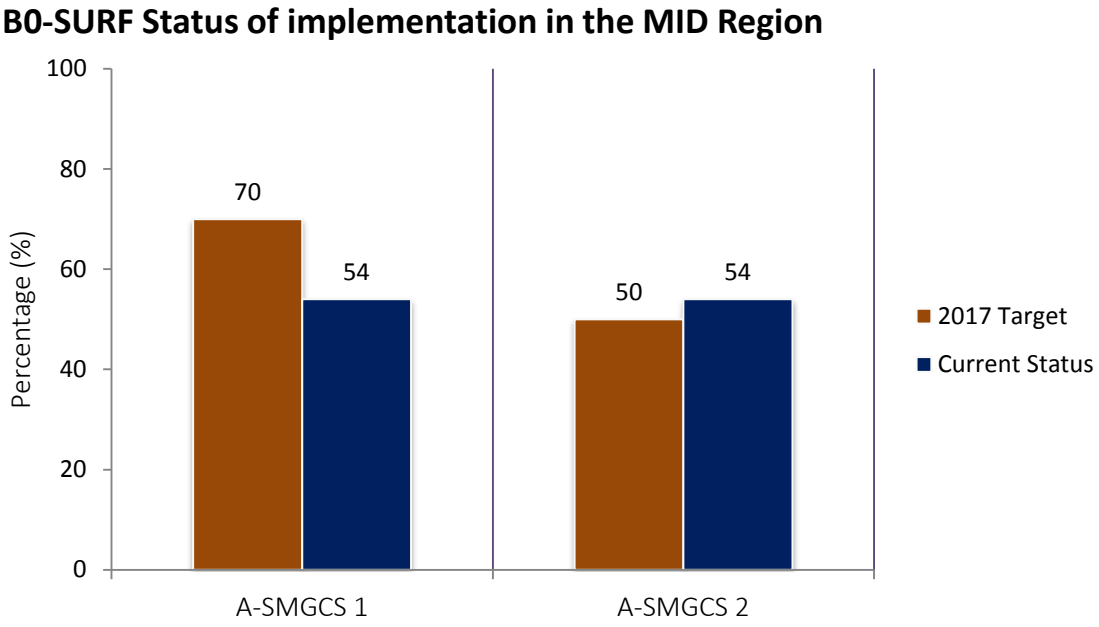
The progress for B0-APTA is slow (with approximately 40% implementation). Nevertheless, if we consider the status of implementation of PBN RWYs, which is considered at the global level, the status of implementation is approximately 52% (acceptable).



2.2.2 B0-SURF

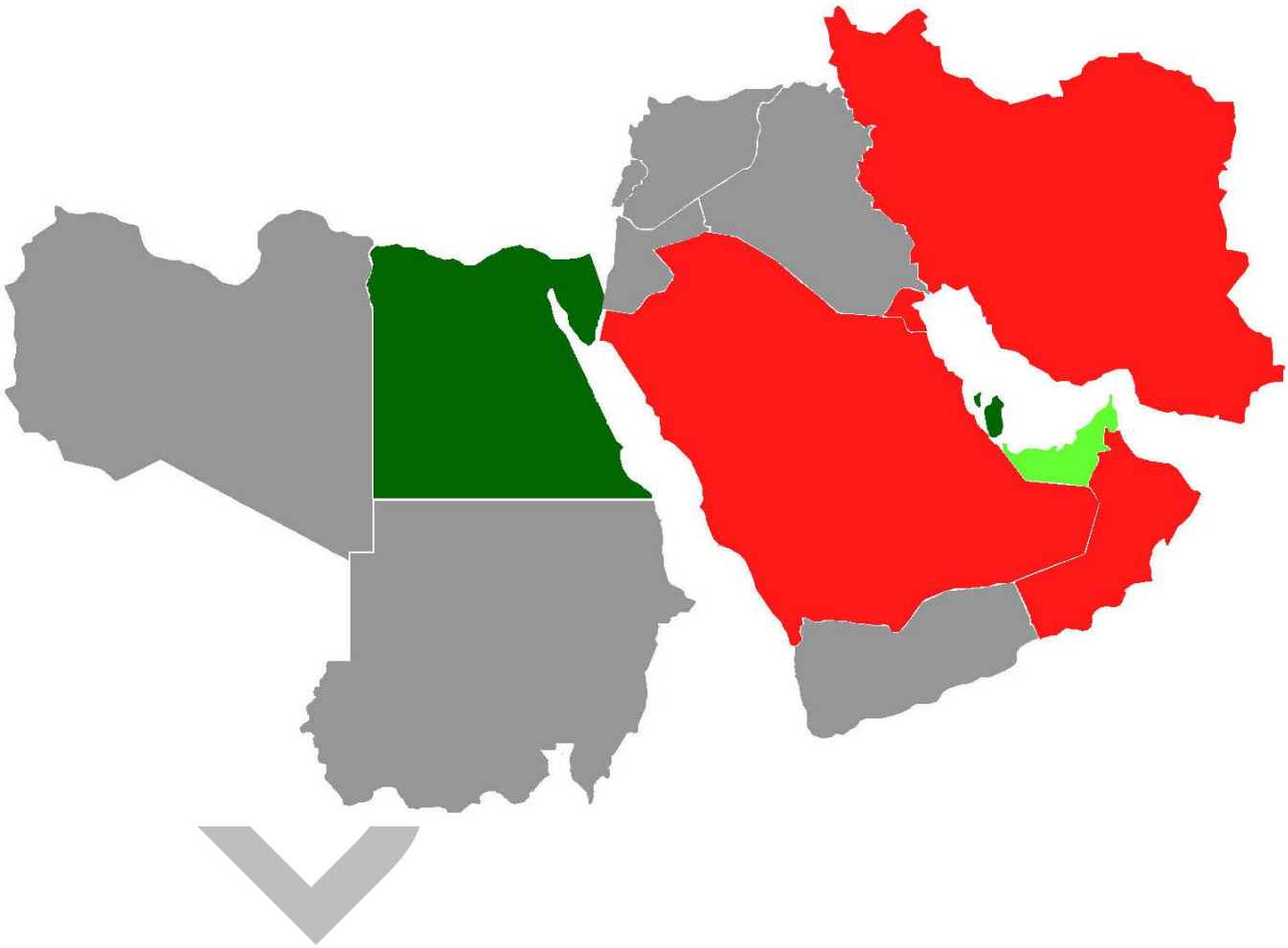
Basic A-SMGCS provides surveillance and alerting of movements of both aircraft and vehicles on the aerodrome thus improving runway/aerodrome safety. ADS-B information is used when available (ADS-B APT).

B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
A-SMGCS Level 1	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEDF, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented A-SMGCS Level 1 Supporting Metric: Number of applicable international aerodromes having implemented A-SMGCS Level 1	70% by Dec. 2017
A-SMGCS Level 2	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented A-SMGCS Level 2 Supporting Metric: Number of applicable international aerodromes having implemented A-SMGCS Level 2	50% by Dec. 2017



Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-SURF	A-SMGCS Level 1															
	A-SMGCS Level 2															

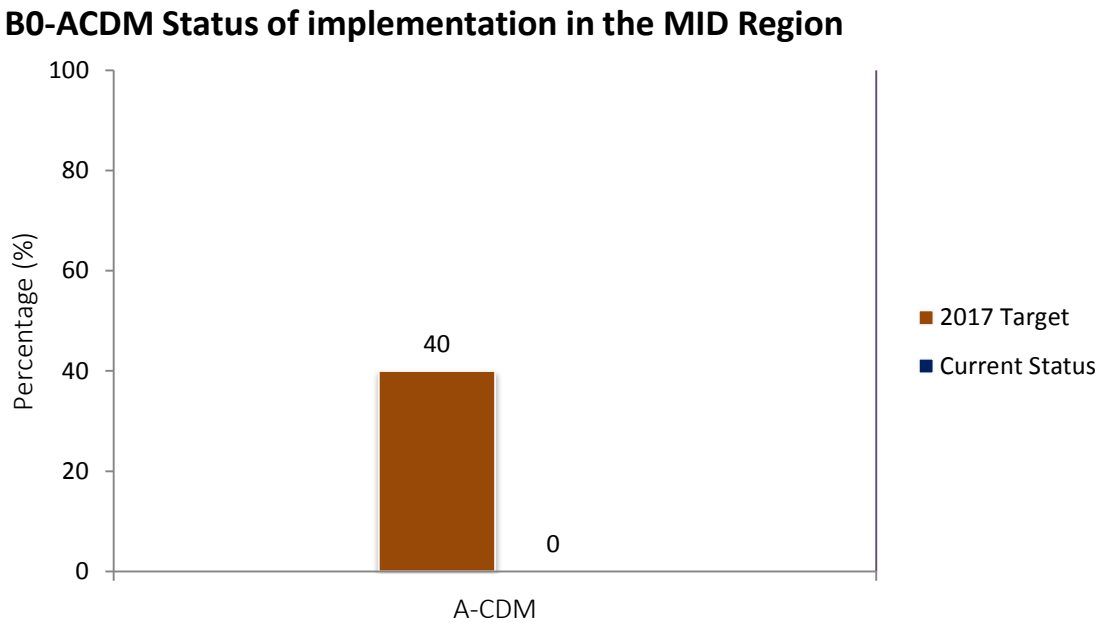
The progress for B0-SURF is acceptable (with approximately 54% implementation). B0-SURF is not applicable for 7 States.



2.2.3 B0-ACDM

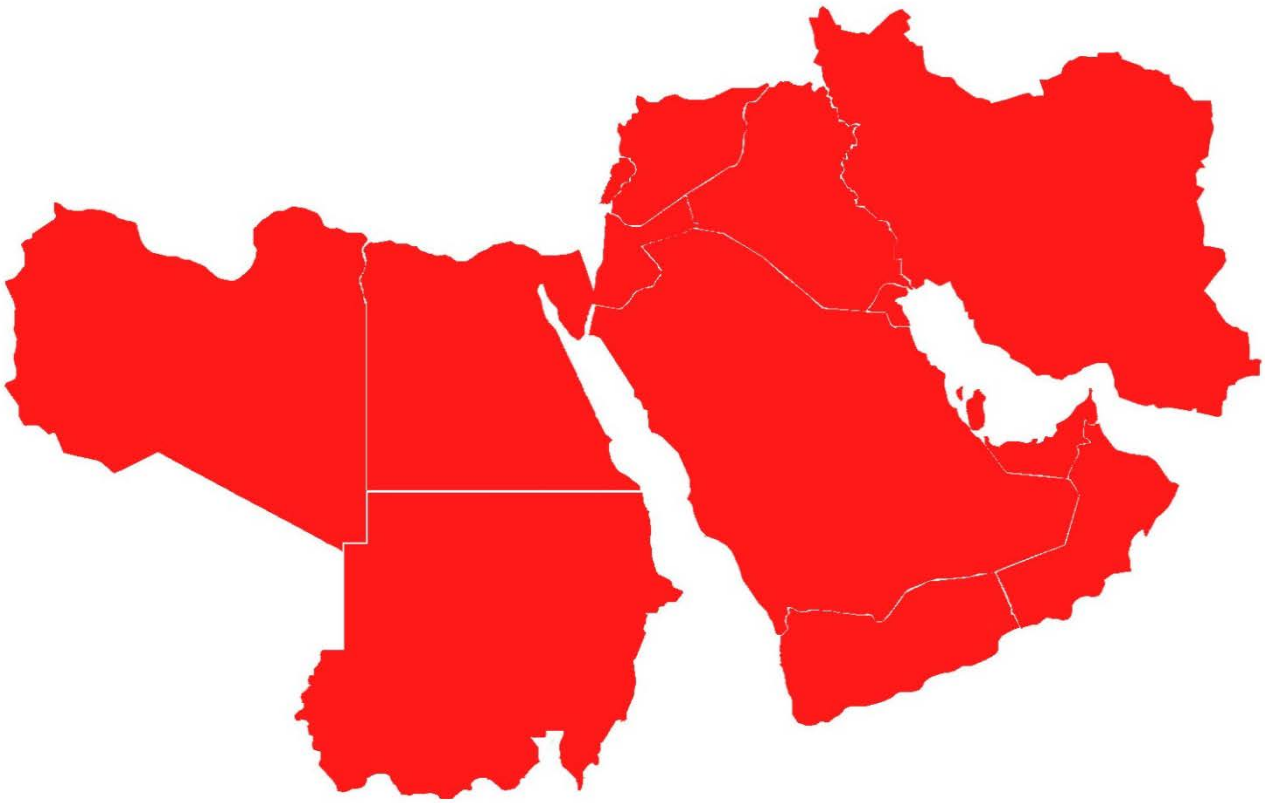
To implement collaborative applications that will allow the sharing of surface operations data among the different stakeholders on the airport. This will improve surface traffic management reducing delays on movement and manoeuvring areas and enhance safety, efficiency and situational awareness.

B0 – ACDM: Improved Airport Operations through Airport-CDM			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
A-CDM	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented improved airport operations through airport-CDM Supporting metric: Number of applicable international aerodromes having implemented improved airport operations through airport-CDM	40% by Dec. 2017



Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-ACDM	A-CDM															

B0-ACDM has not yet been fully implemented by any MID State. Nevertheless, implementation is ongoing in some States.



2.2.4 B0-FICE

To improve coordination between air traffic service units (ATSUs) by using ATS Interfacility Data Communication (AIDC) defined by the ICAO *Manual of Air Traffic Services Data Link Applications* (Doc 9694). The transfer of communication in a data link environment improves the efficiency of this process particularly for oceanic ATSUs.

B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
AMHS capability	All States	Indicator: % of States with AMHS capability Supporting metric: Number of States with AMHS capability	70% of States with AMHS capability by Dec. 2017
AMHS implementation /interconnection	All States	Indicator: % of States with AMHS implemented (interconnected with other States AMHS) Supporting metric: Number of States with AMHS implemented (interconnections with other States AMHS)	60% of States with AMHS interconnected by Dec. 2017
Implementation of AIDC/OLDI between adjacent ACCs	All ACCs	Indicator: % of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC/OLDI with neighboring ACCs Supporting metric: Number of AIDC/OLDI interconnections implemented between adjacent ACCs	70% by Dec. 2017

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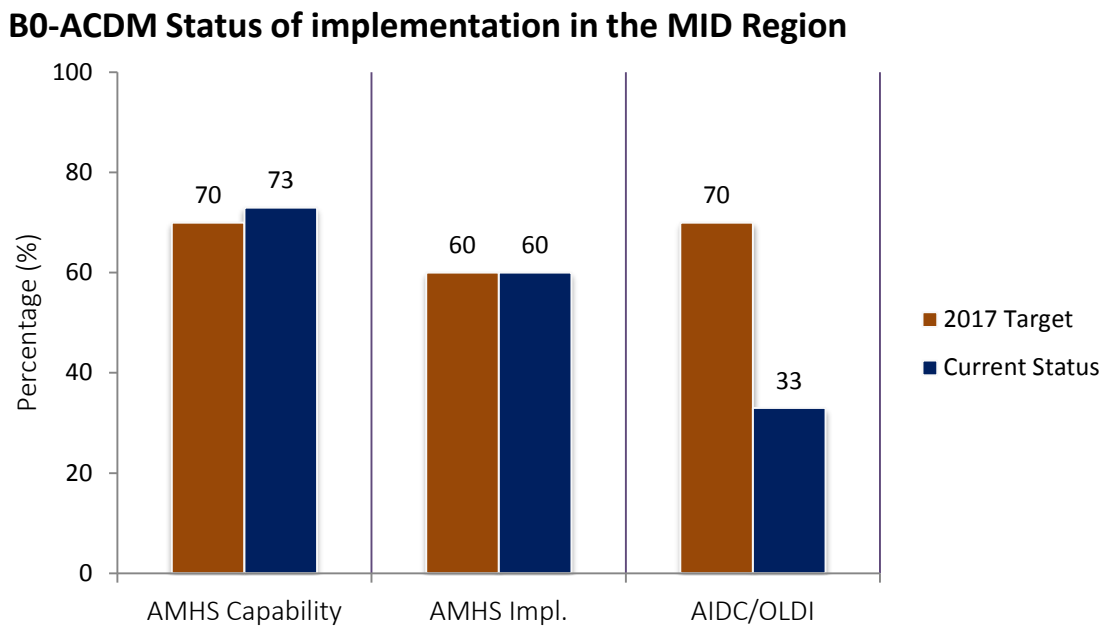
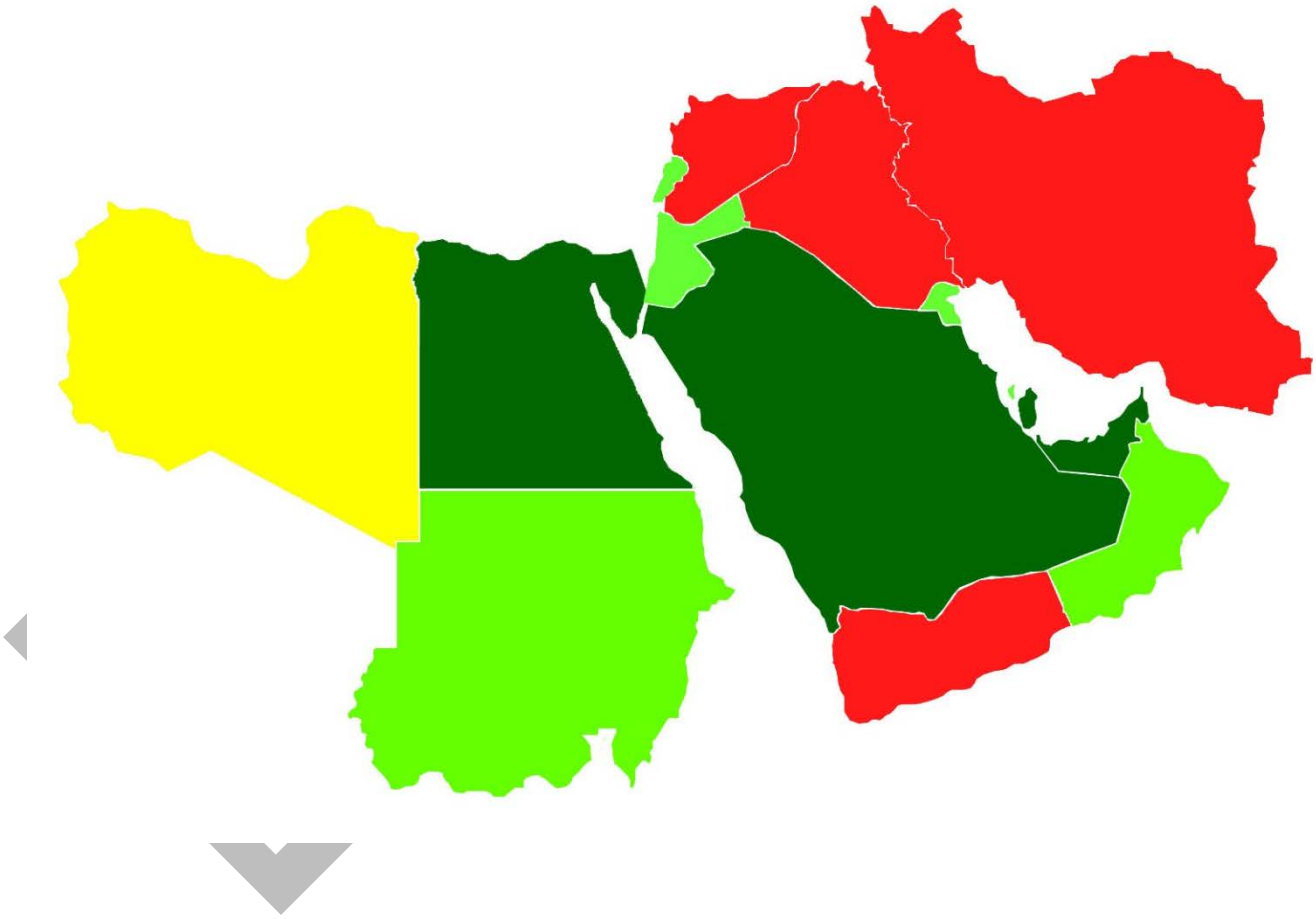


Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-FICE	AMHS capability															
	AMHS impl. /interconnection															
	Implementation of AIDC/OLDI between adjacent ACCs															

The progress for B0-FICE is acceptable (with approximately 55% implementation).



2.2.5 B0-DATM

The initial introduction of digital processing and management of information, through aeronautical information service (AIS)/aeronautical information management (AIM) implementation, use of aeronautical information exchange model (AIXM), migration to electronic aeronautical information publication (AIP) and better quality and availability of data.

