INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

ANSIG/3

(Cairo, Egypt, 2 – 4 July 2018)

The views expressed in this Report should be taken as those of the ANSIG/3 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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TABLE OF CONTENTS

Page

PART I - HISTORY OF THE MEETING

1. Place and Duration 1
2. Opening 1
3. Attendance 1
4. Officers and Secretariat 1
5. Language 2
6. Agenda 2
7. Conclusion and Decisions – Definition 2
8. List of Conclusions and Decisions 3

PART II - REPORT ON AGENDA ITEMS

Report on Agenda Item 1 1-1

Report on Agenda Item 2 2-1

Report on Agenda Item 3 .... 3-1/3-2

Report on Agenda Item 4 .... 4-1/4-9

Report on Agenda Item 5 5-1

Report on Agenda Item 6 6-1

Report on Agenda Item 7 7-1

Report on Agenda Item 8 8-1

APPENDICES

Appendix 2A

Appendices 4A – 4F

Appendices 5A & 5B

List of Participants .... Attachment A

PART I - HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1 The Third meeting of the Air Navigation Systems Implementation Group (ANSIG/3) was held at the Meeting Room of the ICAO Middle East Regional Office in Cairo, Egypt, from 2 to 4 July 2018.

2. OPENING

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

2.2 Mr. Smaoui 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. Smaoui highlighted that, as part of the agenda, the meeting is expected to review and update the Second Edition of the MID Air Navigation Report-2017, in order to consolidate the final version, which will be presented to MSG/6 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.

3. ATTENDANCE

3.1 The meeting was attended by a total of twenty-seven (27) participants from six (6) States (Egypt, Iran, Saudi Arabia, Sudan, United Arab Emirates and United States of America) and three (3) Organizations/Industries (ACAO, IATA and IFATCA). The list of participants is at **Attachment A.**

4. OFFICERS AND SECRETARIAT

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

4.2 Mr. Mohamed Smaoui, ICAO Middle East Deputy Regional Director and Mr. Mr. Abbas Niknejad, Regional Officer, Aeronautical Information Management/Air Traffic Management (AIM/ATM), were the Secretaries of the Meeting supported by:

Mr. Elie El Khoury	-	Regional Officer, Air Traffic Management and Search and Rescue (ATM/SAR)
Ms. Muna Alnadaf	-	Regional Officer, Communication, Navigation and Surveillance (CNS)
Mr. Mohamed I. Hamdi	-	Regional Officer, Aerodrome and Ground Aids (AGA)

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/16 Conclusions and Decisions

Agenda Item 3: Air Navigation Global 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

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 3/1:	*ACTIVE PARTICIPATION OF THE MID STATES IN THE AN-CONF/13*
DRAFT CONCLUSION 3/2:	*MID AN-CONF/13 PREPARATION AD-HOC WORKING GROUP (MID AN-CONF AWG)*
DRAFT CONCLUSION 3/3:	*SURVEY ON ACDM IMPLEMENTATION*
DRAFT CONCLUSION 3/4:	*ACDM IMPLEMENTATION WORKSHOP*
DRAFT CONCLUSION 3/5:	*SECOND EDITION OF THE MID REGION AIR NAVIGATION REPORT (REFERENCE PERIOD: JANUARY 2017 – JUNE 2018)*
DRAFT CONCLUSION 3/6:	*PFA TO THE MID eANP VOLUME II – ATM PART*
DRAFT CONCLUSION 3/7:	*MID eANP VOLUME III REVISED TABLES*
DRAFT CONCLUSION 3/8:	*ORIGINATION AND DISTRIBUTION OF DEPARTURE (DEP) MESSAGES*
DRAFT CONCLUSION 3/9:	*MID CRV REQUIREMENTS*
DRAFT CONCLUSION 3/10:	*REGISTERED FREQUENCY UPDATE*
DRAFT CONCLUSION 3/11:	*ATM DATA CYBER SECURITY (DCS) PORTAL*
DRAFT CONCLUSION 3/12:	*ESTIMATION OF ENVIRONMENTAL BENEFITS ACCRUED FROM THE IMPLEMENTATION OF BLOCK 0 MODULES IN THE MID REGION*

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA

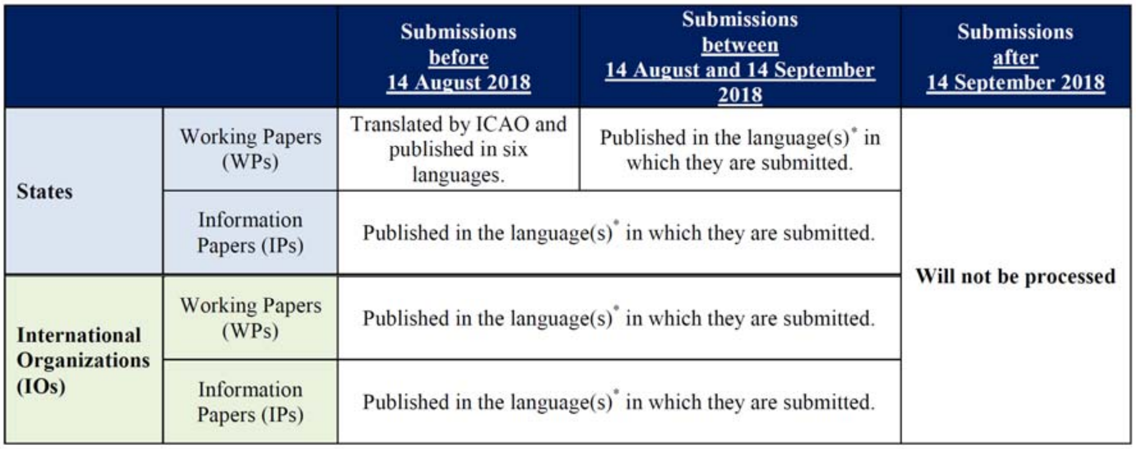
1.1 The meeting reviewed and adopted the Provisional Agenda as at Para 6 of the History of the Meeting.

REPORT ON AGENDA ITEM 2: FOLLOW-UP ON MIDANPIRG/16 CONCLUSIONS AND DECISIONS

2.1 The subject was addressed in WP/2 presented by the Secretariat. The meeting reviewed the progress made with regard to the implementation of the MIDANPIRG/16 Conclusions and Decisions as reflected in the Follow up Action Plan at **Appendix 2A**. The meeting urged States and concerned stakeholders to take necessary measures to expedite the implementation of those Conclusions, which have not yet been closed.

REPORT ON AGENDA ITEM 3: AIR NAVIGATION GLOBAL DEVELOPMENTS

3.1 The subject was addressed in WP/3 presented by the Secretariat. The meeting noted that the Thirteenth Air Navigation Conference (AN-Conf/13) will be held at the ICAO Headquarters, Montreal, Canada from 9 to 19 October 2018. It was highlighted that the rules governing the format, content and length of working papers are indicated in the attachments to AN-Conf/13 Invitation Letter. The meeting noted also that the following deadlines for submission of WPs/IPs, are to be observed:



		Submissions before 14 August 2018	Submissions between 14 August and 14 September 2018	Submissions after 14 September 2018
States	Working Papers (WPs)	Translated by ICAO and published in six languages.	Published in the language(s)* in which they are submitted.	**Will not be processed**
	Information Papers (IPs)	Published in the language(s)* in which they are submitted.		
International Organizations (IOs)	Working Papers (WPs)	Published in the language(s)* in which they are submitted.		
	Information Papers (IPs)	Published in the language(s)* in which they are submitted.		

3.2 Further Information related to the AN-Conf/13 including the agenda and registration is available on the AN-Conf/13 website at: https://www.icao.int/Meetings/anconf13

3.3 The meeting was provided with an update related to the preparation for the AN-Conf/13, in particular with regard to upcoming changes to the GANP and ASBUs Framework, proposed by Secretariat Working Papers.

3.4 The meeting reviewed the multilayer structure proposed for the sixth edition of the Global Air Navigation Plan (GANP), which highlights the importance of Global (Strategic and Technical), Regional and National planning alignment.

3.5 The meeting was informed of the ongoing work with respect to the update of the ASBUs framework, including the process and guiding principles behind it, as well as the concept of Basic Building Blocks (BBB) framework. The BBB framework is considered an independent framework and not a block of the ASBU framework as it represents a baseline rather than evolutionary steps. These two Global frameworks (ASBUs and BBB) will be part of the global technical level in the multilayer structure proposed for the sixth edition of the Global Air Navigation Plan (GANP, Doc 9750).

3.6 It was noted that a new approach to the development of the Technology Roadmaps provided in the Global Air Navigation Plan (GANP) is proposed. The focus of the roadmaps would change from the current technological perspective to a more performance-based and capability-driven approach aligned with the evolution of the air navigation system described in the GANP and the ASBUs framework.

3.7 The meeting noted the proposed ICAO performance management process. It was noted that ICAO is developing new key performance indicators to be included in the list of potential key performance indicators, available on the GANP Portal:
https://www.icao.int/airnavigation/Documents/GANP-Potential_Performance_Indicators.pdf

3.8 Comprehensive information related to the proposed amendments to the GANP and ASBUs framework, including the GANP multilayer structure is available on the GANP Portal at: https://www4.icao.int/ganpportal

3.9 The meeting recognized that the proposed changes to the GANP and ASBUs framework are major and agreed that States need to prepare themselves individually and cooperatively, by reviewing in a timely manner all the AN-Conf/13 WPs and analyzing the impact of the proposed changes on their National Plans, available resources and capabilities, etc.

3.10 Based on the above, the meeting encouraged States and Stakeholders to participate actively in the AN-Conf/13; and agreed to the following Draft Conclusions:

DRAFT CONCLUSION 3/1: ACTIVE PARTICIPATION OF THE MID STATES IN THE AN-CONF/13

That, States are invited to:

a) participate actively in the AN-Conf/13; and

b) provide their inputs to the Conference by submitting Working/Information Papers (WPs/IPs) according to the set guidelines and deadlines.

DRAFT CONCLUSION 3/2: MID AN-CONF/13 PREPARATION AD-HOC WORKING GROUP (MID AN-CONF AWG)

That:

a) an Ad-hoc Working Group be established to coordinate the development, submission and presentation of joint Working Papers to the AN-Conf/13, on subjects of mutual interest;

b) the ad-hoc Working Group be composed of Egypt, Saudi Arabia, UAE (Rapporteur), ACAO and ICAO MID Office; and

c) States be invited to nominate Focal Point to work with and provide inputs to the MID AN-Conf AWG.

3.11 The meeting agreed that a follow-up State Letter needs to be issued by the ICAO MID Office before **15 July 2018**, in order to action the above Draft Conclusions.

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/5, WP/6, WP/7, WP/8 and WP/13 presented by the Secretariat, WP/18 presented by UAE and PPT/1 to 6 presented by Egypt, Iran, Saudi Arabia, Sudan, UAE and USA (FAA). The meeting reviewed and updated the status of implementation of the 12 priority 1 ASBU Block 0 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/16, through Conclusion 16/7, endorsed the MID Air Navigation Report-2016. It was recalled that the MIDANPIRG/16 meeting agreed that States should provide the ICAO MID Office, with relevant data necessary for the development of the Second MID Region Air Navigation Report, and agreed to the following Conclusion:

> *CONCLUSION 16/8: MID REGION AIR NAVIGATION REPORT-2017*
>
> *That, MID States be urged to:*
>
> a) *develop/update their National ASBU Implementation Plan, ensuring the alignment with and support to the MID Region Air Navigation Strategy (MID Doc 002); and*
>
> b) *provide the ICAO MID Office, with relevant data necessary for the development of the MID Region Air Navigation Report-2017, by 1 November 2017.*

4.1.3 As an action to the MIDANPIRG Conclusion 16/6, State Letter Ref.: AN 1/7 – 17/188 dated 2 July 2017 was issued requesting States to provide their feedback on ASBU implementation status to the ICAO MID Office, for the development of the second edition of the MID Air Navigation Report. Six (6) States replied to the State Letter (Bahrain, Egypt, Jordan, Qatar, Sudan and UAE).

4.1.4 The meeting reviewed and updated the Second Edition of the MID Air Navigation Report, as at **Appendix 4A**.

4.1.5 The meeting noted that Bahrain, Egypt, Jordan, Lebanon, Qatar, Sudan 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-SNET, B0-AMET and B0-ACAS is very good. However, it was noted with concern that the progress for the implementation of B0-ACDM, B0-CDO and B0-CCO is far below expectation.

4.1.6 With respect to B0-APTA the meeting noted the challenges identified by the PBN SG/3 meeting (Cairo, Egypt, 13-15 February 2018). 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.

4.1.7 The meeting noted that the launch of the MID FPP is planned for January 2019. The MID FPP main objective in Phase 1 is building the MID States' regulatory, oversight and service provisions capabilities related to instrument flight procedure, which eventually will foster PBN Implementation. It was highlighted that the MID Office circulated the consolidated draft MID FPP Project Document for States review through State Letter AN 6/33 – 18/144 dated 9 May 2018. Accordingly, the meeting strongly encouraged States to join the MID FPP.

4.1.8 The meeting noted that the main challenges related to the implementation of B0-NOPS are related to the establishment of ATFM structure/functions at ATS Units, effective coordination between ATFM Units, sharing of information, establishment of a regional/sub-regional ATFM System/Centre, etc. The meeting encouraged States to participate in the First meeting of the ICAO ATFM Task Force and the First meeting of the ICAO World Cup 2022 Task Force, which will be held back-to-back in Muscat, Oman, from 23 to 27 September 2018.

4.1.9 With regard to ACDM implementation, the meeting raised concern about the slow progress of implementation of the B0-ACDM and requested that an ACDM Workshop be organized by the ICAO MID Office in 2019.

4.1.10 For an improved coordination of ACDM implementation in the MID Region, the meeting recognized the need for designation of ACDM Focal Points for each State/International Airport for which ACDM implementation is required (according to the B0-ACDM applicability area included in the MID Air Navigation Strategy).

4.1.11 The meeting noted that ACDM Information Sharing and ACDM Milestones Approach (Turn-round Process) are considered as the main elements that should be assigned high priority (fundamental elements).

4.1.12 The meeting agreed that a Survey on ACDM implementation be carried out for the monitoring of ACDM implementation by the concerned international aerodromes (reference applicability area in the MID Air Navigation Strategy).

4.1.13 Based on the above, the meeting agreed to the following Draft Conclusions:

DRAFT CONCLUSION 3/3: SURVEY ON ACDM IMPLEMENTATION

That,

a) *concerned States (according to the B0-ACDM applicability area included in the MID Air Navigation Strategy) be urged to provide the ICAO MID Office with the contact details of their designated ACDM Focal Points; and*

b) *a Survey on ACDM implementation be carried out for the monitoring of ACDM implementation.*

DRAFT CONCLUSION 3/4: ACDM IMPLEMENTATION WORKSHOP

That, an ACDM Implementation Workshop be organized by the ICAO MID Office in 2019.

4.1.14 The meeting provided an opportunity for sharing experience through presentations by the MID States. The meeting received with appreciation a briefing by FAA regarding their experience in ASBU implementation and the mechanism of aligning the NextGen with the ASBU framework.

4.1.15 The meeting noted the challenges and difficulties faced by States in the implementation of ASBU Block 0 Modules; and discussed ways and means to foster their implementation.

4.1.16 The meeting noted 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.

4.1.17 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 Second MID Region Air Navigation Report (2017-2018); and urged States to provide necessary inputs/updates to the ICAO MID Office before **31 August 2018**, in order to consolidate the Final version of the Report, which will be presented to MSG/6 for endorsement. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 3/5: SECOND EDITION OF THE MID REGION AIR NAVIGATION REPORT (REFERENCE PERIOD: JANUARY 2017 – JUNE 2018)

That, States be urged to review the Second Edition of the MID Region Air Navigation Report (2017-2018) at ***Appendix 4A****; and provide the ICAO MID Office with necessary inputs/updates related to the reference period January 2017 – June 2018, not later than* ***31 August 2018****, in order to consolidate the Final version of the Report for endorsement by MSG/6.*

4.2 *Air Navigation Strategy and Planning*

MID eANP

4.2.1 The subject was addressed in WP/6, WP/7 and WP/13 presented by the Secretariat.

4.2.2 The meeting noted that, based on the recommendation from the ATM SG/4 meeting (Amman, Jordan, 29 April- 2 May 2018), the applicability area for the AIDC/OLDI has been defined as at **Appendix 4B**. The meeting agreed that a requirement for AIDC/OLDI implementation (priority 1 interconnections) should be included in the MID eANP Volume II Part IV-ATM, under Specific Regional Requirements.

4.2.3 In the same vein, UAE requested mandating the AIDC/OLDI Implementation in the MID Region considering the electronic data exchange benefits.

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

DRAFT CONCLUSION 3/6: PFA TO THE MID eANP VOLUME II– ATM PART

That, a Proposal for Amendment to the MID eANP Volumes II – Part IV-ATM related to the requirement for AIDC/OLDI implementation (priority 1 interconnections) be processed in accordance with the standard procedure for amendment.

4.2.5 The meeting agreed with the changes to the MID eANP Vol III proposed by the AIM SG/4, ATM SG/4, CNS SG/8 and MET SG/7 meetings and the Secretariat (Tables B0-ACDM, B0-DATM, B0-FICE, B0-FRTO, B0-NOPS, B0-ACAS, B0-SNET and B0-AMET).

4.2.6 Based on the above, the meeting agreed that a revised version of the MID eANP Volume III be consolidated by the Secretariat for presentation and endorsement by MSG on behalf of MIDANPIRG. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 3/7: MID eANP VOLUME III REVISED TABLES

*That, the revised Tables: B0-ACDM, B0-DATM, B0-FICE, B0-FRTO, B0-NOPS, B0-ACAS, B0-SNET and B0-AMET at **Appendix 4C** be included in the MID eANP Volume III for presentation to MSG/6 for endorsement.*

MID Region Air Navigation Strategy

4.2.7 The subject was addressed in WP/4 presented by the Secretariat. The meeting recalled that MIDANPIRG/16 meeting (Kuwait, 13-16 February 2017), through Conclusion 16/3, updated and endorsed the MID Region Air Navigation Strategy (MID Doc 002).

4.2.8 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.

4.2.9 Based on the inputs from AIM SG/4, ATM SG/4, CNS SG/8, MET SG/7 and PBN SG/3 meetings, the meeting reviewed and updated the MID Region Air Navigation Strategy (MID Doc 002) as at **Appendix 4D**.

4.2.10 Considering the progress related to ADS-B and MLAT implementation in the MID Region, the meeting agreed that prior to changing the priority of B0-ASUR from 2 to 1, it is necessary for the CNS SG to agree on the elements, applicability area, performance indicators/supporting metrics and their associated targets for the B0-ASUR.

4.3 Specific air navigation issues

AIM Issues

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

MIDAD Project

4.3.2 The meeting was apprised of the progress of MIDAD Project. The meeting recalled that the DGCA-MID/4 meeting agreed on the following way forward proposed by the EAD-MIDAD:

Implementation phases	Phase Description	Responsible
Phase A	Individual migration of MID States to EAD	MID States
Phase B	Set-up of MIDAD Manager	MIDAD States, ICAO MID, EUROCONTROL (as advisor)
Phase C	Implementation of MIDAD system and service	MID States

4.3.3 The meeting recalled that the DGCA-MID/4 meeting agreed to the following Conclusion:

DGCA-MID/4 CONCLUSION 4/4 – MID REGION AIM DATABASE (MIDAD)

That:

a) States are encouraged to engage with EUROCONTROL to migrate to the European AIS Database (EAD);

b) a detailed action plan for the implementation of Phase B: "Set-up of MIDAD Manager" be developed by the MIDAD Task Force; and

c) a progress report be presented to the DGCA-MID/5 meeting.

4.3.4 The meeting reviewed the status of State's plan and progress related to the MIDAD Project Phase A, and agreed that the number of States that initiated the process of migration to EAD is too low. Accordingly, the meeting agreed with the MIDAD TF/5 meeting that the development of a detailed action plan for the implementation of Phase B should be initiated when at least 7 States complete their migration to EAD.

4.3.5 Based on the above, the meeting supported to the following Draft Conclusion proposed by the MIDAD TF/5 meeting:

DRAFT CONCLUSION 4/1: MID REGION AIM DATABASE (MIDAD)

That:

a) the status of individual migration by MID States to EAD (MIDAD Project Phase A) be monitored by the AIM Sub-Group; and

b) the development of a detailed action plan for the implementation of the MIDAD Project Phase B (set-up of MIDAD Manager) be initiated when at least 7 States complete their migration to EAD.

Guidance for AIM Planning and Implementation in the MID Region (MID Doc 008)

4.3.6 The meeting recalled that the MIDANPIRG/16 meeting, through MIDANPIRG Conclusion 16/10, endorsed the "*Guidance for AIM Planning and implementation in the MID Region*" as the MID Doc 008.

4.3.7 The meeting noted that the MID Doc 008 was further reviewed and updated by the AIM SG/4 meeting and the Secretariat is working on the revised version, which will be presented to the MSG/6 meeting for endorsement.

Missing Flight Plans and Departure Messages

4.3.8 The subject was addressed in WP/9 presented by the Secretariat. The meeting recognized that Flight Plan (FPL) message provides fundamental and critical information determining the provision of air traffic services to flights. The Departure (DEP) messages provide important information related to the activation of the FPL in both manual and automated ATM systems, Secondary Surveillance Radar (SSR) mode and code, estimated elapsed time to the destination aerodrome and other information. The DEP message also usually provides the first real-time aircraft movement information used to update demand calculations in Air Traffic Flow Management (ATFM) processes.

4.3.9 The meeting was apprised of the ICAO DOC 4444 (PANS-ATM) provisions related to the origination and distribution of FPLs and DEP messages. The meeting noted that the ICAO Asia/Pacific (APAC) Office carried out 24-hour analysis during which five (5) participating States recorded pertinent details of 582 flights for which a FPL or DEP message had not been received. It was highlighted that out of the 582 only 45 cases were related to the MID Region. The meeting reviewed the APAC analysis of DEP messages distribution at **Appendix 4E** in particular those related to the MID States. The meeting noted the possible causes could be related to human factors, systems interface, network failure, wrong AFTN addresses, AFTN limitations, etc.

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

DRAFT CONCLUSION 3/8: ORIGINATION AND DISTRIBUTION OF DEPARTURE (DEP) MESSAGES

> *That, recognizing the importance of DEP messages in the management and coordination of flight plans in both manual and automated ATM environments:*
>
> *a) ICAO MID Office to carry out analysis of missing DEP messages; and*
>
> *b) States be urged to ensure:*
>
> *i. compliance with the provisions of the PANS-ATM for the distribution of DEP messages; and*
> *ii. proper handling of received DEP messages.*

4.3.11 IATA raised concern on the missing fight plans originated from MID Region for flights to North Africa, and requested assistance from ICAO and concerned States to resolve this ongoing problem.

4.3.12 The meeting reiterated the issue related to missing FPLs and its impact on safety. Furthermore, the meeting noted the following actions taken by the MID Office to resolve this problem:

a) requested the ICAO EUR/NAT Office to consider the establishment of new European Gateway (Rome) with the MID Region;
b) invited Egypt and Lebanon to establish AMHS inter-regional connection with the current European gateways (Athens and Cyprus);
c) coordinated with ICAO ESAF Office to establish new inter-regional AMHS connection between Cairo and South Africa; and
d) invited Bahrain – UAE to migrate their bilateral CIDIN connection to AMHS.

CNS Issues

4.3.13 *The subject was addressed in WP/12, presented by the Secretariat.*

CRV Project

4.3.14 The meeting recalled that MIDANPIRG/16 agreed that the framework of the APAC CRV be used for the implementation of the MID IP Network.

4.3.15 The meeting was apprised of the outcome of the CRV Workshop. The meeting noted that States requested the CRV Service Provider (PCCW Global) to revise the price list. Eight (8) States (Bahrain, Iraq, Jordan, Kuwait, Lebanon, Qatar, Saudi Arabia and UAE) provided their network requirements through the completion of the high level questionnaire.

4.3.16 It was highlighted that States selected different packages for same connections; therefore, the Secretariat prepared consolidated proposal with unified package for all MID States. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 3/9: MID CRV REQUIREMENTS

That, in order to request price revision from the CRV's Service provider (PCCW Global) for the MID Region, States are urged to complete the MID CRV requirements at ***Appendix 4F****, not later than* ***1 August 2018.***

Frequency Finder Tool

4.3.17 The meeting recalled that the new version of the Frequency Finder tool has been developed. Moreover, it was noted that the registered frequency database is not up-to-date, which could result in incompatible frequency assignment. Therefore, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 3/10: REGISTERED FREQUENCY UPDATE

That, for an optimized frequency assignment process and in order to ensure that assigned frequencies to MID States are not interfering, States that have not yet done so, be urged to:

a) verify and update existing registered frequencies in the COM list;

b) add any missing frequencies with the full details, where applicable;

c) delete unused frequencies;

d) send the changes in excel format generated by the FF export function; and

e) provide the ICAO MID Office with feedback before ***15 August 2018****.*

SITA Integration

4.3.18 The meeting was apprised of the progress made in SITA AMHS Gateway inter-connections and transition to AMHS in the MID Region.

4.3.19 The meeting noted that some States did not validate their User Addresses, as required. Therefore, the transition has been postponed two AIRAC cycles.

4.3.20 It was highlighted that the EANPG Aeronautical Fixed Services Group (AFSG) decided that AMHS connectivity between EUR and MID Regions should not be implemented until the MID SITA Gateway is established.

4.3.21 Based on the above, the meeting urged States to cooperate with the MID AMC Team and make the required Routing changes to facilitate AMHS SITA Gateway Transition in the MID Region.

Performance Based Communication and Surveillance

4.3.22 The meeting was apprised of the preparatory work done regarding the Performance Based Communication and Surveillance (PBCS) implementation. The tests successfully conducted by States ensured the capability of their automation systems, and confirmed their readiness to handle the PBCS, as required.

ATM Data and Cyber Security Portal

4.3.23 The subject was addressed in WP/17 and PPT/7, presented by UAE.

4.3.24 The meeting recalled that MIDANPIRG/16, through Decision 16/26, established the MID Region ATM Data Security Action Group (ADSAG) to develop a MID Region ATM Security Plan. The meeting noted that the plan would include the following parts:

a) Security Regulations;
b) Physical Security
c) ICT Cyber Security baseline
d) Disaster Recovery

4.3.25 It was highlighted that the seven (7) Minimum Security Baseline (MSB) documents cover various technologies and systems.

4.3.26 The meeting was provided with an overview of the ATM Data Cyber Security Portal https://www.adcsportal.com/developed and hosted by UAE, to allow ANSPs to report cyber events, as well as share knowledge and information on cyber security incidents. The meeting thanked UAE for the initiative and support; and agreed to the following Draft Conclusion:

DRAFT CONCLUSION 3/11: ATM DATA CYBER SECURITY (ADCS) PORTAL

That;

a) the ADCS Portal be used as a prototype platform for ATM cyber security; and

b) States be encouraged to:

i. register on the ADCS Portal,
*ii. provide feedback to the ADCS Admin by **29 November 2018** for further enhancements; and*
iii. share their experience related to Cyber Security, through the ADCS Portal.

MET Issues

4.3.27 The subject was addressed in WP/11, presented by the Secretariat.

4.3.28 The meeting was apprised of the status of implementation of ROC Jeddah and back-up ROC Bahrain. The meeting noted 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 States (Syria and Yemen) have not started the implementation. Accordingly, the meeting urged States that have not yet done so, to complete the implementation; and ROC Jeddah and back-up ROC Bahrain to implement the exchange of OPMET data in IWXXM and possibly serving as translation Centre(s).

4.3.29 The meeting was informed of the activities related to the planning and implementation of IWXXM. It was noted that in order to gather and analyse information related to States' action plans for IWXXM implementation in the MID Region, the ICAO MID Office carried out an IWXXM survey through State Letter Ref.: ME 2/2.3 – 18/114 dated 10 April 2018. Four States (Egypt, Libya, Oman and Sudan) have responded to the IWXXM Implementation Survey. Accordingly, the meeting urged States that have not yet done so, to complete the IWXXM survey and provide their feedback to the ICAO MID Office.

REPORT ON AGENDA ITEM 5: ENVIRONMENTAL ISSUES

Environmental Activities in the MID Region

5.1 The subject was addressed in WP/14, presented by the Secretariat. The meeting was apprised of the CAEP activities related to the development of the Rules of Thumb (RoTs), for the estimation of environmental benefits accrued from the implementation of ASBU Block 0 Modules. It was noted that a total of twenty-three (23) rules of thumb have been developed for thirteen (13) ASBU Block 0 Modules.

5.2 The meeting noted the results of the studies and analysis carried out by CAEP on the estimation of environmental benefits accrued from the implementation of ASBU Block 0 Modules.

5.3 The meeting noted with appreciation that the Secretariat developed a Draft Methodology for the estimation of environmental benefits accrued from the implementation of priority 1 Block 0 Modules in the MID Region, which is based mainly on the Rules of Thumb, the traffic data available on the ICAO iSTARS and the size of fleet (light, medium, heavy), as at **Appendix 5A**.

5.4 The meeting supported the activity carried out by the Secretariat and agreed that the Draft Methodology be used for the estimation and reporting of environmental benefits in the second edition of the MID Air Navigation Report (2017-2018).

5.5 In order to complete the results of the analysis and improve its accuracy, the meeting urged States to fill the Table for the assessment of environmental benefits accrued from the implementation of ASBU Block 0, at **Appendix 5B**.

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

DRAFT CONCLUSION 3/12: ESTIMATION OF ENVIRONMENTAL BENEFITS ACCRUED FROM THE IMPLEMENTATION OF ASBU BLOCK 0 MODULES IN THE MID REGION

That,

a) the Methodology for the estimation of environmental benefits accrued from the implementation of priority 1 ASBU Block 0 Modules in the MID Region at ***Appendix 5A****, be used for the estimation and reporting of environmental benefits in the MID Region; and*

b) States be urged to provide the ICAO MID Office, on annual basis, with the required data for the assessment of environmental benefits accrued from the implementation of ASBU Block 0 Modules, using the Table at ***Appendix 5B****.*

REPORT ON AGENDA ITEM 6: AIR NAVIGATION DEFICIENCIES

6.1 The subject was addressed in WP/15, presented by the Secretariat.

6.2 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/

6.3 The meeting recalled that MIDANPIRG/16 meeting noted with concern that the majority of deficiencies listed in the MANDD have no specific Corrective Action Plan (CAP). The meeting urged States to implement the provisions of MIDANPIRG Conclusion 15/35 related to elimination of Air Navigation Deficiencies, in particular, the submission of a specific Corrective Action Plan (CAP) for each deficiency.

REPORT ON AGENDA ITEM 7: FUTURE WORK PROGRAMME

7.1 The subject was addressed in WP/16, presented by the Secretariat.

7.2 The meeting raised concern about the level of participation of States in the ANSIG meetings. The meeting discussed the future of the ANSIG. In this respect, the meeting noted the activities and achievements of ANSIG, including those related to the development of the first and second MID Air Navigation Report; and environmental issues. It was highlighted also that some of the tasks included in the ANSIG Terms of References (TORs), such as the environmental issues and ASBU implementation related to aerodrome operations are not covered by any other MIDANPIRG subsidiary body. The meeting agreed that, with the upcoming global developments related to the PIRGs and RASGs, there would be a need to review the Organizational Structure, working arrangements and Terms of Reference (TORs) of MIDANPIRG and all its subsidiary bodies.

7.3 Based on the above, the meeting reviewed the ANSIG Terms of References (TORs) and agreed that they are still valid and current. The meeting agreed that the ANSIG/4 meeting be tentatively planned for the first quarter of 2020; the venue will be Cairo, unless a State is willing to host the meeting.

REPORT ON AGENDA ITEM 8: ANY OTHER BUSINESS

Facilitation of Data Driven Decision-making in Support of Safety Risk Management-ICAO Safety Information Monitoring System (SIMS)

8.1 The subject was addressed in WP/19 presented by the Secretariat. The meeting noted that ICAO launched the new Safety Information Monitoring System (SIMS) project in 2017 (https://www.icao.int/safety/Pages/Safety-Information-Monitoring-Service.aspx). SIMS is built upon the iSTARS concept, with the difference that SIMS uses State data in addition to ICAO data. Member States can simply connect their own stored data (inspection results, occurrence reports, etc.) onto SIMS and generate safety information in the form of indicators, graphs and dashboards directly through the system.

8.2 It was highlighted that SIMS promotes cooperation among States and industry to collect and analyse data pertinent to the monitoring of safety performance, with no charge to the State.

8.3 The meeting noted that the States participating in SIMS can only view their own data. However, by signing a Memorandum of Understanding with ICAO, SIMS allows participating States to not only view their own data but also to securely share certain generated safety information with each other, such as ramp inspection information.

8.4 The implementation of SIMS within the ICAO Regions is based on a phased approach. In this respect, the meeting encouraged States, that have not yet done so, to contact ICAO (sims@icao.int with copy to icaomid@icao.int) for joining the ICAO SIMS project. States were also encouraged to exchange safety and air navigation information with other Member States through SIMS in support of safety risk management.

APPENDICES

APPENDIX 2A

FOLLOW-UP ACTION PLAN ON MIDANPIRG/16 CONCLUSIONS AND DECISIONS

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
CONCLUSION 16/1: MID RVSM SAFETY MONITORING REPORT (SMR) 2015 That, the MID RVSM Safety Monitoring Report (SMR) 2015 is endorsed.		MID RVSM SMR 2016	MIDANPIRG/16	Feb 2017	**Completed**
CONCLUSION 16/2: MID RVSM SMR 2017 That, a) the FPL/traffic data for the period **1 – 30 September 2017** be used for the development of the MID RVSM Safety Monitoring Report (SMR 2017); 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 c) the final version of the MID RVSM SMR 2017 be ready for presentation to and endorsement by MIDANPIRG/17.		State Letter Traffic Data	ICAO State	Aug 2017 Oct 2017	**Actioned** SL Ref.: AN 6/5.10.15A dated 31 Aug 2017 Data provided by most of the States Draft Version presented to the MIDRMA Board/15
CONCLUSION 16/3: MID REGION AIR NAVIGATION STRATEGY That, the revised MID Region Air Navigation Strategy (MID Doc 002, Edition February 2017) at Appendix 5.1A is endorsed.		MID AN Strategy (MID Doc 002)	MIDANPIRG/16	Feb 2017	**Completed**
CONCLUSION 16/4: APPROVAL OF THE AMENDMENT TO THE MID eANP VOLUME III That, the amendment to the MID eANP Volume III at Appendix 5.1B is approved.		Amendment Notification of Amendment	MIDANPIRG/16 ICAO	Feb 2017 May 2017	**Completed** Amendment was approved by MIDANPIRG/16 Notification of amendment issued on 18 June 2017

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
CONCLUSION 16/5: ASSESSMENT OF PBN IMPLEMENTATION That, States be invited to: a) explore means and ways to assess the benefit accrued from the implementation of PBN; and b) report on annual basis (by 1 November), the environmental benefits accrued from PBN implementation to the ICAO MID Office in order to be included in the MID Region Air Navigation Report.		State Letter Benefits accrued form PBN Implementation	ICAO States	Apr2017 Nov 2017 (annual basis)	**Actioned** SL Ref.: AN 6/28 – 17/120 dated 12 April 2017 (Bahrain, Jordan, Sudan)
CONCLUSION 16/6: ACTION PLAN FOR A-CDM IMPLEMENTATION That, in line with the MID Air Navigation Strategy, States concerned: a) be urged to develop their A-CDM implementation plan, with the support of ICAO MID Office, if required; and b) provide the ICAO MID Office with a copy of their plan before 1 November 2017.		State Letter States National Plan	ICAO States	Jun 2017 Nov 2017	**Actioned** SL Ref.: AN 5/23 – 17/174 dated 27 June 2017 (Bahrain, Sudan, UAE)
CONCLUSION 16/7: MID REGION AIR NAVIGATION REPORT-2016 That, the MID Region Air Navigation Report-2016 is endorsed.		MID AN Report	MIDANPIRG/16	Feb 2017	**Completed**

Conclusions and Decisions	Concerns/ Challenges (rationale)	Deliverable/ To be initiated by		Target date	Status/Remarks
Conclusion 16/8: MID Region Air Navigation Report-2017					**Actioned**
That, MID States be urged to:					
a) develop/update their National ASBU Implementation Plan, ensuring the alignment with and support to the MID Region Air Navigation Strategy (MID Doc 002); and		State Letter National ASBU Implementation Plan	ICAO States	Sep 2017 Nov 2017	SL Ref.: AN 1/7-17/188 dated 2 July 2017 (Bahrain, Egypt, Jordan, Qatar, Sudan & UAE)
b) provide the ICAO MID Office, with relevant data necessary for the development of the MID Region Air Navigation Report-2017, by 1 November 2017.		Data for AN Report 2017		Nov 2017	
Conclusion 16/9: Establishment of Heliports database					**Actioned**
That, States be urged to establish and maintain a database for Heliports with information about location and type of use, as a minimum.		State Letter	ICAO	Jun 2017	SL Ref.: AN 6/25 – 17/185 dated 29 June 2017 (Bahrain, Jordan, Oman)
Conclusion 16/10: Guidance for AIM Planning and Implementation in the MID Region					**Actioned/Ongoing**
That,					
a) the Guidance for AIM Planning and Implementation in the MID Region is endorsed as MID Doc 008; and		MID Doc 008	MIDANPIRG/16	Feb 2017	
b) States be encouraged to use the MID Doc 008 in their AIM planning and implementation.		State Letter Updated National AIM Roadmaps	ICAO States	May 2017 Nov 2017	SL Ref: AN 8/4-17/133 dated 30 April 2017 (UAE)
Conclusion 16/11: AIRAC adherence monitoring					**Actioned/Ongoing**
That,					
a) States be urged to:					

CONCLUSIONS AND DECISIONS	**CONCERNS/ CHALLENGES (RATIONALE)**	**DELIVERABLE/ TO BE INITIATED BY**		**TARGET DATE**	**STATUS/REMARKS**
i. implement a system for AIRAC adherence monitoring; and		AIRAC adherence monitoring system	State Letter	Nov 2017	
ii. report on annual basis (by 31 March) to the ICAO MID 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 5.2.2D.		State Letter Filled Questionnaire	ICAO States	Mar. 2017/ continuous Apr.2017/ continuous	SL Ref.: AN 8/4 – 17/087 dated 23 Mar 2017 13 States Replied (Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Sudan and UAE)
b) IATA report to the concerned State(s) and the ICAO MID Office any case of late publication of aeronautical information of operational significance and non-adherence to the AIRAC provisions.			IATA	Nov 2017/ continuous	
CONCLUSION 16/12: INTERREGIONAL SEMINAR ON "SERVICE IMPROVEMENT THROUGH INTEGRATION OF DIGITAL AIM, MET AND ATM INFORMATION"					**Completed**
That, States, Organizations and Industry be invited to actively participate in the Interregional Seminar on "Service Improvement through Integration of Digital AIM, MET and ATM Information Services" (Brussels, Belgium, 2-5 October 2017).		State Letter Actively participate in the Seminar	ICAO States, Organizations and Industry	Jun 2017 Oct 2017	SL Ref.: AN 8/28.1-17/175 dated 14 June 2017 Only 6 MID States participated
DECISION 16/13: DISSOLUTION OF THE MPCT					**Completed**
That, the MAEP Projects Coordination Team (MPCT) is dissolved and its duties and responsibilities be taken over by the MAEP Board.		Dissolution of MPCT	MIDANPIRG/16	Feb. 2017	
DECISION 16/14: MAEP BOARD TERMS OF REFERENCE					**Completed**
That, the MAEP Board Terms of Reference be endorsed as at **Appendix 5.2.2E.**		MAEP Board ToR	MIDANPIRG/16	Feb 2017	

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
CONCLUSION 16/15: MID IP NETWORK PROJECT (CRV)					**Actioned**
That,					
a) States that have already committed to join CRV, are invited to engage with the recommended supplier to establish individual service contracts; and		State Letter	ICAO	May 2017	SL Ref.: AN 6/31.4-17/160 dated 29 May 2017 (Egypt)
b) States that have not yet done so, are urged to carry out a comprehensive CBA related to the implementation of an IP Network under the CRV framework; and inform the ICAO MID Office, as soon as possible, about their decision related to the joining of CRV.		Engage with the recommended supplier	States	Dec 2017	
DECISION 16/16: ATFM TASK FORCE					**Actioned**
That,					
a) an ATFM Task Force be established to develop an ATFM Concept of Operations for the MID Region;		Establishment of ATFM TF	MIDANPIRG/16	Feb 2017	Completed
b) the ATM SG/3 meeting develop the terms of reference of the ATFM Task Force; and		ATFM Concept of Operations	ATFM TF	Sep 2017	Ongoing ATFM TF/1 meeting (Muscat, 23-27 Sep 2018)
c) States support the ATFM Task Force through:					
i. assignment of ATFM Focal Point to contribute to the work of the Task Force; and		Assign ATFM FP	ICAO	Apr 2017	SL Ref.: AN 6/5.5 – 17/121 dated 12 Apr. 2017
ii. provision of required data in timely manner, and in particular to the survey that will be carried out related to the airspace and sectors capacity, hot-spots, ATFM measures/system, etc.		Support ATFM TF and provide required data	States	May 2017 Jan 2018	

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
DECISION 16/17: MID ROUTE DEVELOPMENT WORKING GROUP (MID RDWG) That,					**Completed**
a) a MID Route Development Working Group be established to support the route development within the MID Region and at the interfaces with ICAO AFI, APAC and EUR Regions; and		Establishment of RDWG	MIDANPIRG/16	Feb 2017	Completed
b) the ATM SG develop the terms of reference of the MID RDWG.		RDWG ToR	ATM SG	May 2017	Completed ATM SG/3 Draft Decision 3/3
DECISION 16/18: WORLD CUP 2022 TASK FORCE That,					**Actioned**
a) a World Cup 2022 Task Force be established to develop and follow-up the implementation of a collaborative action plan to accommodate the expected high increase in traffic, in a safe and efficient manner, taking into consideration similar experiences;		Establishment of World Cup 2022	MIDANPIRG/16	Feb 2017	Completed
b) the Task Force address other major events such as the EXPO 2020; and					
c) the ATM SG develop the terms of reference of the Task Force.		TF ToR	ATM SG	May 2017	Completed ATM SG/4 Draft Decision 4/
CONCLUSION 16/19: IMPLEMENTATION OF REDUCED RADAR LONGITUDINAL SEPARATION IN THE MID REGION That,		State Letter	ICAO	Apr 2017	**Actioned** SL Ref.: AN 6/5.5 – 17/122 dated 12

Conclusions and Decisions	**Concerns/ Challenges (rationale)**	**Deliverable/ To be initiated by**		**Target date**	**Status/Remarks**
a) States, that have not yet done so; i) be urged to implement 20 NM radar longitudinal separation; and ii) be encouraged to further reduce the radar longitudinal separation within the MID Region to 10 NM; b) the ATM SG monitor the status of implementation and take appropriate actions to foster the implementation., metrics and targets, for which the necessary data is available**.**					Apr. 2017 (Bahrain, Jordan) Continuous
CONCLUSION 16/20: SIDs AND STARs NEW PHRASEOLOGIES That, States be urged to: a) implement the provisions of amendment 7 to ICAO Doc 4444, in particular those related to the SIDs and STARs new phraseologies; and b) provide the ICAO MID Office with their implementation plan by 1 May 2017.		State Letter Implementation plans for the new SIDs and STARs phraseologies	ICAO States	Apr 2017 May 2017	**Actioned** SL Ref.: AN 6/5.5 – 17/123 dated 12 Apr. 2017 States provided feedback
DECISION 16/21: SAR LONGSTANDING DEFICIENCIES That**,** the ATM SG explore ways and means to support States in the elimination of the longstanding SAR deficiencies.		ATM SG	Means to support States with SAR deficiencies	May 2017	**Actioned** ATM SG/3 meeting agreed to include guidance in the MID Region SAR Plan

Conclusions and Decisions	**Concerns/ Challenges (rationale)**	**Deliverable/ To be initiated by**		**Target date**	**Status/Remarks**
Conclusion 16/22: Mode S Interrogator Code (IC) allocation					**Actioned**
That, States, that have not yet done so, be urged to:					
a) provide the ICAO MID Office with their Mode S Interrogator Code (IC) Focal Points; and		State Letter	ICAO	Sep 2017	SL Ref.: AN 7/27 – 17/329 dated 26 Nov. 2017 (Egypt, Jordan, Kuwait, Saudi Arabia, Sudan)
b) register to the MICA application for the allocation of the Mode S Interrogator Code (IC) at: https://ext.eurocontrol.int/mica/Index.action		Focal Point(s) MICA Registration		Dec 2017	
Decision 16/23: MID Region Surveillance Plan					**Ongoing**
That, the MID Region Surveillance Plan be developed by the CNS SG, based on the operational needs identified by the ATM SG.		MID Region Surveillance Plan	CNS SG	Q1 2018	CNS SG/8 Draft Conclusion 8/9
Conclusion 16/24: FTBP Testing Document					**Completed**
That, the First Edition of File Transfer Body Part (FTBP) Testing Document at **Appendix 5.2.2N** is endorsed.		FTBP Testing Document	MIDANPIRG/16	Feb 2017	
Decision 16/25: Terms Of Reference Of The MIDAMC STG					**Completed**
That, the Terms of Reference and Work Programme of the MIDAMC STG be updated as at **Appendix 5.2.2O**.		MIDAMC STG TORs	MIDANPIRG/16	Feb 2017	
Decision 16/26: ATM Data Security Action Group					**Ongoing**
That, the ATM Data Security Action Group (ADSAG) be:		State Letter	ICAO		
a) established to develop the MID Region ATM Data Security Plan, to be presented to the CNS SG/8.		MID Region ATM Data Security Plan	ADSAG members	Jun 2017	SL Ref: AN 6/38 – 17/334 dated 29 Nov. 2017

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
b) composed of members from Bahrain, Iran, Kuwait, Oman, Saudi Arabia, UAE (Rapporteur), ICAO and IFAIMA.				Q1-2018	(Bahrain, Egypt, Jordan, Kuwait, UAE)
CONCLUSION 16/27: 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.		State Letter Participate in special air-report tests	ICAO States	July 2017 Sep 2017 / Feb 2018	**Completed** SL Ref.: AN 10/16 – 17/208 dated 1 August 2017 Jordan, Kuwait and Sudan: Sep 2017 & UAE: Feb 2018
CONCLUSION 16/28: MID REGIONAL SIGMET GUIDE That the MID Regional SIGMET Guide as provided at **Appendix 5.2.2Q** is endorsed and be published as ICAO MID Doc 009.		MID Doc 009 updated	ICAO	Feb 2017	**Completed**
CONCLUSION 16/29: PROPOSAL FOR AMENDMENT TO MID ANP VOLUMES I AND II (MET PART) That ICAO initiate proposals for amendment to the MID ANP (Doc 9708) Volumes I and II, to include the changes at **Appendices 5.2.2R** and **5.2.2S,** respectively.		Coordination with HQ	ICAO	2018	**Ongoing** Coordination with HQ ongoing
DECISION 16/30: DISSOLUTION OF THE ATM PERFORMANCE MEASUREMENT TASK FORCE (APM TF) That,					**Completed**
a) the APM TF is dissolved; and		APM TF dissolution	MIDANPIRG/16	Feb 2017	Completed
b) the MIDANPIRG Organizational Structure contained in the MIDANPIRG Procedural Handbook (MID Doc 001) be amended accordingly.		MID Doc 001 updated	ICAO	May 2017	Completed

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
CONCLUSION 16/31: ENVIRONMENTAL PROTECTION That, States that have not yet done so, be invited to:					**Actioned/Ongoing**
a) provide the ICAO MID Regional Office with updated contact details of their State's CO2 Action Plan/Environment Focal Points;		State Letter	ICAO	May 2017	SL Ref: EN 1/5-17/171 dated 7 June 2017 (Egypt, Iraq, Qatar)
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		CO2 Action Plans	States	2018	
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		Dedicated structure to Environmental protection			
DECISION 16/32: REVISED ANSIG TERMS OF REFERENCE That,					**Completed**
a) the ANSIG Terms of Reference (TORs) be updated as at **Appendix 7A**; and		Updated TORs	MIDANPIRG/16	Feb 2017	Completed
b) the MIDANPIRG Procedural Handbook (MID Doc 001) be amended accordingly.		MID Doc 001 updated	ICAO	May 2017	Completed

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AIR NAVIGATION REPORT

ICAO Middle East Region

SECOND EDITION (REFERENCE PERIOD: January 2017 – June 2018)

MONITORING ASBU IMPLEMENTATION

DRAFT

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A Coordinated Approach to Regional Air Navigation Systems Implementation

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Regional Director,
ICAO Middles East Office

The air transport industry plays a major role in world economic activity. It directly and indirectly supports 67.3 million jobs by aviation worldwide, contributes over $2.7 trillion to global Gross Domestic Product (GDP), and carries over 4.1 billion passengers and 53 million tonnes of freight annually.

This is illustrated by the fact that over half of the world's 1.2 billion tourists who travelled across international borders last year were transported by air, and that air transport now carries some 35% of world trade by value. Indeed, more than 90% of cross border Business-to-Consumer (B2C) e-commerce was carried by air transport.

Middle East has been the fastest growing Region for passenger and cargo traffic since 2011. In 2016, MID air carriers recorded 11.8% growth in Revenue Passenger-Kilometers (RPKs). Although this growth has declined to 6.9% in 2017, the Region carried 14% RPK share in the year 2017.

The continuing growth of traffic in the MID Region places increased demand on airspace capacity, which necessitates an optimum utilization of the available airspace and airports.

One of the key elements to maintaining the vitality of civil aviation is to ensure safe, secure, efficient and environmentally sustainable operations at the global, regional and national levels. In this respect, ICAO works constantly to address the expectations of the aviation community in all key performance areas through the following coordinated activities:

- Policy and Standardization initiatives;
- Implementing programmes to address performance issues;
- Monitoring of key performance trends and indicators; and
- Performance Analysis.

The GANP represents a rolling, 15-year strategic methodology which leverages existing technologies and anticipates future developments based on State/ industry agreed operational objectives.

Its structured approach, organized in blocks of upgrades in non-overlapping six-year time increments starting in 2013 and continuing through 2031 and beyond, provides a basis for sound investment strategies and will generate commitment from States, equipment manufacturers, operators and service providers.

The GANP also explores the need for more integrated aviation planning at both regional and national level and addresses required solutions through the consensus-driven Aviation System Block Upgrade (ASBU) systems engineering modernization strategy.

In all of its coordinated activities, ICAO always strives to achieve a balance between the need for increased capacity and efficiency while maintaining aviation safety and the impact on climate change at an acceptable level.

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.

MID Air Navigation Report is the main tool for monitoring and reporting on the status of air navigation systems implementation in the MID Region.

This second edition of the report provides update on the status and progress of the Priority 1 ASBU Block 0 Modules within the ICAO MID Region during the reporting period of January 2017 to June 2018.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY 6
1. INTRODUCTION 8

1.1 Objective 8
1.2 Background 8
1.3 Scope 9
1.4 Collection of data 10
1.5 Structure of the Report 11

2. STATUS AND PRORESS OF ASBU IMPLEMENTATION 12

2.1 MID Region ASBU Block 0 Modules Prioritization 13
2.2 ASBU Implementation status and progress in the MID Region 15
  2.2.1 B0-APTA 15
  2.2.1 B0-SURF 17
  2.2.1 B0-ACDM 19
  2.2.1 B0-FICE 21
  2.2.1 B0-DATM 23
  2.2.1 B0-AMET 26
  2.2.1 B0-FRTO 28
  2.2.1 B0-NOPS 29
  2.2.1 B0-ACAS 31
  2.2.1 B0-SNET 33
  2.2.1 B0-CDO 35
  2.2.1 B0-CCO 37

3. ASBU BLOCK 0 STATUS OF IMPLEMENTATION OUTLOOK FOR 2020......39

3.1 Status of Implementation - 2020 39

4. ENVIRONMENTAL PROTECTION......40

4.1 Introduction 40
4.2 States' Action Plan on CO2 emission 41
4.1 Estimation of the Environmental Benefits accrued from the implementation of ASBU Block 0 Modules 42

5. SUCCESS STORIES/BEST PRACTICES 43

5.1 NCLB ACTIVITIES IN THE MID REGION 43
5.2 UAE Airspace Restructuring Project 43
5.3 JORDAN: AIRPORT CARBON ACCREDITATION PROGRAM IN AMMAN/QUEEN ALIA INTERNATIONAL AIRPORT 43

6. CONCLUSION......46

APPENDIX A Status of ASBU Block 0 Modules
APPENDIX B ASBU Block 0 Status of Implementation Outlook 2020

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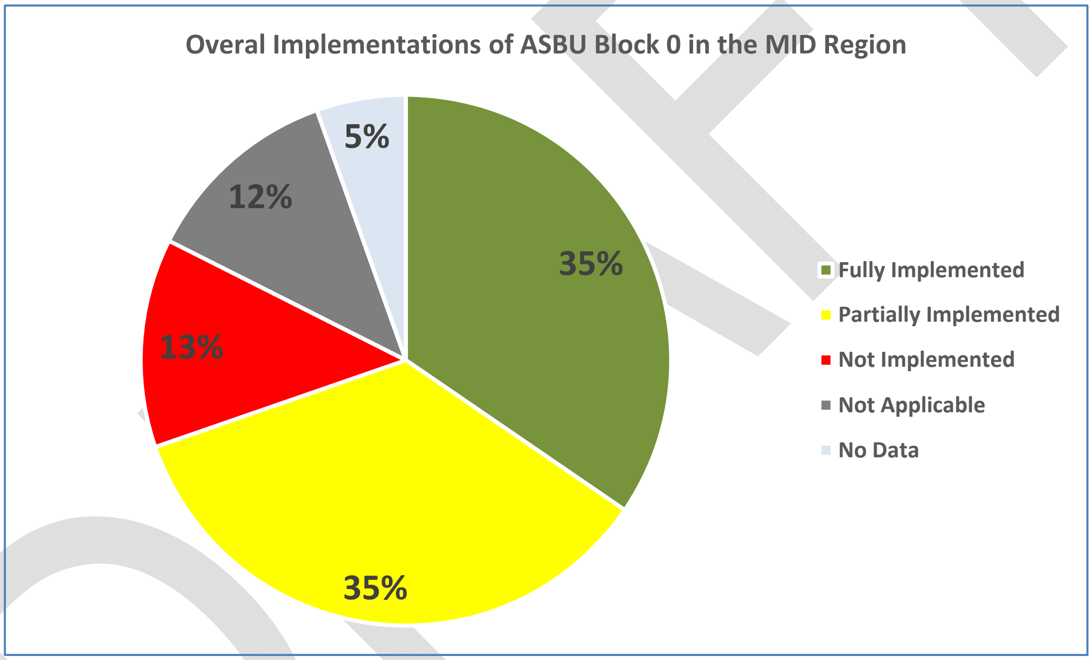
EXECUTIVE SUMMARY

The second edition of the ICAO MID Air Navigation Report (2017-18) provides an overview of the status of implementation of the Priority 1 ASBU Block 0 Modules in the MID Region as well as the progress achieved by MID States from the first edition of the MID Air Navigation Report (2016).

The main part of the document includes Section 2, which provides the status of implementation and the Regional Dashboard for the Priority 1 ASBU Block 0 Modules in the MID Region through different statistical maps and charts.

This Section will be complemented by providing the Outlook 2020 of the Region in Section 3 and environmental protection matters in Section 4. Section 5 provides some best practices/success stories of States in the implementation of ASBU Block 0 Modules.

To summarize the implementation status and progress of ASBU Block 0 Modules, the following high level ASBU Block 0 Implementation Dashboards present status and progress achieved in the implementation of each Module and by State. Detailed status is provided in Section 2.



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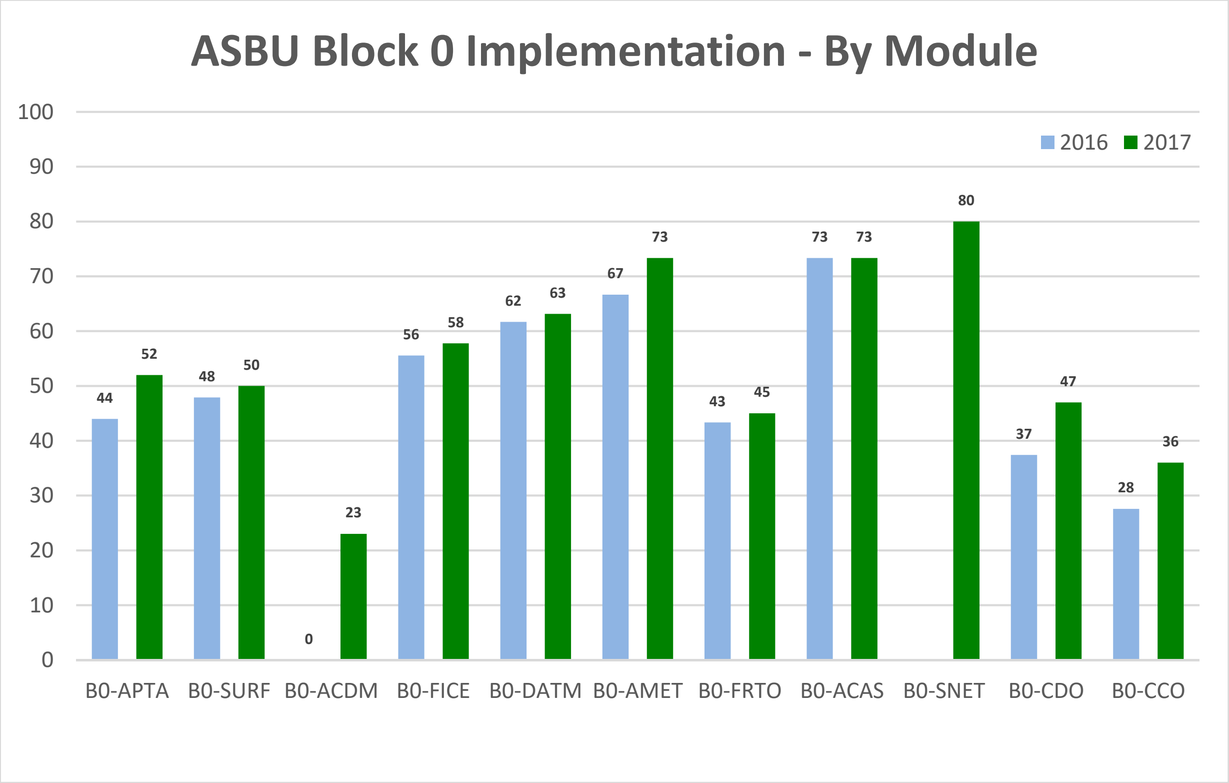
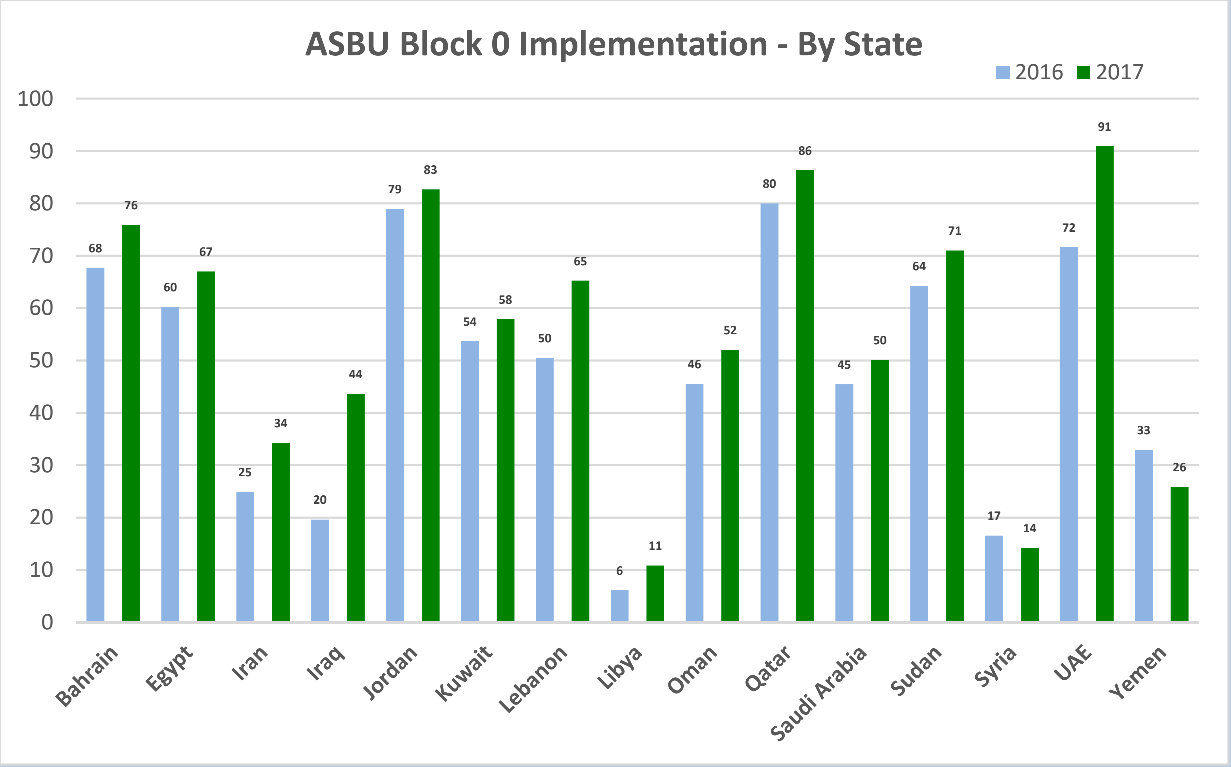




Note 1 – utmost care was taken in the calculation of percentages, figures and numbers, however the statistics and graphs in this report should be considered as approximate amounts.
Note 2 – progress of States from 2016 to 2017 may be from the States implementation as well as some changes in the Modules structure (i.e. introduction of new element for B0-AMET, introduction of B0-SNET as a new Priority1 Module and definition of applicable aerodromes for B0-CDO and B0-CCO)

1. INTRODUCTION

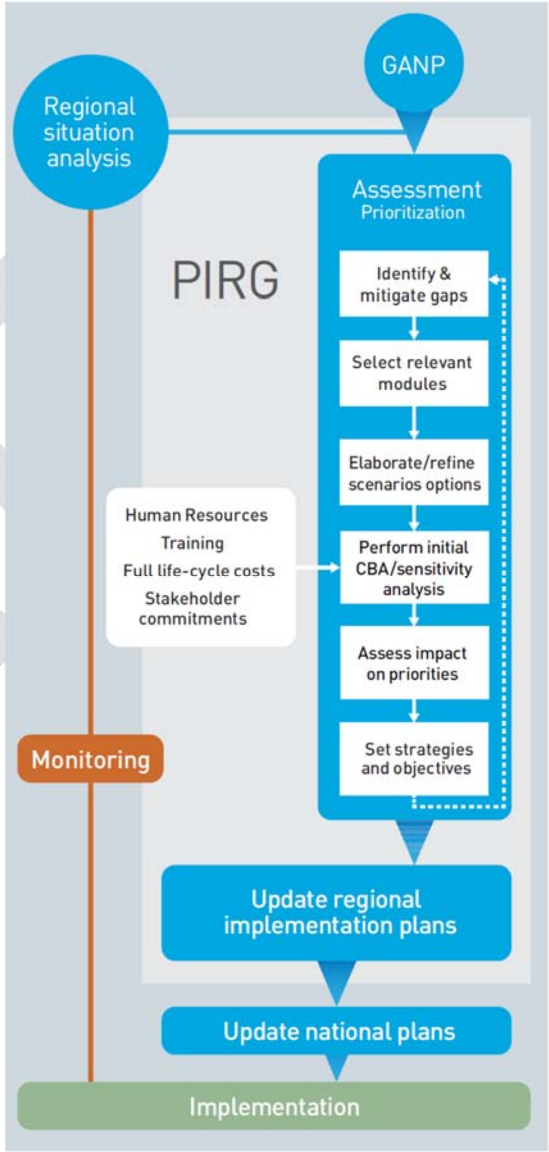
1.1 Objectives

The second edition of the ICAO 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 period January 2017 till June 2018.