B0 – DATM: Service Improvement through Digital Aeronautical Information Management			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
National AIM Implementation Plan/Roadmap	All States	Indicator: % of States that have National AIM Implementation Plan/Roadmap Supporting Metric: Number of States that have National AIM Implementation Plan/Roadmap	80% by Dec. 2016 90% by Dec. 2018
AIXM	All States	Indicator: % of States that have implemented an AIXM-based AIS database Supporting Metric: Number of States that have implemented an AIXM-based AIS database	60% by Dec. 2015 80% by Dec. 2017 100% by Dec. 2019
eAIP	All States	Indicator: % of States that have implemented an IAID driven AIP Production (eAIP) Supporting Metric: Number of States that have implemented an IAID driven AIP Production (eAIP)	60% by Dec. 2016 80% by Dec. 2018 100% by Dec. 2020
QMS	All States	Indicator: % of States that have implemented QMS for AIS/AIM Supporting Metric: Number of States that have implemented QMS for AIS/AIM	70% by Dec. 2016 90% by Dec. 2018
WGS-84	All States	Indicator: % of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) Supporting Metric: Number of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) Indicator: % of States that have implemented WGS-84 Geoid Undulation Supporting Metric: Number of States that have implemented WGS-84 Geoid Undulation	Horizontal: 100% by Dec. 2017 Vertical: 90% by Dec. 2018
eTOD	All States	Indicator: % of States that have implemented required Terrain datasets Supporting Metric: Number of States that have implemented required Terrain datasets Indicator: % of States that have implemented required Obstacle datasets Supporting Metric: Number of States that have implemented required Obstacle datasets	Area 1 : Terrain: 50% by Dec. 2015, 70% by Dec. 2018 Obstacles: 40% by Dec. 2015, 60% by Dec. 2018 Area 4: Terrain: 50% by Dec. 2015, 100% by Dec. 2018 Obstacles: 50% by Dec. 2015, 100% by Dec. 2018
Digital NOTAM*	All States	Indicator: % of States that have included the implementation of Digital NOTAM into their National Plan for the transition from AIS to AIM Supporting Metric: Number of States that have included the implementation of Digital NOTAM into their National Plan for the transition from AIS to AIM	80% by Dec. 2016 90% by Dec. 2018

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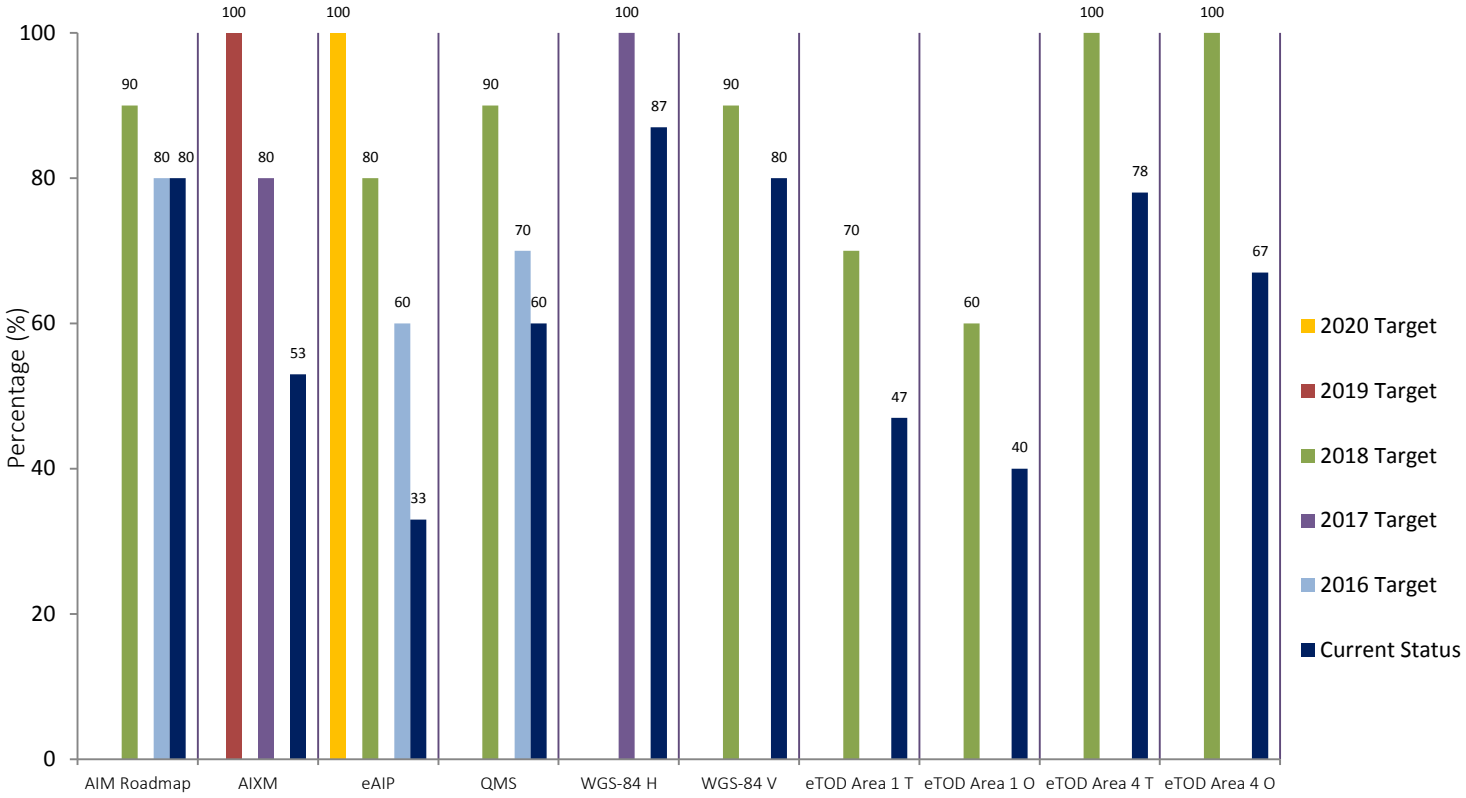
B0-DATM Status of implementation in the MID Region



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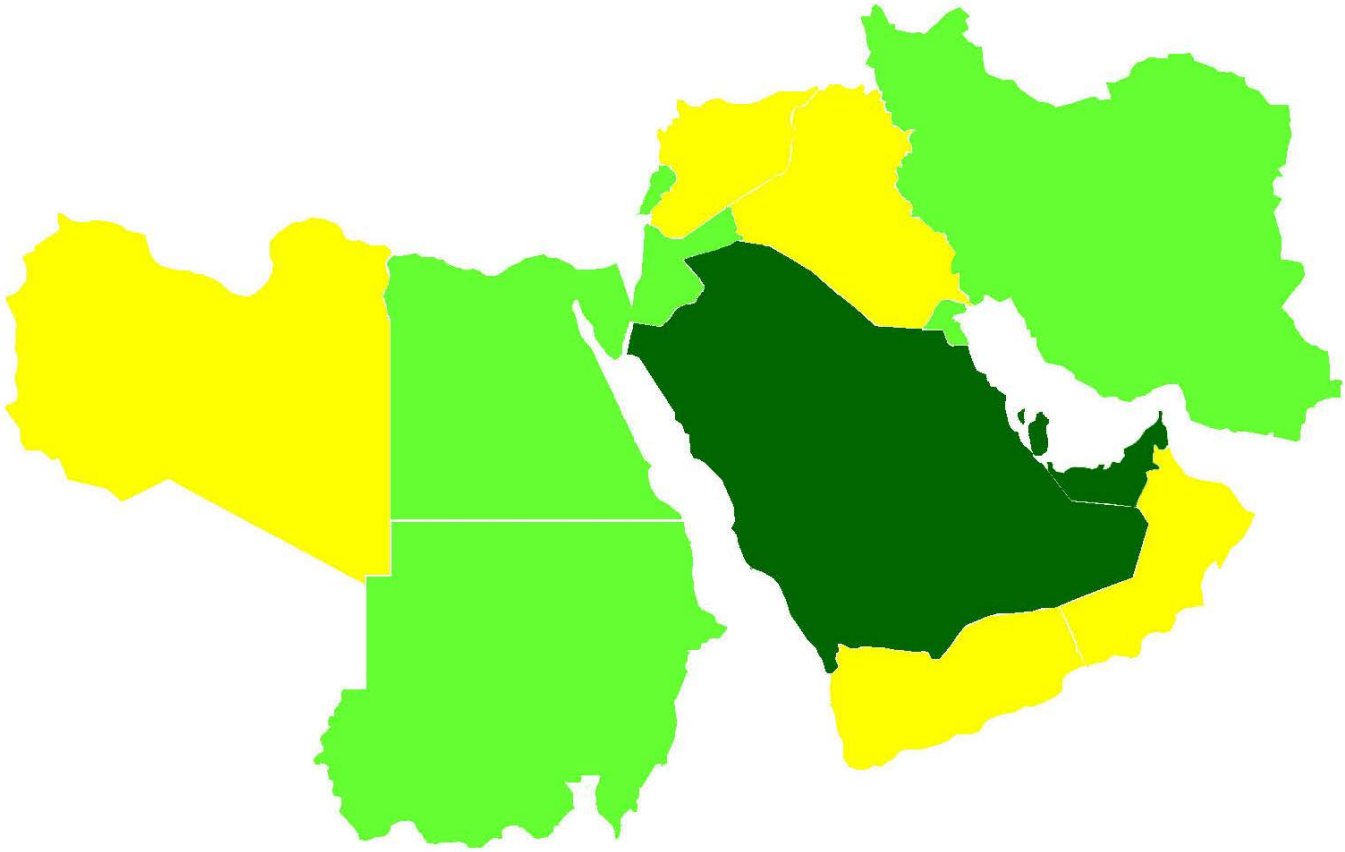
Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-DATM	National AIM Roadmap															
	AIXM															
	eAIP															
	QMS															
	WGS-84 – H															
	WGS-84 – V															
	eTOD Area 1 Terrain															
	eTOD Area 1 Obstacles															
	eTOD Area 4 Terrain															
	eTOD Area 4 Obstacles															

The progress for B0-DATM is acceptable (with approximately 63% implementation). eTOD Area 4 is not applicable in 6 States.



2.2.6 B0-AMET

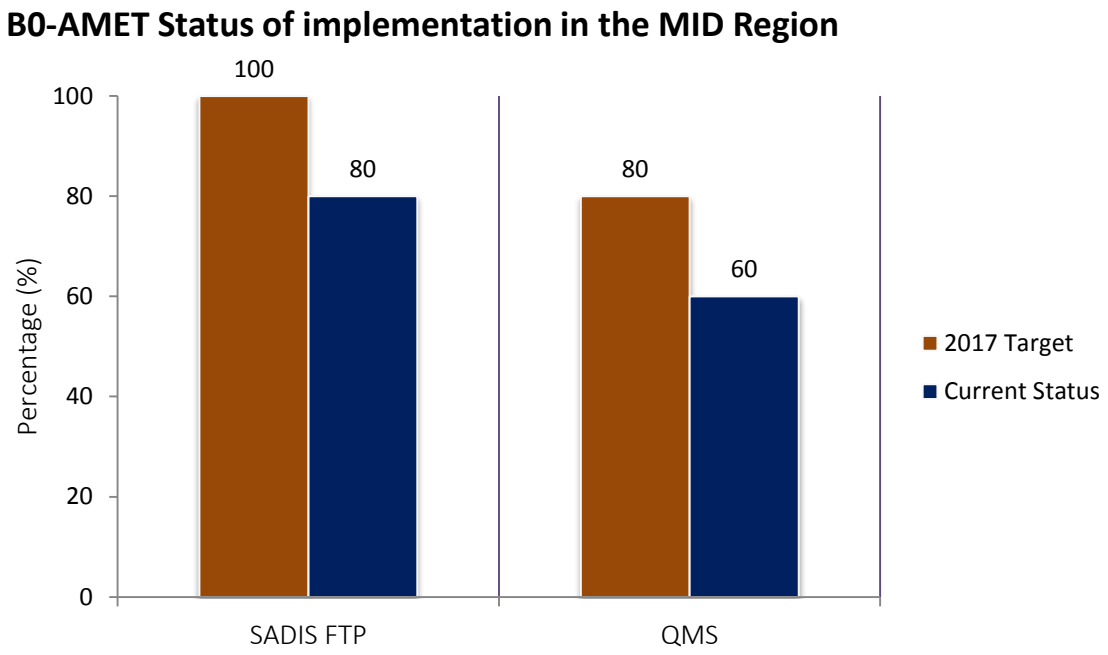
Global, regional and local meteorological information:

a) forecasts provided by world area forecast centres (WAFC), volcanic ash advisory centres (VAAC) and tropical cyclone advisory centres (TCAC);

b) aerodrome warnings to give concise information of meteorological conditions that could adversely affect all aircraft at an aerodrome including wind shear; and

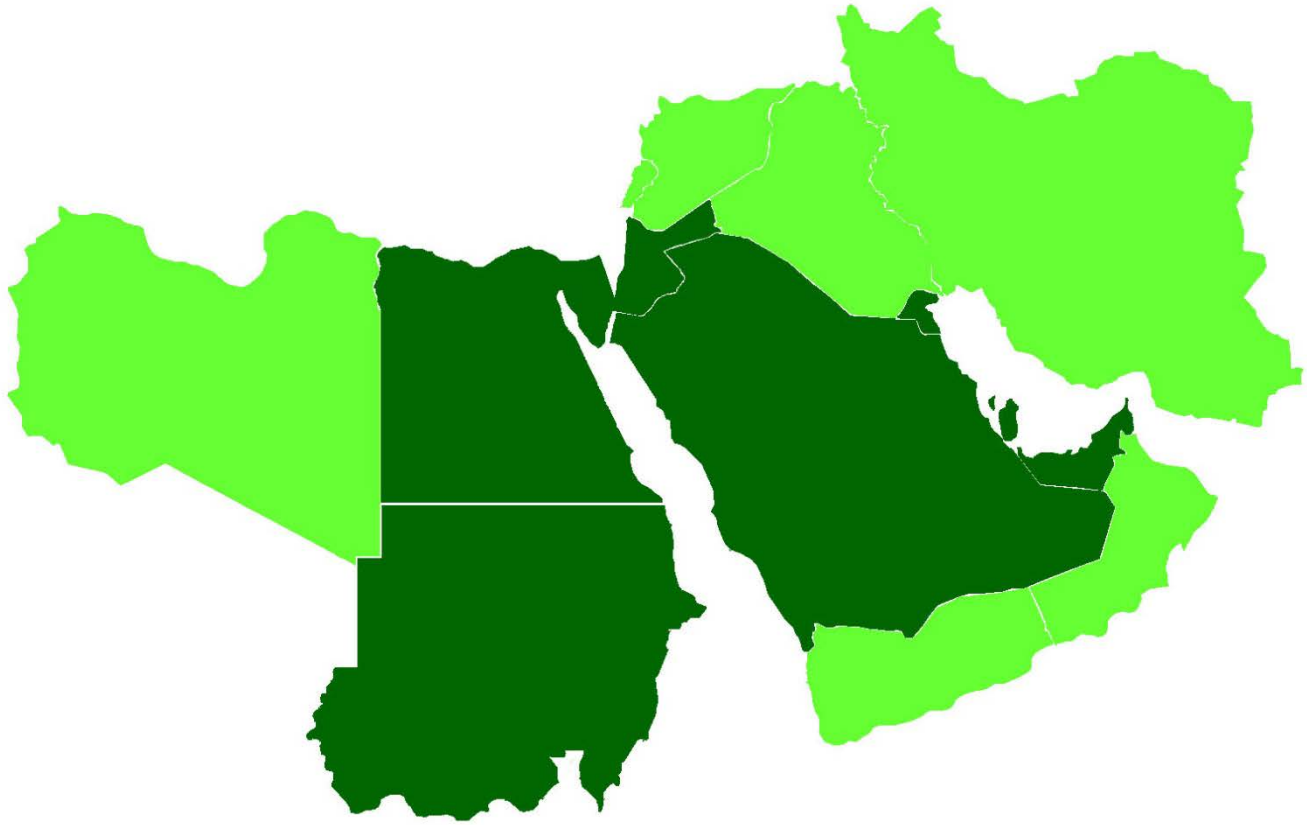
c) SIGMETs to provide information on occurrence or expected occurrence of specific en-route weather phenomena which may affect the safety of aircraft operations and other operational meteorological (OPMET) information, including METAR/SPECI and TAF, to provide routine and special observations and forecasts of meteorological conditions occurring or expected to occur at the aerodrome.

B0 – AMET: Meteorological information supporting enhanced operational efficiency and safety			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
SADIS FTP	All States	Indicator: % of States having implemented SADIS FTP service Supporting metric: number of States having implemented SADIS 2G satellite broadcast or Secure SADIS FTP service	90% by Dec. 2015 100% by Dec. 2017
QMS	All States	Indicator: % of States having implemented QMS for MET Supporting metric: number of States having implemented QMS for MET	60% by Dec. 2015 80% by Dec. 2017



Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-AMET	SADIS 2G/Secure SADIS FTP															
	QMS															

The progress for B0-AMET is acceptable (with approximately 70% implementation).

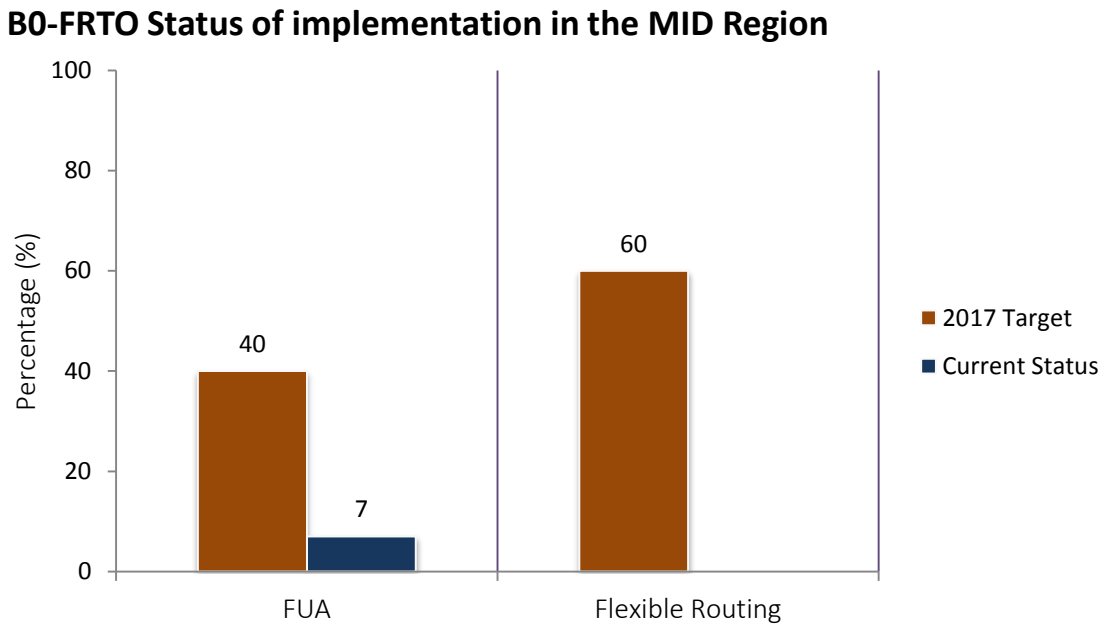


2.2.7 B0-FRTO

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.