The implementation status data covers the fifteen (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.


GANP
Regional situation analysis
PIRG
Assessment
Prioritization
Identify & mitigate gaps
Select relevant modules
Elaborate/refine scenarios options
Human Resources
Training
Full life-cycle costs
Stakeholder commitments
Perform initial CBA/sensitivity analysis
Assess impact on priorities
Monitoring
Set strategies and objectives
Update regional implementation plans
Update national plans
Implementation

Regional Planning

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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 updated by MIDANPIRG/15 and 16 and published as MID Doc 002. The Strategy includes 12 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.

Doha Declaration, which was endorsed by the third meeting of Directors General of Civil Aviation (DGCA-MID/3) (Doha, Qatar, 27-29 April 2015), has set five Targets for the Air Navigation Capacity and Efficiency, as follows:

1- *Optimization of Approach Procedures including vertical guidance (PBN):* Implement PBN approach procedures with vertical guidance, for all runways ends at international aerodromes, either as the primary approach or as a back-up for the precision approaches by 2017

2- *Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration:* 11 States to implement AIDC/OLDI between their ACCs and at least one adjacent ACC by 2017

3- *Service Improvement through Digital Aeronautical Information Management:* All States to complete implementation of Phase I of the transition from AIS to AIM by 2017

4- *Meteorological information supporting enhanced operational efficiency and safety:* 12 States to complete the implementation of QMS for MET by 2017

5- *ACAS Improvement:* All States require carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons by 2017

The MID Region Air Navigation Report is an integral part of the air navigation planning and implementation process in the MID Region; and the main tool for the monitoring and assessing the implementation of Air navigation Systems and ASBUs 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 reference period January 2017 to June 2018.

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.

ICAO MID Region
SYRIA
LEBANON
IRAQ
IRAN
JORDAN
KUWAIT
LIBYA
EGYPT
BAHRAIN
QATAR
SAUDI ARABIA
UAE
OMAN
SUDAN
YEMEN

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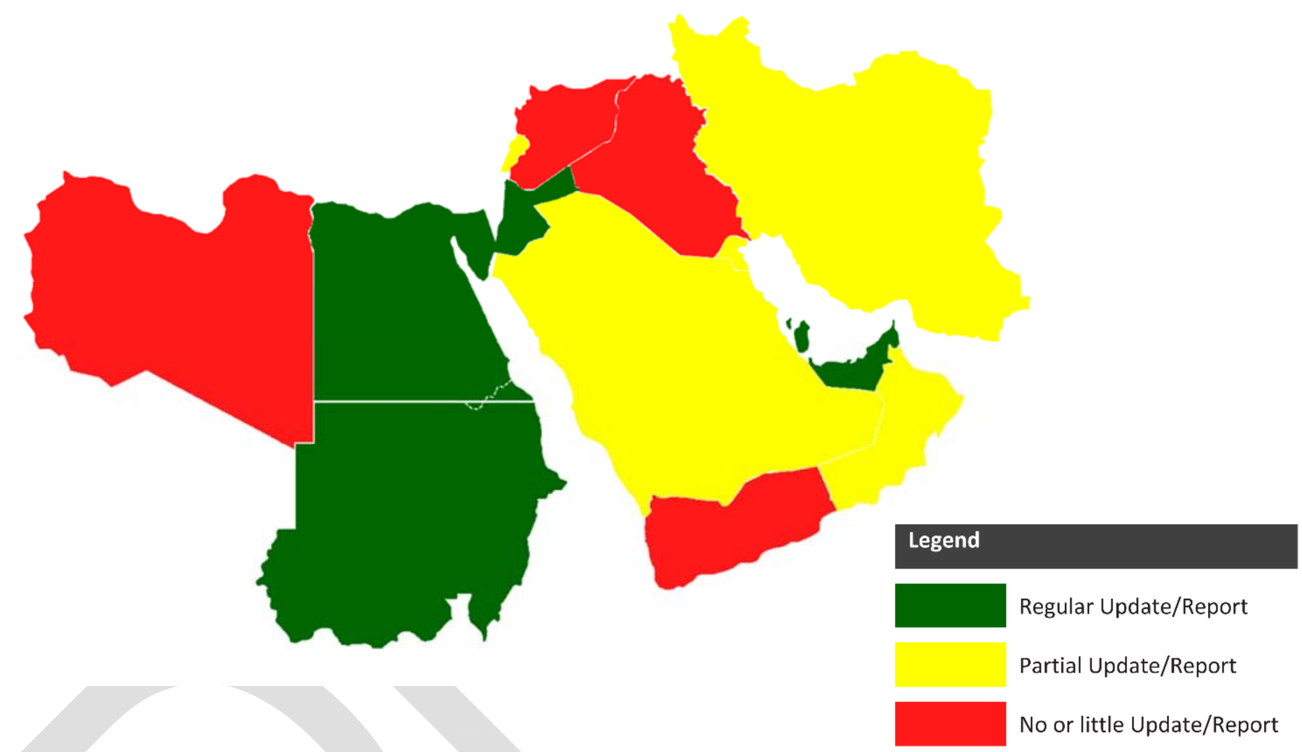
1.4 Collection of data

For the purpose of collecting necessary data for the MID Air Navigation Report-2017, a State Letter Ref.: AN 1/7 – 17/188 was issued on 2 July 2017, to follow-up on the MIDANPIRG Conclusion 16/8, which urged States to provide the relevant data necessary for the development of the MID Region Air Navigation Report-2017. However, some States did not respond to the State Letter. Status of States providing update is shown in the following map.

Data collected from States was complemented by some updates provided mainly through the previous 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).

Status of Reporting by States



1.5 Structure of the Report

Executive Summary provides an overall review of the ASBU Block 0 implementation in the MID Region.

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 and their progress in graphical and numeric form.

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

Section 4 provides an update on global developments related to the environmental protection, status of State's CO2 action plans and the operational improvements that had been/would be implemented in the MID Region.

Section 5 includes few success stories related to the implementation of ASBU Block 0 Modules, as well as their associated operational improvements and environmental benefits.

Section 6 concludes the Report by providing a brief analysis on the status of implementation and the progress of the different priority 1 ASBU Block 0 Modules.

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.

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2. STATUS AND PROGRESS OF ASBU 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.

This chapter of the report gives an overview of the status of implementation for each of the Priority 1 ASBU Block 0 Modules for the MID States. The status of implementation of each Module versus its target(s) is also provided for each priority 1 ASBU Block 0 Module.

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

Legend

🟩 Completed
🟩 Partially Completed (50%+)
🟨 Partially Completed/Late (50%-)
🟥 Not Started/Not Implemented
◼ Not Applicable
▨ Missing Data

Note – Missing data is excluded in the calculation of the average regional status of implementation.

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2.1 MID Region ASBU Block 0 Modules Prioritization

This report covers twelve (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 February 2017, refers).

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		
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	2				

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	through climb/descent procedures using ADS-B					
B0-ACAS	ACAS Improvements	1	2014	CNS SG		
B0-SNET	Increased Effectiveness of Ground-Based Safety Nets	1	2017	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		

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ASBU Implementation Status and Progress in the MID Region

2.1.1 B0-APTA

2.1.1.1 B0-APTA Elements and Performance Targets

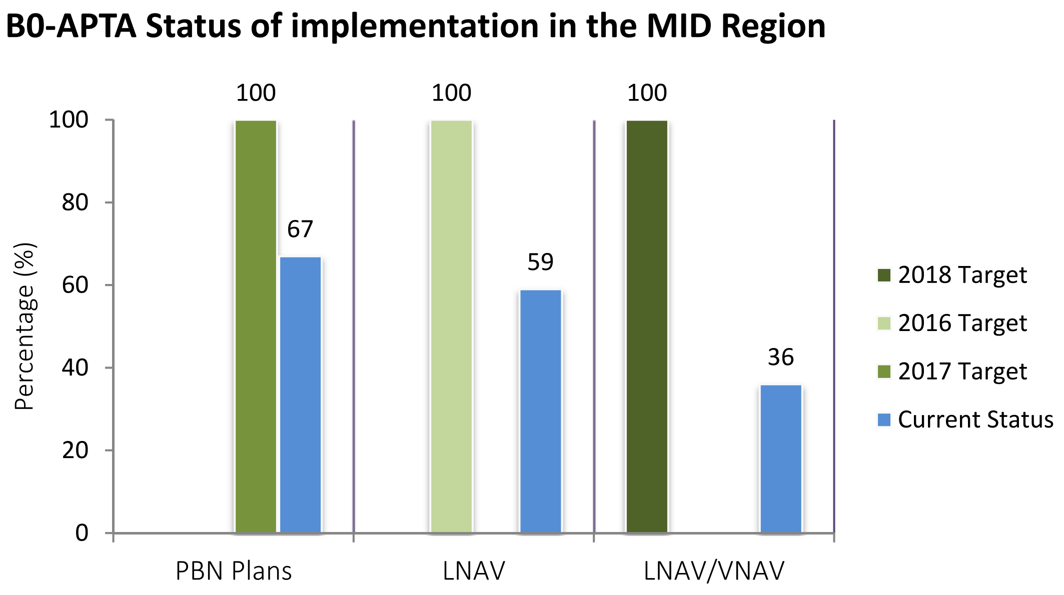
The use of performance-based navigation (PBN) and ground-based augmentation system (GBAS) landing system (GLS) procedures will enhance the reliability and predictability of approaches to runways, thus increasing safety, accessibility and efficiency. This is possible through the application of Basic global 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	100% by Dec. 2018
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

2.1.1.2 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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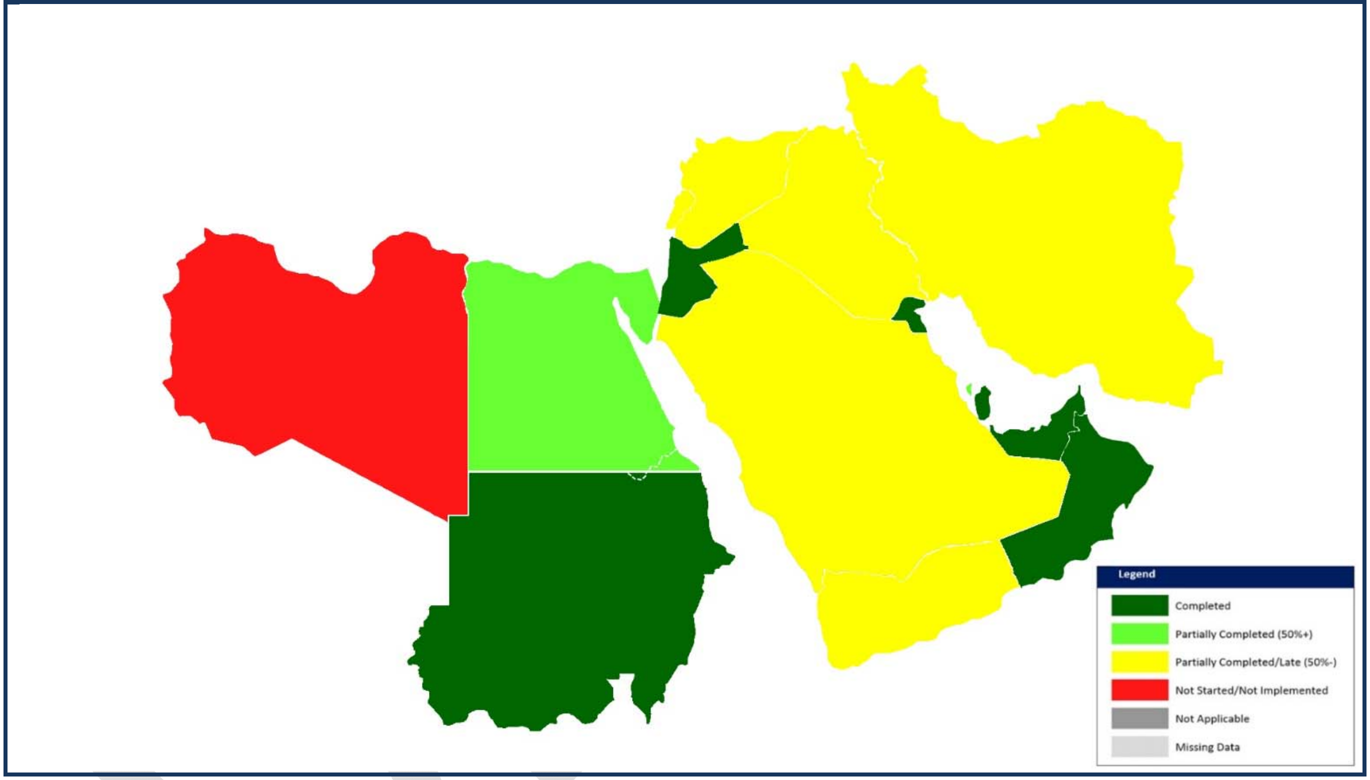
The Table and map below provide the status of implementation of B0-APTA in each of the MID States:

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 good (with approximately 52% implementation).

B0-APTA Status of implementation in the MID Region


Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

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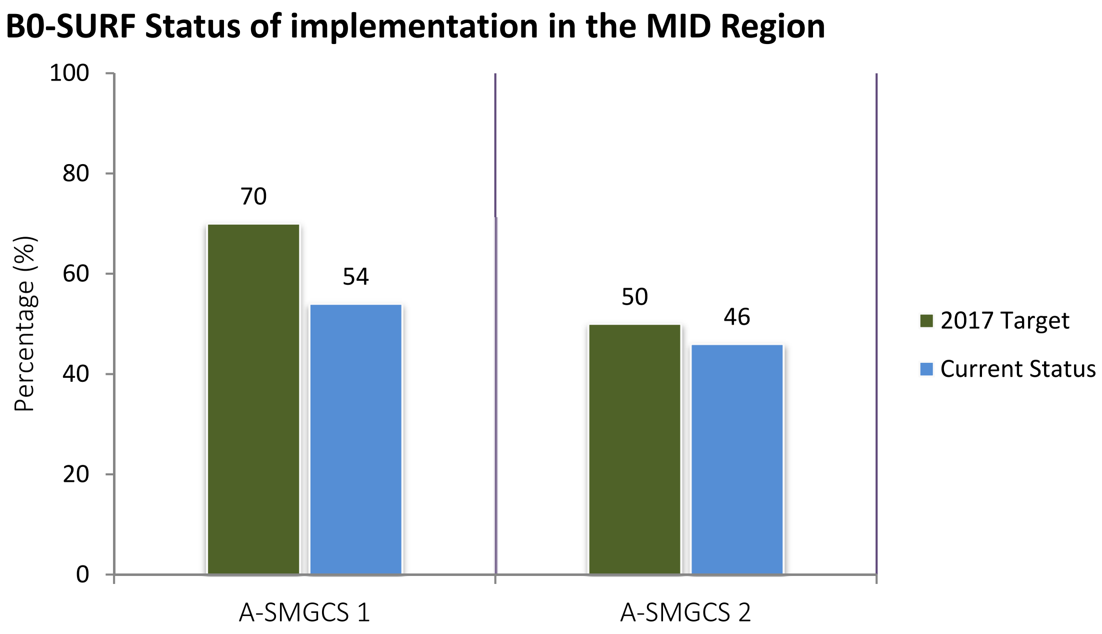
2.1.2 B0-SURF

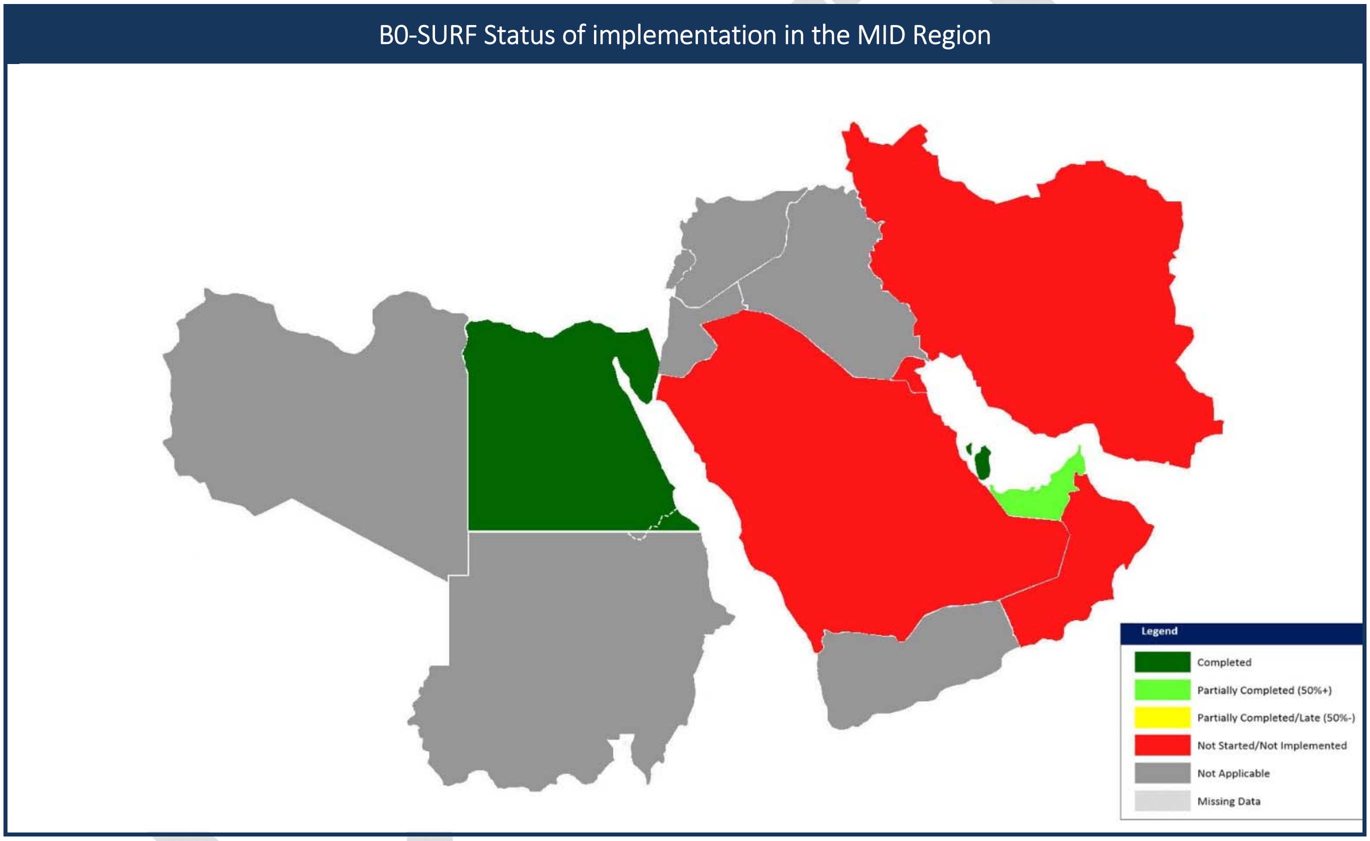
Basic A-SMGCS provides surveillance and alerting of movements of both aircraft and vehicles on the aerodrome thus improving runway/aerodrome safety. ADS-B information is used when available (ADS-B APT).

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


B0-SURF Status of implementation in the MID Region

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 50% implementation). B0-SURF is not applicable for 7 States.


B0-SURF Status of implementation in the MID Region

Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

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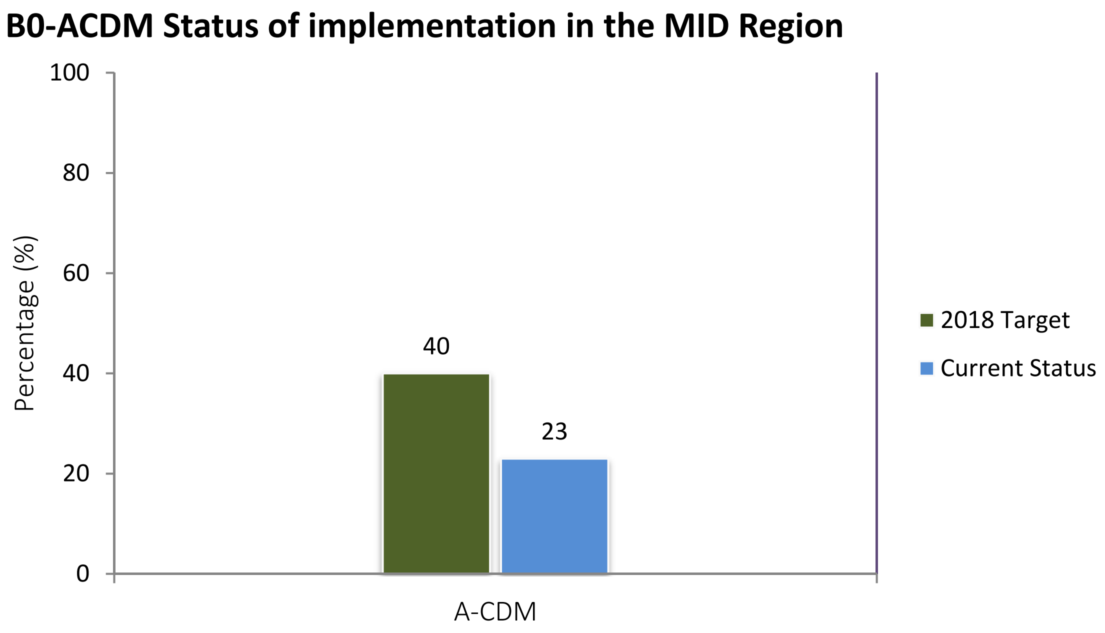
2.1.3 B0-ACDM

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 manoeuvering areas and enhance safety, efficiency and situational awareness.

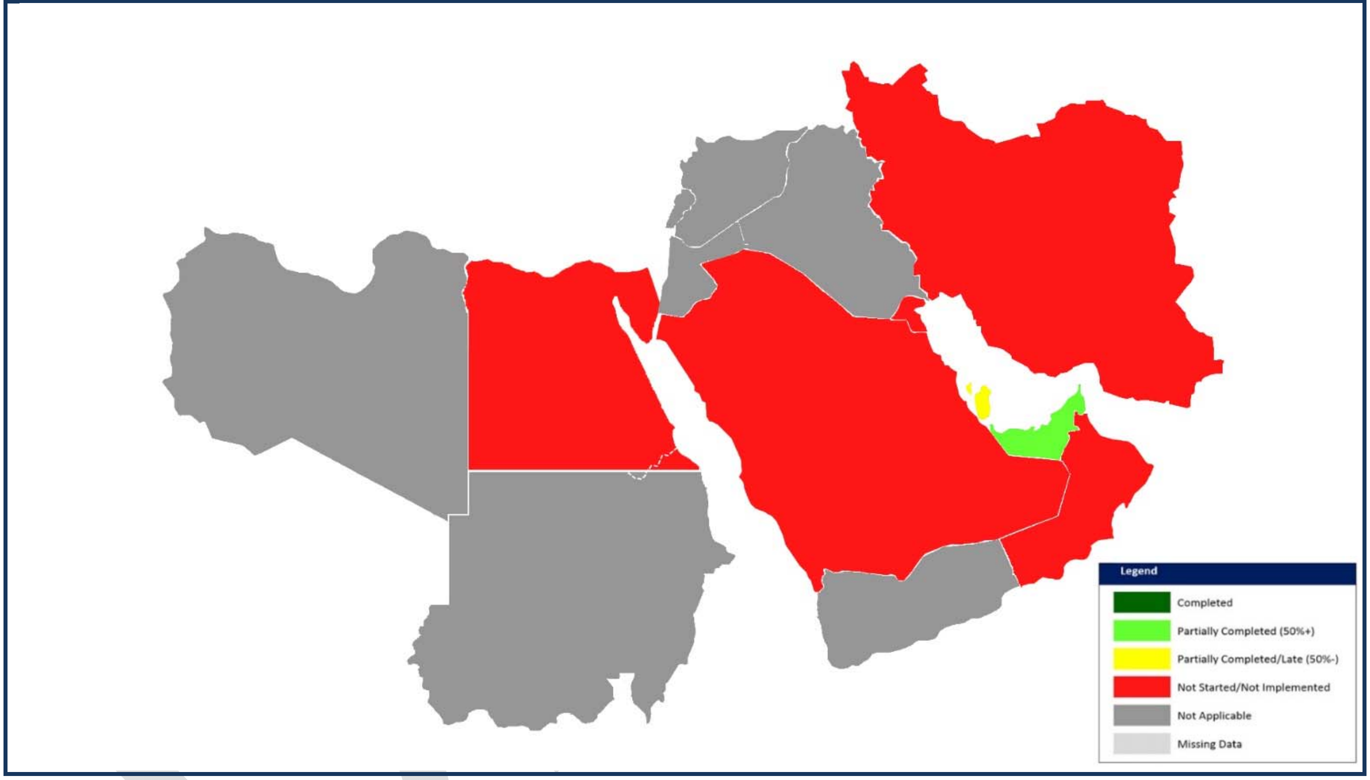
B0 – ACDM: Improved Airport Operations through Airport-CDM			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
A-CDM	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented improved airport operations through airport-CDM Supporting metric: Number of applicable international aerodromes having implemented improved airport operations through airport-CDM	50% by Dec. 2018



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

The progress for B0-ACDM is very slow (with approximately 23% implementation. Nevertheless, implementation is ongoing in some States.

B0-ACDM Status of implementation in the MID Region


Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

2.1.4 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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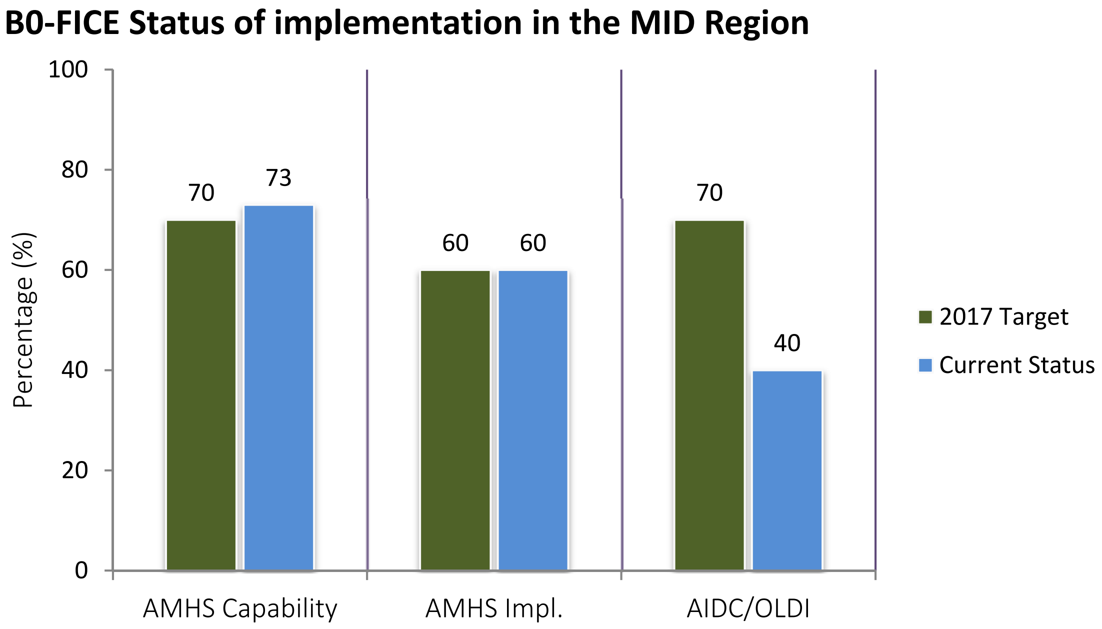
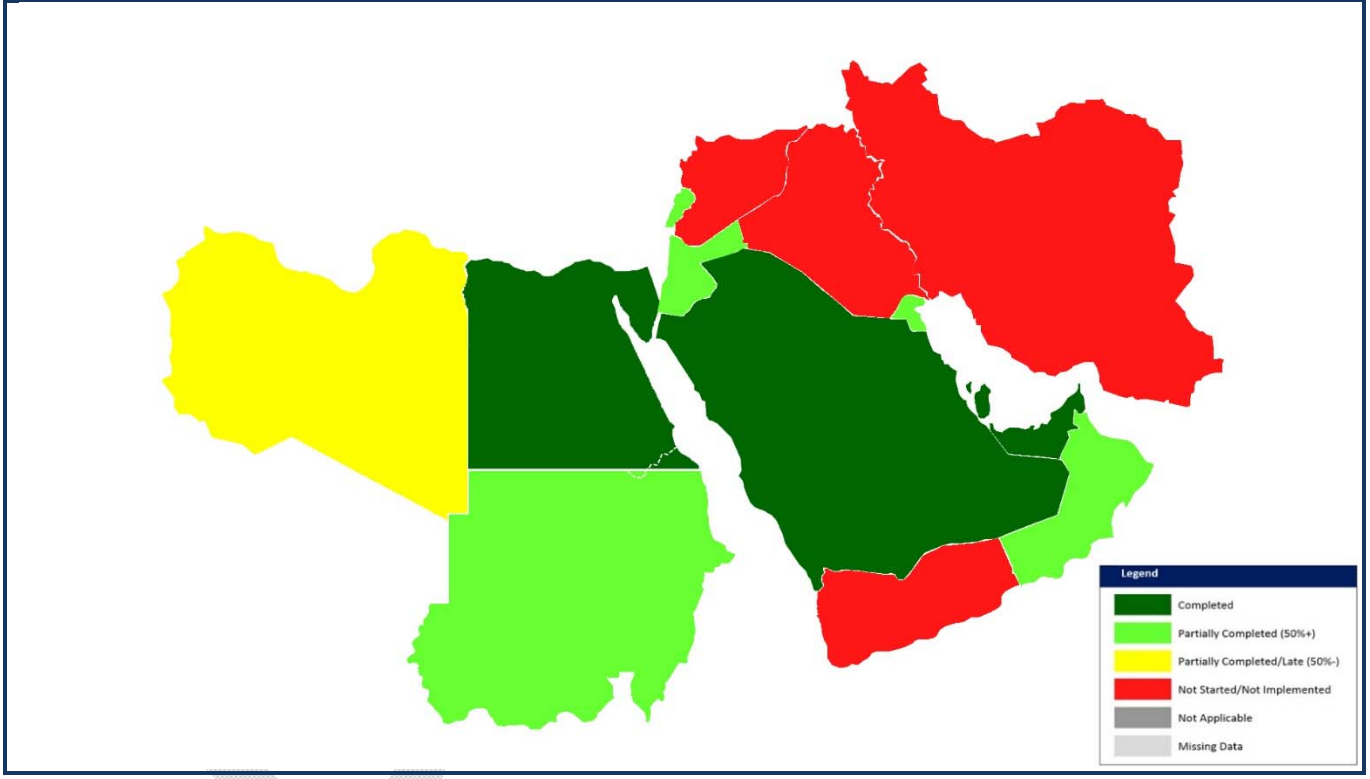


Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-FICE	AMHS capability	🟩	🟩	🟥	🟥	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟥	🟩	🟥
	AMHS impl. /interconnection	🟩	🟩	🟥	🟥	🟩	🟩	🟥	🟥	🟩	🟩	🟩	🟩	🟥	🟩	🟥
	Implementation of AIDC/OLDI between adjacent ACCs	🟩	🟩	🟥	🟥	🟥	🟥	🟩	🟥	🟥	🟩	🟩	🟥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

The progress for B0-FICE is acceptable (with approximately 58% implementation).

B0-FICE Status of implementation in the MID Region


Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

2.1.5 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	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. 2020

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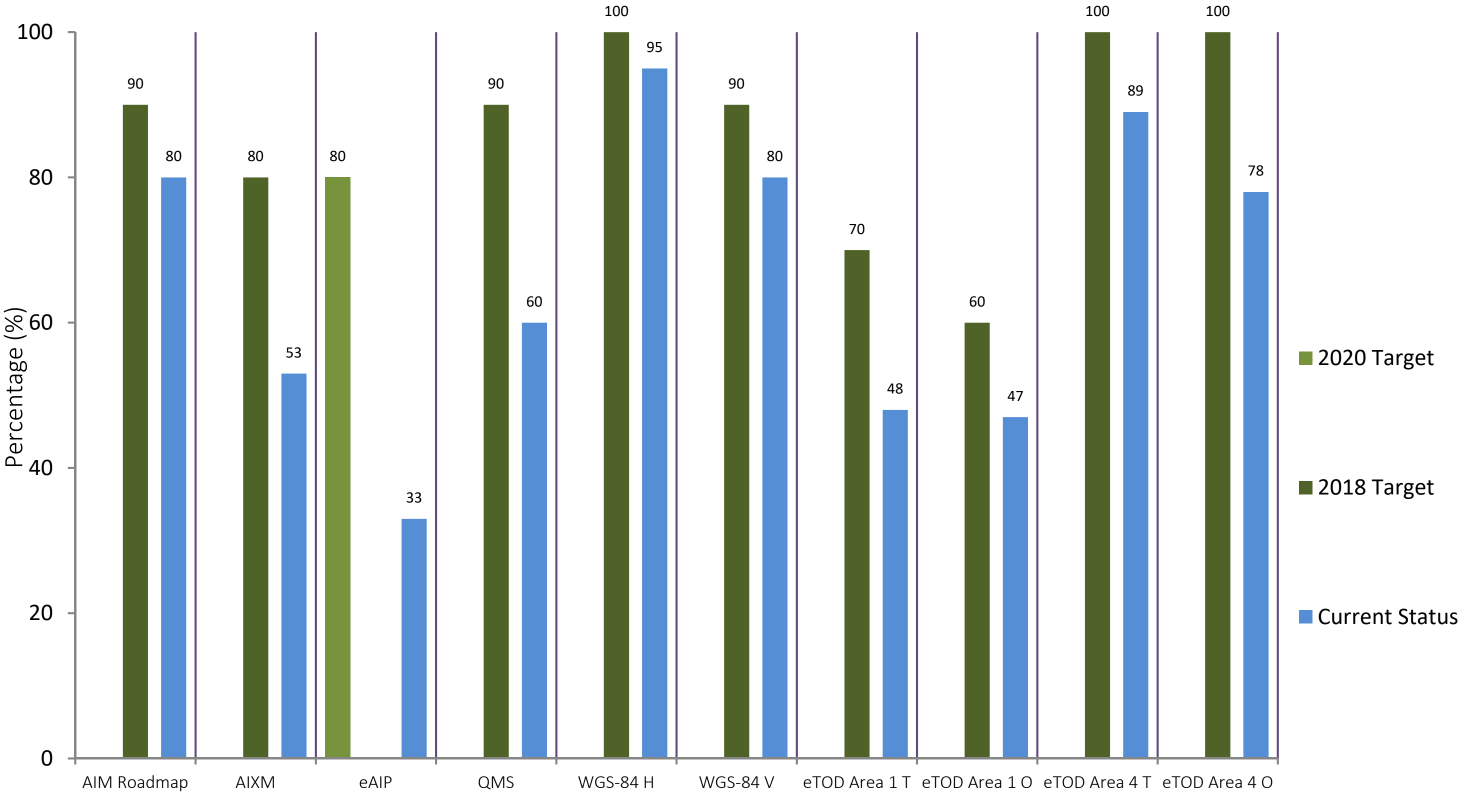
B0-DATM Status of implementation in the MID Region



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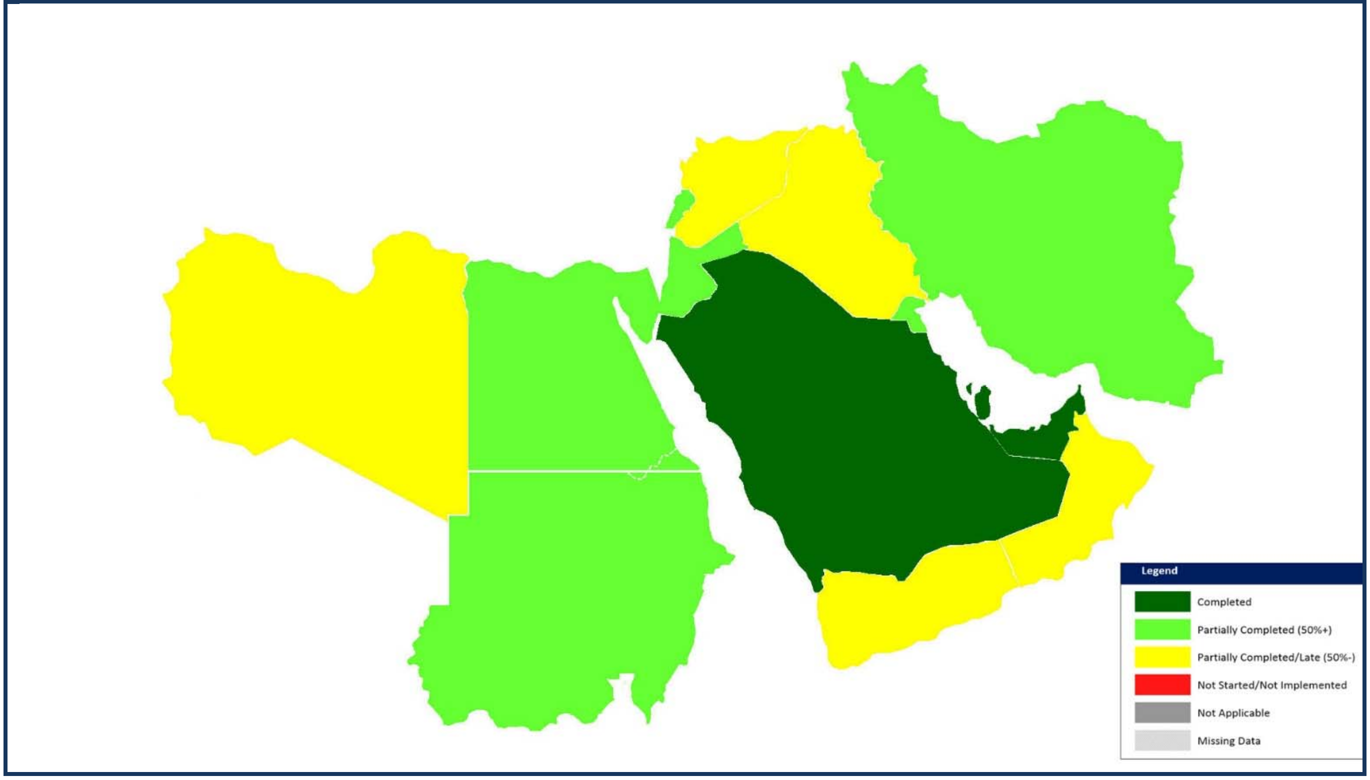
Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-DATM	National AIM Roadmap	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟥	🟩	🟩	🟩	🟩	🟥	🟩	🟥
	AIXM	🟩	🟩	🟥	🟥	🟩	🟥	🟩	🟥	🟥	🟩	🟩	🟩	🟥	🟩	🟥
	eAIP	🟩	🟥	🟥	🟥	🟥	🟥	🟩	🟥	🟥	🟩	🟩	🟥	🟥	🟩	🟥
	QMS	🟩	🟩	🟩	🟥	🟩	🟩	🟥	🟥	🟥	🟩	🟩	🟩	🟥	🟩	🟥
	WGS-84 – H	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟨	🟩	🟩	🟩	🟩	🟩	🟩	🟩
	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 good (with approximately 63% implementation). eTOD Area 4 is not applicable in 6 States.

B0-DATM Status of implementation in the MID Region

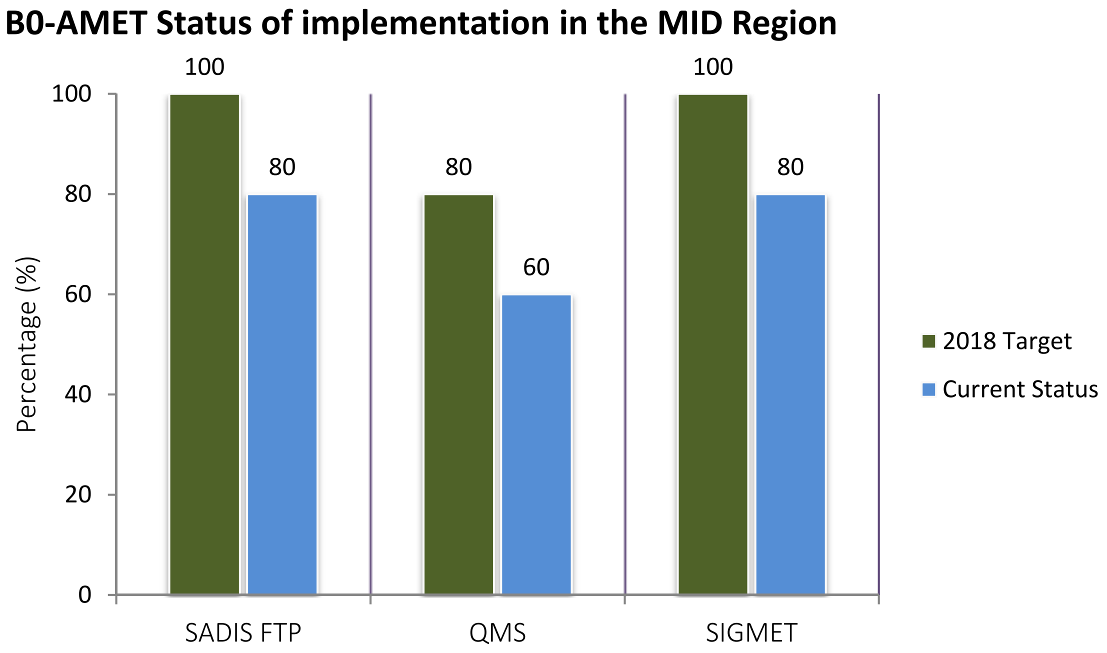

Legend
🟩 Completed
🟢 Partially Completed (50%+)
🟨 Partially Completed/Late (50%-)
🟥 Not Started/Not Implemented
⬛ Not Applicable
⬜ Missing Data

2.1.6 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.

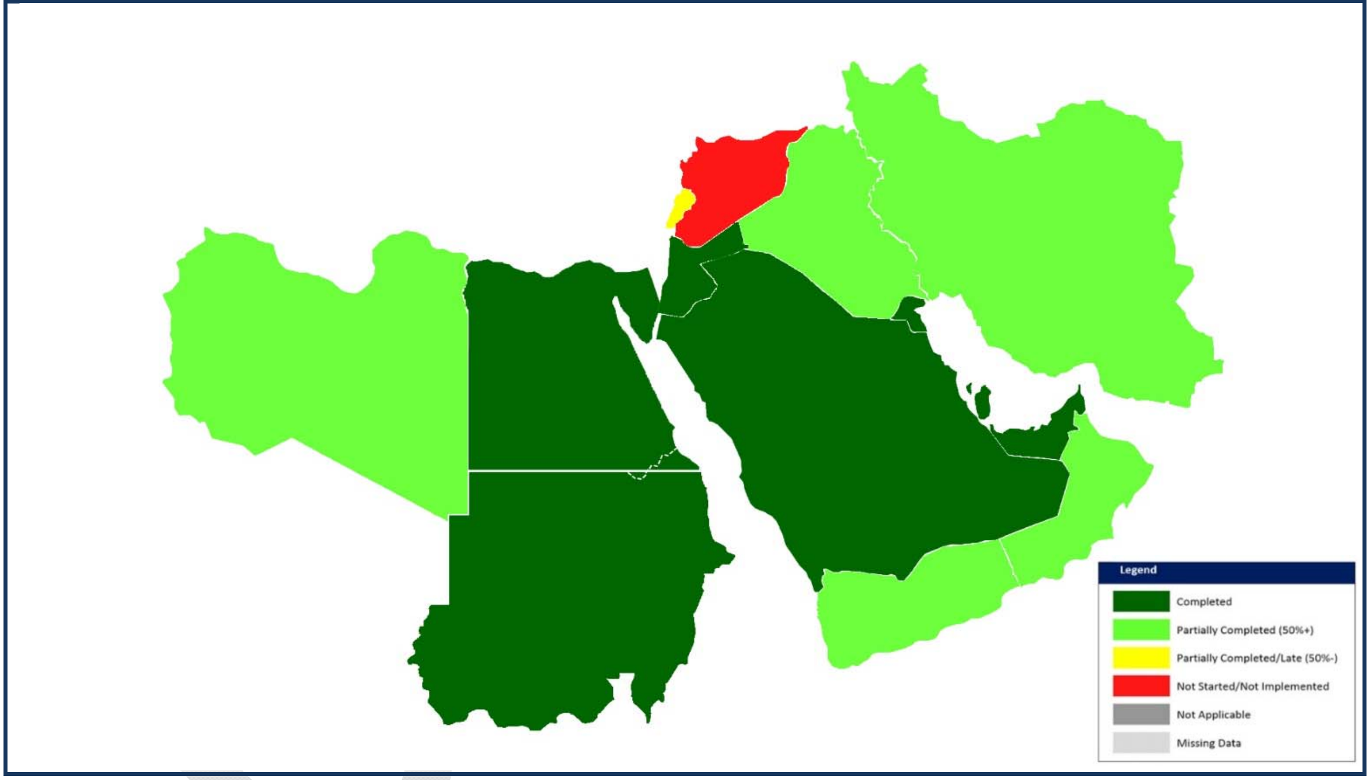
B0 – AMET: Meteorological information supporting enhanced operational efficiency and safety			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
SADIS FTP	All States	Indicator: % of States that have implemented SADIS FTP service Supporting Metric: Number of States that have implemented SADIS FTP service	100% by Dec. 2018
QMS	All States	Indicator: % of States having implemented QMS for MET Supporting metric: number of States having implemented QMS for MET	80% by Dec. 2018
SIGMET	All MWOs in MID Region	Indicator: % of FIRs in which SIGMET is implemented Supporting metric: number of FIRs SIGMET is implemented	100% by Dec. 2018



Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-AMET	SADIS FTP	🟩	🟩	🟥	🟩	🟩	🟩	🟥	🟩	🟩	🟩	🟩	🟩	🟥	🟩	🟩
	QMS	🟩	🟩	🟩	🟥	🟩	🟩	🟥	🟥	🟥	🟩	🟩	🟩	🟥	🟩	🟥
	SIGMET	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟢	🟩	🟩	🟩	🟩	🟥	🟢	🟥

The progress for B0-AMET is acceptable (with approximately 73% implementation).

B0-AMET Status of implementation in the MID Region


Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

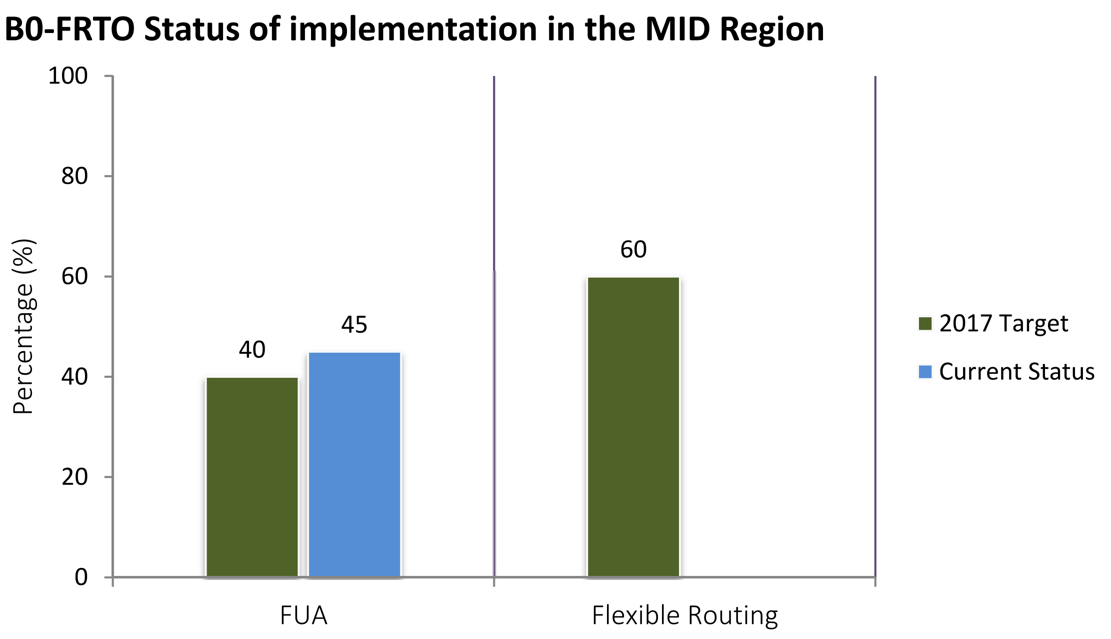
DRAFT

2.1.7 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

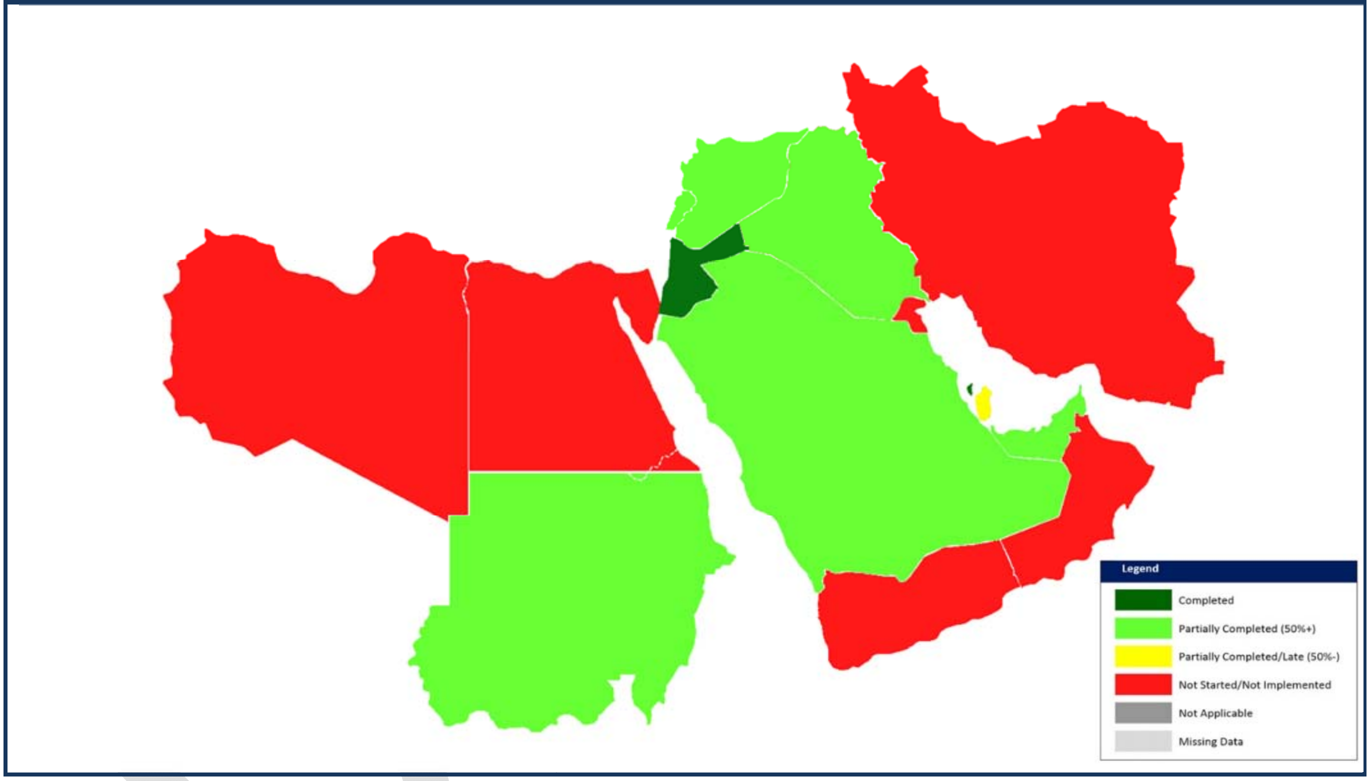
* *Implementation should be based on the published aeronautical information*


B0-FRTO Status of implementation in the MID Region

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 (FUA) is good (with approximately 45% implementation). The element “Flexible Routing” could not be monitored because of the lack of data.

B0-FRTO (FUA) Status of implementation in the MID Region


Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

2.1.8 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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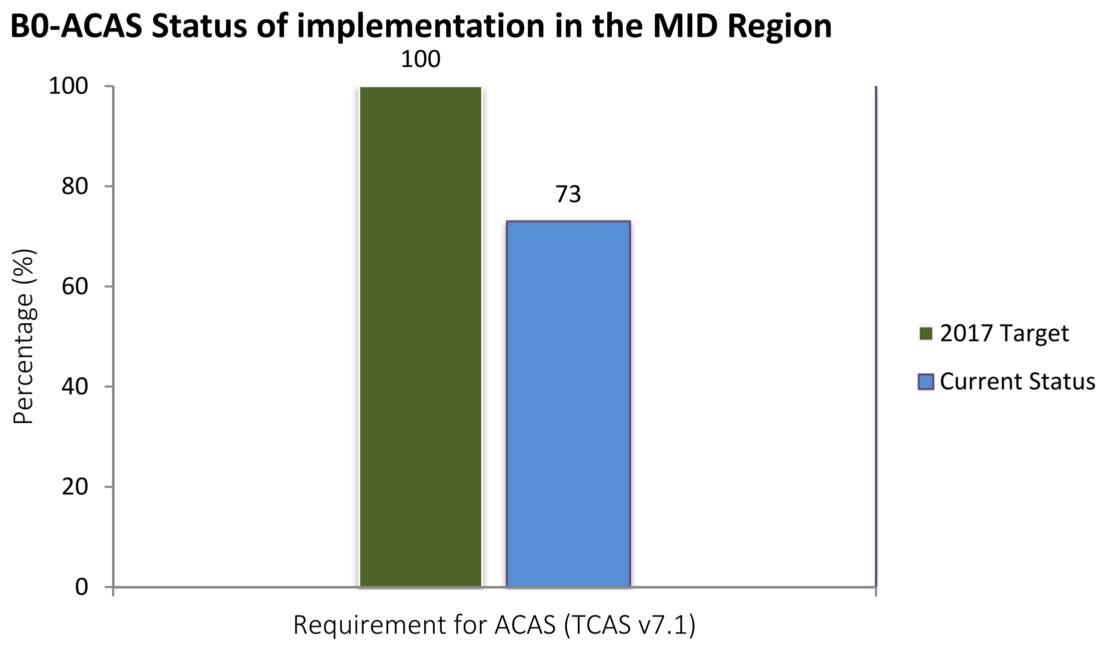
2.1.9 B0-ACAS

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.

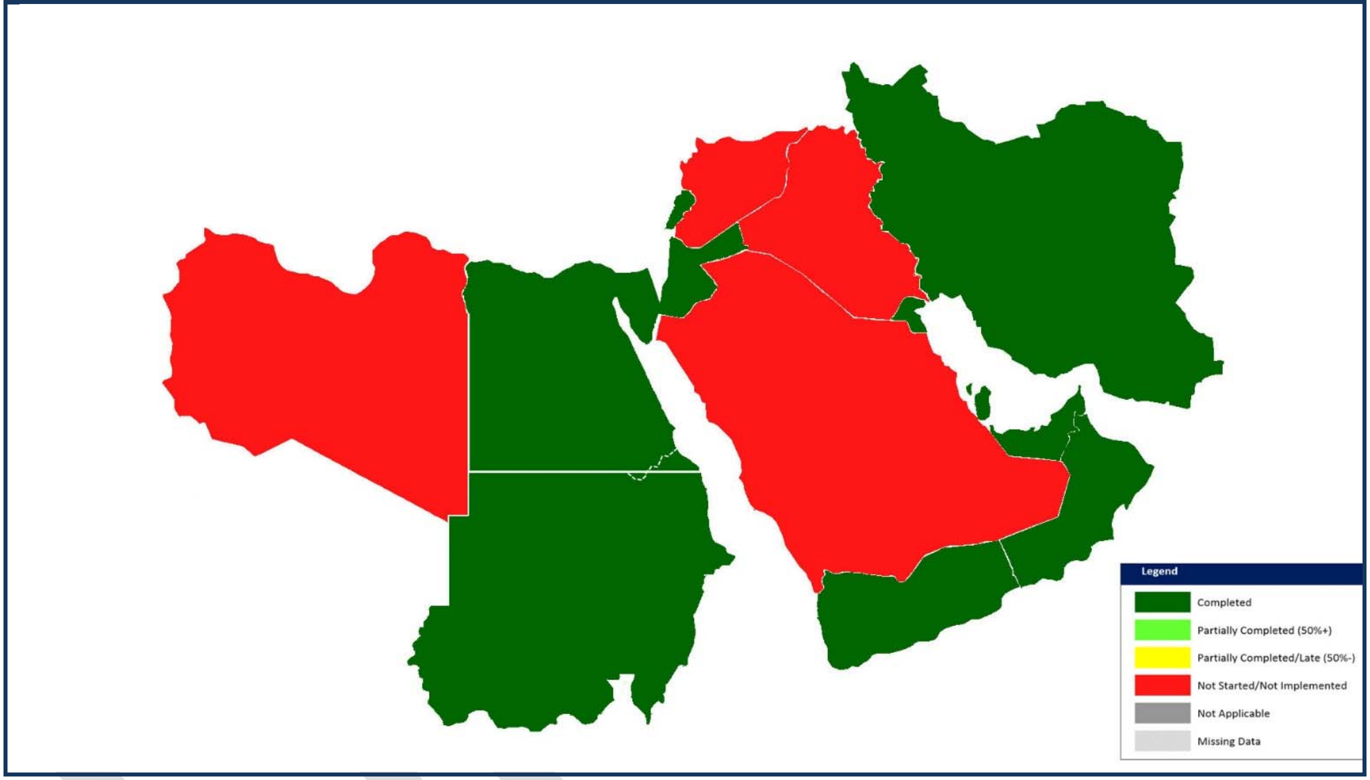
B0 – ACAS: ACAS Improvements			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
Avionics (TCAS V7.1)	All States	Indicator: % of States requiring carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons Supporting metric: 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	100% by Dec. 2017



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 73% implementation).

B0-ACAS Status of implementation in the MID Region


Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

DRAFT

2.1.10 B0-SNET

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 centered.