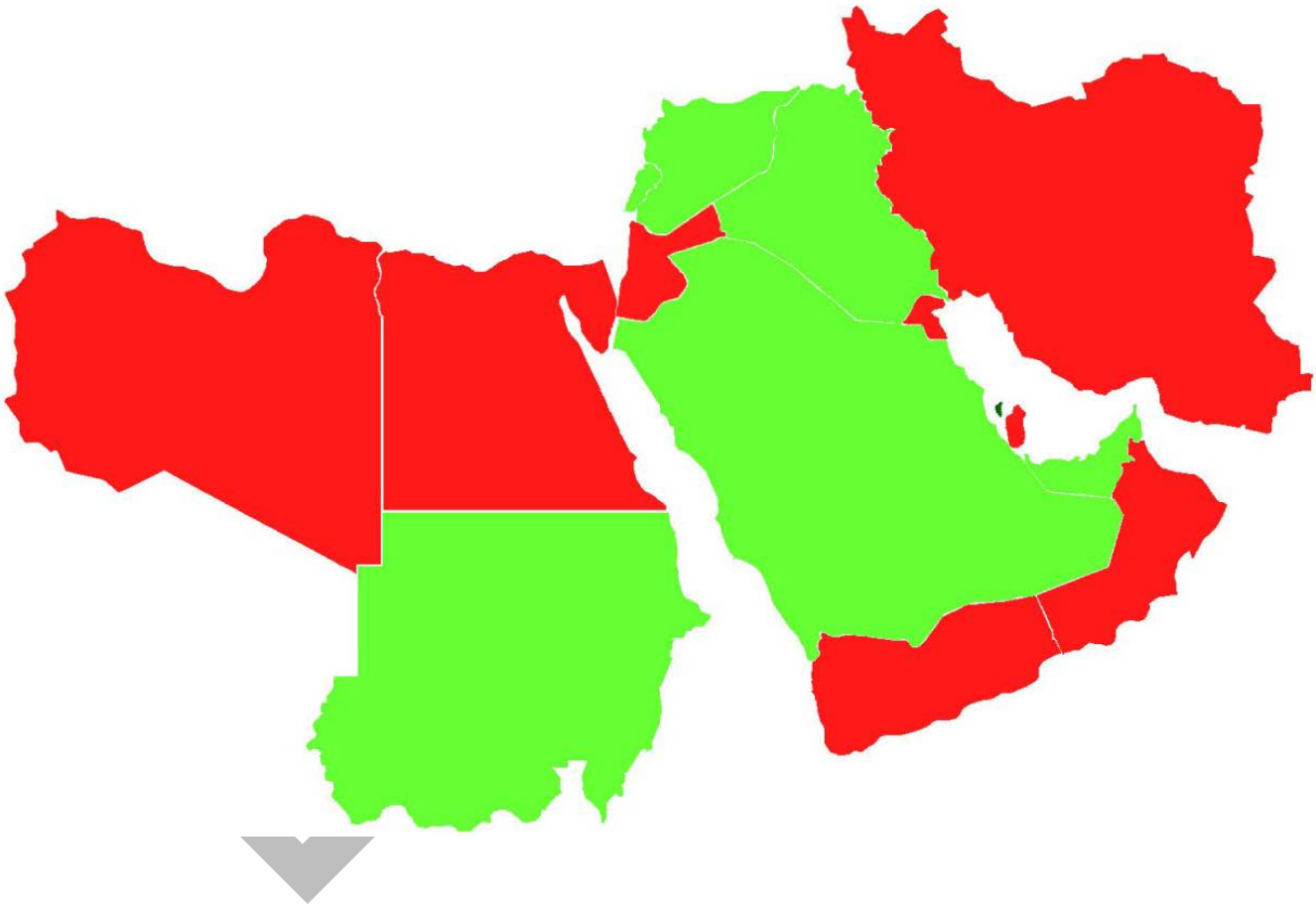
B0 – FRTO: Improved Operations through Enhanced En-Route Trajectories			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
Flexible use of airspace (FUA)	All States	Indicator: % of States that have implemented FUA Supporting metric*: number of States that have implemented FUA	40% by Dec. 2017
Flexible routing	All States	Indicator: % of required Routes that are not implemented due military restrictions (segregated areas) Supporting metric 1: total number of ATS Routes in the Mid Region Supporting metric 2*: number of required Routes that are not implemented due military restrictions (segregated areas)	60% by Dec. 2017

* *Implementation should be based on the published aeronautical information*



Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-FRTO	Flexible use of airspace (FUA)															
	Flexible routing															

The progress for B0-FRTO is very slow (with approximately 7% implementation). The element "Flexible Routing" could not be monitored because the status data is missing/incomplete.



2.2.8 B0-NOPS

Air Traffic Flow Management (ATFM) is used to manage the flow of traffic in a way that minimizes delay and maximizes the use of the entire airspace. ATFM can regulate traffic flows involving departure slots, smooth flows and manage rates of entry into airspace along traffic axes, manage arrival time at waypoints or Flight Information Region (FIR)/sector boundaries and re-route traffic to avoid saturated areas. ATFM may also be used to address system disruptions including crisis caused by human or natural phenomena.

Experience clearly shows the benefits related to managing flows consistently and collaboratively over an area of a sufficient geographical size to take into account sufficiently well the network effects. The concept for ATFM and demand and capacity balancing (DCB) should be further exploited wherever possible. System improvements are also about better procedures in these domains, and creating instruments to allow collaboration among the different actors**.**

B0 – NOPS: Improved Flow Performance through Planning based on a Network-Wide view			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
ATFM Measures implemented in collaborative manner	All States	Indicator: % of States that have established a mechanism for the implementation of ATFM Measures based on collaborative decision Supporting metric: number of States that have established a mechanism for the implementation of ATFM Measures based on collaborative decision	100% by Dec. 2017

Note – B0-NOPS could not be monitored because the elements and associated performance indicators and targets have not yet been agreed upon and are under development.

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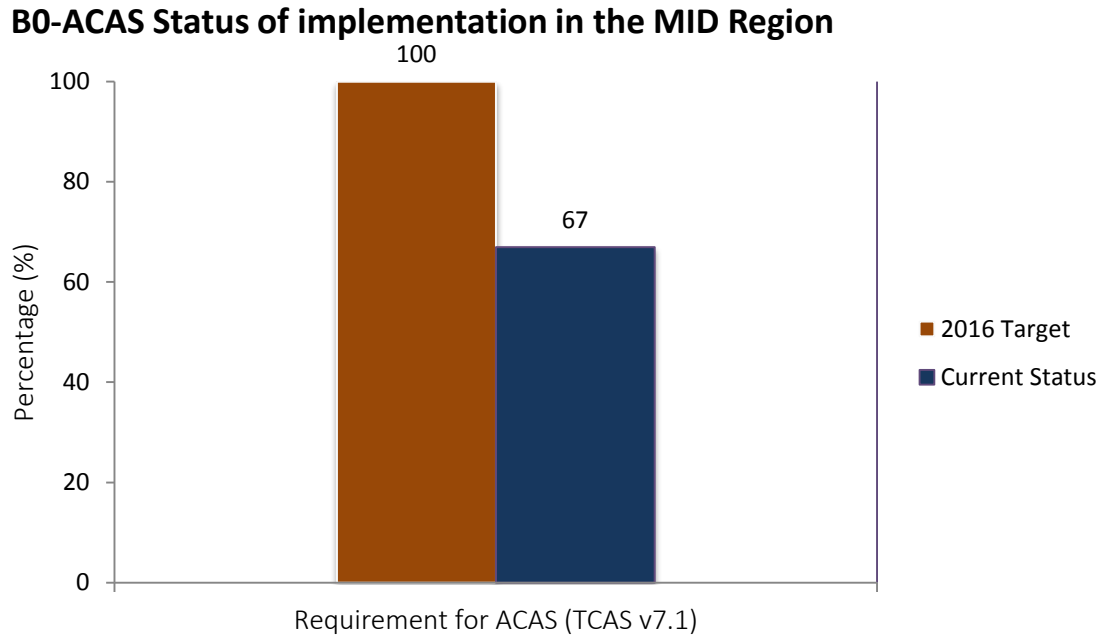
2.2.9 B0-ACAS

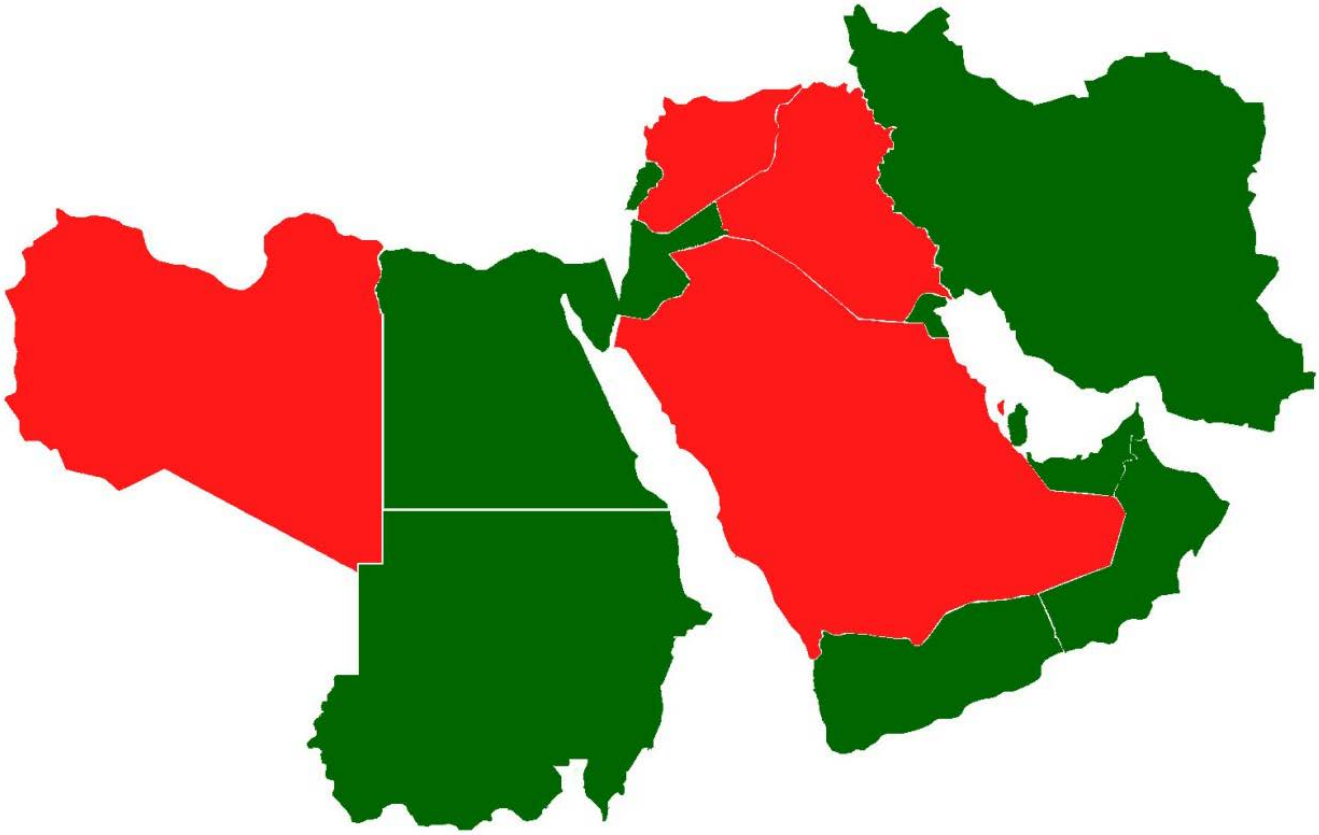
To provide short-term improvements to existing airborne collision avoidance systems (ACAS) to reduce nuisance alerts while maintaining existing levels of safety. This will reduce trajectory deviations and increase safety in cases where there is a breakdown of separation.

B0 – ACAS: ACAS Improvements			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
Avionics (TCAS V7.1)	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 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	80% by Dec. 2015 100% by Dec. 2016



Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-ACAS	ACAS (TCAS V7.1)															

The progress for B0-ACAS is acceptable (with approximately 67% implementation).



2.2.10 B0-CDO

To use performance-based airspace and arrival procedures allowing 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.

B0 – CDO: Improved Flexibility and Efficiency in Descent Profiles (CDO)			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
PBN STARs	In accordance with States' implementation Plans: (OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OISS, OIKB, OIMM, OIFM, ORER, ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, OOMS, OOSA, OTHH, OEJN, OEMA, OEDF, OERK, HSNN, HSOB, HSSS, HSPN, OMAA, OMAD, OMDB, OMDW, OMSJ)	Indicator: % of International Aerodromes/TMA with PBN STAR implemented as required. Supporting Metric: Number of International Aerodromes/TMAs with PBN STAR implemented as required.	100% by Dec. 2016 for the identified Aerodromes/TMAs 100% by Dec. 2018 for all the International Aerodromes/TMAs
International aerodromes/TMAs with CDO	In accordance with States' implementation Plans: (OBBI, HESH, HEMA, HEGN, OIIE, OIKB, OIFM, OJAI, OJAQ, OKBK, OLBA, OOMS, OTHH, OEJN, OEMA, OEDF, OERK, HSSS, HSPN, OMAA, OMDB, OMDW, OMSJ)	Indicator: % of International Aerodromes/TMA with CDO implemented as required. Supporting Metric: Number of International Aerodromes/TMAs with CDO implemented as required.	100% by Dec. 2018 for the identified Aerodromes/TMAs

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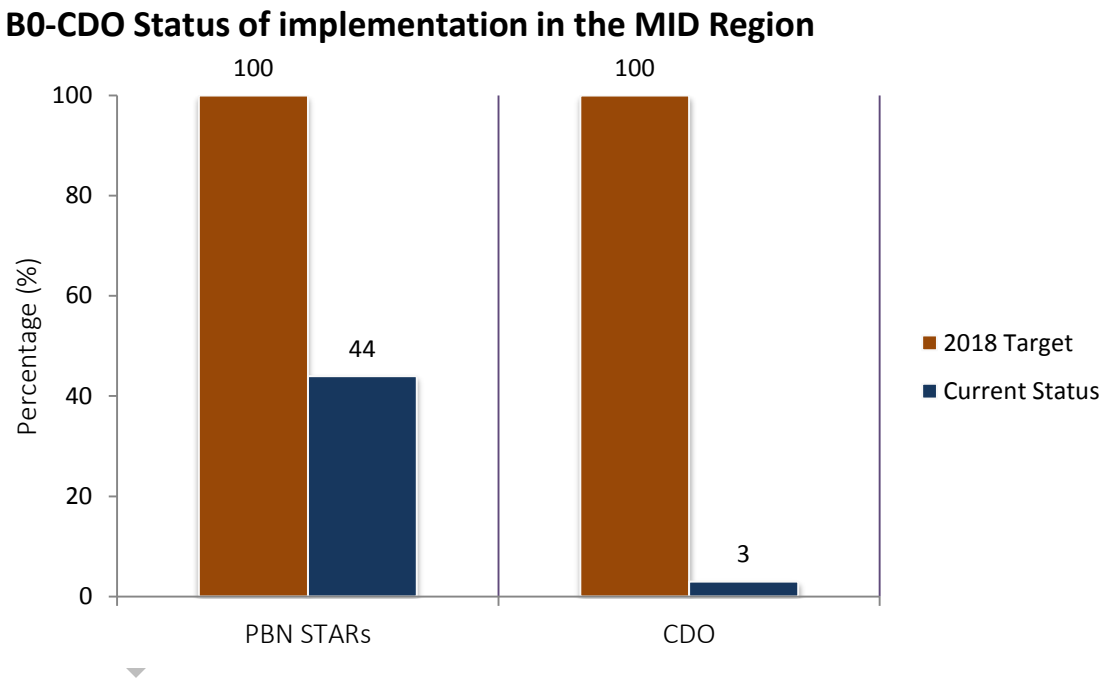
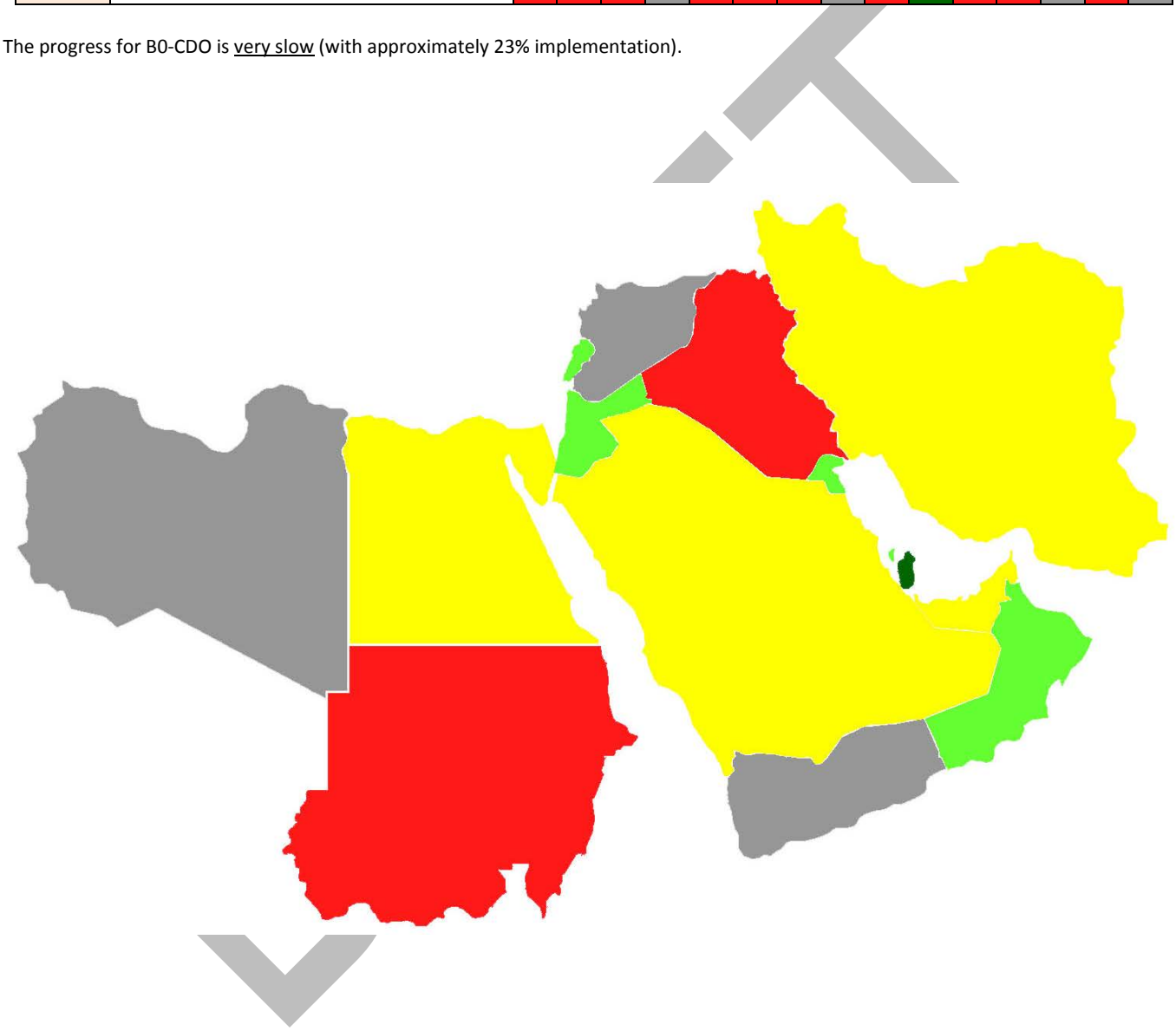


Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-CDO	PBN STARs															
	International aerodromes/TMAs with CDO															

The progress for B0-CDO is very slow (with approximately 23% implementation).



2.2.11 B0-CCO

To implement continuous climb operations in conjunction with performance-based navigation (PBN) to provide opportunities to optimize throughput, improve flexibility, enable fuel-efficient climb profiles and increase capacity at congested terminal areas.

B0 – CCO: Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
PBN SIDs	in accordance with States' implementation Plans: OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OISS, OIKB, OIMM, OIFM, ORER, ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, OOMS, OOSA, OTHH, OEJN, OEMA, OEDF, OERK, HSNN, HSOB, HSSS, HSPN, OMAA, OMAD, OMDB, OMDW, OMSJ	Indicator: % of International Aerodromes/TMA with PBN SID implemented as required. Supporting Metric: Number of International Aerodromes/ TMAs with PBN SID implemented as required.	100% by Dec. 2016 for the identified Aerodromes/TMAs 100% by Dec. 2018 for all the International Aerodromes/TMAs
International aerodromes/TMAs with CCO	in accordance with States' implementation Plans: OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OISS, OIKB, OIMM, OIFM, ORER, ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, OOMS, OOSA, OTHH, OEJN, OEMA, OEDF, OERK, HSNN, HSOB, HSSS, HSPN, OMAA, OMAD, OMDB, OMDW, OMSJ	Indicator: % of International Aerodromes/TMA with CCO implemented as required. Supporting Metric: Number of International Aerodromes/TMAs with CCO implemented as required.	100% by Dec. 2018 for the identified Aerodromes/TMAs

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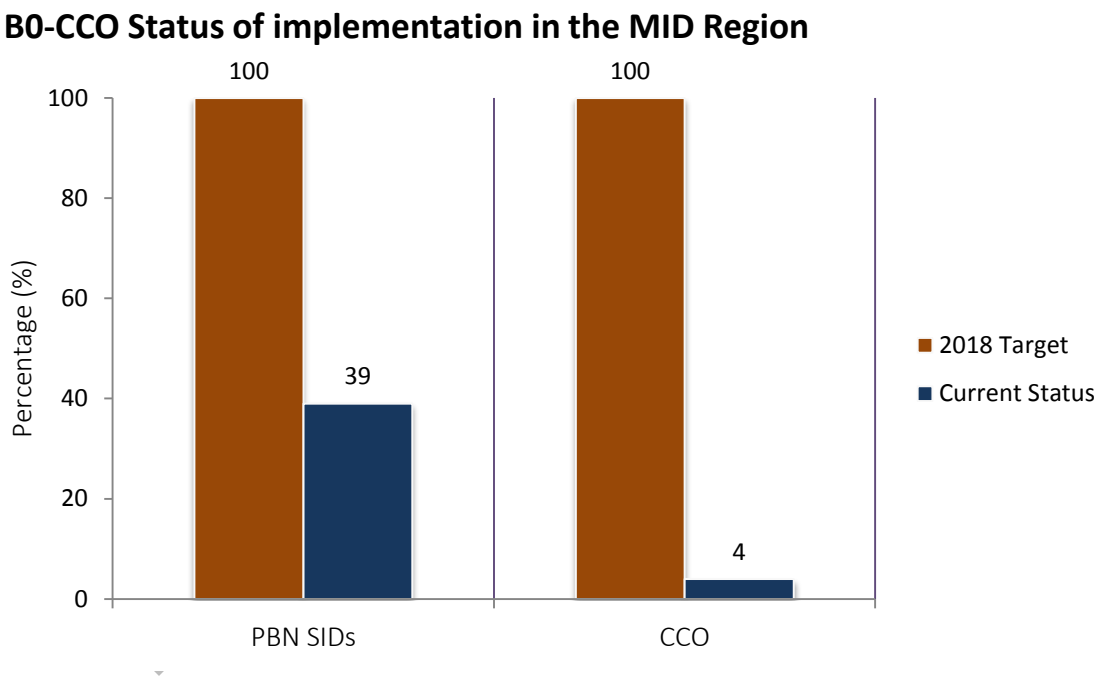
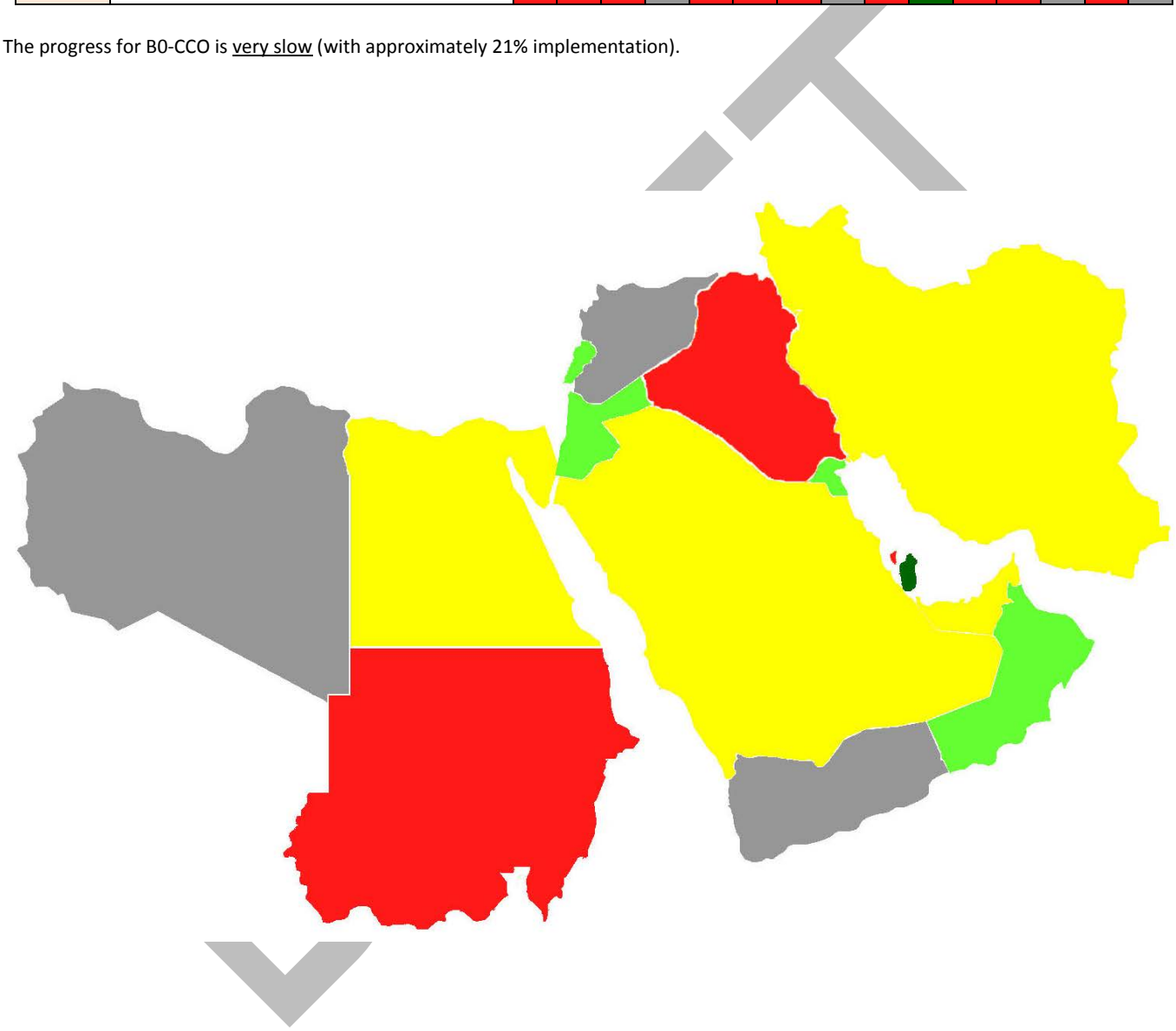


Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-CCO	PBN SIDs															
	Intl ADs/TMAs with CCO															

The progress for B0-CCO is very slow (with approximately 21% implementation).



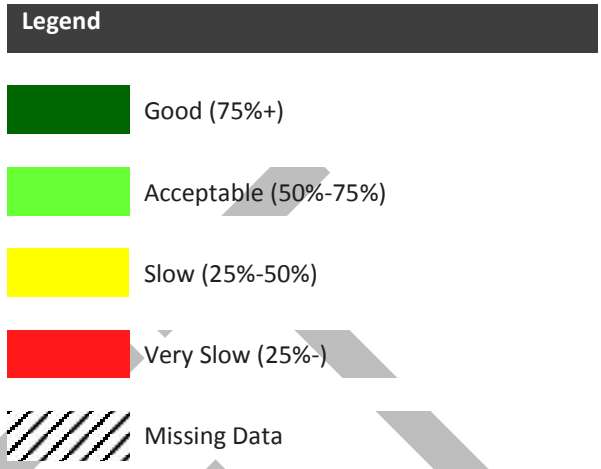
3. ASBU BLOCK 0 IMPLEMENTATION OUTLOOK FOR 2020

3.1 Status of Implementation-2020

In order to envisage the upcoming implementation of the Block 1 ASBU Modules (2019-2025), this section consolidates the outlook of the Block 0 Modules implementation in the MID States, by 2020. The table below presents the status of implementation of the 18 ASBU Block 0 Modules foreseen to be achieved by the end of 2020, in accordance with the planning dates reported by States in the ICAO MID Region.

Detailed status of implementation of the 18 ASBU Block 0 Modules foreseen to be achieved by the end of 2020, for each State is provided at **Appendix B**.

The following color scheme is used for the projection of outlook status:



Module	Current Status of implementation (approximate rate)	Projected Status of implementation by 2020 (approximate rate)
B0-APTA	33%	TBD for Final version
B0-WAKE	(Priority 2)	TBD for Final version
B0-RSEQ	(Priority 2)	TBD for Final version
B0-SURF	46%	TBD for Final version
B0-ACDM	0%	TBD for Final version
B0-FICE	55%	TBD for Final version
B0-DATM	61%	TBD for Final version
B0-AMET	70%	TBD for Final version
B0-FRTO	7%	TBD for Final version
B0-NOPS	(Priority 2)	TBD for Final version
B0-ASUR	(Priority 2)	TBD for Final version
B0-ASEP	(Priority 2)	TBD for Final version
B0-OPFL	(Priority 2)	TBD for Final version
B0-ACAS	67%	TBD for Final version
B0-SNET	(Priority 2)	TBD for Final version
B0-CDO	10%	TBD for Final version
B0-TBO	(Priority 2)	TBD for Final version
B0-CCO	19%	TBD for Final version

4. ENVIRONMENTAL PROTECTION

4.1 TBD

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5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

TBD

5.2 Recommendations

MID Air navigation Report-2016 is the first edition of an air navigation report in the MID Region based on ASBU. It provides a thorough overview of the progress achieved in implementing of all the ASBU Block 0 Modules in the MID Region. This report also envisages the outlook of Block 0 in the Region by 2020. Based on the experience in this first exercise, next editions are expected to include more detailed analysis and progressive data. The following recommendations are provided to be taken into consideration for next edition:

- A progress be provided on the implementation of the modules between the two reports throughout the data collected in 2017;
- States actively participate in providing data on the status of implementation requested through State Letters and the MIDANPIG Subsidiary Bodies;
- XXX

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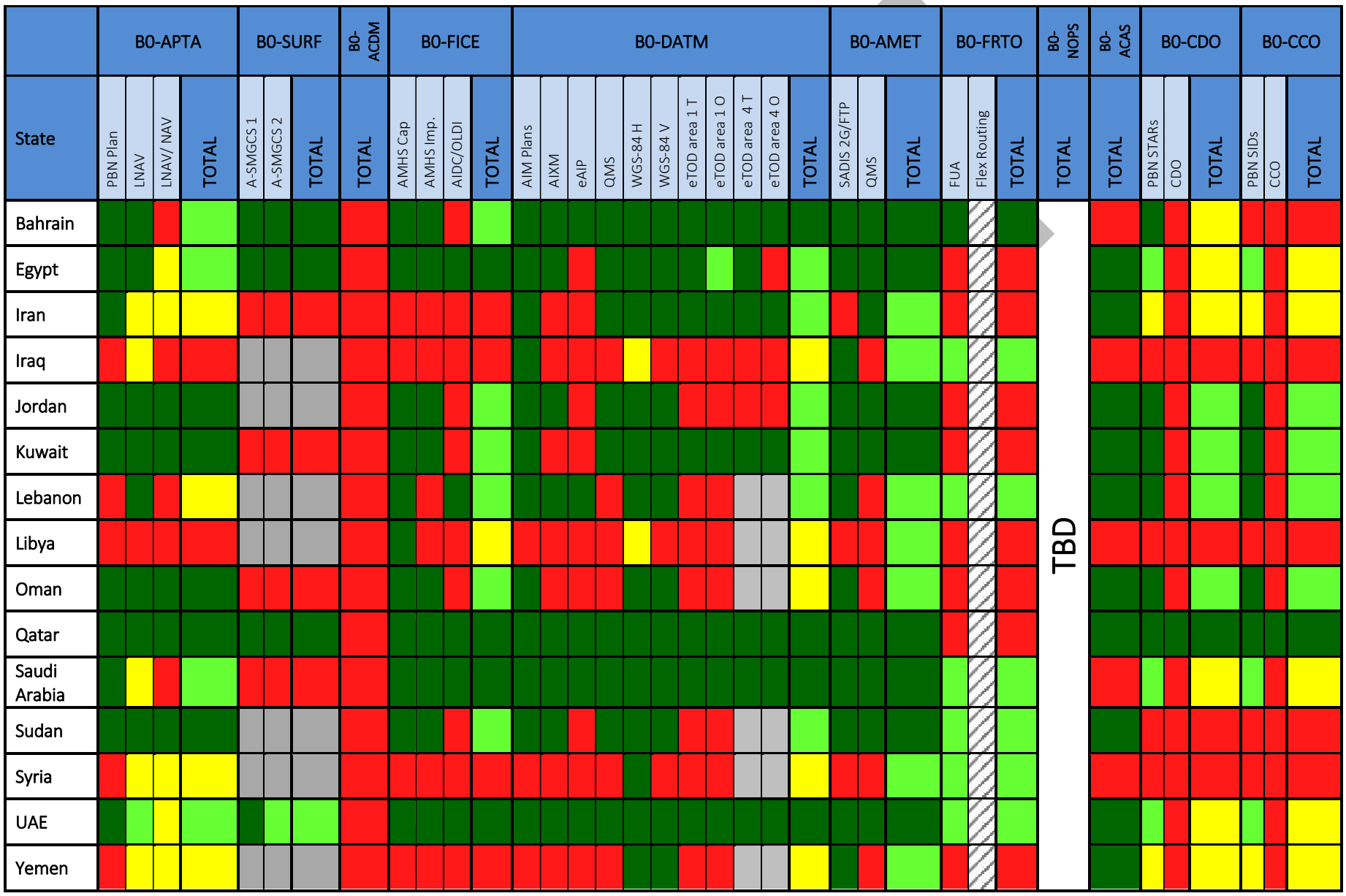
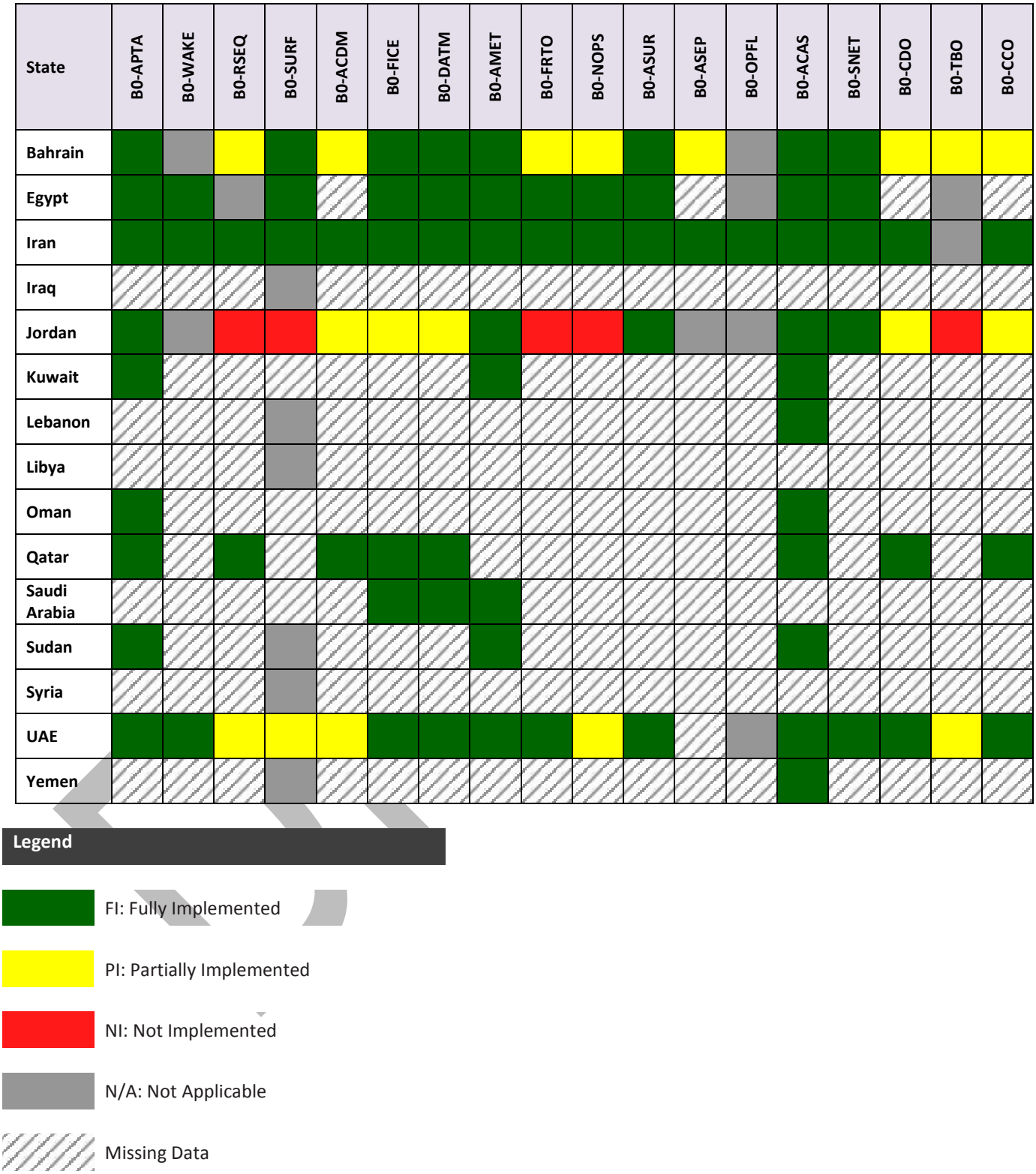
APPENDIX A: STATUS OF ASBU BLOCK 0 MODULES



APPENDIX B: ASBU BLOCK 0 STATUS OF IMPLEMENTATION OUTLOOK 2020



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MID DOC 002

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

MID REGION

AIR NAVIGATION STRATEGY

EDITION FEBRUARY, 2017

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The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontier or boundaries.

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~~MID REGION AIR NAVIGATION STRATEGY~~

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) methodology 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 Through Recommendation 6/1 - *Regional performance framework – planning methodologies and tools*, AN-Conf/12 urged States and PIRGs to harmonize the regional and national air navigation plans with the ASBU methodology in response to this, the MID region is developing MID Region Air Navigation Strategy that is aligned with the ASBU methodology.

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 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).

Near-term Objective (2013 - 2018): ASBU Block 0

3.2 Block ‘0’ features Modules characterized by operational improvements which have already been developed and implemented in many parts of the world today. It therefore has a near-term implementation period of 2013–2018. The MID Region near-term priorities are based on the implementation of an agreed set of Block 0 Modules as reflected in **Table 1** below.

3.3 The MID Region Air Navigation Strategy is aimed to maintain regional harmonisation. The States should develop their national performance framework, including action plans for the implementation of relevant priority 1 ASBU Modules and other modules according to the State operational requirements.

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Mid-term Objective (2019~~8~~ - 2024~~3~~): ASBU Block 1

3.4 Blocks 1 through 3 are characterized by both existing and projected performance area solutions, with availability milestones beginning in 2019~~8~~, 2025~~3~~ and 2031~~28~~, respectively. Associated timescales are intended to depict the initial deployment targets along with the readiness of all components needed for deployment.

Long-term Objective (2025~~3~~ - 2031~~28~~): ASBU Block 2

3.5 The Block Upgrades incorporate a long-term perspective matching that of the three companion ICAO Air Navigation planning documents. They coordinate clear aircraft- and ground-based operational objectives together with the avionics, data link and ATM system requirements needed to achieve them. The overall strategy serves to provide industry wide transparency and essential investment certainty for operators, equipment manufacturers and ANSPs.