B0 – SNET: Increased Effectiveness of Ground-based Safety Nets			
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)	80 % by 2018
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)	80 % by 2018

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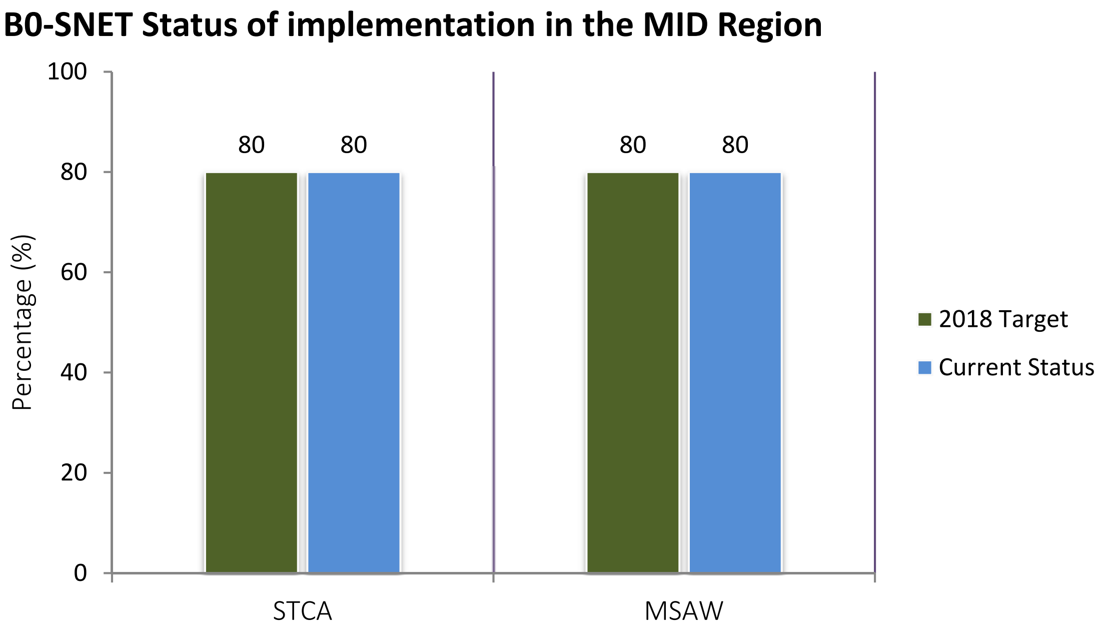
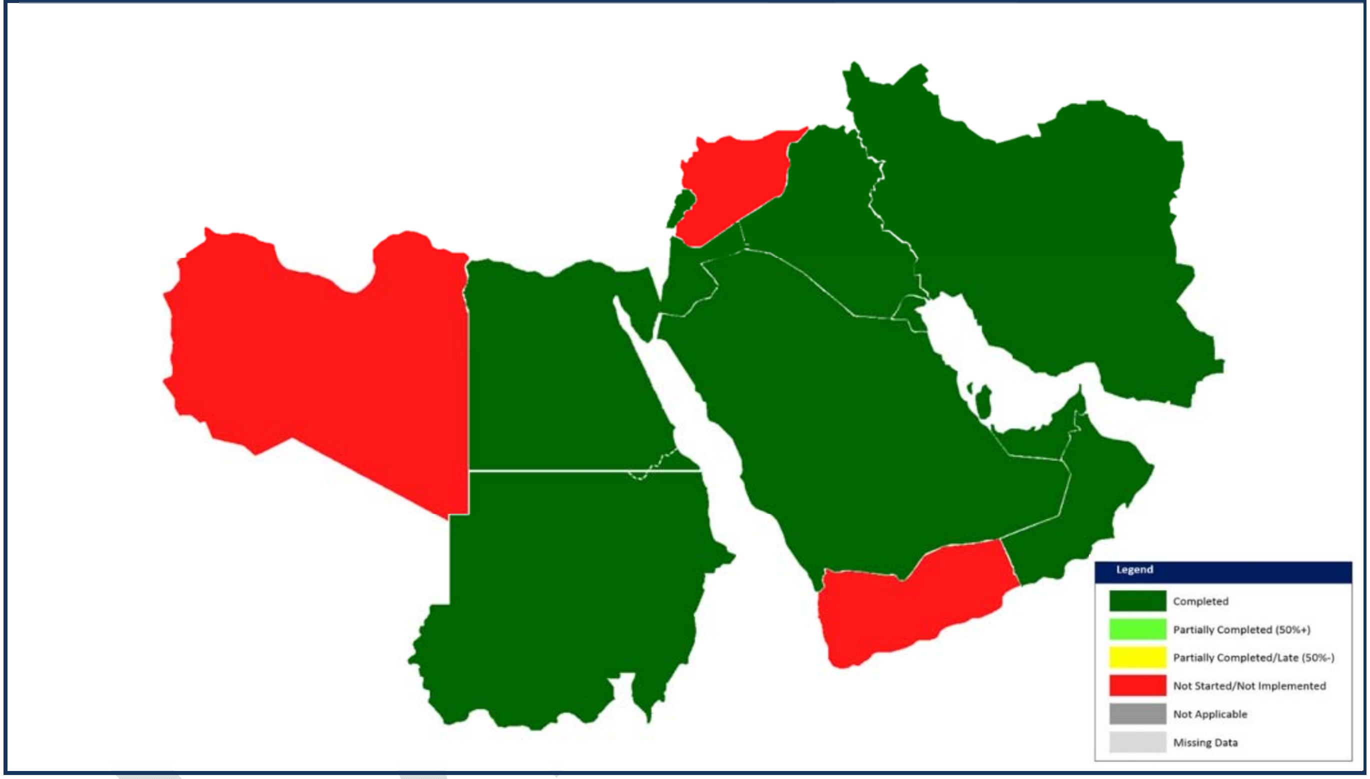


Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-SNET	Short-term conflict alert (STCA)	🟩	🟩	🟩	🟩	🟩	🟩	🟩	▨	🟩	🟩	🟩	🟩	▨	🟩	▨
	Minimum safe altitude warning (MSAW)	🟩	🟩	🟩	🟩	🟩	🟩	🟩	▨	🟩	🟩	🟩	🟩	▨	🟩	▨

The progress for B0-SNET is very good (with approximately 80% implementation).

B0-SNET Status of implementation in the MID Region


Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

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2.1.11 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	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. 2018 for the identified 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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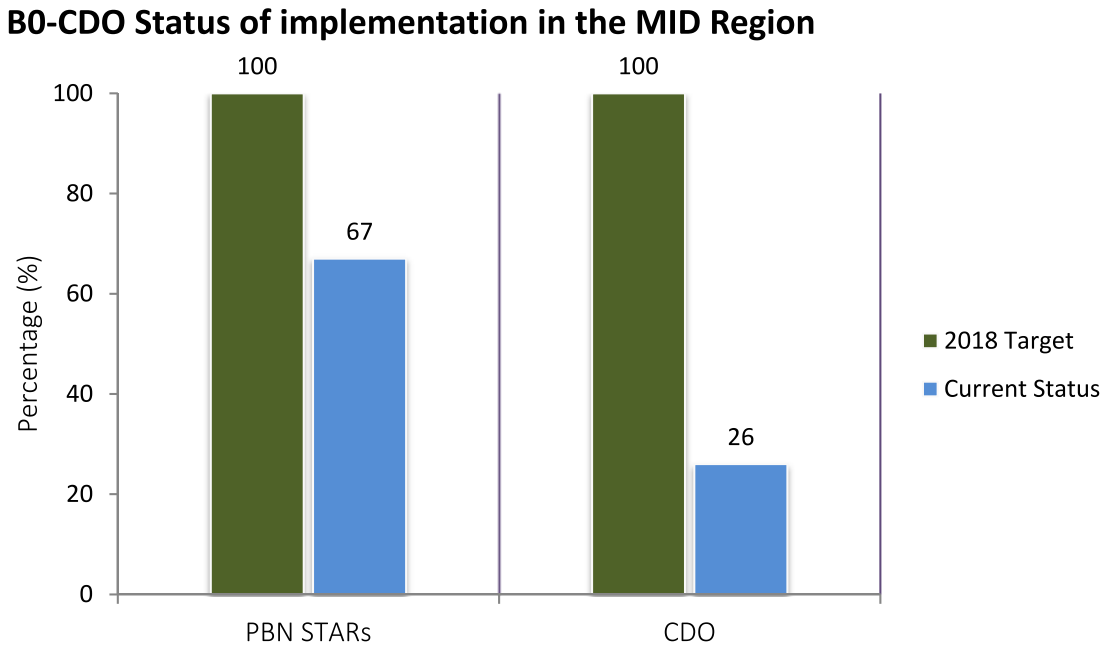
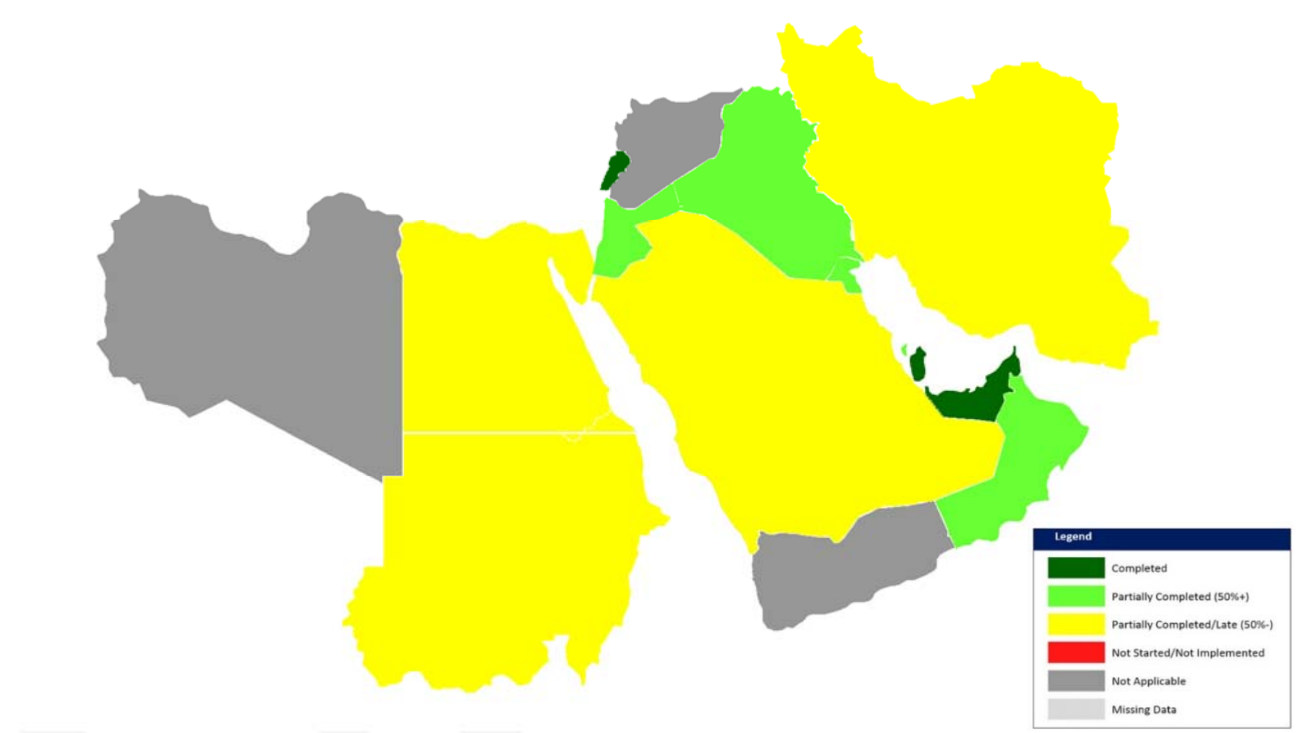


Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-CDO	PBN STARs	🟩	🟢	🟨	🟢	🟩	🟩	🟩	⬛	🟩	🟩	🟢	🟨	⬛	🟩	⬛
	International aerodromes/TMAs with CDO	🟥	🟥	🟥	⬛	🟥	🟥	🟩	⬛	🟥	🟩	🟥	🟥	⬛	🟩	⬛

The progress for B0-CDO is acceptable (with approximately 47% implementation).

B0-CDO Status of implementation in the MID Region

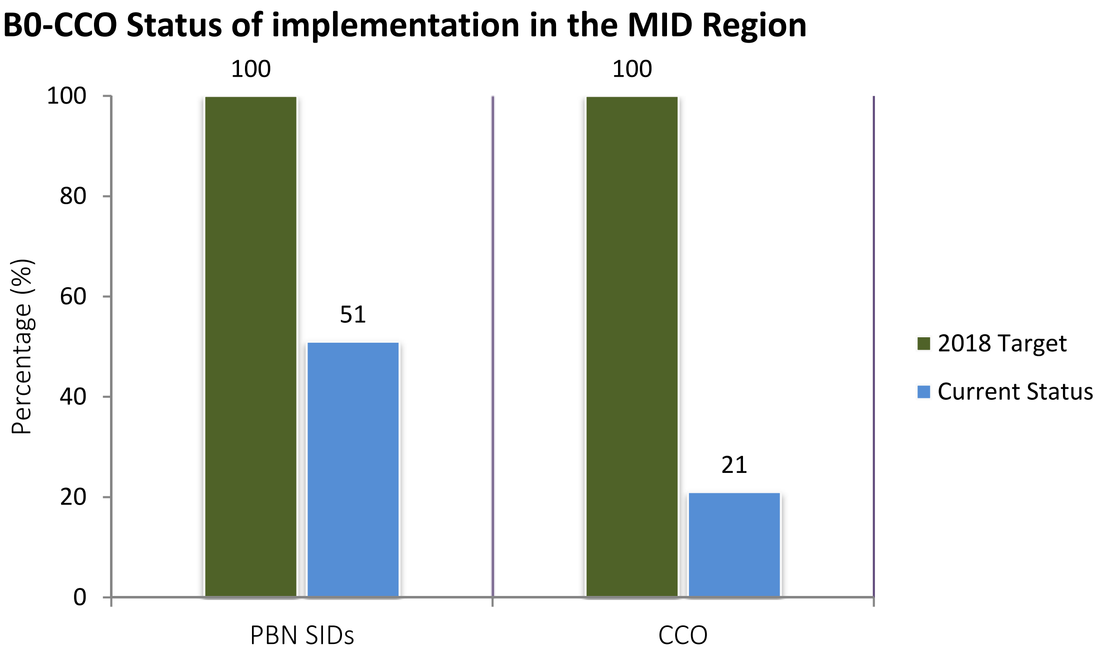

Legend
🟩 Completed
🟢 Partially Completed (50%+)
🟨 Partially Completed/Late (50%-)
🟥 Not Started/Not Implemented
⬛ Not Applicable
⬜ Missing Data

DRAFT

2.1.12 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.

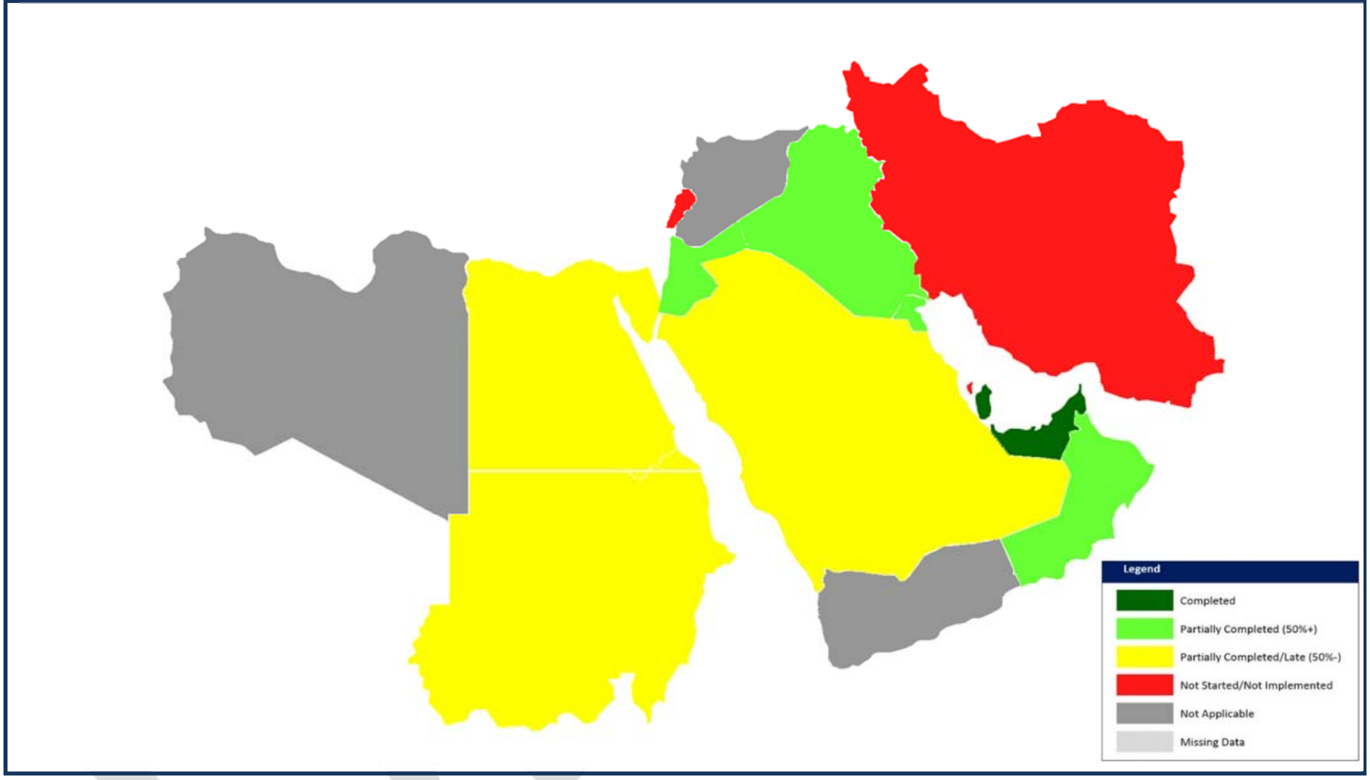
B0 – CCO: Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
PBN SIDs	OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OISS, OIKB, OIMM, OIFM, ORER, ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, 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. 2018 for the identified 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



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 acceptable (with approximately 36% implementation).

B0-CCO Status of implementation in the MID Region


Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

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3. ASBU BLOCK 0 IMPLEMENTATION OUTLOOK FOR 2020

3.1 Status of Implementation-2020

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. This would provide a good basis/prerequisite for the planning of ASBU Block 1 implementation (2019-2025).

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 the outlook status:

Legend

🟩 Good (75%+)

🟩 Acceptable (50%-75%)

🟨 Slow (25%-50%)

🟥 Very Slow (25%-)

▨ Missing Data

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Module	Status of implementation December 2016 (approximate rate)	Status of implementation June 2018 (approximate rate)	Projected Status of implementation by 2020* (approximate rate)
B0-APTA	44%	52%	**96%**
B0-WAKE	(Priority 2)	(Priority 2)	**71%**
B0-RSEQ	(Priority 2)	(Priority 2)	**55%**
B0-SURF	48%	50%	**67%**
B0-ACDM	0%	23%	**50%**
B0-FICE	56%	58%	**83%**
B0-DATM	62%	63%	**87%**
B0-AMET	67%	73%	**92%**
B0-FRTO	43%	45%	**71%**
B0-NOPS	(Priority 2)	(Priority 2)	**46%**
B0-ASUR	(Priority 2)	(Priority 2)	**70%**
B0-ASEP	(Priority 2)	(Priority 2)	**69%**
B0-OPFL	(Priority 2)	(Priority 2)	**60%**
B0-ACAS	73%	73%	**100%**
B0-SNET	(Priority 2)	80%	**100%**
B0-CDO	34%	47%	**67%**
B0-TBO	(Priority 2)	(Priority 2)	**44%**
B0-CCO	28%	36%	**63%**

Note – projected status for 2020 is calculated based on information received from 12 States (out of 15).

4. ENVIRONMENTAL PROTECTION

4.1 Introduction

TBD

4.2 State's action plan on CO2 emission

The ICAO Assembly 38 (24 September to 4 October 2013) endorsed the Resolution 38-18 Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate Change which encouraged States to voluntarily prepare and submit action plans on CO2 emission reduction to ICAO. An ambitious work programme was further laid down for capacity building and assistance to States in the development and implementation of their action plans to reduce emissions, which States were initially invited to submit by the 37th Session of the ICAO Assembly in October 2010.

ICAO Assembly 39 (Montreal, Canada, 27 September – 6 October 2016) encouraged States, through Assembly Resolution 39-2 Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change, to submit voluntary action plans outlining respective policies and actions, and annual reporting on international aviation CO2 emissions to ICAO.

The MIDANPIRG/16 meeting (Kuwait, 13 - 16 February 2017) invited 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.

An action plan is a means for States to communicate to ICAO information on activities to address CO2 emissions from international aviation. The level of information contained in an action plan should be sufficient to demonstrate the effectiveness of actions and to enable ICAO to measure progress towards meeting the global goals set by Assembly Resolution A38-18. Action plans give States the ability to: establish partnerships; promote cooperation and capacity building; facilitate technology transfer; and provide assistance.

The Status of the provision of Action Plans on CO2 emission in the MID Region is as follows:

State	Action Plan	State	Action Plan
Bahrain	June 2015	**Oman**	-
Egypt	July 2016	**Qatar**	-
Iran	-	**Saudi Arabia**	April 2018
Iraq	June 2012	**Sudan**	January 2015
Jordan	September 2013	**Syria**	-
Kuwait	-	**UAE**	June 2012
Lebanon	-	**Yemen**	-
Libya	-		

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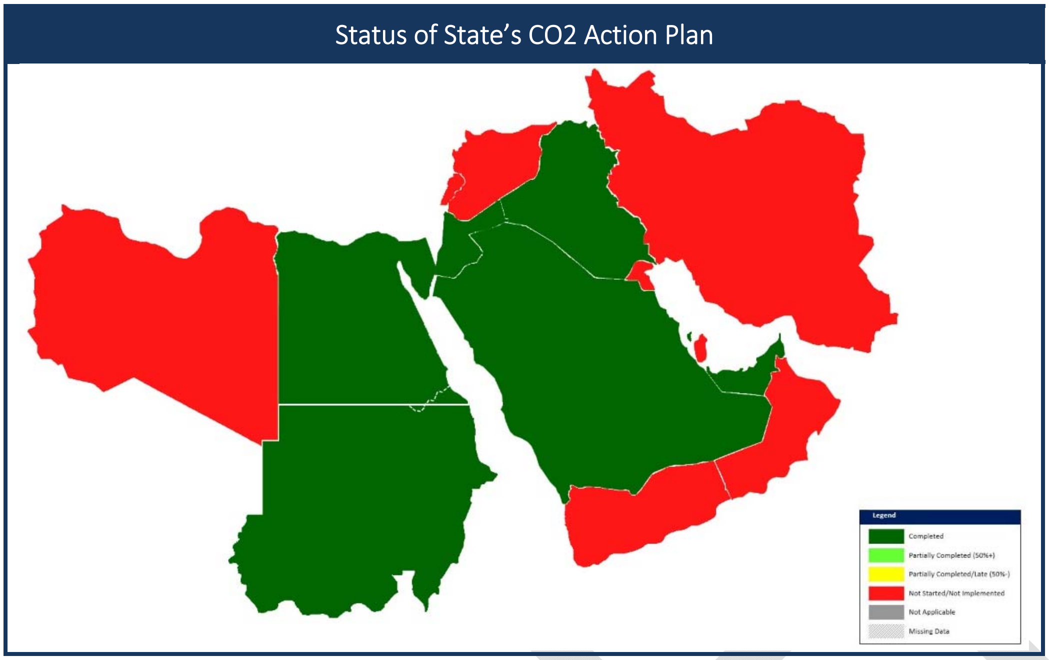
Status of State’s CO2 Action Plan

Legend
Completed
Partially Completed (50%+)
Partially Completed/Late (50%-)
Not Started/Not Implemented
Not Applicable
Missing Data

4.3 Estimation of the Environmental Benefits accrued from the implementation of ASBU Block 0 Modules

TBD

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5. SUCCESS STORIES/BEST PRACTICES

5.1 NCLB ACTIVITIES IN THE MID REGION

I. Introduction

The ICAO Council identified that there is a large discrepancy among States in the implementation of ICAO Standards and Recommended Practices (SARPs). As a result, the ICAO "No Country Left Behind" (NCLB) Campaign was established by the Council to help ensure that SARPs implementation is better harmonized globally. To avoid this gap, ICAO should focus its activities on States lacking fundamental oversight capabilities for effective implementation of ICAO SARPs, particularly in the priority areas of safety, air navigation and efficiency, and security. Therefore, particular attention should be given to the assistance of those States with a higher safety and security risk.

In accordance with Assembly Resolution A39-23 "No Country Left Behind" (NCLB) Initiative, States should effectively implement ICAO's Standards and Recommended Practices (SARPs) and policies so that all States have safe, secure, efficient, economically viable and environmentally sound air transport systems, which support sustainable development and socio-economic prosperity.

At the Regional Level; the MID Region NCLB Strategy supports the implementation of the Global Aviation Safety Plan (GASP) and its Roadmap as the basis to develop action plans that define the specific activities, which should take place in order to improve safety at the regional and national levels.

The MID Region NCLB Strategy is complemented by the MID Region NCLB Implementation Plan as a companion document. This Plan is a living document used for recording the NCLB activities in the MID Region (general and State-by-State), including the monitoring of the States' NCLB Plan of Actions and States/Stakeholders' contributions to support the NCLB initiative.

NO COUNTRY LEFT BEHIND
ICAO

The Fourth meeting of the Directors General of Civil Aviation – Middle East Region (DGCA-MID/4), which was held in Muscat, Oman from 17 to 19 October 2017, through DGCA-MID/4 Conclusion 4/1, endorsed the NCLB Declaration (Muscat Declaration) in support of the ICAO NCLB Initiative; and invited States and Stakeholders to support the implementation of the MID Region NCLB Strategy.

It is to be highlighted that Kingdom of Saudi Arabia has kindly provided 400 K US$ to support ICAO MID NCLB activities; and UAE provided 50 K US$ to support the establishment of the MID Flight Procedure Programme (MID FPP). Other States and stakeholders, such as Egypt, Iran and EASA provided in-kind support to some MID States related to aviation safety and security, under the MID Region NCLB framework.

II. MID NCLB Activities related to Air Navigation

- 10 NCLB assistance missions in 2016 and 7 in 2017 (Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Sudan)
- 6 NCLB Seminars/Workshops in 2016 and 6 in 2017
- 1 ATM Inspectors Course (GSI-ANS/ATM)

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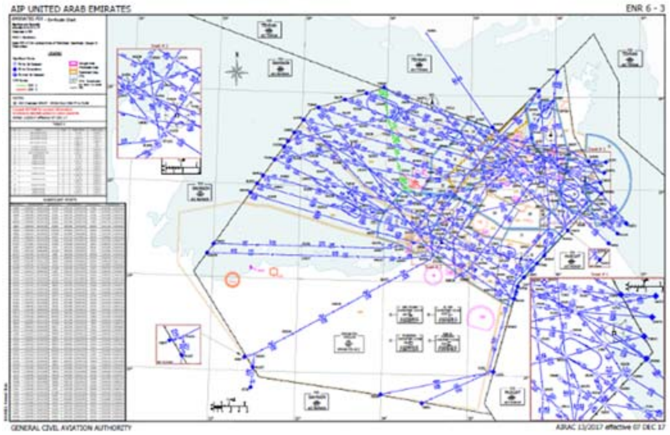
5.2 UNITED ARAB EMIRATES

I. UAE Airspace Restructuring Project – Integration & Implementation Phase

On December 7th 2017, the General Civil Aviation Authority (GCAA) completed the implementation of the UAE Airspace Restructuring Project – Integration & Implementation (UAE ARP3). This airspace change saw the Emirates Flight Information Region (FIR) transformed into an airspace structure completely based on Performance Based Navigation (PBN) with a Navigation Specification of RNAV-1 (GNSS).


AIP UNITED ARAB EMIRATES
ENR 6 - 3
GENERAL CIVIL AVIATION AUTHORITY
AIRAC 13/2017 effective 07 DEC 17

UAE ARP (Integration & Implementation) was the culmination of years of extensive analysis, development, collaboration and cooperation across the UAE Aviation Community including the GCAA Sheikh Zayed Air Navigation Centre (SZC), Dubai Air Navigation Services, Abu Dhabi Airports Company, Ras Al Khaimah Department of Civil Aviation, Sharjah Department of Civil Aviation, Fujairah Department of Civil Aviation as well as more than twenty further aviation stakeholders.

The UAE ARP (Integration & Implementation) was designed to meet multiple objectives, all of which were achieved in line with global best practices. Primarily the airspace change was designed to increase UAE Airspace capacity to meet the forecasted air traffic demand for 2020, as well as increased access to all UAE airports, improve efficiency for both aviation system customers and Air Navigation Service Providers (ANSP) and reduce the environmental impact of the increasing traffic through more effective Air Traffic Management operations.

UAE ARP3 Facts:

- Capability to safely meet capacity requirements for the forecasted 2040 air traffic demand through the UAE ARP3 Integrated Airspace Master Plan (IAMP).
- Annual fuel savings exceeding $15 million to the airlines customers within the first year after implementation.
- Annual environmental efficiency exceeding 100,000 Mt of CO^2, supporting a 'Greener' aviation.
  - Project Implementation Duration – 18 months
  - Number of project Deliverables - 50
  - Number of Workshops / Meetings – over 200
  - Actual Man hours for design development – over 120,000 hours
  - Number of UAE Air Navigation Service Providers involved – 6
  - Number of Emirates of the United Arab Emirates involved - 5
  - Number of Aviation Stakeholder organizations collaboratively involved - 26
  - Number of Project Representatives – over 150
  - Number of Air Traffic Controllers trained for UAE ARP3 - 250

The project directly involved five of the seven Emirates within the UAE and required over 120,000 man-hours to develop the airspace design network. Multiple Fast Time and Real Time simulations in Italy, UK and in the UAE formed critical activities for the design validation and verification of the revised airspace network.

The UAE ARP (Integration & Implementation) also required over 250 Air Traffic Controllers to take simulation and theoretical training on the redesign for over two hundred Instrument Flight Procedures and thirty new airways.

In 2012, prior to the launch of the UAE ARP the GCAA, in collaboration with the local Departments of Civil Aviation and ANSPs, undertook a 'UAE Airspace Study' which, among other recommendations, identified a requirement to 'develop a

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comprehensive airspace design that will accommodate transition to a full PBN airspace environment to support the increasing demand' and this laid the foundations of the UAE ARP.

Accordingly, UAE ARP adopted an industry wide collaborative approach, encompassing a three phased project which kicked off in 2013. In July 2016, the ARP activated Phase 3 (Integration & Implementation) and with the support of globally recognised consultants ensured the successful transformation of the chosen conceptual designs were integrated into an implementable solution. The first iteration of the design network delivered on 7th December 2017 enabled the airspace within the Emirates FIR sufficient capacity, capability and efficiency to support the forecasted traffic growth to 2020.