4. MID Region ASBU Block 0 Modules Prioritization and Monitoring

4.1 On the basis of operational requirements and taking into consideration the associated benefits, **Table 1** below shows the priority for implementation of the 18 Block "0" Modules**,** as well as the MIDANPIRG subsidiary bodies that will be monitoring and supporting the implementation of the Modules:

Table 1. MID REGION ASBU BLOCK 0 MODULES PRIORITIZATION AND MONITORING

Module Code	Module Title	Priority	Start Date	Monitoring		Remarks
				Main	Supporting	
***Performance Improvement Areas (PIA) 1*: Airport Operations**						
B0-APTA	Optimization of Approach Procedures including vertical guidance	1	2014	PBN SG	ATM SG, AIM SG, CNS SG	
B0-WAKE	Increased Runway Throughput through Optimized Wake Turbulence Separation	2				
B0-RSEQ	Improve Traffic flow through Runway Sequencing (AMAN/DMAN)	2				
B0-SURF	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)	1	2014	ANSIG	CNS SG	Coordination with RGS WG
B0-ACDM	Improved Airport Operations through Airport-CDM	1	2014	ANSIG	CNS SG, AIM SG, ATM SG	Coordination with RGS WG
Performance Improvement Areas (PIA) 2 Globally Interoperable Systems and Data Through Globally Interoperable System Wide Information Management						
B0-FICE	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	1	2014	CNS SG	AIM SG, ATM SG	
B0-DATM	Service Improvement through Digital Aeronautical Information Management	1	2014	AIM SG		

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B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	1	2014	MET SG		
Performance Improvement Areas (PIA) 3 Optimum Capacity and Flexible Flights – Through Global Collaborative ATM						
B0-FRTO	Improved Operations through Enhanced En-Route Trajectories	1	2014	ATM SG		
B0-NOPS	Improved Flow Performance through Planning based on a Network-Wide view	1	2014			
B0-ASUR	Initial capability for ground surveillance	2				
B0-ASEP	Air Traffic Situational Awareness (ATSA)	2				
B0-OPFL	Improved access to optimum flight levels through climb/descent procedures using ADS-B	2				
B0-ACAS	ACAS Improvements	1	2014	CNS SG		
B0-SNET	Increased Effectiveness of Ground-Based Safety Nets	~~2~~ 1	2016	ATM SG		
Performance Improvement Areas (PIA) 4 Efficient Flight Path – Through Trajectory-based Operations						
B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDO)	1	2014	PBN SG		
B0-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route	2		ATM SG	CNS SG	
B0-CCO	Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)	1	2014	PBN SG		

Priority 1: Modules that have the highest contribution to the improvement of air navigation safety and/or efficiency in the MID Region. These modules should be implemented where applicable and will be used for the purpose of regional air navigation monitoring and reporting for the period 2015~~3~~-2018~~4~~.

Priority 2: Modules recommended for implementation based on identified operational needs and benefits.

5. Measuring and monitoring air navigation performance

5.1 The monitoring of air navigation performance and its enhancement is achieved 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 modules 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 Modules to achieve the air navigation targets.

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

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***Note**: The different elements supporting the implementation are explained in detail in the ASBU Document which is attached to the Global Plan (Doc 9750).*

6. Governance

6.1 Progress report on the status of implementation of the different priority 1 Modules and other Modules, as appropriate, should be developed by the Air Navigation System Implemenation Group (ANSIG) and presented to the MIDANPIRG Steering Group (MSG) and/or MIDANPIRG on regular basis.

6.2 The MIDANPIRG and its Steering Group (MSG) 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 Report, etc.; and to the stakeholders in the Region within the framework of MIDANPIRG.

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Table 2. MONITORING THE IMPLEMENTATION OF THE ASBU BLOCK 0 MODULES IN THE MID REGION

B0 – APTA: Optimization of Approach Procedures including vertical guidance

Description and purpose:

The use of performance-based navigation (PBN) and ground-based augmentation system (GBAS) landing system (GLS) procedures will enhance the reliability and predictability of approaches to runways, thus increasing safety, accessibility and efficiency. This is possible through the application of Basic global navigation satellite system (GNSS), Baro vertical navigation (VNAV), satellite-based augmentation system (SBAS) and GLS. The flexibility inherent in PBN approach design can be exploited to increase runway capacity.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
Y	Y	Y	Y	Y

Applicability consideration:

This module is applicable to all instrument, and precision instrument runway ends, and to a limited extent, non-instrument runway ends.

B0 – APTA: Optimization of Approach Procedures including vertical guidance			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
States' PBN Implementation Plans	All States	Indicator: % of States that provided updated PBN implementation Plan Supporting metric: Number of States that provided updated PBN implementation Plan	~~80 % by Dec. 2014~~ 100% by Dec. 201~~5~~6
LNAV	All RWYs Ends at International Aerodromes	Indicator: % of runway ends at international aerodromes with RNAV(GNSS) Approach Procedures (LNAV) Supporting metric: Number of runway ends at international aerodromes with RNAV (GNSS) Approach Procedures (LNAV)	All runway ends at Int'l Aerodromes, either as the primary approach or as a back-up for precision approaches by Dec. 2016
LNAV/VNAV	All RWYs ENDs at International Aerodromes	Indicator: % of runways ends at international aerodromes provided with Baro-VNAV approach procedures (LNAV/VNAV) Supporting metric: Number of runways ends at international aerodromes provided with Baro-VNAV approach procedures (LNAV/VNAV)	All runway ends at Int'l Aerodromes, either as the primary approach or as a back-up for precision approaches by Dec. 2017

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Module B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)

Description and purpose:

Basic A-SMGCS provides surveillance and alerting of movements of both aircraft and vehicles on the aerodrome thus improving runway/aerodrome safety. ADS-B information is used when available (ADS-B APT).

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
Y	Y	Y	Y	Y

Applicability consideration:

A-SMGCS is applicable to any aerodrome and all classes of aircraft/vehicles. Implementation is to be based on requirements stemming from individual aerodrome operational and cost-benefit assessments. ADS-B APT, when applied is an element of A-SMGCS, is designed to be applied at aerodromes with medium traffic complexity, having up to two active runways at a time and the runway width of minimum 45 m.

B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
A-SMGCS Level 1*	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEDF, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented A-SMGCS Level 1 Supporting Metric: Number of applicable international aerodromes having implemented A-SMGCS Level 1	70% by Dec. 2017
A-SMGCS Level 2*	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented A-SMGCS Level 2 Supporting Metric: Number of applicable international aerodromes having implemented A-SMGCS Level 2	50% by Dec. 2017

**Reference: Eurocontrol Document – "Definition of A-SMGCS Implementation Levels, Edition 1.2, 2010".*

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B0 – ACDM: Improved Airport Operations through Airport-CDM

Description and purpose:

To implement collaborative applications that will allow the sharing of surface operations data among the different stakeholders on the airport. This will improve surface traffic management reducing delays on movement and manoeuvring areas and enhance safety, efficiency and situational awareness.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	Y	Y	Y	N

Applicability consideration:

Local for equipped/capable fleets and already established airport surface infrastructure.

B0 – ACDM: Improved Airport Operations through Airport-CDM			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
A-CDM	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented improved airport operations through airport-CDM Supporting metric: Number of applicable international aerodromes having implemented improved airport operations through airport-CDM	540% by Dec. 20178

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B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

Description and purpose:

To improve coordination between air traffic service units (ATSUs) by using ATS Interfacility Data Communication (AIDC) defined by the ICAO *Manual of Air Traffic Services Data Link Applications* (Doc 9694). The transfer of communication in a data link environment improves the efficiency of this process particularly for oceanic ATSUs.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	Y	Y	N	Y

Applicability consideration:

Applicable to at least two area control centres (ACCs) dealing with enroute and/or terminal control area (TMA) airspace. A greater number of consecutive participating ACCs will increase the benefits.

B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
AMHS capability	All States	Indicator: % of States with AMHS capability Supporting metric: Number of States with AMHS capability	70% of States with AMHS capability by Dec. 2017
AMHS implementation /interconnection	All States	Indicator: % of States with AMHS implemented (interconnected with other States AMHS) Supporting metric: Number of States with AMHS implemented (interconnections with other States AMHS)	60% of States with AMHS interconnected by Dec. 2017
Implementation of AIDC/OLDI between adjacent ACCs	All ACCs	Indicator: % of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC/OLDI with neighboring ACCs Supporting metric: Number of AIDC/OLDI interconnections implemented between adjacent ACCs	70% by Dec. 2017

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B0 – DATM: Service Improvement through Digital Aeronautical Information Management

Description and purpose:

The initial introduction of digital processing and management of information, through aeronautical information service (AIS)/aeronautical information management (AIM) implementation, use of aeronautical information exchange model (AIXM), migration to electronic aeronautical information publication (AIP) and better quality and availability of data

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	N	Y	Y	Y

Applicability consideration:

Applicable at State level, with increased benefits as more States participate

B0 – DATM: Service Improvement through Digital Aeronautical Information Management			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
National AIM Implementation Plan/Roadmap	All States	Indicator: % of States that have National AIM Implementation Plan/Roadmap Supporting Metric: Number of States that have National AIM Implementation Plan/Roadmap	~~80% by Dec. 2016~~ 90% by Dec. 2018
AIXM	All States	Indicator: % of States that have implemented an AIXM-based AIS database Supporting Metric: Number of States that have implemented an AIXM-based AIS database	~~60% by Dec. 2015~~ 80% by Dec. 2017~~8~~ ~~100% by Dec. 2019~~
eAIP	All States	Indicator: % of States that have implemented an IAID driven AIP Production (eAIP) Supporting Metric: Number of States that have implemented an IAID driven AIP Production (eAIP)	~~60% by Dec. 2016~~ 80% by Dec. 2018~~20~~ ~~100% by Dec. 2020~~
QMS	All States	Indicator: % of States that have implemented QMS for AIS/AIM Supporting Metric: Number of States that have implemented QMS for AIS/AIM	~~70% by Dec. 2016~~ 90% by Dec. 2018
WGS-84	All States	Indicator: % of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) Supporting Metric: Number of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) Indicator: % of States that have implemented WGS-84 Geoid Undulation Supporting Metric: Number of States that have implemented WGS-84 Geoid Undulation	Horizontal: 100% by Dec. 2017~~8~~ Vertical: 90% by Dec. 2018

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eTOD	All States	Indicator: % of States that have implemented required Terrain datasets Supporting Metric: Number of States that have implemented required Terrain datasets Indicator: % of States that have implemented required Obstacle datasets Supporting Metric: Number of States that have implemented required Obstacle datasets	Area 1 : Terrain: ~~50% by Dec. 2015~~, 70% by Dec. 2018 Obstacles: ~~40% by Dec. 2015~~, 60% by Dec. 2018 Area 4: Terrain: ~~50% by Dec. 2015~~, 100% by Dec. 2018 Obstacles: ~~50% by Dec. 2015~~, 100% by Dec. 2018
Digital NOTAM*	All States	Indicator: % of States that have included the implementation of Digital NOTAM into their National Plan for the transition from AIS to AIM Supporting Metric: Number of States that have included the implementation of Digital NOTAM into their National Plan for the transition from AIS to AIM	~~80% by Dec. 2016~~ 90% by Dec. 2018

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B0 – AMET: Meteorological information supporting enhanced operational efficiency and safety

Description and purpose:

Global, regional and local meteorological information:

a) forecasts provided by world area forecast centres (WAFC), volcanic ash advisory centres (VAAC) and tropical cyclone advisory centres (TCAC);
b) aerodrome warnings to give concise information of meteorological conditions that could adversely affect all aircraft at an aerodrome including wind shear; and
c) SIGMETs to provide information on occurrence or expected occurrence of specific en-route weather phenomena which may affect the safety of aircraft operations and other operational meteorological (OPMET) information, including METAR/SPECI and TAF, to provide routine and special observations and forecasts of meteorological conditions occurring or expected to occur at the aerodrome.

This module includes elements which should be viewed as a subset of all available meteorological information that can be used to support enhanced operational efficiency and safety.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	Y	Y	Y	Y

Applicability consideration:

Applicable to traffic flow planning, and to all aircraft operations in all domains and flight phases, regardless of level of aircraft equipage.

B0 – AMET: Meteorological information supporting enhanced operational efficiency and safety			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
~~SADIS 2G and Secure~~ SADIS FTP	All States	Indicator: % of States that have implemented ~~SADIS 2G satellite broadcast or Secure~~ SADIS FTP service Supporting Metric: Number of States that have implemented ~~SADIS 2G satellite broadcast or Secure~~ SADIS FTP service	~~90% by Dec. 2015~~ 100% by Dec. 201~~7~~8
QMS	All States	Indicator: % of States having implemented QMS for MET Supporting metric: number of States having implemented QMS for MET	~~60% by Dec. 2015~~ 80% by Dec. 201~~7~~8
SIGMET	All MWOs in MID Region	Indicator: % of FIRs in which SIGMET is implemented Supporting metric: number of FIRs SIGMET is implemented	~~90% by Dec. 2016~~ 100% by Dec. 2018

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B0 – FRTO: Improved Operations through Enhanced En-Route Trajectories

Description and purpose:

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.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
Y	Y	Y	Y	N/A

Applicability consideration:

Applicable to en-route and terminal airspace. Benefits can start locally. The larger the size of the concerned airspace the greater the benefits, in particular for flex track aspects. Benefits accrue to individual flights and flows. Application will naturally span over a long period as traffic develops. Its features can be introduced starting with the simplest ones.

B0 – FRTO: Improved Operations through Enhanced En-Route Trajectories			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
Flexible use of airspace (FUA)	All States	Indicator: % of States that have implemented FUA Supporting metric*: number of States that have implemented FUA	40% by Dec. 2017
Flexible routing	All States	Indicator: % of required Routes that are not implemented due military restrictions (segregated areas) Supporting metric 1: total number of ATS Routes in the Mid Region Supporting metric 2*: number of required Routes that are not implemented due military restrictions (segregated areas)	60% by Dec. 2017

* *Implementation should be based on the published aeronautical information*

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B0 – NOPS: Improved Flow Performance through Planning based on a Network-Wide view

Description and purpose:

Air Traffic Flow Management (ATFM) is used to manage the flow of traffic in a way that minimizes delay and maximizes the use of the entire airspace. ATFM can regulate traffic flows involving departure slots, smooth flows and manage rates of entry into airspace along traffic axes, manage arrival time at waypoints or Flight Information Region (FIR)/sector boundaries and re-route traffic to avoid saturated areas. ATFM may also be used to address system disruptions including crisis caused by human or natural phenomena.

Experience clearly shows the benefits related to managing flows consistently and collaboratively over an area of a sufficient geographical size to take into account sufficiently well the network effects. The concept for ATFM and demand and capacity balancing (DCB) should be further exploited wherever possible. System improvements are also about better procedures in these domains, and creating instruments to allow collaboration among the different actors**.**

Guidance on the implementation of ATFM service are provided in the ICAO Doc 9971– Manual on Collaborative Air Traffic Flow Management

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
Y	Y	Y	Y	N/A

Applicability consideration:

Applicable to en-route and terminal airspace. Benefits can start locally. The larger the size of the concerned airspace the greater the benefits. Application will naturally span over a long period as traffic develops.

B0 – NOPS: Improved Flow Performance through Planning based on a Network-Wide view			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
ATFM Measures implemented in collaborative manner	All States	Indicator: % of States that have established a mechanism for the implementation of ATFM Measures based on collaborative decision Supporting metric: number of States that have established a mechanism for the implementation of ATFM Measures based on collaborative decision	100% by Dec. 2017

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B0 – ACAS: ACAS Improvements

Description and purpose:

To provide short-term improvements to existing airborne collision avoidance systems (ACAS) to reduce nuisance alerts while maintaining existing levels of safety. This will reduce trajectory deviations and increase safety in cases where there is a breakdown of separation

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N/A	N/A	Y	N/A	Y

Applicability consideration:

Safety and operational benefits increase with the proportion of equipped aircraft.

B0 – ACAS: ACAS Improvements			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
Avionics (TCAS V7.1)	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 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	~~80% by Dec. 2015~~ 100% by Dec. 2016

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B0 – SNET: Increased Effectiveness of Ground-based Safety Nets

Description and purpose:

To enable monitoring of flights while airborne to provide timely alerts to air traffic controllers of potential risks to flight safety. Alerts from short-term conflict alert (STCA), area proximity warnings (APW) and minimum safe altitude warnings (MSAW) are proposed. Ground-based safety nets make an essential contribution to safety and remain required as long as the operational concept remains human centred

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N/A	N/A	Y	N/A	Y

Applicability consideration:

Benefits increase as traffic density and complexity increase. Not all ground-based safety nets are relevant for each environment. Deployment of this Module should be accelerated.

B0 – ACAS: ACAS Improvements			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
Short-term conflict alert (STCA)	All States	Indicator: % of States that have implemented Short-term conflict alert (STCA) Supporting metric*: number of States that have implemented Short-term conflict alert (STCA)	XX % by XXX
Minimum safe altitude warning (MSAW)	All States	Indicator: % of States that have implemented Minimum safe altitude warning (MSAW) Supporting metric*: number of States that have implemented Minimum safe altitude warning (MSAW)	XX % by XXX

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B0 – CDO: Improved Flexibility and Efficiency in Descent Profiles (CDO)

Description and purpose:

To use performance-based airspace and arrival procedures allowing 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.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	Y	Y	Y	Y

Applicability consideration:

Regions, States or individual locations most in need of these improvements. For simplicity and implementation success, complexity can be divided into three tiers:

a) least complex – regional/States/locations with some foundational PBN operational experience that could capitalize on near term enhancements, which include integrating procedures and optimizing performance;

b) more complex – regional/States/locations that may or may not possess PBN experience, but would benefit from introducing new or enhanced procedures. However, many of these locations may have environmental and operational challenges that will add to the complexities of procedure development and implementation; and

c) most complex – regional/States/locations in this tier will be the most challenging and complex to introduce integrated and optimized PBN operations. Traffic volume and airspace constraints are added complexities that must be confronted. Operational changes to these areas can have a profound effect on the entire State, region or location.

B0 – CDO: Improved Flexibility and Efficiency in Descent Profiles (CDO)			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
PBN STARs	OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OISS, OIKB, OIMM, OIFM, ORER, ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, OOMS, OOSA, OTHH, OEJN, OEMA, OEDF, OERK, HSNN, HSOB, HSSS, HSPN, OMAA, OMAD, OMDB, OMDW, OMSJ	Indicator: % of International Aerodromes/TMA with PBN STAR implemented as required. Supporting Metric: Number of International Aerodromes/TMAs with PBN STAR implemented as required.	100% by Dec. 2016~~8~~ for the identified Aerodromes/TMAs ~~100% by Dec. 2018 for all the International Aerodromes/TMAs~~
International aerodromes/TMAs with CDO	OBBI, HESH, HEMA, HEGN, OIIE, OIKB, OIFM, OJAI, OJAQ, OKBK, OLBA, OOMS, OTHH, OEJN, OEMA, OEDF, OERK, HSSS, HSPN, OMAA, OMDB, OMDW, OMSJ	Indicator: % of International Aerodromes/TMA with CDO implemented as required. Supporting Metric: Number of International Aerodromes/TMAs with CDO implemented as required.	100% by Dec. 2018 for the identified Aerodromes/TMAs

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B0 – CCO: Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)

Description and purpose:

To implement continuous climb operations in conjunction with performance-based navigation (PBN) to provide opportunities to optimize throughput, improve flexibility, enable fuel-efficient climb profiles and increase capacity at congested terminal areas.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N/A	N/A	Y	Y	Y

Applicability consideration:

Regions, States or individual locations most in need of these improvements. For simplicity and implementation success, complexity can be divided into three tiers:

a) least complex: regional/States/locations with some foundational PBN operational experience that could capitalize on near-term enhancements, which include integrating procedures and optimizing performance;

b) more complex: regional/States/locations that may or may not possess PBN experience, but would benefit from introducing new or enhanced procedures. However, many of these locations may have environmental and operational challenges that will add to the complexities of procedure development and implementation; and

c) most complex: regional/States/locations in this tier will be the most challenging and complex to introduce integrated and optimized PBN operations. Traffic volume and airspace constraints are added complexities that must be confronted. Operational changes to these areas can have a profound effect on the entire State, region or location.

B0 – CCO: Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
PBN SIDs	OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OISS, OIKB, OIMM, OIFM, ORER, ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, OOMS, OOSA, OTHH, OEJN, OEMA, OEDF, OERK, HSNN, HSOB, HSSS, HSPN, OMAA, OMAD, OMDB, OMDW, OMSJ	Indicator: % of International Aerodromes/TMA with PBN SID implemented as required. Supporting Metric: Number of International Aerodromes/ TMAs with PBN SID implemented as required.	100% by Dec. 2016~~8~~ for the identified Aerodromes/TMAs ~~100% by Dec. 2018 for all the International Aerodromes/TMAs~~
International aerodromes/TMAs with CCO	OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OIKB, OIFM, ORER, ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, OOMS, OOSA, OTHH, OEJN, OEMA, OEDF, OERK, HSNN, HSOB, HSSS, HSPN, OMAA, OMDB, OMDW, OMSJ	Indicator: % of International Aerodromes/TMA with CCO implemented as required. Supporting Metric: Number of International Aerodromes/TMAs with CCO implemented as required.	100% by Dec. 2018 for the identified Aerodromes/TMAs

-END-

APPENDIX 4C

ICAO AFI/APAC/MID SAR Workshop Recommendations

	Action	Responsible	Timeline	Status / Updates
1.	Organize ICAO Inter-regional AFI/APAC/MID SAR Workshop periodically on a rotational basis between the regions. ICAO ROs to include the workshop venue and dates in 2017 schedule of meetings	ICAO	Dec. 2016	
2.	Coordinate with ICAO HQ to provide more support to SAR through the provision of adequate resources to ensure effective follow-up and assistance regarding global SAR issues.	ICAO	Sep. 2016	
3.	Consider the reduction of the uncertainty phase timing commensurate with adequate communications and surveillance capabilities.	ICAO	TBD	
4.	Clearly define the division of responsibilities regarding command and control and hand over between the search and rescue function (Annex 12) and the air accident investigation search and recovery function (Annex 13).	ICAO	TBD	
5.	Development of AFI and MID Regional SAR Plans in a harmonized manner, taking into consideration the APAC SAR Plan and experience.	ICAO MID ICAO AFI	Mar. 2017 TBD	
6.	Establishment of national SAR committee that manages aeronautical, maritime, and civil/military cooperation aspects.	States ICAO	June 2017	
7.	Establishment of internal Quality Management System (QMS) for RCCs utilizing frameworks such IAMSAR, regional plan, USOAP-CMA protocol questions related to SAR.	States	Ongoing	
8.	Development of a Template for national SAR Plan	ICAO	Jan. 2017	
9.	Development of a comprehensive national SAR Plan addressing the ICAO and IMO requirements, involving the airspace operators and ensuring effective internal and cross borders cooperation, taking into consideration the regional SAR Plan. Aerodrome and airline emergency response plans and disaster management plans should be synchronized with the SAR Plan.	States	June 2017	
10.	Raise awareness related to SAR through promotional material and the conduct of national, regional and inter-regional SAR workshops with the support of ICAO and IMO.	AFCAC (for AFI Region) ICAO IMO States	Ongoing	
11.	Negotiate and sign SAR LoAs between adjacent States	States AFCAC (for	June 2017	

		AFI Region)		
12.	States at the interface with the ICAO MID Region to follow-up with their ACCs the signature of the MID SAR Bilateral Arrangements with their relevant adjacent MID ACCs to ensure that alerting and coordination procedures are in place.	States adjacent to MID States	June 2017	
13.	Staff RCCs with sufficient number of adequately dedicated SAR personnel, and ACC with supervisory resource to ensure swift triggering of the alerting and coordination process.	States	Ongoing	
14.	Develop a short and long term plans for training of search and rescue personnel, including those involved in the oversight of SAR, derived from comprehensive training programmes, manual, etc. in order to ensure effective training and high level of competency.	ICAO IMO States	Ongoing	
15.	Enhance SAR experts' competency thorough the conduct of national, regional and inter-regional SAR courses with the support of ICAO and IMO as appropriate.	States ICAO AFCAC	Ongoing	
16.	RCCs and, as appropriate, RSCs, staffed 24 hours a day by trained and qualified operational personnel using radiotelephony communications who are proficient in the use of the English language.	States	Ongoing	
17.	Training to interact with the media should be provided to SAR Managers or any person involved with public communications.	States	Ongoing	
18.	Alternatives means of communication to promote, coordinate, SAR issues such as social media could be used. *Note. Social media should not be used as an initial alerting means in lieu of formal communication mechanism*	States	ongoing	
19.	Establishment of a Joint Rescue Coordinator Centre (JRCC) to coordinate aeronautical and maritime SAR operations	States	TBD	
20.	Sharing of resources (Human, assets, funding, etc.) through the establishment of regional and sub-regional SAR JRCC	ICAO States	Ongoing	
21.	Making available funds to ensure effective provision of SAR services, which should cover the running cost of the RCC and the SAR missions in case of incidents and accidents, SAREX and the provisions of services during large scale SAR responses, such as Mass Rescue Operations (MRO).	States Donors Stakeholders	Ongoing	
22.	Review the GADSS Concept and consider their preparedness for implementation.	States Airlines	Ongoing	
23.	Establishment of a legal framework to support the roles and responsibilities of SAR experts to handle various SAR missions.	States	Ongoing	
24.	Conduct national, regional, sub-regional and inter-regional SAREX. SAREX should be effective to test the SAR system in place.	States ICAO IMO	Ongoing	

25.	Signature of Memorandum of Arrangements (MoA) between SPOCs and their relevant MCCs	States	June 2017	
26.	RCCs should be notified well in advance regarding any activity that may lead to a SAR response (adventure, experimental, etc.) within their area of responsibility by their relevant authorities, for appropriate actions.	States	Ongoing	
27.	Consider the use of drones for SAR services.	States	Ongoing	
28.	Development of guidance on the use of drones for SAR.	ICAO IMO Stakeholders	Dec 2017	
29.	Take note of the emerging space-based ADS-B technology (trial from September 2016)	States	Ongoing	

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

GUIDANCE FOR AIM PLANNING AND IMPLEMENTATION IN THE MID REGION

DRAFT

EDITION FEBRUARY, 2017

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontier or boundaries.

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RECORD OF AMENDMENTS

Edition Number	Edition Date	Description	Pages Affected
0.1	1 September 2015	Initial draft version	All
0.2	7 October 2015	Inputs incorporated by AIM SG/2	All
0.3	April 2016	Change in Doc title; improving order and content of chapters; States comments considered; Reviewed by MSG/5	All
0.4	November 2016	Review by ANSIG/2	All
1.0	February 2017	Endorsed by MIDANPIRG/16	All

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FOREWARD

The “Guidance for AIM Planning and Implementation in the MID Region” has been developed in 2015-16 to harmonize Transition from AIS to AIM in the MID Region and to addresses Global and Regional issues related to planning and implementation of Aeronautical Information Management. This Regional AIM Plan explains concept and operational elements of AIM; outlines the Regional and National AIM Roadmaps; and provides guidance and tools for their implementation at the Regional and National levels.

This Document consolidates updates and supersedes all previous guidance materials on the AIM implementation in the MID Region (National AIM Roadmap Template, Regional AIM Roadmap, etc.). The “Guidance for AIM Planning and Implementation in the MID Region” will be reviewed and updated, whenever deemed necessary, by the AIM Sub-Group.

First edition of the Document, consolidated by the ICAO MID Regional Office, was endorsed by MIDAPIRG/16 (Kuwait, 13-16 February 2017).

The Document was prepared in accordance with ICAO provisions related to AIM, the Global Air Navigation Plan, Aviation System Block Upgrades (ASBU) methodology, MID Region Air Navigation Plan and the MID Region Air Navigation Strategy, in addition to the twelfth Air Navigation Conference (AN-Conf/12) Recommendation 3/8 related to AIM. States are invited to take necessary measures to implement provisions of this document and notify their experiences and practices related to transition from AIS to AIM.

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Abbreviations and Acronyms

The abbreviations and acronyms used in this document along with their expansions are given in the following List:

AI	Aeronautical Information
AICM	Aeronautical Information Conceptual Model
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIS	Aeronautical Information Services
AIS-AIM SG	AIS to AIM Study Group
AIM	Aeronautical Information Management
AIM SG	Aeronautical Information Management Sub-Group
AIXM	Aeronautical Information Exchange Model
AN-Conf/11	Eleventh Air Navigation Conference
AN-Conf/12	Twelfth Air Navigation Conference
ANP	Air Navigation Plan
ANSP	Air Navigations Services Provider
ASBU	Aviation System Block Upgrade
ATM	Air Traffic management
eAIP	electronic Aeronautical Information Publication
eANP	electronic Air Navigation Plan
eTOD	electronic Terrain and Obstacle Data
GANP	Global Air Navigation Plan
GANR	Global Air Navigation Report
GIS	Geographic Information System
GML	Geography Markup Language
IM	Information Management
IMP	Information Management Panel
ISO	International Organization for Standardization
MET	Meteorology
MIDAD	MID Region AIM Database
MIDANPIRG	Middle East Air Navigation Planning and Implementation Regional Group

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MIL	Military
MSG	MIDANPIRG Steering Group
PBN	Performance-Based Navigation
QMS	Quality Management System
RWY	Runway
SARPs	Standards and Recommended Practices
SMART	Specific, Measurable, Achievable, Relevant and Timely
SWIM	System Wide Information Management
TORs	Terms of Reference
UML	Unified Modeling Language
WGS-84	World Geodetic System-1984
XML	Extensible Markup Language

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CHAPTER 1

ICAO AIM CONCEPT

INTRODUCTION

1.1 The Eleventh Air Navigation Conference (AN-Conf/11) held in Montréal, 22 September to 3 October 2003, endorsed the Global ATM Operational Concept (Doc 9854) and recognized that, in the global air traffic management (ATM) system environment envisioned by the operational concept, aeronautical information service (AIS) would become one of the most valuable and important enabling services. As the global ATM system foreseen in the operational concept was based on a collaborative decision-making environment, the timely availability of high-quality and reliable electronic aeronautical, meteorological, airspace and flow management information would be necessary. Some recommendations of AN-Conf/11 addressed the importance of aeronautical information in particular.

1.2 Aeronautical Information Management (AIM) during its evolution has been defined as the provision of the right Aeronautical Information (quality assured), at the right place (digital), at the right time (timeliness). ICAO Annex 15 defines AIM as the dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties.

1.3 The Twelfth Air Navigation Conference (AN-Conf/12) held in Montréal, 19 to 30 November 2012, through Recommendation 3/8, supported and pushed:

- Transition from AIS to AIM by implementing a fully automated digital aeronautical data chain;
- Implementing necessary processes to ensure the quality of aeronautical data; and
- Engage in intraregional and interregional cooperation for an expeditious transition from AIS to AIM in a harmonized manner and to using digital data exchange and consider regional or subregional AIS databases as an enabler for the transition from AIS to AIM information from the origin to the end users

TRANSITION FROM AIS TO AIM

ICAO Roadmap for the transition from AIS to AIM

1.4 The aeronautical information/data based on paper and telex-based text messages can not satisfy anymore the requirements of the ATM integrated and interoperable system. AIS is required to evolve from the paper product-centric service to the data-centric aeronautical information management (AIM) with a different method of information provision and management.

1.5 ICAO published in 2009 the "*Roadmap for the transition from AIS to AIM*". The changes foreseen are such that this development is being referred to as the transition from aeronautical information services (AIS) to aeronautical information management (AIM). It identifies the major milestones recommended for a uniform evolution across all regions of the world and specific steps that need to be achieved for implementation.

1.6 The Roadmap envisaged the transition into three phases and twenty one steps. Three phases of action are envisaged for States and ICAO to complete the transition to AIM:

– *Phase 1 — Consolidation*

Phase 1 is the pre-requisite for the transition from AIS to AIM (implementation of the current SARPs). In Phase 1, QMS implementation is still a challenge for some States.

– *Phase 2 — Going digital*

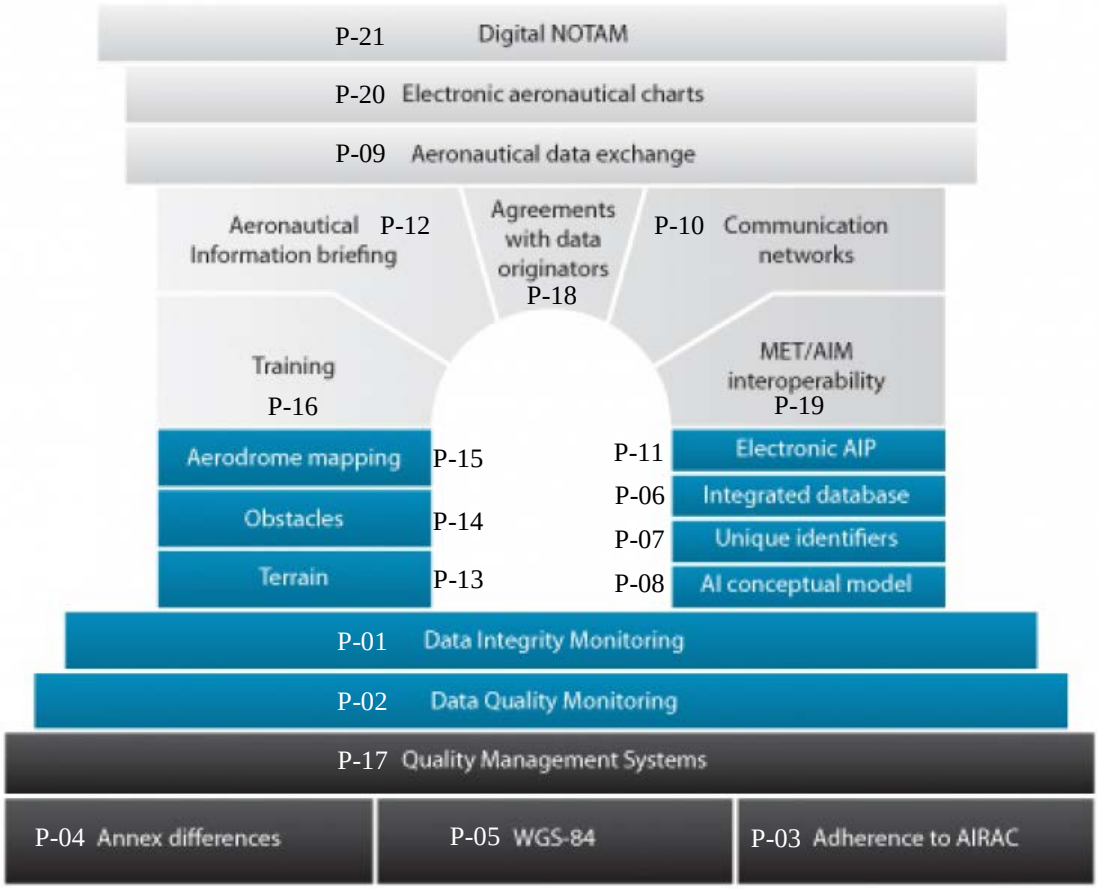
Main components of the Phase 2 are:

- Data-driven processes for the production of the current products;
- Introduction of structured digital data from databases into AIS/AIM processes;
- Introduction of highly structured databases and tools such as GIS;
- Electronic Terrain and Obstacle Datasets; and
- Implementation of aeronautical information conceptual model (AICM).

– *Phase 3 — Information management*

Main components of the Phase 3 are:

- Enabling AIM functions to address the new requirements of the Global ATM Operational Concept in a net-centric information environment;
- Transfer of information in the form of digital data based on the established databases; and
- Aeronautical data exchange model ensuring interoperability between all systems.



Positioning of the 21 steps of the roadmap in the three phases

AIS-AIM Study Group

1.7 The Air Navigation Commission in 2008 agreed to the establishment of AIS-AIM SG in order to assist with the development of:

– A global strategy/roadmap for the transition from AIS to AIM;

– SARPs and guidance material related to the provision of a standard AICM and standard AIXM to enable the global exchange of data in digital format; and

– Other SARPs, guidance material and training material necessary to support AIM implementation.

1.8 Some achievements of the AIS-AIM Study Group are:

- ICAO Roadmap for transition from AIS to AIM;
- Amendments to Annex 15:
  - Amendment 36: New provisions related to the operational use of the public Internet; volcanic ash deposition; QMS; use of automation enabling digital data exchange; eAIP; NOTAM Format; and eTOD.
  - Amendment 37: Annex 15 restructuring; Chapter 1 (General), Chapter 2 (Responsibilities and functions) and Chapter 3 (Aeronautical Information Management) introduced in Nov 2014;
  - Amendment XX: Chapters 4 (Scope of AI and data), Chapter 5 (AI Products and services) and Chapter 6 (AI updates) instead of current Chapters 4-11 (in progress).
- Development of Aeronautical Data Catalogue (in progress)
- Development of PANS AIM (in progress)
- Development of Training Manual, Quality Manual, update of AIS Manual (Doc 8126) (in progress)

1.9 AIS-AIMSG/12 was the last AIS-AIMSG held in Montreal, Canada from 19 to 23 October 2015. Materials related to the AIS-AIM SG including the meetings' Study Notes, Information Papers and Summary of Discussions are available on the ICAO AIM website at:

http://www.icao.int/safety/ais-aimsg/Pages/default.aspx

Information Management Panel (IMP)

1.10 The Air Navigation Commission in 2014 agreed to the establishment of the Information Management Panel (IMP) to elaborate on necessary concepts and develop a global and interoperable approach to ensure effective management of information within the global air navigation system. The IMP will undertake tasks relating to the global transition from AIS to AIM, based upon Recommendations 3/1, 3/2, 3/3 and 3/9 of the Twelfth Air Navigation Conference in 2012 (AN-Conf/12).

1.11 Four (4) Working Groups were established to undertake tasks of the Panel:

- Information Services and NOTAM
- Information Architecture & Management

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- SWIM Awareness & Communication
- SWIM Governance

1.12 Materials related to the IMP including the meetings' Working/Information Papers and Reports are available on the ICAO AIM website at:

http://www.icao.int/airnavigation/IMP/Pages/default.aspx

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CHAPTER 2

REGIONAL AIM PLANNING

MID REGION AIM IMPLEMENTATION ROADMAP

2.2 Having Phase I of the transition from AIS to AIM mostly completed in the MID Region, the current focus should be the implementation of phase II of the Roadmap for the transition from AIS to AIM to prepare further transition to Phase III in a timely manner. Accordingly, States should take into consideration the "MID Region AIM Implementation Roadmap" in planning for the transition from AIS to AIM in a prioritized manner.

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MID REGION AIM IMPLEMENTATION ROADMAP

	2014				2015				2016				2017				2018				Priority	Remarks
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
AIXM																					**1**	The target is to have 60% by 2015, 80% by 2017 and 100% by 2019
eAIP																					**1**	The target is to have 60% by 2016, 70% by 2018 and 100% by 2020
Terrain A-1																					**2**	The target is to have 50% by 2015, 70% by 2018
Obstacle A-1																					**2**	The target is to have 40% by 2015, 60% by 2018
Terrain A-4																					**2**	The target is to have 50% by 2015, 100% by 2018
Obstacle A-4																					**2**	The target is to have 50% by 2015, 100% by 2018
Terrain A-2a																					**3**	The target is to have 30% by 2017, 50% by 2018
Obstacle A-2a																					**3**	The target is to have 30% by 2017, 50% by 2018
Data Quality Monitoring																					**3**	Target for 2018: To be implemented by 50% of the States that have implemented QMS at least for the segment originator-AIS (excluding the segment AIS-End user)
Data Integrity Monitoring																					**3**	
Agreement with data originators																					**3**	Target for 2018: 50% of the States that have implemented QMS
Terrain and Obstacle for Areas 2b, 2c, 2d and 3																					**4**	Optional based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs
Aerodrome Mapping																					**4**	Optional based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs

***White**: Not started* ***Yellow**: Initial Target* ***Orange**: Intermediate Target* ***Green**: Target for full implementation*

CHAPTER 3

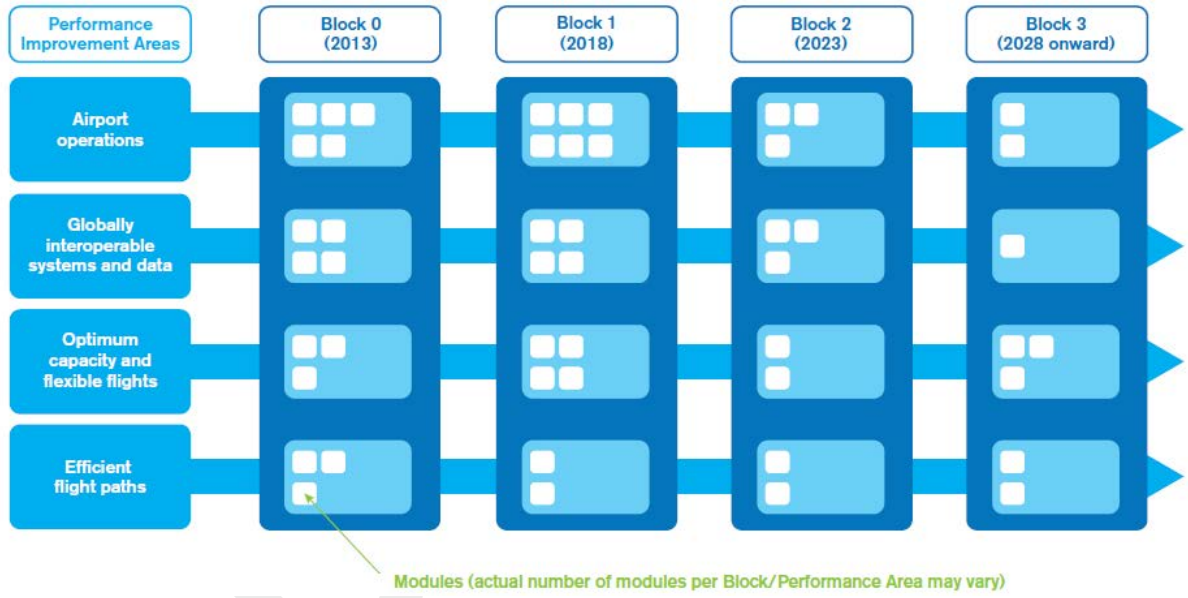
ASBU METHODOLOGY AND THE MID AIR NAVIGATION STRATEGY (AIM/SWIM RELATED ASBU MODULES)

ASBU METHODOLOGY

3.1 ICAO introduced the Aviation System Block Upgrades (ASBU) methodology in the fourth edition of the Doc 9750 (Global Air Navigation Plan), endorsed by the ICAO Assembly in 2013, 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.