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Communication of such a large scale change is a vital change management activity to ensure a smooth and successful transition. UAE ARP (Integration & Implementation) undertook months of cross industry stakeholder workshops and events culminating in an awareness campaign at the Dubai Airshow between November 17-21st.

A Communication and Engagement document was also generated to ensure clear and consistent messages were relayed by all stakeholders, whilst also leaflets and briefing material generated across the six ANSPs, National carriers and IATA. AICs and NOTAMs were used to promulgate further Global awareness prior to the December 7th transition.

GENERAL CIVIL AVIATION AUTHORITY

GCAA UNVEILS ONE OF THE LARGEST EVER AIRSPACE CHANGES IN THE REGION

FURTHER INFORMATION WITH REGARDS TO UAE ARP3, PLEASE CONTACT:

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CALLAN@SZC.GCAA.AE
+971 50 642 7023

UAE ARP3 PROJECT STAKEHOLDERS:

dans
DEPARTMENT OF TRANSPORT
Fujairah International Airport
ABU DHABI AIRPORTS
SHEIKH ZAYED AIR NAVIGATION CENTER
United Arab Emirates G.H.Q.Armed Forces
Government of Sharjah

Implementing a new network for the entire Emirates FIR airspace change without generating disruption to the aviation customers was a major and critical challenge which required significant stakeholder collaboration. To do this, UAE ARP (Integration & Implementation) created a Transition Plan Development Team (TPDT) encompassing ANSPs, airlines, IATA, military, NCMS and other appropriate aviation stakeholders. The ultimate focus of the team was to develop a harmonised Transition Plan for all agencies involved to ensure a complete synchronised and seamless transition. One of the first hurdles for the team to overcome was as a result of the traffic patterns of the Emirates FIR and the unsuitable timing associated with the AIRAC effectiveness. Through the TPDT a bespoke collaborative solution was found to delay the 'Operational Effective' time of implementation to 03:30 UTC (07:30 UAE) and therefore not utilising the 0000UTC effective time associated with AIRAC 13/17. The rationale ensured that the major arrival flows into the UAE airfields which would be operating predominantly to old FMS network data would have landed prior to the operational airspace change. The new airspace would then become operationally effective prior to the major UAE departure flow materializing and would encompass a majority of aircraft operating to the new AIRAC 13/17 FMS network.

To ensure that a synchronised airspace transition was enabled across the six ANSPs, a Transition Team was created with representation of six Transition Coordinators (one per ANSP, with also a deputy allocation) coordinating through a Transition Manager based at SZC. These Transition Coordinators and Transition Manager operated to an Operational Transition Event Schedule, containing major 'Check-Points' confirming that each unit's activities were operating in sync, whilst also in parallel. To enable rapid decision making capability, the UAE ARP (Integration & Implementation) also formed a Transition & Contingency Cell at SZC. This cell contained PSG representation from the ANSPs, military and also representation from the UAE Airline community. The Transition & Contingency Cell was activated several hours prior to the Operational Transition of the new airspace and their role was to ensure that if any major decisions were required at either an ANSP or project level, a resolution could be sought and acted upon quickly to enable minimal disruption to the Transition Event.

As part of the Transition Plan, UAE ARP (Integration & Implementation) adopted varying Transition timelines to provide regulatory assurance that each ANSP had implemented the airspace change successfully. In preparation for the airspace implementation, the project carried out a Transition Readiness Review which was held on November 23rd. The purpose of this review was to ensure that all ANSPs had satisfied specific 'Entry Criteria' prior to the Transition Event (December 7th). In the five day build up to the Transition Event, NCMS provided a daily weather forecast for December 7th across the UAE which was disseminated to the PSG and Transition Coordinators via the Transition Manager. From December 5th, this information was also supplemented with a fog forecast for the UAE airfields.

During the Transition Event four appropriately scheduled teleconferences were also held to provide a status check on the progress of the transition to the airline community and allow an opportunity for the airlines to provide pertinent information back to the Transition Manager. A final teleconference was held at 13:30 UTC (17:30 UAE) which confirmed that each ANSP had satisfied the Transition Event 'Exit Criteria'. This information was then relayed to the PSG for their approval to exit the Transition Event. At this stage, the UAE ARP transition was transferred from the Transition Event to a 10 day Transition Period. Any observations or feedback from each of the six ANSPs or from the airline community would then be fed into a 10/30/60/90 day review, with the project then supporting a six month Post Implementation Maintenance & Support period.

The output of the extensive planning and preparation by the TPDT in the generation of a Transition Delivery Document (TDD) and associated Transition Plans for the Transition Event ensured that on December 7th 2017, a seamless transition took place with no disruption or delay to the aviation community and no issues reported from any of the six ANSPs involved.

Through the development of an Integrated Airspace Master Plan (IAMP), the project will also create a Roadmap to future-proof the UAE's airspace network for the forecasted traffic growth until 2040. Design elements will need to incorporate such major airport expansion projects for both Dubai World Central Al Maktoum International Airport, Abu Dhabi International Airport as well as meeting the anticipated capacity increases for Dubai's Expo 2020. Moreover, it will ensure that aviation will continue to provide a vital contribution to the UAE Gross Domestic Product.

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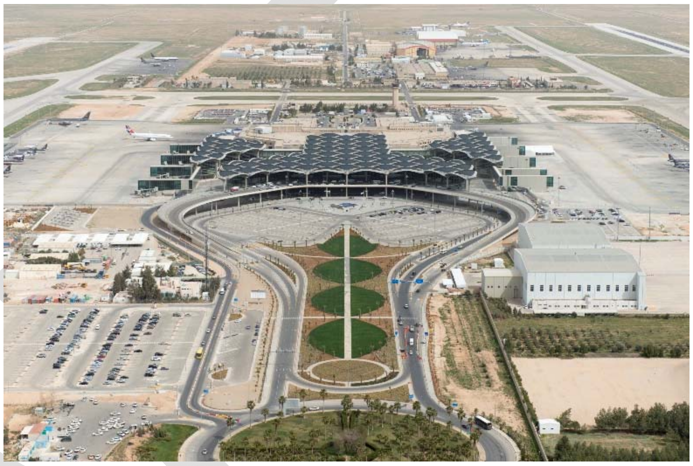
5.3 JORDAN: AIRPORT CARBON ACCREDITATION PROGRAM IN AMMAN/QUEEN ALIA INTERNATIONAL AIRPORT

Empowering airports to address their carbon emissions
airport carbon accreditation
MAPPING I REDUCTION I OPTIMISATION I NEUTRALITY
QUEEN ALIA INTERNATIONAL AIRPORT
مطار الملكة علياء الدولي

Amman/Queen Alia International Airport (QAIA) completed the requirements of the final level (level 3+ Neutrality) of the Airport Carbon Accreditation (ACA) program, which is a carbon management program developed by Airport Council International (ACI). QAIA is the first airport in the Middle East to achieve this accomplishment.

QAIA has demonstrated commitment to the aviation environmental protection, by implementing a comprehensive Environment Management Plan (EMP), which was developed to assess the probability of a multitude of risks, related to airport operations and activities, on the surrounding environment. This plan is reviewed annually to comply with the latest changes in national and international standards and requirements. QAIA's EMP is developed to minimize and control sources of environmental pollution such as carbon emissions, in addition to the monitoring of several environmental elements, through an integrated waste management program, in addition to air quality, water and biodiversity management, as well as noise control.



QAIA completed the first level of ACA Programme (Mapping) in March 2013, helping to determine the sources of harmful emissions on Airport grounds. This was followed in March 2015, by reaching level 2 (Reduction), as a result of the continuous efforts to reduce Carbon emissions, making QAIA the first airport to achieve this level in the region.

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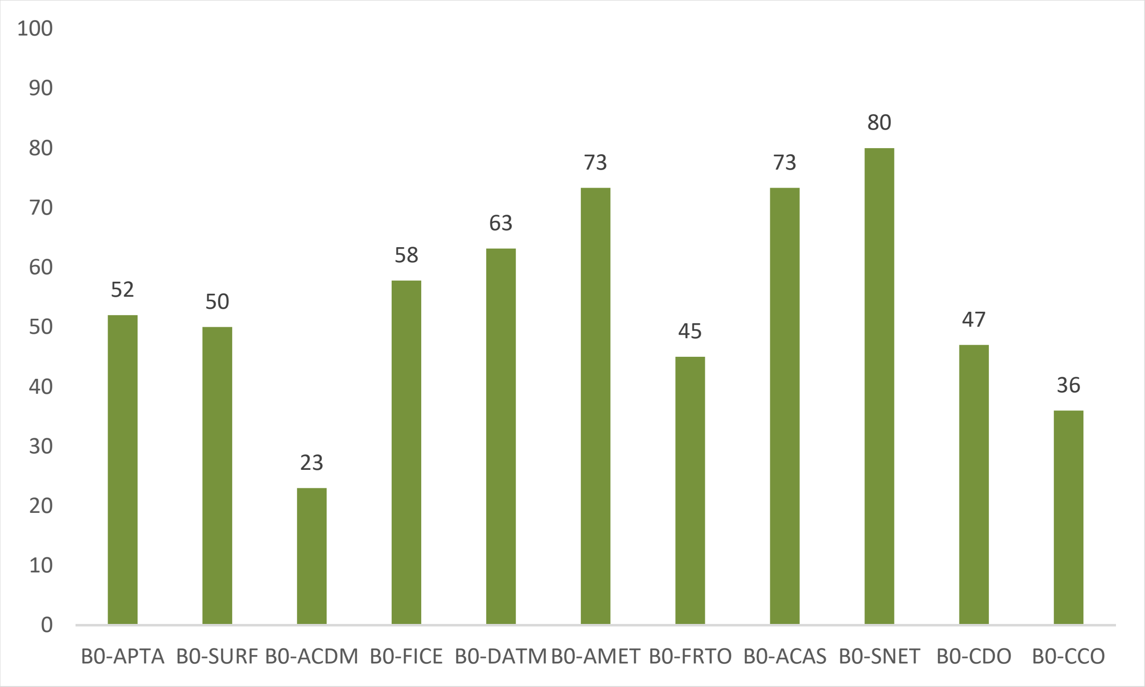
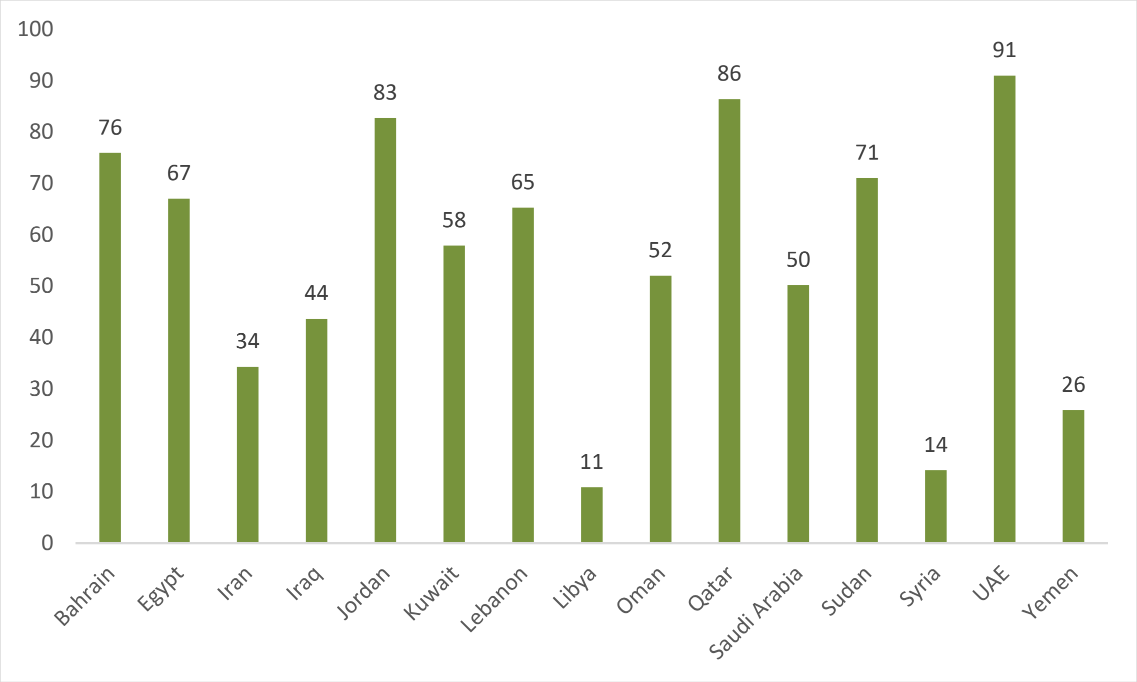
6. CONCLUSION

The progress for the implementation of some priority 1 Block0 Modules in the MID Region has been acceptable/good; such as B0-ACAS, B0-AMET and B0-DATM. Nevertheless, some States are still facing challenges to implement the majority of the Block 0 Modules.

The status of implementation of the ASBU Block 0 Modules also shows 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.

Looking into the States' plans for 2020 (outlook), the focus/priority of States is to complete the implementation of B0-APTA, B0-FICE, B0-DATM, B0-AMET, B0-CCO and B0-CDO.





Status of implementation of Doha Declaration Targets:

Doha Declaration was endorsed by the third meeting of Directors General of Civil Aviation (DGCA-MID/3) in Doha, Qatar from 27 to 29 April 2015. Doha Declaration set five Targets for the Air Navigation Capacity and Efficiency, as follows:

1- Optimization of Approach Procedures including vertical guidance (PBN): Implement PBN approach procedures with vertical guidance, for all runways ends at international aerodromes, either as the primary approach or as a back-up for the precision approaches by 2017

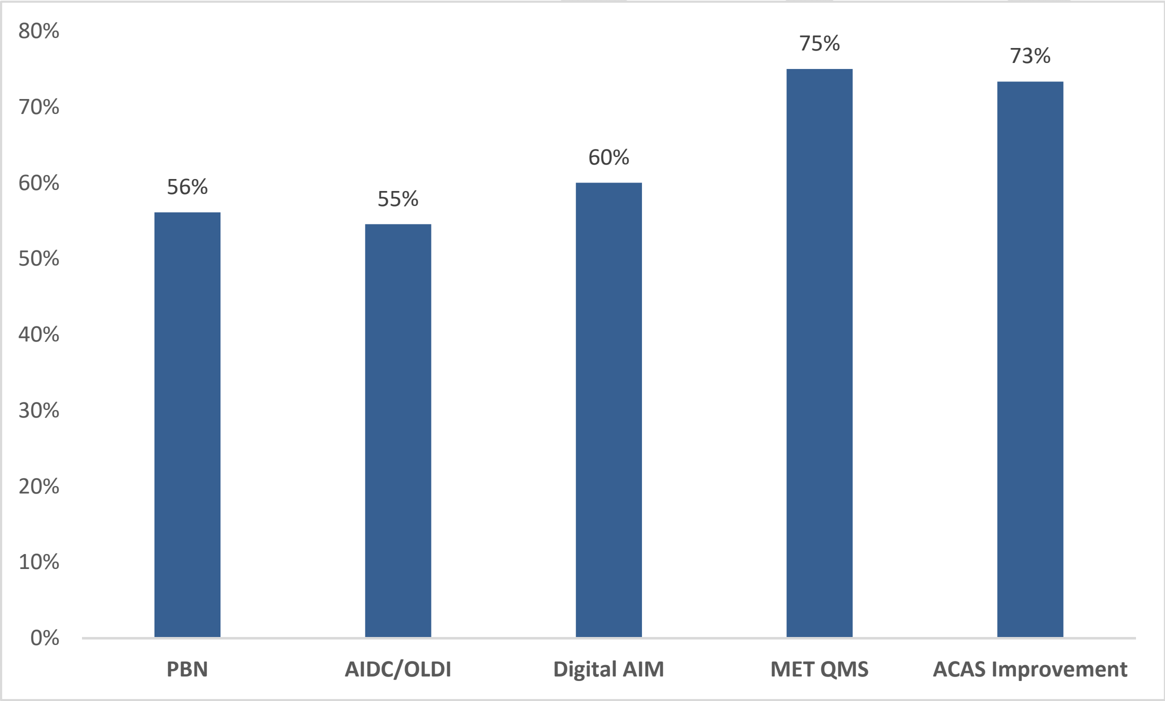
2- Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration: 11 States to implement AIDC/OLDI between their ACCs and at least one adjacent ACC by 2017

3- Service Improvement through Digital Aeronautical Information Management: All States to complete implementation of Phase I of the transition from AIS to AIM by 2017

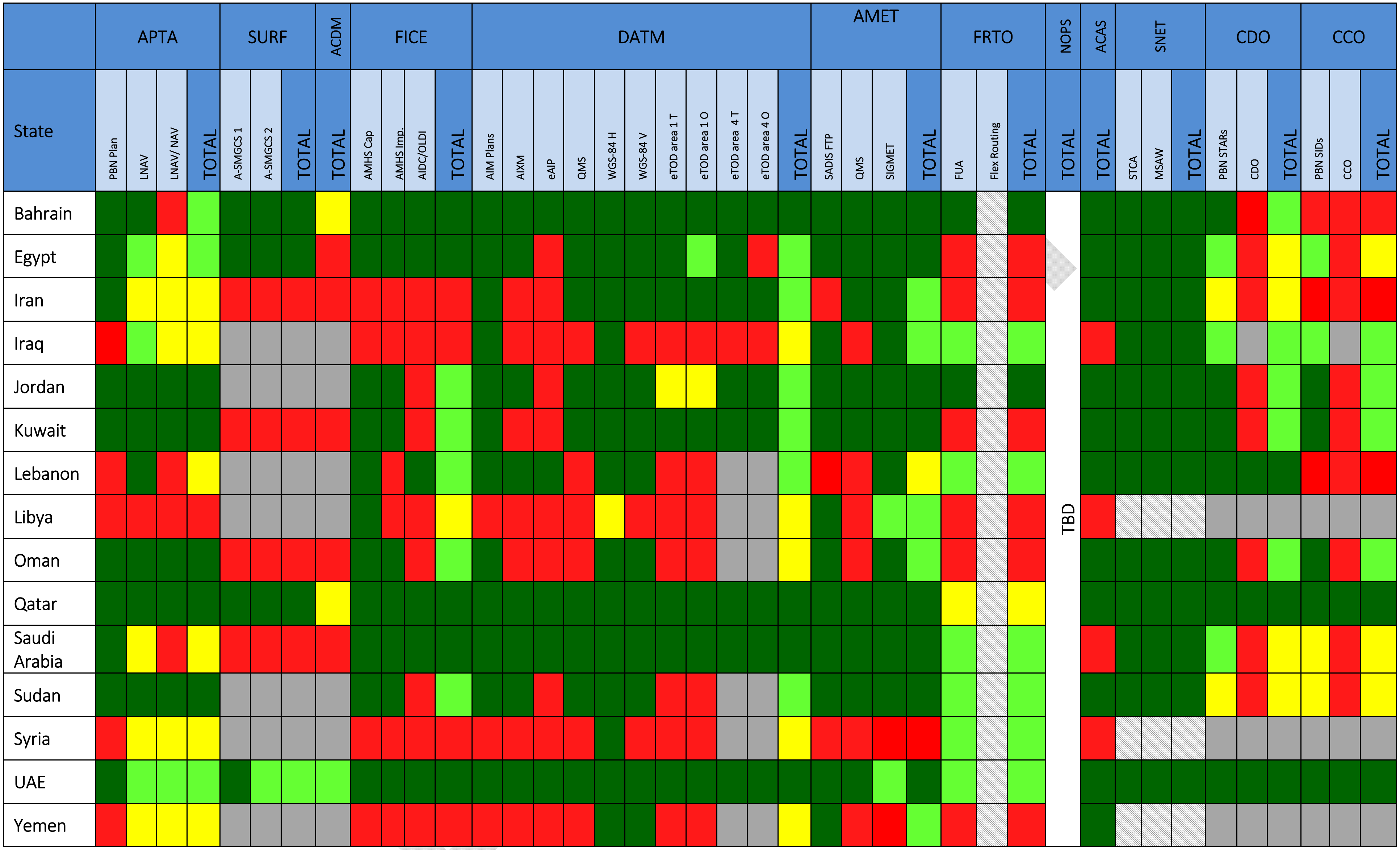
4- Meteorological information supporting enhanced operational efficiency and safety: 12 States to complete the implementation of QMS for MET by 2017

5- ACAS Improvement: All States require carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons by 2017

Status of implementation by States related to the Targets of the Doha Declaration is as follows:

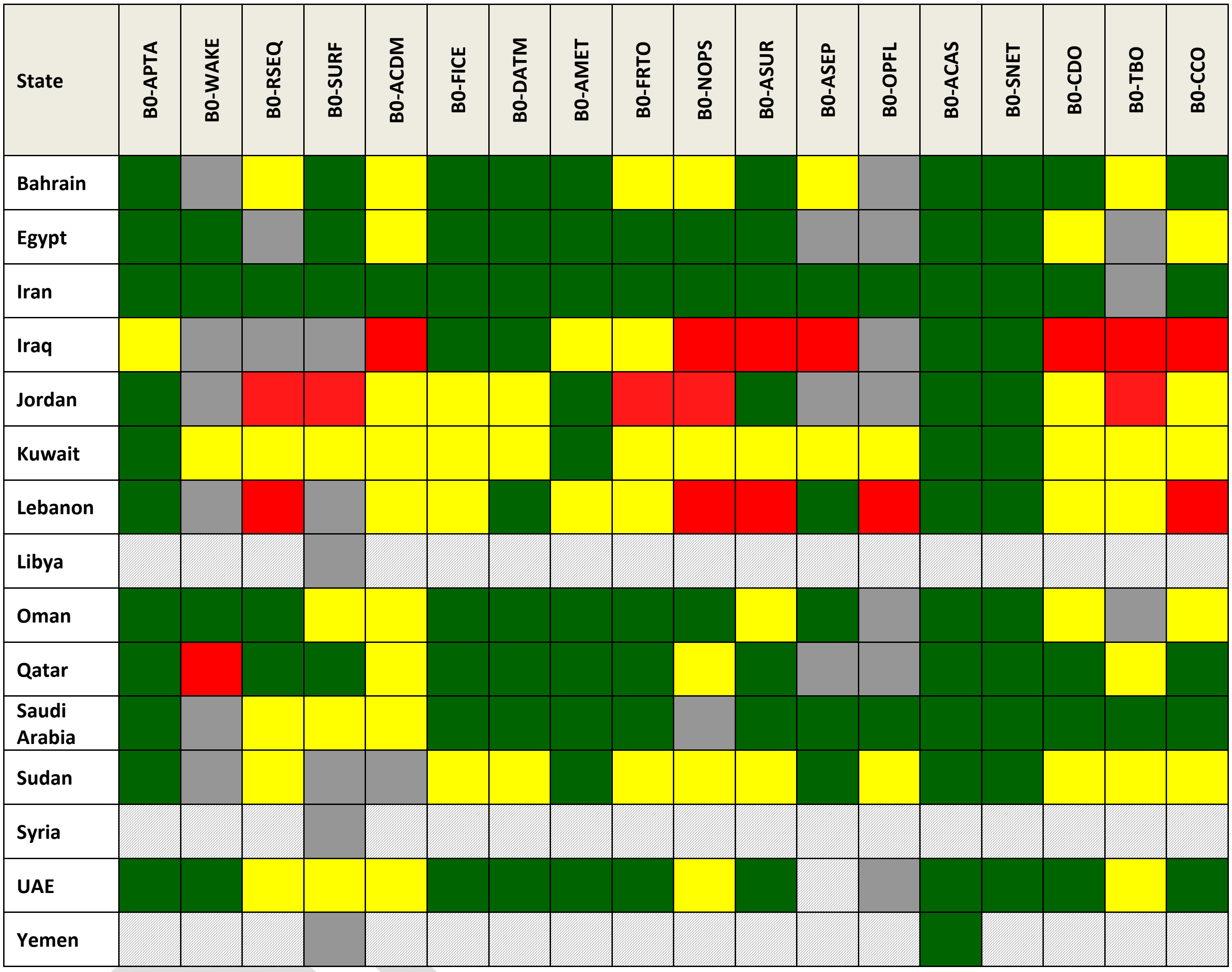


APPENDIX A: STATUS OF ASBU BLOCK 0 MODULES



	APTA				SURF			ACDM	FICE				DATM											AMET				FRTO			NOPS	ACAS	SNET			CDO			CCO		
State	PBN Plan	LNAV	LNAV/ NAV	TOTAL	A-SMGCS 1	A-SMGCS 2	TOTAL	TOTAL	AMHS Cap	AMHS Imp.	AIDC/OLDI	TOTAL	AIM Plans	AIXM	eAIP	QMS	WGS-84 H	WGS-84 V	eTOD area 1 T	eTOD area 1 O	eTOD area 4 T	eTOD area 4 O	TOTAL	SADIS FTP	QMS	SIGMET	TOTAL	FUA	Flex Routing	TOTAL	TOTAL	TOTAL	STCA	MSAW	TOTAL	PBN STARs	CDO	TOTAL	PBN SIDs	CCO	TOTAL
Bahrain	🟩	🟩	🟥	🟢	🟩	🟩	🟩	🟨	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	▨	🟩	TBD	🟩	🟩	🟩	🟩	🟩	🟥	🟢	🟥	🟥	🟥
Egypt	🟩	🟢	🟨	🟢	🟩	🟩	🟩	🟥	🟩	🟩	🟩	🟩	🟩	🟩	🟥	🟩	🟩	🟩	🟩	🟢	🟩	🟥	🟢	🟩	🟩	🟩	🟩	🟥	▨	🟥		🟩	🟩	🟩	🟩	🟢	🟥	🟨	🟢	🟥	🟨
Iran	🟩	🟨	🟨	🟨	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟩	🟥	🟥	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟢	🟥	🟩	🟩	🟢	🟥	▨	🟥		🟩	🟩	🟩	🟩	🟨	🟥	🟨	🟥	🟥	🟥
Iraq	🟥	🟢	🟨	🟨	⬜	⬜	⬜	⬜	🟥	🟥	🟥	🟥	🟩	🟥	🟥	🟥	🟩	🟥	🟥	🟥	🟥	🟥	🟨	🟩	🟥	🟩	🟢	🟢	▨	🟢		🟥	🟩	🟩	🟩	🟢	⬜	🟢	🟢	⬜	🟢
Jordan	🟩	🟩	🟩	🟩	⬜	⬜	⬜	⬜	🟩	🟩	🟥	🟢	🟩	🟩	🟥	🟩	🟩	🟩	🟨	🟨	🟩	🟩	🟢	🟩	🟩	🟩	🟩	🟩	▨	🟩		🟩	🟩	🟩	🟩	🟩	🟥	🟢	🟩	🟥	🟢
Kuwait	🟩	🟩	🟩	🟩	🟥	🟥	🟥	🟥	🟩	🟩	🟥	🟢	🟩	🟥	🟥	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟢	🟩	🟩	🟩	🟩	🟥	▨	🟥		🟩	🟩	🟩	🟩	🟩	🟥	🟢	🟩	🟥	🟢
Lebanon	🟥	🟩	🟥	🟨	⬜	⬜	⬜	⬜	🟩	🟥	🟩	🟢	🟩	🟩	🟩	🟥	🟩	🟩	🟥	🟥	⬜	⬜	🟢	🟥	🟥	🟩	🟨	🟢	▨	🟢		🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟥	🟥	🟥
Libya	🟥	🟥	🟥	🟥	⬜	⬜	⬜	⬜	🟩	🟥	🟥	🟨	🟥	🟥	🟥	🟥	🟨	🟥	🟥	🟥	⬜	⬜	🟨	🟩	🟥	🟢	🟢	🟥	▨	🟥		🟥	▨	▨	▨	⬜	⬜	⬜	⬜	⬜	⬜
Oman	🟩	🟩	🟩	🟩	🟥	🟥	🟥	🟥	🟩	🟩	🟥	🟢	🟩	🟥	🟥	🟥	🟩	🟩	🟥	🟥	⬜	⬜	🟨	🟩	🟥	🟩	🟢	🟥	▨	🟥		🟩	🟩	🟩	🟩	🟩	🟥	🟢	🟩	🟥	🟢
Qatar	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟨	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟨	▨	🟨		🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
Saudi Arabia	🟩	🟨	🟥	🟨	🟥	🟥	🟥	🟥	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟢	▨	🟢		🟥	🟩	🟩	🟩	🟢	🟥	🟨	🟨	🟥	🟨
Sudan	🟩	🟩	🟩	🟩	⬜	⬜	⬜	⬜	🟩	🟩	🟥	🟢	🟩	🟩	🟥	🟩	🟩	🟩	🟥	🟥	⬜	⬜	🟢	🟩	🟩	🟩	🟩	🟢	▨	🟢		🟩	🟩	🟩	🟩	🟨	🟥	🟨	🟨	🟥	🟨
Syria	🟥	🟨	🟨	🟨	⬜	⬜	⬜	⬜	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟩	🟥	🟥	🟥	⬜	⬜	🟨	🟥	🟥	🟥	🟥	🟢	▨	🟢		🟥	▨	▨	▨	⬜	⬜	⬜	⬜	⬜	⬜
UAE	🟩	🟢	🟢	🟢	🟩	🟢	🟢	🟢	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟢	🟩	🟢	▨	🟢		🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
Yemen	🟥	🟨	🟨	🟨	⬜	⬜	⬜	⬜	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟩	🟩	🟥	🟥	⬜	⬜	🟨	🟩	🟥	🟥	🟢	🟥	▨	🟥		🟩	▨	▨	▨	⬜	⬜	⬜	⬜	⬜	⬜