3.2 The GANP represents a rolling, 15-year strategic methodology which leverages existing technologies and anticipates future developments based on State/industry agreed operational objectives. The Block Upgrades are organized in five-year time increments starting in 2013 and continuing through 2028 and beyond.

3.3 ASBU methodology defines improvements, through modules, over four blocks in four performance improvements areas:



MID REGION AIR NAVIGATION STRATEGY

3.4 Revised MID Region Air Navigation Strategy (MID Doc 002) was endorsed by the MIDANPIRG/15 meeting to introduce Block 0 ASBU Modules implementation priorities, elements, indicators and targets for the MID Region. It recognizes 11 (out of 18) Block 0 Modules as priority 1 in the MID Region (for more information refer to the MID Doc 002 in the ICAO Secure Portal at: https://portal.icao.int/RO_MID/Pages/MIDDocs.aspx).

BLOCK 0 AIM RELATED MODULE

B0-DATM Implementation

3.5 Block 0 contains 18 Modules and serves as the enabler and foundation for the envisioned future aviation systems. B0-DATM is a priority 1 ASBU Module in accordance with the

MID Region Air Navigation Strategy (MID Doc 002). MID Doc 002 defines the B0-DATM as follows:

Description and purpose

The initial introduction of digital processing and management of information, through aeronautical information service (AIS)/aeronautical information management (AIM) implementation, use of aeronautical information exchange model (AIXM), migration to electronic aeronautical information publication (AIP) and better quality and availability of data**.**

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	N	Y	Y	Y

Applicability consideration:

Applicable at State level, with increased benefits as more States participate

B0 – DATM: Service Improvement through Digital Aeronautical Information Management			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
National AIM Implementation Plan/Roadmap	All States	Indicator: % of States that have National AIM Implementation Plan/Roadmap Supporting Metric: Number of States that have National AIM Implementation Plan/Roadmap	90% by Dec. 2018
AIXM	All States	Indicator: % of States that have implemented an AIXM-based AIS database Supporting Metric: Number of States that have implemented an AIXM-based AIS database	80% by Dec. 2018
eAIP	All States	Indicator: % of States that have implemented an IAID driven AIP Production (eAIP) Supporting Metric: Number of States that have implemented an IAID driven AIP Production (eAIP)	80% by Dec. 2020
QMS	All States	Indicator: % of States that have implemented QMS for AIS/AIM Supporting Metric: Number of States that have implemented QMS for AIS/AIM	90% by Dec. 2018
WGS-84	All States	Indicator: % of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) Supporting Metric: Number of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) Indicator: % of States that have implemented WGS-84 Geoid Undulation Supporting Metric: Number of States that have implemented WGS-84 Geoid Undulation	Horizontal: 100% by Dec. 2018 Vertical: 90% by Dec. 2018

eTOD	All States	Indicator: % of States that have implemented required Terrain datasets Supporting Metric: Number of States that have implemented required Terrain datasets Indicator: % of States that have implemented required Obstacle datasets Supporting Metric: Number of States that have implemented required Obstacle datasets	Area 1 : Terrain: 70% by Dec. 2018 Obstacles: 60% by Dec. 2018 Area 4: Terrain: 100% by Dec. 2018 Obstacles: 100% by Dec. 2018
Digital NOTAM*	All States	Indicator: % of States that have included the implementation of Digital NOTAM into their National Plan for the transition from AIS to AIM Supporting Metric: Number of States that have included the implementation of Digital NOTAM into their National Plan for the transition from AIS to AIM	90% by Dec. 2018

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Aeronautical Information Exchange Model (AIXM)

3.6 The aeronautical information exchange model (AIXM) is designed to enable the management and distribution of aeronautical information services data in digital format. AIXM takes advantages of established information engineering standards and supports current and future aeronautical information system requirements. The major tenets are:

a) an exhaustive temporality model, including support for the temporary information contained in NOTAM;

b) alignment with ISO standards for geospatial information, including the use of the geography markup language (GML);

c) support for the latest ICAO and user requirements for aeronautical data including obstacles, terminal procedures and airport mapping databases; and

d) modularity and extensibility.

3.7 AIXM covers the ICAO requirements for the "data necessary for the safety, regularity and efficiency of international air navigation", existing industry standards (e.g. ARINC 424) and emerging data needs. It has constructs for: aerodromes, navigation aids, terminal procedures, airspace and route structures, ATM and related services, air traffic restrictions and other data.

3.8 AIXM has two components:

a) The AIXM UML Model provides a formal description of the information.

b) The AIXM XML Schemas are an encoding format for aeronautical data.

3.9 AIXM 5 takes advantages of established information engineering standards and supports current and future aeronautical information system requirements.

electronic AIP (eAIP)

3.10 The AIP, AIP Amendment, AIP Supplement and AIC should also be published in a format that allows for displaying on a computer screen and printing on paper. When provided, the eAIP should be available on a physical distribution medium (CD, DVD, etc.) and/or online on the Internet. When provided, the information content of the eAIP and the structure of chapters, sections and sub-sections shall follow the content and structure of the paper AIP. The eAIP shall include files that allow for printing a paper AIP.

Note 1 - This composite electronic document is named "Electronic AIP" (eAIP) and may be based on a format that allows for digital data exchange.

Note 2 - The eAIP is not intended to support the Digital Notice to Airmen (NOTAM) process, as Digital NOTAM require a database of aeronautical information and are, therefore, not reliant on the eAIP.

3.11 Aeronautical data and aeronautical information within the AIPs, AMDTs and SUPs should be made available, as a minimum, "in a way that allows the content and format of the documents to be directly readable on a computer screen".

3.12 General requirements associated with the **display of the eAIP** are reflected below:

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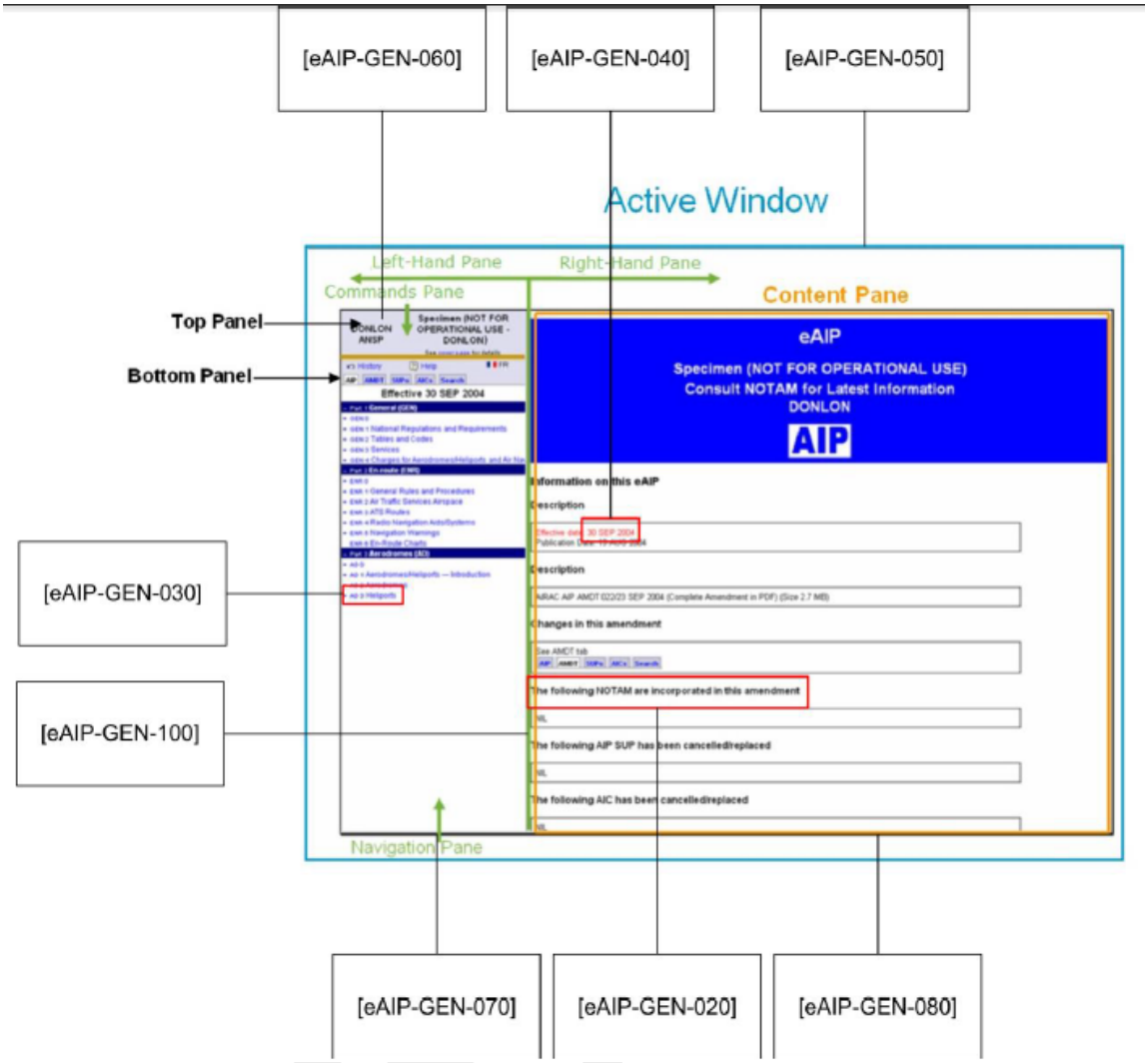

3.13 The eAIP, as a minimum, should have help and search facility and provide history of current and previous amendments to users. It should also include a table of content. Format, display and content requirement for AIP Pages, AIP SUP, AIP Amendment and AIC should be in accordance with Annex15, Doc 8126 and other related SARPs.

Note 3 – More guidance material on the specifications of eAIP could be found in the EUROCONTROL Specifications for the electronic Aeronautical Information Publication (eAIP).

Quality Management System (QMS)

3.14 Quality management systems shall be implemented and maintained encompassing all functions of an aeronautical information service. The execution of such quality management systems shall be made demonstrable for each function stage.

Note 1 - An ISO 9000 certificate issued by an accredited certification body would be considered an acceptable means of compliance.

Note 2 - Guidance material is contained in the Manual on the Quality Management System for Aeronautical Information Services (Doc 9839).

Note 3 - Necessary measures should be taken for the signature of formal arrangements concerning data quality between AIS/AIM and the data originators, commensurate with the Aerodrome operators, Air Navigation Service Providers (ANSPs) and the Military Authority.

World Geodetic System-1984 (WGS-84)

3.15 World Geodetic System — 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

3.16 WGS-84 shall be introduced in the published coordinates in AIP in the following sections:

a) Enroute

b) Terminal

c) Aerodrome

d) Geoid Undulation

Note - Comprehensive guidance material concerning WGS-84 is contained in the World Geodetic System - 1984 (WGS-84) Manual (Doc 9674).

electronic Terrain and Obstacle Dataset (eTOD)

3.17 eTOD is an electronic set(s) of terrain and/or obstacle data for the defined coverage areas and with the defined data specifications to fulfill the needs of electronic air navigation applications for digital data. The coverage areas for sets of electronic terrain and obstacle data shall be specified as:

— Area 1: the entire territory of a State;

— Area 2: within the vicinity of an aerodrome, subdivided as follows;

— Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists.

— Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15 per cent to each side;

— Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a; and

— Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest;

— Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area.

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— Area 4: The area extending 900 m prior to the runway threshold and 60 m each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.

3.18 Electronic terrain data shall be provided for Area 1 and 4. The obstacle data shall be provided for obstacles in Area 1 higher than 100 m above ground.

Note - Comprehensive guidance material concerning eTOD is contained in Annex 15; the Guidelines for electronic terrain, obstacle and aerodrome mapping information (Doc 9881) and the EUROCONTROL Terrain and Obstacle Data Manual.

AIM/SWIM RELATED MODULES

3.19 Performance Improvement Area 2 (Globally Interoperable Systems and Data – Through Globally Interoperable System Wide Information Management) focuses on ASBU Modules which mainly support Collaborative Decision Making (CDM) through Information Management (i.e. Aeronautical Information, MET, Flight and Flow, etc.) in a SWIM environment:

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Performance Improvement Area 2: Globally Interoperable Systems and Data – Through Globally Interoperable System Wide Information Management			
Block 0 (2013)	***Block 1 (2018)***	***Block 2 (2023)***	***Block 3 (2028)***
B0-FICE Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	**B1-FICE** Increased Interoperability, Efficiency and Capacity though FF-ICE, Step 1 application before Departure	**B2-FICE** Improved Coordination through multi-centre Ground-Ground Integration: (FF-ICE/1 and Flight Object, SWIM)	**B3-FICE** Improved Operational Performance through the introduction of Full FF-ICE
B0-DATM Service Improvement through Digital Aeronautical Information Management	**B1-DATM** Service Improvement through Integration of all Digital ATM Information		
	B1-SWIM Performance Improvement through the application of System-Wide Information Management (SWIM)	**B2-SWIM** Enabling Airborne Participation in collaborative ATM through SWIM	
B0-AMET Meteorological information supporting enhanced operational efficiency and safety	**B1-AMET** Enhanced Operational Decisions through Integrated Meteorological Information (Planning and Near-term Service)		**B3-AMET** Enhanced Operational Decisions through Integrated Meteorological Information (Near-term and Immediate Service)

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CHAPTER 4

AIM NATIONAL PLANNING AND IMPLEMENTATION

NATIONAL PLANNING

4.1 States should focus on the implementation of phase II of the ICAO Roadmap for the transition from AIS to AIM and take into consideration the "MID Region AIM implementation Roadmap" in planning for the transition from AIS to AIM in a prioritized manner

4.2 States are required to develop/update their National AIM Implementation Roadmap on an annual basis (by end of December), using the Template at **Appendix A** (National AIM Implementation Roadmap Template).

IMPLEMENTATION OF A SYSTEM FOR AIRAC ADHERENCE MONITORING

4.2 Operationally significant changes to the AIP, listed in Annex 15, Appendix 4 shall be published in accordance with AIRAC procedures and shall be clearly identified by the acronym — AIRAC.

4.3 When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a NOTAM called "Trigger NOTAM" shall be originated giving a brief description of the contents, the effective date and time, and the reference number of the amendment or supplement.

4.4 The Trigger NOTAM shall be issued as soon as possible, preferably at the publication date of the AIRAC AIP Amendment or the AIP Supplement. This NOTAM shall come into force on the same effective date and time as the amendment or supplement and shall remain valid for a period of fourteen days.

4.5 The text in Item E) should start with the words 'TRIGGER NOTAM' (followed only in the case of an AIP Amendment by the abbreviation PERM), the reference number of the published AIP Amendment or AIP Supplement concerned, the effective date and a brief description of its contents. Effective time will be omitted in Item E) unless it differs from the default AIRAC effective time of 0000 UTC.

4.6 Trigger NOTAM shall be issued in the appropriate NOTAM series, according to the information to be promulgated and shall follow the normal NOTAM procedures.

Example:

Q) HECA/QARTT/I/BO/000/999
A) HECC B) 1604280000 C) 1605122359
E) TRIGGER NOTAM – PERM AIRAC AIP AMDT 4/16 WEF 28 APR 2016.
IMPLEMENTATION OF NEW ATS ROUTE UL111.

Note – the term 'PERM' is inserted in Item E) to stress that Item C) contains an artificial end-date and that the information is of a permanent nature.

4.7 When information has not been submitted by the AIRAC date, a NIL notification shall be originated and distributed by NOTAM or other suitable means, not later than one cycle before the AIRAC effective date concerned.

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4.8 Implementation dates other than AIRAC effective dates shall not be used for pre-planned operationally significant changes requiring cartographic work and/or for updating of navigation databases.

4.9 Information provided under the AIRAC system in paper copy form shall be distributed by the AIS unit at least 42 days in advance of the effective date with the objective of reaching recipients at least 28 days in advance of the effective date. Information provided as electronic media, concerning the circumstances listed in Annex 15, Appendix 4 shall be distributed/made available by the AIS unit so as to reach recipients at least 28 days in advance of the AIRAC effective date.

Recommendation *– Whenever major changes are planned and where advance notice is desirable and practicable, information provided as electronic media should be distributed/made available at least 56 days in advance of the effective date. This should be applied to the establishment of, and premeditated major changes in, the circumstances listed in Appendix 4, Part 3, and other major changes if deemed necessary.*

4.10 AIS/AIM should 1) raise the awareness of the Data Originators regarding the AIRAC provisions and 2) include necessary procedures related to AIRAC adherence in the arrangement with the Data Originators.

4.11 States should implement a system for AIRAC adherence monitoring and report on annual basis (by 31 December) to the ICAO MID Regional Office the case(s) of late publication of aeronautical information of operational significance and non-adherence to the AIRAC provisions. **Appendix B** could be used as a monitoring and reporting tool in the AIRAC adherence.

AIR NAVIGATION DEFICIENCIES

4.12 A deficiency is a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.

4.13 Priority for action to remedy a deficiency is based on the following safety assessments:

'U' priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions. Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

'A' priority = Top priority requirements necessary for air navigation safety. Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

'B' priority = Intermediate requirements necessary for air navigation regularity and efficiency. Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

4.14 MIDANPIRG is responsible to identify and address specific deficiencies in the air navigation field and to facilitate the development and implementation of an action plan by States to resolve identified deficiencies, where necessary.

4.15 States are required to use the MID Air Navigation Deficiency Database (MANDD) for the submission of requests for addition, update, and elimination of Air Navigation Deficiencies,

including the submission of a specific Corrective Action Plan (CAP) for each deficiency. Each State MANDD Focal Point is given the required credential and MANDD is accessible at: http://www.cairo.icao.int/

4.16 A Sample State's Corrective Action Plan (CAP) is provided as **Appendix C** for assistance to States in developing their CAPs for the Air Navigation Deficiencies.

4.17 States are required to submit a Formal Letter to the ICAO MID Regional Office containing the evidence(s) that mitigation measures have been implemented for the elimination of deficiency(ies) when requesting the elimination of deficiency(ies) from the MANDD.

HUMAN RESOURCE AND TRAINING

4.18 Within the context of the established quality management system, the competencies and the associated knowledge, skills and abilities required for each function shall be identified, and personnel assigned to perform those functions shall be appropriately trained. Processes shall be in place to ensure that personnel possess the competencies required to perform specific assigned functions. Appropriate records shall be maintained so that the qualifications of personnel can be confirmed. Initial and periodic assessments shall be established that require personnel to demonstrate the required competencies. Periodic assessments of personnel shall be used as a means to detect and correct shortfalls.

Note 1 - Guidance material concerning training methodology to ensure the competency of personnel is contained in the Aeronautical Information Management Training Development Manual (Doc 9991).

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CHAPTER 5

REPORTING AND MONITORING

MID eANP VOLUME III

5.1 The status of implementation is reported/monitored through the Tables in the MID eANP Volume III. the MID eANP is available on the ICAO MID website at: http://www.icao.int/MID/Pages/MIDeANP.aspx

REGIONAL PERFORMANCE DASHBOARD

5.2 The 38th Assembly approved the Regional Performance Dashboards. The Dashboards aim to provide a glance of both Safety and Air Navigation Capacity and Efficiency strategic objectives, using a set of indicators and targets based on the regional implementation of the Global Aviation Safety Plan (GASP) and the Global Air Navigation Plan (GANP).

5.3 ICAO introduced the Regional Performance Dashboards as a framework of nested reporting of results with an increased focus on implementation. The initial version of the dashboard shows the globally agreed targeted performance at the regional level and contains graphics and maps with a planned expansion to include regionally agreed targets and the Aviation System Block upgrades (ASBU) Block 0 Modules (i.e. AIM National Plan/Roadmap, AIXM, eAIP, eTOD, WGS-84 and QMS).

5.4 For the first edition of the Regional Performance Dashboards, the implementation of 3 steps from Phase I of the ICAO Roadmap for transition from AIS to AIM (AIRAC, QMS and WGS-84) is monitored. The dashboard can be accessed on the ICAO website at: http://www.icao.int/safety/Pages/Regional-Targets.aspx.

5.5 It is agreed that in the expansion of the MID Regional Performance Dashboard, AIM National Roadmap, AIXM 5+, eAIP, eTOD Area 1 and 4 should be added to the MID Region Dashboard.

METHODOLOGY FOR ASSESSING AND REPORTING THE PROGRESS OF TRANSITION FROM AIS TO AIM

5.6 "*Methodology for assessing and reporting the progress of transition from AIS to AIM*" aims to develop a uniform method and plan for the reporting by the States on the progress achieved for the AIM transition, based on the ICAO Roadmap for Transition from AIS to AIM. The ICAO air navigation planning and implementation performance framework requires that reporting, monitoring, analysis and review activities be conducted on a cyclical, annual basis (ICAO DOC 9750). The Methodology is used while collecting data for monitoring the progress achieved in the transition from AIS to AIM and for the purpose of Regional Performance Dashboard, MID eANP, etc.

5.7 MIDANPIRG/15 meeting (Bahrain, 8-11 June 2015) reviewed the draft Methodology for reporting and assessing the progress related to the transition from AIS to AIM, as an initial MID Regional framework for monitoring the progress achieved for the AIM transition.

METHODOLOGY FOR REPORTING AND ASSESSING THE PROGRESS RELATED TO THE TRANSITION FROM AIS TO AIM

Element (Phase/Step/Step No.)			Metric/ Indicator	Finalization/Compliance Criteria	Link to ASBU Block	Remarks
1			**2**	**3**	**4**	**5**
Phase 1						
AIRAC adherence		P-03	FC/NC	Implementation of a system for AIRAC adherence monitoring (compliance with annex 15 AIRAC provisions) (TBD)	Block 0	
WGS-84 implementation		P-05	FC/PC/NC	National AIP GEN 2.1.3 ‘Geodetic reference datum’ provides information about the implementation of WGS-84 in ENR, Terminal and AD	Block 0	
QMS		P-17	FC/NC	ISO 9001 Certification	Block 0	
Phase 2						
Data quality monitoring		P-01	FI/NI	QMS (P-17) and Agreement with data originators (P-18) is implemented (TBD)	Block 0	
Data integrity monitoring		P-02				*Linked to P-01*
Integrated aeronautical information database	AIXM-based AIS Database	P-06	FI/NI	National aeronautical data and information is stored and maintained in AIXM-based AIS database	Block 0	*Structured AI Database with digital exchange capabilities (AIXM 5.1)*
	Implementation of IAID		FI/PI/NI	Implementation of a database providing eAIP (text, tables and charts) and NOTAM, linked to the terrain/obstacles and aerodrome mapping datasets (TBD)	Block 1	
Unique identifiers		P-07				*Linked to P-06*
Aeronautical information conceptual model		P-08				*Linked to P-06*
Electronic AIP		P-11	FI/NI	National AIP GEN 3.1.3 ‘Aeronautical publications’ provides information about the availability of the National AIP in electronic format (eAIP)	Block 0	
Terrain	Area 1	P-13	FC/NC	National AIP GEN 3.1.6 ‘Electronic terrain and obstacle data’ provides information on how the dataset can be obtained	Block 0	
	Area 4	P-13	FC/PC/NC or N/A	National AIP GEN 3.1.6 ‘Electronic terrain and obstacle data‘ provides information on how the dataset for specific CAT II/III RWY can be obtained. States should indicate in remarks the number of existing CAT II/III RWY. N/A for States with no CAT II/III RWY.	Block 0	*In case of PC, list name of CAT II/III ADs having the dataset*

Element (Phase/Step/Step No.)			Metric/ Indicator	Finalization/Compliance Criteria	Link to ASBU Block	Remarks
1			2	3	4	5
	Area 2a	P-13	FC/PC/NC	National AIP GEN 3.1.6 'Electronic terrain and obstacle data' provides information on how the dataset can be obtained. States should indicate in remarks the number of AD eligible for provision of Area 2 data. This number should come from the Regional eANP Table AOP II-1 – for aerodromes with one of the following designation: — RS: international scheduled air transport, regular use — RNS: international non-scheduled air transport, regular use — RG: international general aviation, regular use.	Block 0	*In case of PC, list name of ADs having the dataset*
	Take-off flight path area	P-13	FC/PC/NC	Same as Terrain Area 2a	Block 0	*In case of PC, list name of ADs having the dataset*
	An area bounded by the lateral extent of the aerodrome obstacle limitation surfaces	P-13	FC/PC/NC	Same as Terrain Area 2a	Block 0	*In case of PC, list name of ADs having the dataset*
Obstacles	Area 1	P-14	FC/NC	National AIP GEN 3.1.6 'Electronic terrain and obstacle data' provides information on how the dataset can be obtained	Block 0	
	Area 4	P-14	FC/PC/NC or N/A	National AIP GEN 3.1.6 'Electronic terrain and obstacle data' provides information on how the dataset for specific CAT II/III RWY can be obtained. States should indicate in remarks the number of existing CAT II/III RWY. N/A for States with no CAT II/III RWY.	Block 0	*In case of PC, list name of CAT II/III ADs having the dataset*
	Area 2a	P-14	FC/PC/NC	National AIP GEN 3.1.6 'Electronic terrain and obstacle data' provides information on how the dataset can be obtained. States should indicate in remarks the number of AD eligible for provision of Area 2 data. This number should come from the Regional eANP Table AOP II-1 – for aerodromes with one of the following designation: — RS: international scheduled air transport, regular use	Block 0	*In case of PC, list name of ADs having the dataset*

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Element (Phase/Step/Step No.)		Metric/ Indicator	Finalization/Compliance Criteria	Link to ASBU Block	Remarks
1		**2**	**3**	**4**	**5**
			— RNS: international non-scheduled air transport, regular use — RG: international general aviation, regular use.		
objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area	P-14	FC/PC/NC	Same as Obstacles Area 2a	Block 0	*In case of PC, list name of ADs having the dataset*
penetrations of the aerodrome obstacle limitation surfaces	P-14	FC/PC/NC	Same as Obstacles Area 2a	Block 0	*In case of PC, list name of ADs having the dataset*
Aerodrome mapping	P-15	FI/PI/NI	National AIP GEN 3.1.6 ‘Electronic terrain and obstacle data’ provides information on how the dataset can be obtained	Block 1	*In case of PC, list name of ADs having the dataset*
Phase 3					
Aeronautical data exchange	P-09	FI/PI/NI	Direct data exchange between AIS and data originators/users (TBD)	Block 1	*In case of PC, list name of Units (Data Originators/Users)*
Communication networks	P-10				
Aeronautical information briefing	P-12	FI/PI/NI	Provision of preflight aeronautical information briefing at the international aerodromes (TBD) Mandatory for international aerodromes contained in the Regional eANP Table AOP II-1 – for aerodromes with one of the following designation: — RS: international scheduled air transport, regular use — RNS: international non-scheduled air transport, regular use — RG: international general aviation, regular use.	Block 1	*In case of PC, list name of ADs providing AI briefing*
Training	P-16				

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Element (Phase/Step/Step No.)		Metric/ Indicator	Finalization/Compliance Criteria	Link to ASBU Block	Remarks
1		**2**	**3**	**4**	**5**
Agreement with data originators	P-18	FI/PI/NI	Signed agreements between AIS and ANSPs (ATM, CNS, etc.), Aerodromes and Military	Block 0	*In case of PC, list name of Data Originator(s)*
Interoperability with meteorological products	P-19				*Linked to P-12*
Electronic aeronautical charts	P-20	FI/NI	National AIP GEN 3.2 'Aeronautical Charts provides information about the availability of the e-Aeronautical Charts	Block 1	
Digital NOTAM	P-21	FI/NI	TBD	Block 1	

FC: Fully Compliant; PC: Partially Compliant; NC: Not Compliant; FI: Fully Implemented; PI: Partially Implemented; NI: Not Implemented; N/A: Not Applicable

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APPENDICES

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APPENDIX A
NATIONAL AIM IMPLEMENTATION ROADMAP TEMPLATE

Phase/Step	Step No.	Timeline																		Start	End	Remarks
		2014				2015				2016				2017				2018						
Phase I																						
AIRAC adherence	P-03																					
WGS-84 implementation	P-05																					
QMS	P-17																					
Phase II																						
Data Quality Monitoring	P-01																					
Data Integrity Monitoring	P-02																					
AIXM	P-06																					
Unique identifiers	P-07																					
Aeronautical information conceptual model	P-08																					
eAIP	P-11																					
Terrain A-1	P-13																					
Obstacle A-1	P-14																					
Terrain A-4	P-13																					
Obstacle A-4	P-14																					
Terrain A-2	P-13																					Please specify implementation of Area 2a, 2b, 2c and/or 2d

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Phase/Step	Step No.	Timeline																				Start	End	Remarks
		2014				2015				2016				2017				2018						
Obstacle A-2	P-14																							Please specify implementation of Area 2a, 2b, 2c and/or 2d
Terrain A-3	P-13																							
Obstacle A-3	P-14																							
AD Mapping	P-15																							
Phase III																								
Aeronautical data exchange	P-09																							
Communication networks	P-10																							
Aeronautical information briefing	P-12																							
Training	P-16																							
Agreement with data originators	P-18																							
Interoperability with meteorological products	P-19																							
Electronic aeronautical charts	P-20																							
Digital NOTAM	P-21																							

Legend		Not Started
		In Progress
		Implemented

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APPENDIX B

AIRAC ADHERENCE MONITORING

YEAR: 2016			**STATE: …….**		
AIRAC EFF Date	**AIRAC AMDT Serial Number; or NIL Notification**	**AIRAC AMDT PUB/Distribution Date**	**Trigger NOTAM (Serial Number)**	**No change until 28 days after EFF Date? (Yes / No)**	**Remarks**
7 JAN 16	- AIRAC …../16; or - NIL notification issued on …….				
4 FEB 16	- AIRAC …../16; or - NIL notification issued on …….				
3 MAR 16	- AIRAC …../16; or - NIL notification issued on …….				
31 MAR 16	- AIRAC …../16; or - NIL notification issued on …….				
28 APR 16	- AIRAC …../16; or - NIL notification issued on …….				
26 MAY 16	- AIRAC …../16; or - NIL notification issued on …….				
23 JUN 16	- AIRAC …../16; or - NIL notification issued on …….				
21 JUL 16	- AIRAC …../16; or - NIL notification issued on …….				
18 AUG 16	- AIRAC …../16; or - NIL notification issued on …….				
15 SEP 16	- AIRAC …../16; or - NIL notification issued on …….				
13 OCT 16	- AIRAC …../16; or - NIL notification issued on …….				
10 NOV 16	- AIRAC …../16; or - NIL notification issued on …….				
8 DEC 16	- AIRAC …../16; or - NIL notification issued on …….				

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APPENDIX C

SAMPLE STATE'S CORRECTIVE ACTION PLAN

DEFICIENCY DESCRIPTION		**PRIORITY** *(U/A/B)*
		RATIONALE *F:Financial, H:HR, S:State, O:Other*
STATE'S COMMENTS/OBSERVATION		
CORRECTIVE ACTION(S) PROPOSED	**ACTION OFFICE/BODY**	**DATE OF COMPLETION**

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References

- ICAO Annex 15 – Aeronautical Information Services
- ICAO Doc 9750 – Global Air Navigation Plan
- ICAO Roadmap for the transition from AIS to AIM
- EUROCONTROL Guidelines – Operating procedures for AIS Dynamic Data (OPADD)
- EUROCONTROL Specifications for the electronic Aeronautical Information Publication (eAIP)
- EUROCONTROL Terrain and Obstacle Data Manual
- MIDANPIRG/15 Report
- MID Doc 002 – MID Region Air Navigation Strategy
- MSG/4 Report
- http://www.aixm.aero
- http://www.icao.int/airnavigation/Documents/ICAO_AN%20Report_EN_final_30042014.pdf
- http://www.icao.int/airnavigation/IMP/Pages/default.aspx
- http://www.icao.int/safety/ais-aimsg/Pages/default.aspx
- http://www.icao.int/safety/Pages/Regional-Targets.aspx.
- https://portal.icao.int/RO_MID/Pages/MIDDocs.aspx
- https://portal.icao.int/space/anp/Pages/Home.aspx

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APPENDIX 4E

AIRAC ADHERENCE MONITORING QUESTIONNAIRE– 2016

NAME OF STATE: ……..

Please circle the appropriate response.

1. Have you published any operationally significant information, as referred to in Appendix 4 of Annex 15, other than using the AIRAC System? **Yes / No**

   If the answer is "Yes", please explain: ……
   ……
   ……
   ……
   …….

2. Have you received any complain from the users about non-adherence to AIRAC? **Yes / No**

   If the answer is "Yes", please explain: ……
   ……
   ……
   ……
   …….

3. Please fill the required data in the table below on the AIRAC System in your State:

AIRAC EFF Date	**AIRAC AMDT Serial Number; or NIL Notification**	**AIRAC AMDT PUB/Distribution Date**	**Trigger NOTAM (Serial Number)**	**No change until 28 days after EFF Date? (Yes / No)**	**Remarks**
7 JAN 16	- AIRAC …../16; or - NIL notification issued on …….				
4 FEB 16	- AIRAC …../16; or - NIL notification issued on …….				
3 MAR 16	- AIRAC …../16; or - NIL notification issued on …….				
31 MAR 16	- AIRAC …../16; or - NIL notification issued on …….				
28 APR 16	- AIRAC …../16; or - NIL notification issued on …….				
26 MAY 16	- AIRAC …../16; or - NIL notification issued on …….				
23 JUN 16	- AIRAC …../16; or - NIL notification issued on …….				

21 JUL 16	- AIRAC …../16; or - NIL notification issued on …….				
18 AUG 16	- AIRAC …../16; or - NIL notification issued on …….				
15 SEP 16	- AIRAC …../16; or - NIL notification issued on …….				
13 OCT 16	- AIRAC …../16; or - NIL notification issued on …….				
10 NOV 16	- AIRAC …../16; or - NIL notification issued on …….				
8 DEC 16	- AIRAC …../16; or - NIL notification issued on …….				

4. Details and signature of the person completing this form:

Full Name:

Title:

Organization:

Mailing address:

Contact details:

Email address:

Signature:

……..

Please return completed form by 31 January 2017 to:

Email: icaomid@icao.int or Fax: +2 (02) 22674843

APPENDIX 7A

AIR NAVIGATION SYSTEMS IMPLEMENTATION GROUP (ANSIG)

1. Terms of Reference

1.1 The terms of reference of the ANSIG are:

a) ensure that the implementation of Air Navigation Systems in the MID Region is coherent and compatible with developments in adjacent regions, and is in line with the ATM Operational Concept (Doc 9854), Global Air Navigation Plan (GANP), the Aviation System Block Upgrades (ASBU) methodology and the MID Region Air Navigation Plan/Strategy;

b) monitor the status of implementation of the MID Region Air Navigation Systems and related ASBU Modules included in the MID Region Air Navigation Plan/Strategy as well as other required Air Navigation facilities and services, identify the associated difficulties and deficiencies and provide progress reports, as required;

c) keep under review the MID Region Air Navigation Strategy, and propose changes to the MID Region Air Navigation Plan/Strategy and Air Navigation priorities, as appropriate;

d) seek to achieve common understanding and support from all stakeholders involved in or affected by the Air Navigation Systems developments/activities in the MID Region;

e) provide a platform for harmonization of developments and deployments of the MID Air Navigation Systems;

f) monitor and review the latest Air Navigation developments and provide expert inputs for the implementation of the Air Navigation Systems based on ATM operational requirements;

g) ensure that the work programmes of all Subsidiary Bodies reporting to ANSIG are harmonized and coordinated, achieving the agreed air navigation performance targets;

h) keep under review the air navigation environmental issues and the State's CO2 action plans;

i) provide regular progress reports to the MSG and MIDANPIRG concerning its work programme; and

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

1.2 In order to meet the Terms of Reference, the ANSIG shall:

a) agree on the necessary data to be collected for monitoring the MID Key Performance Indicators and Metrics;

b) monitor the status of implementation of the different ASBU Module elements included in the MID Air Navigation Plan/Strategy; develop associated progress

reports and update the performance dashboards; ~~and ensure that the associated performance targets are met;~~

c) ensure that the agreed performance targets are achieved, identify the associated challenges and difficulties; and agree on necessary mitigation measures, as required;

d) consolidate inputs from all Subsidiary Bodies and propose changes to the Plan/Strategy and Air Navigation priorities, as appropriate;

e) provide necessary assistance and guidance to States to ensure harmonization and interoperability in line with the GANP, the MID ANP and ASBU methodology;

~~f) develop and continuously update the MID regional Air Navigation Report Forms (ANRF) in order to reflect the MID Region Performance Objectives;~~

g) review and identify intra and inter-regional co-ordination issues and where appropriate recommend actions to address those issues;

h) identify the environmental effect and use the guidance provided by the Committee on Aviation Environmental Protection (CAEP) in the analysis of environmental benefits of implementing Air Navigation Systems;

i) collect and analyse the data related to the implementation of operational improvements provided by States and users;

j) follow-up the implementation of the operational improvements required in the MID Air Navigation Strategy and Regional Air Navigation Plan (ANP) or in national plans and estimate the associated environmental benefits;

k) support the implementation of the performance framework and propose new technical elements for the continuous improvement of the performance framework; and

l) foster the integrated improvement of MID Air Navigation systems implementation through proper training and qualification of the personnel.

2. Composition:

2.1 The ANSIG is composed of:

a) 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.

LIST OF PARTICIPANTS

NAME	TITLE & ADDRESS
STATES **BAHRAIN** Mr. Ahmed Ali Al-Sayed	 A/Director Air Navigation Systems Civil Aviation Affairs KINGDOM OF BAHRAIN
EGYPT Mr. Tayseer Mohamed Abdel Kareem	 ATS General Manager Egyptian Civil Aviation Authority (ECAA) Cairo - EGYPT
Mr. Ehab Raslan Abdel Galil	Technical Bureau of ATC Head National Air Navigation Services Company Cairo - EGYPT
Mr. Moatassem Bellah Baligh	Director General Research and Development National Air Navigation Services Company Cairo - EGYPT
Col. Ihab Khalef Gamal Besada	Colonel Navigation Air Forces Department Navigation Cairo - EGYPT
Mr. Khaled Mohamed Reda Ahmed	CNS Inspector/ANS Engineer Ministry of Civil Aviation Cairo - EGYPT
Mr. Medhat Mohamed Abdel Hafez	Air Traffic Controller National Air Navigation Services Company Cairo - EGYPT
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NAME	TITLE & ADDRESS
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Mr. Hany Mohamed Fathy Amin	AIM Supervisor National Air Navigation Services Company Cairo - EGYPT
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Mr. Saeed Akbari	Deputy CEO for Aeronautical Operation Iran Airports and Air Navigation Company Tehran - ISLAMIC REPUBLIC OF IRAN
JORDAN Mr. Daoud Abu-hussein	Planning and Studies Director Civil Aviation Regulatory Commission Amman - JORDAN
Mr. Suleiman Deeb Zayed	Director of Technical Support Civil Aviation Regulatory Commission Amman - JORDAN
KUWAIT Mr. Khalid M. N. Al Kreebani	Head of APP. & ACC Division Directorate General of Civil Aviation State of KUWAIT
Mr. Mohammad H. Al Anezi	AIS Officer Directorate General of Civil Aviation State of KUWAIT
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NAME	TITLE & ADDRESS
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Mr. Hayder Mohamed Abdalla	AIM Director Sudan Civil Aviation Authority Khartoum - SUDAN
UNITED ARAB EMIRATES	
Mr. Hamad Rashid Al Belushi	Director Air Traffic Management General Civil Aviation Authority Abu Dhabi - UNITED ARAB EMIRATES
ORGANIZATIONS/INDUSTRIES	
CANSO	
Ms. Hanan Qabartai	Director Middle East Affairs CANSO JORDAN
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Mr. George Rhodes	Assistant Director Infrastructure IATA, MENA Amman 11194, JORDAN
MIDRMA	
Mr. Fareed Abdullah Al Alawi	MIDRMA Manager MIDRMA KINGDOM OF BAHRAIN
Mr. Fathi Ibrahim Al-Thawadi	MIDRMA Officer MIDRMA KINGDOM OF BAHRAIN

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