APPENDIX B: ASBU BLOCK 0 STATUS OF IMPLEMENTATION OUTLOOK 2020



State	B0-APTA	B0-WAKE	B0-RSEQ	B0-SURF	B0-ACDM	B0-FICE	B0-DATM	B0-AMET	B0-FRTO	B0-NOPS	B0-ASUR	B0-ASEP	B0-OPFL	B0-ACAS	B0-SNET	B0-CDO	B0-TBO	B0-CCO
Bahrain	🟩	◼	🟨	🟩	🟨	🟩	🟩	🟩	🟨	🟨	🟩	🟨	◼	🟩	🟩	🟩	🟨	🟩
Egypt	🟩	🟩	◼	🟩	🟨	🟩	🟩	🟩	🟩	🟩	🟩	◼	◼	🟩	🟩	🟨	◼	🟨
Iran	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	◼	🟩
Iraq	🟨	◼	◼	◼	🟥	🟩	🟩	🟨	🟨	🟥	🟥	🟥	◼	🟩	🟩	🟥	🟥	🟥
Jordan	🟩	◼	🟥	🟥	🟨	🟨	🟨	🟩	🟥	🟥	🟩	◼	◼	🟩	🟩	🟨	🟥	🟨
Kuwait	🟩	🟨	🟨	🟨	🟨	🟨	🟨	🟩	🟨	🟨	🟨	🟨	🟨	🟩	🟩	🟨	🟨	🟨
Lebanon	🟩	◼	🟥	◼	🟨	🟨	🟩	🟨	🟨	🟥	🟥	🟩	🟥	🟩	🟩	🟨	🟨	🟥
Libya	▨	▨	▨	◼	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Oman	🟩	🟩	🟩	🟨	🟨	🟩	🟩	🟩	🟩	🟩	🟨	🟩	◼	🟩	🟩	🟨	◼	🟨
Qatar	🟩	🟥	🟩	🟩	🟨	🟩	🟩	🟩	🟩	🟨	🟩	◼	◼	🟩	🟩	🟩	🟨	🟩
Saudi Arabia	🟩	◼	🟨	🟨	🟨	🟩	🟩	🟩	🟩	◼	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
Sudan	🟩	◼	🟨	◼	◼	🟨	🟨	🟩	🟨	🟨	🟨	🟩	🟨	🟩	🟩	🟨	🟨	🟨
Syria	▨	▨	▨	◼	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
UAE	🟩	🟩	🟨	🟨	🟨	🟩	🟩	🟩	🟩	🟨	🟩	▨	◼	🟩	🟩	🟩	🟨	🟩
Yemen	▨	▨	▨	◼	▨	▨	▨	▨	▨	▨	▨	▨	▨	🟩	▨	▨	▨	▨

Legend

🟩 FI: Fully Implemented

🟨 PI: Partially Implemented

🟥 NI: Not Implemented

◼ N/A: Not Applicable

▨ Missing Data

International Civil Aviation Organization
Middle East Office
Cairo International Airport
Cairo 11776, EGYPT

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Fax: +20 2 22674843
Email: icaomid@icao.int

AFT

www.icao.int/mid

APPENDIX 4B

MID Region AIDC/OLDI Applicability Area (Priority 1 and 2 for Implementation)

As of July 2018

ACC	Adjacent ACCs						
Amman	Cairo (1)	Baghdad (2)	Damascus (2)	Jeddah (1)	Tel Aviv (2)		
Baghdad	Amman (2)	Ankara (1)	Damascus (2)	Jeddah (2)	Tehran (2)	Kuwait (1)	
Bahrain	Doha (1)	Emirates (1)	Jeddah (1)	Kuwait (1)	Riyadh (1)	Tehran (2) AFTN MSG	Dammam(2)
Beirut	Damascus (2)		Nicosia (1)				
Cairo	Amman (1)	Athena (2)	Jeddah (1)	Khartoum (1)	Nicosia (1)	Tel Aviv (2)	Tripoli (2)
Damascus	Amman (2)	Ankara (2)	Bagdad (2)	Beirut (2)	Nicosia (2)		
Doha*	Bahrain (1)	Emirates (1)	Jeddah (2)	Riyadh (2)			
Emirates	Bahrain (1)	Doha (1)	Jeddah (1)	Muscat (1)	Tehran (2) AFTN MSG		
Jeddah	Amman (1)	Asmara (2)	Baghdad (2)	Bahrain (1)	Cairo (1)	Doha (2)	Emirates (1)
	Khartoum (1)	Kuwait (2)	Muscat (1)	Riyadh (1)		Sana'a (2)	
Riyadh	Bahrain (1)	Doha (2)	Kuwait (2)	Jeddah (1)			
Khartoum	Addis (1)	Asmara (2)	Brazzaville (2)	Cairo (1)	Entebbe (2)	Jeddah (1)	Juba (1)
	Kinshasa (2)	N'Djamena (2)	Nairobi (2)	Tripoli (2)			
Kuwait	Baghdad (1)	Bahrain (1)	Jeddah (2)	Tehran (2)			
Muscat	Emirates (1)	Jeddah (1)	Karachi (2)	Mumbai (1)	Sana'a (2)	Tehran (1)	
Sana'a	Djibouti (Addis Ababa) (2)	Asmara (2)	Jeddah (2)	Mogadishu (2)	Mumbai (2)	Muscat (2)	
Tehran	Ankara (1)	Ashgabat (2)	Baghdad (2)	Bahrain (1)	Baku (2)	Emirates (2) AFTN MSG	Kabul (2)
	Karachi (1)	Kuwait (2)	Muscat (1)	Yerevan (2)			
Tripoli	Algiers (2)	Cairo (2)	Khartoum (2)	Malta (2)	N'Djamena (2)	Niamey (2)	Tunis (2)

(1) = Priority 1 for implementation based on the number of traffic movements and/or operational needs (Green color means already implemented)

(2) = Priority 2 for implementation based on the number of traffic movements or if other solution is in place such as exchange of information via AFTN

APPENDIX 4C

Table B0-ACDM 3-1

EXPLANATION OF THE TABLE

Column:

1- Name of the State

2- Aerodrome and Location Indicator

3 & 4 Fundamental ACDM Elements

3-Information Sharing:
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented

Note 1- Information Sharing is essential since it forms the foundation for all the other subsequent elements.

4-The Milestones Approach (Turn- Round Process)
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented

Note 2- The Milestones Approach (Turn- Round Process) aims to achieve common situational awareness by tracking the progress of a flight from the initial planning to the take off.

5 – 8 Other ACDM Elements

5- Variable Taxi Time
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented

Note 3- Variable Taxi Time is the key to predictability of accurate take-off in block times especially at complex airports.

6-Collaborative Management of Flight Updates
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented

Note 4- Collaborative Management of Flight Updates enhances the quality of arrival and departure information exchanges between the Network Operations and the CDM airports.

7-Collaborative Pre-departure Sequence
FI – Fully Implemented
PI – Partially Implemented
NI – Not Implemented

Note 5- (Collaborative) Pre-departure Sequence establishes an off-block sequence taking into account operators preferences and operational constraints.

8-ACDM in Adverse Conditions
  FI – Fully Implemented
  PI – Partially Implemented
  NI – Not Implemented

Note 6- ACDM in Adverse Conditions achieves collaborative management of a ACDM during periods of predicted or unpredicted reductions of capacity.

9- Action Plan — short description of the State's Action Plan with regard to ACDM Implementation, especially for items with a "PI" or "NI" status, including planned date(s) of full compliance, as appropriate.

10- Remarks — additional information, including detail of "PI" or "N", as appropriate.

Table B0-ACDM 3-1

State	Aerodrome Location Indicator	ACDM IMPLEMENTATIOM ELEMENTS							
		Fundamental ACDM Elements		Other ACDM Elements				Action Plan	Remarks
		Information Sharing	Milestones Approach	Variable Taxi Time	Collaborative Management of Flight Updates	Collaborative Pre-departure Sequence	ACDM in Adverse Conditions		
1	2	3	4	5	6	7	8	9	10
Bahrain	OBBI								
Egypt	HECA								
Iran	OIII								
Kuwait	OKBK								
Oman	OOMS								
Qatar	OTBD								
	OTHH								
Saudi Arabia	OEJN								
	OERK								
UAE	OMDB								
	OMAA								

TABLE B0-FICE 3-1

EXPLANATION OF THE TABLE

Column	
1	Name of the State
2,3,4	Status of AMHS Capability and Interconnection and AIDC/OLDI Capability, where: Y – Fully Implemented N – Not Implemented
5	~~Status~~ Number of required AIDC/OLDI Interconnections~~mplementation, where:~~ ~~Y – If AIDC/OLDI is implemented at least with one neighbouring ACC~~ ~~N – Not Implemented~~
6	Number of implemented AIDC/OLDI Interconnection~~Action plan – short description of the State's Action Plan with regard to the implementation of B0-FICE~~.
7	Remarks

State	AMHS Capability	AMHS Interconnection	AIDC/OLDI Capability	Required AIDC/OLDI Interconnections~~Implementation~~	~~Action Plan~~AIDC/OLDI Implementation	Remarks
1	*2*	*3*	*4*	*5***	**6**	*7*
Bahrain	Y	Y	Y	5~~Y~~	1	connection with ABU Dhabi
Egypt	Y	Y	Y	4~~Y~~	1	
Iran	N	N	Y	4~~N~~	0	Contract signed for AMHS
Iraq	N	N	N	2~~N~~	0	Thales Topsky ATM system
Jordan	Y	Y	Y	2~~N~~	0	
Kuwait	Y	Y	Y	2~~N~~	0	
Lebanon	Y	Y	Y	1~~Y~~	0	
Libya	Y	N	Y	0~~N~~	0	0Contract signed for AMHS
Oman	Y	Y	Y	4~~N~~	1	
Qatar	Y	Y	Y	2~~Y~~	1	local implementation for OLDI
Saudi Arabia	Y	Y	Y	7~~Y~~	2	local implementation for AIDC
Sudan	Y	Y	Y	4~~N~~	0	

Syria	N	N	N	0~~N~~	0	
UAE	Y	Y	Y	4~~Y~~	3	
Yemen	N	N	N	0~~N~~	0	Contract signed for AMHS
Total Percentage/ Number	**73%**	**67%**	**80%**	**41~~40%~~**	**9 (22%)**	

B0-DATM Enablers/Tables

In order to assist States in the planning for the transition from AIS to AIM in an expeditious manner, the following Tables, which provide more details than the standard ANRF, should be used:

1- **Table B0-DATM 3-1** sets out the requirements for the Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID). It reflects the transition from the current product centric AIS to data centric AIM. For the future digital environment it is important that the authoritative databases are clearly designated and such designation must be published for the users. This is achieved with the concept of the Integrated Aeronautical Information Database (IAID), a single access point for one or more authoritative databases (~~AIS~~AIP, Terrain, Obstacles, AMDB, etc) for which the State is responsible. This Table will be used for the monitoring of the Key Performance Indicators (KPIs) related to elements Nr. 1 and 2 of the Module B0-DATM.

2- **Table B0-DATM 3-2** sets out the requirements for aeronautical data quality. It will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 3 of the Module B0-DATM.

3- **Table B0-DATM 3-3** sets out the requirements for the implementation of the World Geodetic System – 1984 (WGS-84).The requirement to use a common geodetic system remains essential to facilitate the exchange of data between different systems. The expression of all coordinates in the AIP and charts using WGS-84 is an important first step for the transition to AIM. This Table will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 4 of the Module B0-DATM.

4- **Table B0-DATM 3-4-1** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 1 and Area 4. It will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATM.

5- **Table B0-DATM 3-4-2** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 2. It will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATM.

6- **Table B0-DATM 3-4-3** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 3 and implementation of Airport Mapping Databases (AMDB). It will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATM.

Table B0-DATM 3-1

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

EXPLANATION OF THE TABLE

Column:

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

2 Requirement for the implementation and designation of the authoritative IAID, shown by:

FI – Fully Implemented
~~PI – Partially Implemented~~
NI – Not Implemented

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

~~*Note 2 — Information providing detail of "PI" should be given in the Remarks column (the implemented components of the IAID).*~~

Note ~~3~~ 2 — The information related to the designation of the authoritative IAID should be published in the AIP (GEN 3.1)

3 Requirement for an IAID driven AIP production, shown by:

FI – Fully Implemented (eAIP: Text, Tables and Charts)
PI – Partially Implemented
NI – Not Implemented

Note ~~4~~ 3 — AIP production includes, production of AIP, AIP Amendments and AIP Supplements

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

4 Requirement for an IAID driven NOTAM production, shown by:

FC – Fully Compliant
NC – Not Compliant

5 Requirement for an IAID driven SNOWTAM ~~production~~processing, shown by:

~~FC~~ FI – Fully Implemented~~Compliant~~
~~NC~~ NI – Not Implemented~~compliant~~

6 Requirement for an IAID driven PIB production, shown by:

FC – Fully Compliant
PC – Partially Compliant
NC – Not Compliant

~~7 Requirement for Charting systems to be interoperable with the IAID, shown by:~~

~~FC – Fully compliant~~
~~PC – Partially compliant~~
~~NC – Not compliant~~

~~8~~7 Requirement for Procedure design systems to be interoperable with the IAID, shown by:

FI – Fully Implemented

PI – Partially Implemented

NI – Not Implemented

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

~~9~~8 Requirement for ATS systems to be interoperable with the IAID, shown by:

FI – Fully Implemented

PI – Partially Implemented

NI – Not Implemented

~~10~~9 Action Plan — short description of the State’s Action Plan with regard to the provision of AIM products and services based on the IAID, especially for items with a “PC”, “PI”, “NC” or “NI” status, including planned date(s) of full compliance, as appropriate.

~~11~~10 Remarks — additional information, including detail of “PC”, “NC”, “PI” and “NI”, as appropriate.

TABLE B0-DATM-3-1

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

State	IAID	AIP	NOTAM	SNOWTAM	PIB	~~Charting~~	Procedure Design	ATS	Action Plan	Remarks
1	*2*	*3*	*4*	*5*	*6*	~~*7*~~	~~*8*~~*7*	~~*9*~~*8*	~~*10*~~*9*	~~*11*~~*10*
BAHARAIN	~~PI~~FI	FI	FC	~~FC~~FI	FC	~~FC~~	PI	FI	National AIM Roadmap-~~2015~~2016	**AIXM:** ~~4.5~~ 5.1 ~~by end 2015~~
EGYPT	FI	PI	~~NC~~FC	~~NC~~FI	FC	~~NC~~	NI	PI	National AIM Roadmap-~~2015~~2017	**AIXM:** 5.1 3 and 7 by ~~2015, 4-9 by~~ ~~2016~~2018
IRAN, ISLAMIC REPUBLIC OF	NI	NI	NC	NI~~C~~	NC	~~NC~~	NI	NI	National AIM Roadmap-~~2015~~2016	**AIXM:** NI Separate semi-automated NOTAM/SNOWTAM system is operative
IRAQ	NI	NI	NC	~~NC~~NI	NC	~~NC~~	NI	NI	National AIM Roadmap-~~2014~~2015	**AIXM:** NI
JORDAN	~~PI~~NI	NI	FC	~~FC~~NI	FC	~~PC~~	NI	NI	National AIM Roadmap-~~2014~~2017	**AIXM:** database through EAD
KUWAIT	~~PI~~NI	NI	FC	~~NC~~NI	PC	~~NC~~	NI	NI	National AIM Roadmap-~~2015~~2016	**AIXM:** NI (5.1 in progress)
LEBANON	NI	~~FI~~ NI	NC	~~NC~~NI	NC	~~NC~~	NI	NI	National AIM Roadmap-~~2014~~2016	**AIXM:** 4.5
LIBYA	NI	NI	NC	~~NC~~NI	NC	~~NC~~	NI	NI	No Action Plan	**AIXM:** NI
OMAN	NI	NI	NC	~~NC~~NI	NC	~~NC~~	NI	NI	National AIM Roadmap-~~2014~~2016	**AIXM:** NI (5.1 in progress)
QATAR	~~PI~~NI	PI	FC	~~PC~~NI	FC	~~PC~~	PI	NI	National AIM Roadmap-~~2015~~2016	**AIXM:** 5.1 Q4/2017 – Data Integration (AIP, Terrain, Obstacle, Procedure Design and AMDB datasets)
SAUDI ARABIA	FI	FI	~~FC~~NC	~~FC~~NI	~~FC~~PC	~~FC~~	FI	FI	National AIM Roadmap-~~2014~~2017	**AIXM:** 4.5
SUDAN	~~PI~~NI	NI	FC	NI~~NC~~	FC	~~PC~~	PI	PI	National AIM Roadmap-~~2015~~2017	~~1.AIS DB integrated with MET & ATM~~ ~~2. Contract Signed for eAIP, AIXM connected with Charting SYS.~~ ~~7. Contract signed.~~ ~~8. Ongoing project~~ **AIXM:** NI (5.1 in progress) AIS Automation Project is

State	**IAID**	**AIP**	**NOTAM**	**SNOWTAM**	**PIB**	~~**Charting**~~	**Procedure Design**	**ATS**	**Action Plan**	**Remarks**
1	***2***	***3***	***4***	***5***	***6***	~~***7***~~	~~***8***~~***7***	~~***9***~~***8***	~~***10***~~***9***	~~***11***~~***10***
										ongoing
SYRIAN ARAB REPUBLIC	NI	NI	NC	~~NC~~NI	NC	~~NC~~	NI	NI	No Action Plan	**AIXM:** NI
UNITED ARAB EMIRATES	~~PI~~NI	FI	NC	~~NC~~NI	PC	~~PC~~	NI	PI	National AIM Roadmap-~~2014~~2017	**AIXM:** 5.1 AMDB: 2016-2021; PIB: AVBL at OMAA, OMDB, OMDW, OMFJ, other ADs 2020; Charting system upgrade is planned for 2017; Procedure Design 2020; ATS: ACC AVBL, ADs 2020 Digital NOTAM: 2016-2021 ~~AMDB: 2016-2021~~ ~~eTOD integration: 2016~~ ~~PIB: AVBL at OMMA, OMDB, OMDW; other ADs 2020~~ ~~Charing: 2016~~ ~~Procedure Design 2020~~ ~~ATS: ACC AVBL, ADs 2020~~ ~~Digital NOTAM 2016-2021~~
YEMEN	NI	NI	NC	~~NC~~NI	NC	~~NC~~	NI	NI	No Action Plan	**AIXM:** NI

Table B0-DATM-3-2

Aeronautical Data Quality

EXPLANATION OF THE TABLE

Column:

1 Name of the State or territory.

2 Compliance with the requirement for implementation of QMS for Aeronautical Information Services including safety and security objectives, shown by:

FC – Fully compliant
NC – Not compliant

3 Compliance with the requirement for the establishment of formal arrangements with approved data originators concerning aeronautical data quality, shown by:

FC – Fully compliant
PC – Partially compliant
NC – Not compliant

4 Implementation of digital data exchange with originators, shown by:

FI – Implemented
PI – Partially Implemented
NI – Not implemented

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

5 Compliance with the requirement for metadata, shown by:

FC – Fully compliant
PC – Partially compliant
NC – Not compliant

6 Compliance with the requirements related to aeronautical data quality monitoring (accuracy, resolution, timeliness, completeness), shown by:

FC – Fully compliant
PC – Partially compliant
NC – Not compliant

7 Compliance with the requirements related to aeronautical data integrity monitoring, shown by:

FC – Fully compliant
PC – Partially compliant
NC – Not compliant

8 Compliance with the requirements related to the AIRAC adherence, shown by:

FC – Fully compliant
NC – Not compliant

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

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

TABLE B0-DATM-3-2

Aeronautical Data Quality

State	QMS	Establishment of formal agreements	Digital data exchange with originators	Metadata	Data quality monitoring	Data integrity monitoring	AIRAC adherence	Action Plan	Remarks
1	2	3	4	5	6	7	8	9	10
BAHARAIN	FC	~~FC~~PC	PI	~~PC~~FC	~~PC~~FC	~~PC~~FC	FC	National AIM Roadmap-~~2015~~2016	
EGYPT	FC	PC	PI	FC	PC	PC	FC	National AIM Roadmap-~~2015~~2017	3, 4, 6 and 7 by ~~2016~~2018
IRAN, ISLAMIC REPUBLIC OF	FC	PC	NI	NC	~~NC~~FC	~~NC~~FC	FC	National AIM Roadmap-~~2015~~2016	
IRAQ	NC	NC	NI	NC	NC	NC	FC	National AIM Roadmap-~~2014~~2015	
JORDAN	FC	~~NC~~PC	NI	~~PC~~FC	FC	FC	FC	National AIM Roadmap-~~2014~~2017	
KUWAIT	FC	PC	NI	NC	NC	NC	FC	National AIM Roadmap-~~2015~~2016	
LEBANON	NC	~~NC~~PC	NI	~~NC~~PC	~~NC~~PC	~~NC~~PC	FC	National AIM Roadmap-~~2014~~2016	
LIBYA	NC	NC	NI	NC	NC	NC	NC	No Action Plan	
OMAN	NC	NC	NI	NC	~~NC~~FC	~~NC~~FC	FC	National AIM Roadmap-~~2014~~2016	
QATAR	FC	~~FC~~PC	PI	FC	PC	PC	FC	National AIM Roadmap-~~2015~~2016	~~SLA with MIL in progress~~
SAUDI ARABIA	FC	~~PC~~FC	NI	FC	FC	FC	FC	National AIM Roadmap-~~2014~~2017	~~SLA will be completed end 2015~~
SUDAN	FC	FC	NI	NC	FC	FC	FC	National AIM Roadmap-~~2015~~2017	
SYRIAN ARAB REPUBLIC	NC	NC	NI	NC	NC	NC	NC	No Action Plan	
UNITED ARAB EMIRATES	FC	PC	~~NI~~PI	FC	FC	FC	FC	National AIM Roadmap-~~2014~~2017	SLA initiated with MIL-ongoing Digital data exchange with originator: planned (2016-2021)

									CAAP 56 details of agreements
YEMEN	NC	NC	NI	PC	NC	NC	NC	No Action Plan	

Table B0-DATM-3-3

World Geodetic System-1984 (WGS-84)

EXPLANATION OF THE TABLE

Column:

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

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

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

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

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

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

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

TABLE B0-DATM-3-3
World Geodetic System-1984 (WGS-84)

State	FIR/ENR	Terminal	AD	GUND	Action Plan	Remarks
1	2	3	4	5	6	7
BAHARAIN	FC	FC	FC	FC		~~Plan to be updated by 2016~~
EGYPT	FC	FC	FC	FC		
IRAN, ISLAMIC REPUBLIC OF	FC	FC	FC	FC		
IRAQ	~~PC~~FC	~~PC~~FC	~~PC~~FC	NC	National AIM Roadmap-~~2014~~2015	
JORDAN	FC	FC	FC	FC		
KUWAIT	FC	FC	FC	FC		Last survey FEB 2015
LEBANON	FC	FC	FC	~~NC~~FC	~~National AIM Roadmap-2014~~	
LIBYA	PC	PC	NC	NC	No Action Plan	
OMAN	FC	FC	FC	FC		
QATAR	FC	FC	FC	FC		Annual Validation/Survey Updates planned up to 2017
SAUDI ARABIA	FC	FC	FC	FC		
SUDAN	FC	FC	FC	FC		
SYRIAN ARAB REPUBLIC	FC	FC	FC	NC	No Action Plan	
UNITED ARAB EMIRATES	FC	FC	FC	FC		
YEMEN	FC	FC	FC	FC		

Table B0-DATM-3-4-1

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

EXPLANATION OF THE TABLE

Column	
1	Name of the State or territory for which Terrain and Obstacle data sets for Areas 1 and 4 are required.
2	Compliance with requirement for the provision of Terrain data sets for Area 1, shown by: FC – Fully Compliant PC – Partially Compliant NC – Not Compliant
3	Compliance with requirement for the provision of Terrain data sets for Area 4, shown by: FC – Fully Compliant PC – Partially Compliant NC – Not Compliant N/A – Not Applicable
4	Compliance with requirement for the provision of Obstacle data sets for Area 1, shown by: FC – Fully Compliant PC – Partially Compliant NC – Not Compliant
5	Compliance with requirement for the provision of Obstacle data sets for Area 4, shown by: FC – Fully Compliant PC – Partially Compliant NC – Not Compliant N/A – Not Applicable
6	Action plan — short description of the State's Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets for Areas 1 and 4, especially for items with a "PC" or "NC" status, including planned date(s) of full compliance, as appropriate.
7	Remarks— additional information, including detail of "PC" and "NC", as appropriate.

TABLE B0-DATM-3-4-1

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

State	Terrain data sets		Obstacle data sets		Action Plan	Remarks
	Area 1	Area 4	Area 1	Area 4		
1	2	3	4	5	6	7
BAHARAIN	FC	FC	FC	FC		
EGYPT	FC	FC	~~PC~~NC	~~PC~~NC	National AIM Roadmap-~~2015~~2017	4 and 5 (HECA & HESH): 2019
IRAN, ISLAMIC REPUBLIC OF	FC	FC	FC	FC		
IRAQ	NC	NC	NC	NC	National AIM Roadmap-~~2014~~2015	
JORDAN	~~NC~~PC	~~NC~~FC	~~NC~~PC	~~NC~~FC	National AIM Roadmap-~~2014~~2017	
KUWAIT	FC	FC	FC	FC		
LEBANON	NC	N/A	NC	N/A	National AIM Roadmap-~~2014~~2016	
LIBYA	NC	N/A	NC	N/A	No Action Plan	
OMAN	NC	N/A	NC	N/A	National AIM Roadmap-~~2014~~2016	
QATAR	FC	FC	FC	FC		
SAUDI ARABIA	FC	FC	FC	FC		
SUDAN	NC	N/A	NC	N/A	National AIM Roadmap-~~2015~~2017	
SYRIAN ARAB REPUBLIC	NC	N/A	NC	N/A	No Action Plan	
UNITED ARAB EMIRATES	PC	FC	PC	FC	National AIM Roadmap-~~2014~~2017	A recurrent data acquisition eTOD Area 1 is planned
YEMEN	NC	N/A	NC	N/A	No Action Plan	

Table B0-DATM-3-4-2

Provision of Terrain and Obstacle data sets for Area 2

EXPLANATION OF THE TABLE

Column

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

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

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

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

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

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

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

8 Compliance with requirement for the provision of Obstacle data sets for Area 2c, shown by:
  FI – Fully Implemented

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

9 Compliance with requirement for the provision of Obstacle data sets for Area 2d, shown by:

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

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

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

TABLE B0-DATM-3-4-2

Provision of Terrain and Obstacle data sets for Area 2

State	Terrain data sets				Obstacle data sets				Action Plan	Remarks
	Area 2a	Area 2b	Area 2c	Area 2d	Area 2a	Area 2b	Area 2c	Area 2d		
1	2	3	4	5	6	7	8	9	10	11
BAHARAIN	NC	NI	NI	NI	~~NC~~FC	~~NI~~FI	~~NI~~FI	~~NI~~FI	National AIM Roadmap-~~2015~~2016	
EGYPT	PC	PI	PI	PI	NC	NI	NI	NI	National AIM Roadmap-~~2015~~2017	To be completed by 2020
IRAN, ISLAMIC REPUBLIC OF	~~NC~~FC	~~NI~~FI	~~NI~~FI	~~NI~~FI	~~NC~~FC	~~NI~~FI	~~NI~~FI	~~NI~~FI	~~National AIM Roadmap-2015~~	
IRAQ	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap-~~2014~~2015	
JORDAN	~~NC~~PC	~~NI~~PI	~~NI~~PI	NI	~~NC~~PC	~~NI~~PI	~~NI~~PI	NI	National AIM Roadmap-~~2014~~2017	Area 2a, 2b and 2c implemented for OJAI RWY 26R/08L
KUWAIT	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap-~~2015~~2016	
LEBANON	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap-~~2014~~2016	
LIBYA	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	
OMAN	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap-~~2014~~2016	
QATAR	FC	FI	FI	FI	FC	FI	FI	FI		
SAUDI ARABIA	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap-~~2014~~2017	
SUDAN	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap-~~2015~~2017	
SYRIAN ARAB REPUBLIC	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	
UNITED ARAB EMIRATES	NC	NI	NI	P~~N~~I	~~NC~~FC	~~NI~~FI	~~NI~~FI	~~NI~~PI	National AIM Roadmap-~~2014~~2017	eTOD Area 2 (all sub-areas) survey & data acquisition through international airport service providers
YEMEN	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	

Table B0-DATM-3-4-3

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

EXPLANATION OF THE TABLE

Column	
1	Name of the State or territory for which Terrain and Obstacle data sets for Area 3 and AMDB are required.
2	Compliance with requirement for the provision of Terrain data sets for Area 3, shown by: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented N/A – Not Applicable
3	Compliance with requirement for the provision of Obstacle data sets for Area 3, shown by: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented N/A – Not Applicable
4	Implementation of AMDB, shown by: FI – Fully Implemented PI – Partially Implemented NI – Not Implemented N/A – Not Applicable
5	Action plan — short description of the State's Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets for Area 3 and AMDB implementation, especially for items with a "PC", "PI", "NC" or "NI" status.
6	Remarks— additional information, including detail of "PI" and "NI", as appropriate.

TABLE B0-DATM-3-4-3

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

State	Terrain data sets (Area 3)	Obstacle data sets (Area 3)	AMDB	Action Plan	Remarks
1	2	3	4	5	6
BAHARAIN	NI	~~NI~~FI	NI	National AIM Roadmap-~~2015~~2016	
EGYPT	NI	NI	NI	National AIM Roadmap-~~2015~~2017	A3: 2019; AMDB: 2020
IRAN, ISLAMIC REPUBLIC OF	~~NI~~FI	~~NI~~FI	NI	National AIM Roadmap-~~2015~~2016	
IRAQ	NI	NI	NI	National AIM Roadmap-~~2014~~2015	
JORDAN	~~NI~~PI	~~NI~~PI	NI	National AIM Roadmap-~~2014~~2017	Area 3 implemented for OJAI RWY 26R/08L
KUWAIT	FI	FI	NI	National AIM Roadmap-~~2015~~2016	
LEBANON	NI	NI	NI	National AIM Roadmap-~~2014~~2016	
LIBYA	NI	NI	NI	No Action Plan	
OMAN	NI	NI	NI	National AIM Roadmap-~~2014~~2016	
QATAR	~~NI~~FI	~~FI~~PI	~~NI~~PI	National AIM Roadmap-~~2015~~2016	Q4/2017 AMDB implementation~~AMDB to be implemented last quarter of 2015~~
SAUDI ARABIA	NI	NI	NI	National AIM Roadmap-~~2014~~2017	
SUDAN	NI	NI	NI	National AIM Roadmap-~~2015~~2017	
SYRIAN ARAB REPUBLIC	NI	NI	NI	No Action Plan	
UNITED ARAB EMIRATES	~~NI~~FI	~~NI~~FI	NI	National AIM Roadmap-~~2014~~2017	AMDB technical infrastructure (metadata, model) implemented in IAID, pending compatibility analysis AIXM 5.1 with revised AMDB model (RTCA DO-272D) when released.
YEMEN	NI	NI	NI	No Action Plan	

Table B0-AMET 3-1

SADIS FTP

EXPLANATION OF THE TABLE

Column

1	Name of the State
2	Status of implementation of SADIS FTP, where:
	Y – Yes, implemented
	N – No, not implemented
3	Action Plan
4	Remarks

State	Status	Action Plan	Remarks
1	**2**	**3**	**4**
BAHRAIN	Y		
EGYPT	Y		
IRAN (ISLAMIC REPUBLIC OF)	N	No Action Plan	
IRAQ	Y		
JORDAN	Y		
KUWAIT	Y		
LEBANON	N	No Action Plan	
LIBYA	Y		
OMAN	Y		
QATAR	Y		
SAUDI ARABIA	N	Coordinating with SADIS Provider	
SUDAN	Y		
SYRIAN ARAB REPUBLIC	N	No Action Plan	
UNITED ARAB EMIRATES	Y		
YEMEN	Y		

Table B0-AMET 3-2

Volcanic Ash Advisory Centers

Not Applicable

~~EXPLANATION OF THE TABLE~~

~~Column~~

~~1~~	~~Name of the State responsible for the provision of a volcanic ash advisory centre (VAAC)~~
~~2~~	~~Name of the VAAC~~ *~~Note: The name is extracted from the ICAO Location Indicators (Doc 7910).~~*
~~3~~	~~ICAO location indicator of the VAAC~~
~~4~~	~~Status of implementation of volcanic ash advisory information, where:~~ ~~FC — Fully compliant~~ ~~PC — Partially compliant~~ ~~NC — Not compliant~~
~~5~~	~~Status of implementation of volcanic ash advisory information in graphical format, where:~~ ~~FC — Fully compliant~~ ~~PC — Partially compliant~~ ~~NC — Not compliant~~

~~State~~	**~~Volcanic Ash Advisory Centre (VAAC)~~**	**~~ICAO Location Indicator~~**	**~~Status of Implementation~~**	
			~~VAA~~	**~~VAG~~**
~~1~~	**~~2~~**	**~~3~~**	**~~4~~**	**~~5~~**
~~FRANCE~~	~~Toulouse~~	~~LFPW~~	~~FC~~	~~FC~~

Table B0-AMET 3-3

Tropical Cyclone Advisory Centers

Not Applicable

~~EXPLANATION OF THE TABLE~~

~~Column~~

~~1~~ ~~Name of the State responsible for the provision of a tropical cyclone advisory centre (TCAC)~~

~~2~~ ~~Name of the TCAC~~

~~Note: The name is extracted from the ICAO Location Indicators (Doc 7910).~~

~~3~~ ~~ICAO location indicator of the TCAC~~

~~4~~ ~~Status of implementation of tropical cyclone advisory information, where:~~

- ~~FC – Fully compliant~~
- ~~PC – Partially compliant~~
- ~~NC – Not compliant~~

~~5~~ ~~Status of implementation of tropical cyclone advisory information in graphical format, where:~~

- ~~FC – Fully compliant~~
- ~~PC – Partially compliant~~
- ~~NC – Not compliant~~

~~State~~	**~~Tropical Cyclone Advisory Centre (TCAC)~~**	**~~ICAO Location Indicator~~**	**~~Status of Implementation~~**	
			~~TCA~~	**~~TCG~~**
~~1~~	**~~2~~**	**~~3~~**	**~~4~~**	**~~5~~**
~~INDIA~~	~~New Delhi~~	~~VIDP~~	~~FC~~	~~FC~~

Table B0-AMET 3-4

Quality Management System

EXPLANATION OF THE TABLE

Column

1	Name of the State
2, 3, 4, 5	Status of implementation of Quality Management System of meteorological information – QMS: not started/ planning, ongoing/ partially implemented, Implemented/ISO 9001 Certified, Date of Certification.
6	Action Plan
7	Remarks

State	**Not started/ planning**	**Ongoing/ partially implemented**	**Implemented/ ISO 9001 Certified**		**Action Plan**	**Remarks**
			Status	**Date of Certification**		
1	**2**	**3**	**4**	**5**	**6**	**7**
BAHARAIN			√	2008		
EGYPT			√	~~23 May 2012~~ May 2015		
IRAN, ISLAMIC REPUBLIC OF			√	Oct 2015		
IRAQ	√				No Action Plan	
JORDAN			√	~~2 Apr 2014~~ 14 April 2017		
KUWAIT			√	~~23 Aug 2013~~ 22 Aug 2016		
LEBANON	√				No Action Plan	
LIBYA	√				No Action Plan	
OMAN		√			TBD	
QATAR			√	Dec 2011		
SAUDI ARABIA			√	Aug 2014		
SUDAN			√	5 June 2014		
SYRIAN ARAB REPUBLIC	√				No Action Plan	
UNITED ARAB EMIRATES			√	~~19 Dec 2012~~ 18 Dec 2015		
YEMEN	√				No Action Plan	

Table B0-AMET 3-5
SIGMET Availability

EXPLANATION OF THE TABLE

Column	
1	Name of the State
2	Status of implementation of SIGMET, where: Y – Yes, implemented (at least one SIGMET received within a 5 month monitoring period, or as required) N – No, not implemented (no SIGMET received within a 5 month monitoring period)
3	Status of implementation of SIGMET format, where: Y – Yes, implemented (at least 95% of received SIGMET messages reveal the correct format (TTAAii CCCC in accordance to the MID SIGMET Guide; ATSU, MWO, FIR and FIR name in accordance to ICAO Doc 7910) for the first two lines of SIGMET)
4	N – No, not implemented (less than 95% of received SIGMET messages reveal the correct format for the first two lines of SIGMET)
	Action Plan
5	Remarks

State	**Implementation**		**Action Plan**	**Remarks**
	SIGMET Reception	**SIGMET Format**		
1	**2**	**3**	**4**	**5**
BAHRAIN	Y	Y		
EGYPT	Y	Y		
IRAN, ISLAMIC REPUBLIC OF	Y	Y		
IRAQ	Y	Y		Verify the header for Iraq is WSIQ01 ORBI for FIR ORBB – if so, update to MID Doc 009
JORDAN	Y	Y		
KUWAIT	Y	Y		
LEBANON	Y	Y		
LIBYA	Y	N		Indicators HLMC for MWO and HLLL for FIR are not defined in ICAO Doc 7910
OMAN	Y	Y		
QATAR	N/A	N/A		These fields are not applicable to

				Qatar
SAUDI ARABIA	Y	Y		
SUDAN	Y	Y		
SYRIAN ARAB REPUBLIC	N	N	No Action Plan	
UNITED ARAB EMIRATES	Y	Y		
YEMEN	N	N	No Action Plan	

Table B0-AMET 3-6

WIND SHEAR Availability

TBD

Draft Table B0-AMET 3-7

OPMET Availability (METAR and TAF)

EXPLANATION OF THE TABLE

Column

1 Name of the State
2, 3 Status of availability of METAR and TAF for AOP aerodromes, where:
Y – Yes, implemented (95% availability of required METAR within a State; 95% availability of required TAF within a State)
N – No, not implemented
4 Remarks

State	**Implementation**		**Remarks**
	METAR	**TAF**	
1	**2**	**3**	**4**
BAHRAIN	Y	Y	
EGYPT	Y	Y	
IRAN, ISLAMIC REPUBLIC OF	Y	Y	
IRAQ	N	N	MEAR and TAF needed for ORBM
JORDAN	Y	Y	
KUWAIT	Y	Y	
LEBANON	Y	Y	
LIBYA	Y	Y	
OMAN	Y	Y	
QATAR	Y	Y	
SAUDI ARABIA	Y	Y	
SUDAN	Y	Y	
SYRIAN ARAB REPUBLIC	N	N	METAR &TAF needed for OSAP
UNITED ARAB EMIRATES	Y	Y	
YEMEN	N	N	METAR & TAF needed for OYAA, OYHD, OYRN, OYSN and OYTZ

- END -

Table B0-FRTO 3-1

EXPLANATION OF THE TABLE

Column

1 Name of the State

2 Status of implementation of Flexible Use of Airspace (FUA) Level 1-Strategic.

3 Status of implementation of Flexible Use of Airspace (FUA) Level 2-Pre-tactical

4 Status of implementation of Flexible Use of Airspace (FUA) Level 3-Tactical

Note – FI/PI/NI should be used for 2, 3 and 4, as follows:

FI – Fully Implemented

PI – Partially Implemented

NI – Not Implemented

5 Remarks

Applicability State	FUA Level 1	FUA Level 2	FUA Level 3	Remarks
1	**2**	**3**	**4**	**5**
Bahrain				
Egypt				
Iran				
Iraq				
Jordan				
Lebanon				
Libya				
Kuwait				
Oman				
Qatar				
Saudi Arabia				
Sudan				
Syria				
Unite Arab Emirates				
Yemen				
Total				
Percentage				

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Table B0-NOPS 3-1

EXPLANATION OF THE TABLE

Column

1 Name of the State
2 Mechanism for the implementation of ATFM Measures based on collaborative decision:
  Y –Implemented
  N – Not Implemented
3 ATFM Structure/Functions:
  Y –Implemented
  N – Not Implemented
4 Remarks

Applicability State	Mechanism for the implementation of ATFM Measures based on collaborative decision	ATFM Structure/Functions	Remarks
1	**2**	**3**	**4**
Bahrain			
Egypt			
Iran			
Iraq			
Jordan			
Lebanon			
Libya			
Kuwait			
Oman			
Qatar			
Saudi Arabia			
Sudan			
Syria			
UAE			
Yemen			
Total			
Percentage			

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Table B0-ACAS 3-1

EXPLANATION OF THE TABLE

Column
1 Name of the State
2 Status of implementation:
  Y – Fully Implemented
  N – Not Implemented
3 National Regulation(s) Reference(s)
4 Remarks

State	Status	Regulation Reference	Effective Date	Remarks
1	2	3	4	5
Bahrain	Y	Aeronautical Circular AC/OPS/05/2015 dated 10th of March 2015		Air Navigation Technical Regulations (ANTR) updated to reflect Annex 10 (Volume IV) Reference needs to be provided http://www.mtt.gov.bh/content/caa-laws-and-regulations
Egypt	Y	ECAR Part 121.356 & ECAR Part 91.221		Egyptian Civil Aviation Regulation (ECAR) Parts 121 and 91 have been updated in accordance with the relevant provisions of ICAO Annex 10, Volume IV, Ch.4 http://www.civilaviation.gov.eg/Regulations/regulation.html
Iran	Y	Aeronautical Telecommunications bylaw, articles 3 and 4		According to articles 3 and 4 of Iran aeronautical telecommunications by law, ratified by board of ministers, Airborne collision avoidance systems are categorized as aeronautical telecommunications systems and should be manufactured, installed and maintained according to standards of Annex 10. -Since no difference to ICAO annex 10 is notified, ACAS V 7.1 is mandatory according to provisions of annex 10 amendment 85. -Airworthiness directives issued

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State	Status	Regulation Reference	Effective Date	Remarks
1	**2**	**3**	**4**	**5**
				by FAA and EASA shall to be implemented by Iranian AOC holders.
Iraq	N			
Jordan	Y	JCAR-OPS.1 (1.668 airborne collision avoidance system)		
Kuwait	Y	Kuwait Civil Aviation Safety Regulations – Part 6 – Operation of Aircraft, Para. 6.20.4		
Lebanon	Y			Regulation reference needs to be provided
Libya	N			
Oman	Y			Regulation reference needs to be provided
Qatar	Y	QCAR – OPS 1, Subpart K, QCAR – OPS 1.668 – Airborne collision avoidance system QCAR Part 10 - Volume4 Chapter 4 Airborne Collision Avoidance System		References: http://www.caa.gov.qa/en/safety_regulations
Saudi Arabia	Y	GACAR PART 91 – Appendix C		
Sudan	Y	Amended Annex 10 (V4)- ANNESX 6 (V2)		According to adopted annexes to Sudan Regulations (SUCAR 10 V4 Par. 4.3.5.3.1 and SUCAR 6 V2 par 2.05.15)
Syria	N			
UAE	Y	CAR-OPS 1.668 Airborne Collision Avoidance System (See IEM OPS 1.668) and CAAP 29 and AIP 1.5.6.6		https://www.gcaa.gov.ae/en/ePublication/Pages/CARs.aspx?CertD=CARs
Yemen	Y			Reference need to be provided

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TABLE B0-SNET 3-1

EXPLANATION OF THE TABLE

Column	
1	Name of the State and ATS Units within a State providing Enroute and Approach services
2	Enroute and Approach ATS Units providing Radar services: “R”
3	Enroute and Approach ATS Units providing Procedural services: “P”
4	Enroute and Approach ATS Units within a State providing radar services where Short-Term Conflict Alert (STCA) was implemented (Y/N or N/A)
5	Enroute and Approach ATS Units within a State providing radar services where Minimum Safe Altitude Warning (MSAW)was implemented (Y/N or N/A)
6	Action Plan for the implementation of STCA and MSAW
7	Status of implementation of STCA and MSAW (reference to column 2)

State/ ATS Units (ENR & APP)	**ATS**		**STCA**	**MSAW**	**Action Plan**	**Status**
1	*2*	*3*	*4*	*5*	*6*	*7*
Bahrain	**2**	**0**	**2**	**2**		**STCA 100%** **MSAW 100%**
Bahrain ACC	R		Y	Y		
Bahrain APP	R		Y	Y		
Egypt	**7**	**1**				**STCA 100%** **MSAW 100%**
Cairo ACC	R		Y	Y		
Alex APP	R		Y	Y		
Aswan APP	R		Y	Y		
Cairo APP	R		Y	Y		
Luxor APP	R		Y	Y		
Hurghada APP	R		Y	Y		
Marsa APP		P	N/A	N/A		
Sharm APP	R		Y	Y		
Iran	**5**	**2**				**STCA 100%** **MSAW 100%**
Tehran ACC	R		Y	Y		
Bandar Abbas APP		P	N/A	N/A		
Esfahan APP	R		Y	Y		
Mashhad APP	R		Y	Y		
Mehrabad APP	R		Y	Y		
Shiraz APP	R		Y	Y		
Tabriz APP		P	N/A	N/A		
Iraq	**2**	**0**				**STCA 100%**

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State/ ATS Units (ENR & APP)	ATS		STCA	MSAW	Action Plan	Status
1	*2*	*3*	*4*	*5*	*6*	*7*
Baghdad ACC	R		Y	Y		**MSAW 100%**
Baghdad APP	R		Y	Y		
Jordan	**2**	**1**				**STCA 100%** **MSAW 100%**
Amman ACC	R		Y	Y		
Amman APP	R		Y	Y		
Aqaba APP		P	N/A	N/A		
Kuwait	**2**	**0**				**STCA 100%** **MSAW 100%**
Kuwait ACC	R		Y	Y		
Kuwait APP	R		Y	Y		
Lebanon	**2**	**0**				**STCA 100%** **MSAW 100%**
Beirut ACC	R		Y	Y		
Beirut APP	R		Y	Y		
Libya	**0**	**4**				**STCA 0%** **MSAW 0%**
Tripoli ACC		P	N/A	N/A		
Tripoli APP		P	N/A	N/A		
Benghazi Centre		P	N/A	N/A		
Benghazi APP		P	N/A	N/A		
Oman	**3**	**0**				**STCA 100%** **MSAW 100%**
Muscat ACC	R		Y	Y		
Seeb APP	R		Y	Y		
Salalah APP	R		Y	Y		
Qatar	**1**	**0**				**STCA 100%** **MSAW 100%**
Doha Radar	R		Y	Y		
Saudi Arabia	**6**	**0**				**STCA 100%** **MSAW 100%**
Jeddah ACC	R		Y	Y		
Riyadh ACC	R		Y	Y		
Jeddah APP	R		Y	Y		
Riyadh APP	R		Y	Y		
Madina APP	R		Y	Y		
Damam APP	R		Y	Y		
Sudan	**2**	**3**				**STCA 100%** **MSAW 100%**
Khartoum ACC	R		Y	Y		
Khartoum APP	R		Y	Y		
Elobeid APP		P	N/A	N/A		

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State/ ATS Units (ENR & APP)	**ATS**		**STCA**	**MSAW**	**Action Plan**	**Status**
1	*2*	*3*	*4*	*5*	*6*	*7*
Nyala APP		P	N/A	N/A		
Port Sudan APP		P	N/A	N/A		
Syria	**0**	**4**				**STCA 0%** **MSAW 0%**
Damascus ACC		P				
Damascus ACC		P				
Aleppo APP		P				
Latakia APP		P				
UAE	**7**	**0**	**6**	**6**		**STCA 86%** **MSAW 86%**
SZC	R		Y	Y		
Al Ain APP	R		Y	Y		
Abu Dhabi Radar	R		Y	Y		
Al Maktoum APP	R		Y	Y		
Dubai Radar	R		Y	Y		
Fujairah APP	R		Y	Y		
RAS AL KHAIMAH	R		N	N		
Yemen		**3**				**STCA 0%** **MSAW 0%**
Sana'a ACC		P	N/A	N/A		
Aden APP		P	N/A	N/A		
Sana'a APP		P	N/A	N/A		
Total	**41**	**18**	**40 Y**	**40 Y**		**STCA 97%**
Percentage			**18 N/A**	**18 N/A**		**MSAW 97%**

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MID DOC 002

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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.

TABLE OF CONTENTS

1. Introduction 1

2. Strategic Air Navigation Capacity and Efficiency Objective........................... 1

3. MID Air Navigation Objectives 1

   - ~~✓ Near Term Objectives.. 1~~

   - ~~✓ MID Term Objectives.. 2~~

   - ~~✓ Long Term Objectives... 2~~

4. MID Region ASBU Modules prioritization 2

5. Measuring and monitoring air navigation performance 3

6. Governance 4

DRAFT

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.~~ Block '0' features Modules are characterized by operational improvements, which have already been developed and implemented in many parts of the world. The MID Region priority 1 Block 0 Modules are reflected in **Table 1** below.

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

DRAFT

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

3.4 The implementation of the ASBU Block 0 Modules in the MID Region started in 2013 and is continuing.

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

~~Long-term Objective (2025 - 2030): ASBU Block 2~~

3.6 The Block Upgrades incorporate a long-term perspective matching that of the Regional Air Navigation Plan (eANP). 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.

3.7 The implementation of Block 2 and Block 3 Modules is planned for 2025 and beyond.

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	1	2014	CNS SG	AIM SG, ATM SG	

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	through Ground-Ground Integration					
B0-DATM	Service Improvement through Digital Aeronautical Information Management	1	2014	AIM SG		
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	2015			
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	1	2017	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		

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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 2015-2018.

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.

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~~	~~100% by Dec. 2018~~
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	50% by Dec. 2018

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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 Inter-facility 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~~As per the AIDC/OLDI Applicability Table*	Indicator: % of priority 1 ~~FIRs within which all applicable ACCs have implemented at least one interface to use~~ AIDC/OLDI Interconnection have been implemented~~with neighboring ACCs~~ Supporting metric: Number of AIDC/OLDI interconnections implemented between adjacent ACCs	70% by Dec. ~~2017~~2020

** Note – the required AIDC/OLDI connection is detailed in the MID eANP Volume II Part III-CNS under Specific Regional Requirements*

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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

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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
Agreement with data originators	All States	Indicator: % of States that have signed Service Level Agreements (SLA) with at least 50% of their AIS data originators Supporting Metric: Number of States that have signed Service Level Agreements (SLA) with at least 50% of	~~60~~80% by Dec. 2020

		their AIS data originators	
~~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. 2020~~

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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 FTP	All States	Indicator: % of States ~~that have~~ having implemented SADIS FTP service Supporting Metric: Number of States ~~that have~~ having implemented SADIS FTP service	100% by Dec. 2018
QMS	All States	Indicator: % of States having implemented QMS for MET Supporting metric: number of States having implemented QMS for MET	80% by Dec. 2018
SIGMET	All States with MWOs in MID Region	Indicator: % of States having implemented ~~FIRs in which~~ SIGMET ~~is implemented~~ Supporting metric: number of ~~FIRs~~ States having implemented SIGMET ~~is implemented~~	100% by Dec. 2018
WIND SHEAR	TBD	Indicator: TBD Supporting metric: TBD	TBD
OPMET	All States	Indicator: % of States having implemented METAR and TAF Supporting metric: number of States having implemented METAR and TAF	95% by Dec. 2018

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.

DRAFT

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~~
Flexible Use of Airspace (FUA) Level 1 Strategic	All States	Indicator: % of States that have implemented FUA Level 1 Supporting metric*: number of States that have implemented FUA Level 1	50% by Dec. 2019
FUA Level 2 Pre-tactical	All States	Indicator: % of States that have implemented FUA Level 2 Supporting metric*: number of States that have implemented FUA Level 2	60% by Dec. 2020
FUA Level 3 Tactical	All States	Indicator: % of States that have implemented FUA Level 3 Supporting metric*: number of States that have implemented FUA Level 3	60% by Dec. 2022

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

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~~2018
ATFM Structure	All States	Indicator: % of States that have established an ATFM Structure Supporting metric: number of States that have established an ATFM Structure	100 % by 2019

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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	100% by Dec. 2017

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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 centered.

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 – SNET: Increased Effectiveness of Ground-based Safety Nets			
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)	80 % by 2018
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)	80 % by 2018

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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. 2018 for the identified 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)

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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. 2018 for the identified 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

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Ref.: T 3/10.1- AP062/18 (ATM)

14 June 2018

Subject: Non-Compliance with ICAO Doc 4444 PANS-ATM 11.4.2.2 - Departure (DEP) Messages

Action required: Conduct analysis and take corrective action to ensure compliance with PANS-ATM 11.4.2.2 (DEP Messages)

Sir/Madam,

I wish to refer to the discussion and outcomes of the Fifth Meeting of the Air Traffic Management Sub-Group of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (ATM/SG/5, Bangkok, Thailand, 31 July – 04 August 2017) and the Eighth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/8, New Delhi, India, 14 - 18 May 2018) relating to the failed transmission of ATS messages, specifically Departure (DEP) messages.

DEP messages provide important information related to the activation of the FPL in both manual and automated ATM systems, Secondary Surveillance Radar (SSR) mode and code, estimated elapsed time to the destination aerodrome and other information. The DEP message also usually provides the first real-time aircraft movement information used to update demand calculations in Air Traffic Flow Management (ATFM) processes.

Analyses of DEP message distribution were conducted in accordance with the following Conclusion of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG):

Conclusion APANPIRG/27/12: Origination and Distribution of Departure (DEP) Messages

That, recognizing the importance of AFTN departure (DEP) messages in the management and coordination of flight plans in both manual and automated ATM environments, ICAO be requested to:

1. *Conduct an analysis of the incidence of non-receipt of DEP messages required by ICAO Doc 4444 Procedures for Air Navigation Services (PANS-ATM) Section 11.4.2.2;*

2/…

2. *Request that States failing to ensure correct transmission of DEP messages promptly take corrective action and report the status of corrective actions to the ICAO APAC Regional Office by 30 April 2017; and*

3. *Raise APANPIRG Air Navigation Deficiencies against failure by States to comply with Doc 4444 Section 11.4.2.2, at APANPIRG/28.*

The most recent analysis **(Attachment A)** indicates that, for a twenty four-hour data collection period, there were 582 instances of non-received DEP messages for flights entering one or more Flight Information Regions (FIRs) administered by the five Asia/Pacific States participating in the collection of data. The data indicates widespread non-compliance with the provisions of ICAO Doc 4444 Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) Section 11.4.2.2.6. There may in some cases also be errors in the reception handling of messages,

Accordingly, I request that your administration takes immediate steps to conduct a thorough analysis and take corrective action to ensure:

1. full compliance with the provisions of PANS-ATM for the distribution of DEP messages to all affected FIRs in the Asia/Pacific Region; and

2. the correct handling of DEP messages received.

For Asia/Pacific Region States where the data analysis indicates a significant systemic failure to comply with PANS-ATM, APANPIRG Air Navigation Deficiencies will be presented to the APANPIRG/29 meeting in September 2018. The States concerned will be separately notified. The Planning and Implementation Regional Groups (PIRGs) of other Regions will be requested to also consider action on this matter.

Further Asia/Pacific regional analyses of missing DEP messages will be conducted in due course.

Yours sincerely,

Arun Mishra
Regional Director

Enclosure:

A – Missing DEP Messages per State of Departure

ATTACHMENT A – MISSING DEP MESSAGES PER STATE OF DEPARTURE

Note: Information provided by participating States Australia, China, Japan, Singapore and Thailand

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
1.	AUSTRALIA	QFA7533	YSSY	VMMC	201803021730	China
2.		CCA796	YBBN	ZBAA	201803021730	China
3.		CES778	YSSY	ZPPP	201803021850	China
4.		GCR7940	YSSY	ZHCC	201803030530	China
5.		CHH7998	YSSY	ZGHA	201803030715	China
6.		CSN334	YBCS	ZGGG	201803030740	China
7.		AUA25	LOWW	VTBS	201803012220	Thailand
8.		AIC309	YMML	VIDP	201803022345	Singapore
9.		XAX223	YSSY	WMKK	2018030255	Singapore
10.	AUSTRIA	AUA75	LOWW	ZSPD	201803022020	China
11.		AUA57	LOWW	VHHH	201803022040	China
12.		AUA63	LOWW	ZBAA	201803030055	China
13.	AZERBAIJAN	CLX798	UBBB	ZSPD	201803021300	China
14.		CLX784	UBBB	WSSS	201803020545	Thailand
15.		CLX784	UBBB	WSSS	20180302545	Singapore
16.	BAHRAIN	SOO275	OBBI	VHHH	201803021040	China
17.		CKS247	OBBI	VHHH	201803021835	China
18.		GFA152	OBBI	VTBS	201803011925	Thailand
19.		GFA150	OBBI	VTBS	201803020605	Thailand
20.		GFA154	OBBI	RPLL	201803021725	Thailand
21.		CXB767	OTBD	WSSS	201803022300	Singapore
22.	BANGLADESH	CES2036	VGHS	ZPPP	201803021635	China
23.		HKC6652	VGHS	VHHH	201803021735	China
24.		CSN392	VGHS	ZGGG	201803030250	China
25.		BBC084	VGHS	WSSS	201803020225	Thailand
26.		UBG315	VGHS	WMKK	201803020250	Thailand
27.		BBC088	VGHS	VTBS	201803020420	Thailand
28.		THA322	VGHS	VTBS	201803020740	Thailand
29.		RGE784	VGHS	WSSS	201803020745	Thailand
30.		S2AHF	VGHS	WMKL	201803020800	Thailand
31.		MEDIC45	VGHS	WSSL	201803021100	Thailand
32.		BBC086	VGHS	WMKK	201803021500	Thailand
33.		TGW515	VGHS	WSSS	201803021500	Thailand
34.		MAS113	VGHS	WMKK	201803021525	Thailand
35.		UBG307	VGHS	WSSS	201803021630	Thailand
36.		RGE782	VGHS	WMKK	201803021720	Thailand
37.		MXD165	VGHS	WMKK	201803021730	Thailand
38.		SIA447	VGHS	WSSS	201803021755	Thailand

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
39.	BANGLADESH	MAS197	VGHS	WMKK	201803021830	Thailand
40.		MXD161	VGHS	WMKK	201803021910	Thailand
41.		AXM70	VGHS	WMKK	201803021920	Thailand
42.		THA340	VGHS	VTBS	201803022000	Thailand
43.		BBC084	VGHS	WSSS	20180302225	Singapore
44.		MEDIC45	VGHS	WSSL	201803021100	Singapore
45.		RGE784	VGHS	WSSS	20180302745	Singapore
46.		SIA447	VGHS	WSSS	201803021755	Singapore
47.		TGW515	VGHS	WSSS	201803021500	Singapore
48.		UBG307	VGHS	WSSS	201803021630	Singapore
49.	BELGIUM	ETH3738	EBLG	ZSPD	201803021810	China
50.		CHH7922	EBBR	ZSPD	201803021825	China
51.		TAY801	EBLG	ZSPD	201803022105	China
52.		ANA232	EBBR	RJAA	201803021950	Japan
53.		THA935	EBBR	VTBS	201803021210	Thailand
54.	CAMBODIA	CSZ9044	VDPP	ZGGG	201803022120	China
55.		CHH454	VDPP	ZJSY	201803022315	China
56.		AXM265	VDSV	WMKK	201803020645	Thailand
57.	CANADA	CPA829	CYYZ	VHHH	201803021420	China
58.		ACA015	CYYZ	VHHH	201803022300	China
59.		ACA017	CYUL	ZSPD	201803030210	China
60.		ACA027	CYYZ	ZSPD	201803030225	China
61.		CSC8502	CYVR	ZHCC	201803030225	China
62.		CRK081	CYVR	VHHH	201803030240	China
63.		ACA031	CYYZ	ZBAA	201803030250	China
64.		CPA825	CYYZ	VHHH	201803030315	China
65.		ACA007	CYVR	VHHH	201803030405	China
66.		CES582	CYVR	ZSPD	201803030420	China
67.		ACA025	CYVR	ZSPD	201803030420	China
68.		CBJ472	CYVR	ZSQD	201803030420	China
69.		CCA992	CYVR	ZBAA	201803030450	China
70.		ACA029	CYVR	ZBAA	201803030500	China
71.		CSN378	CYVR	ZGGG	201803030525	China
72.		CHH7976	CYYZ	ZBAA	201803030610	China
73.	CHILE	QFA28	SCEL	YSSY	xxxxxxxx1635	Australia
74.	CHINA	PIA852	ZBAA	RJAA	201803020050	Japan
75.		CSN8327	ZGGG	VTCC	201803020255	Thailand
76.		CTV8815	ZPPP	WADD	201803021900	Singapore
77.	DENMARK	SAS995	EKCH	ZBAA	201803030405	China
78.		TOM578	EKCH	VVPQ	201803020120	Thailand
79.		THA951	EKCH	VTBS	201803021250	Thailand

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
80.	EGYPT	MSR958	HECA	ZGGG	201803030530	China
81.	ESTONIA	QQE565	EETN	RJTT	201803021500	Japan
82.	ETHIOPIA	ETH604	HAAB	ZBAA	201803021030	China
83.		ETH684	HAAB	ZSPD	201803030340	China
84.		ETH608	HAAB	VHHH	201803030345	China
85.		ETH606	HAAB	ZGGG	201803030505	China
86.		ETH618	HAAB	VTBS	201803012135	Thailand
87.	FINLAND	JAL414	EFHK	RJAA	201803021505	Japan
88.		TOM354	EFOU	VTSP	201803011500	Thailand
89.	FRANCE	AFR256	LFPG	WSSS	201803021950	Singapore
90.		AFR256A	LFPG	WSSS	201803021300	Singapore
91.		KAL504	LFPG	RKSI	201803020815	China
92.		FDX5342	LFPG	ZGGG	201803021135	China
93.		EVA088	LFPG	RCTP	201803021820	China
94.		CSN348	LFPG	ZGGG	201803021845	China
95.		CES554	LFPG	ZSPD	201803021925	China
96.		CCA834	LFPG	ZSPD	201803021925	China
97.		AFR264	LFPG	RKSI	201803022010	China
98.		AFR128	LFPG	ZBAA	201803022045	China
99.		AFR292	LFPG	RJBB	201803022100	China
100.		AFR112	LFPG	ZSPD	201803022100	China
101.		AFR132	LFPG	ZHHH	201803022135	China
102.		AAR502	LFPG	RKSI	201803030200	China
103.		CCA934	LFPG	ZBAA	201803030230	China
104.		CES570	LFPG	ZSPD	201803030305	China
105.		KAL902	LFPG	RKSI	201803030400	China
106.		AFR188	LFPG	VHHH	201803030630	China
107.		AFR382	LFPG	ZBAA	201803030640	China
108.		AFR116	LFPG	ZSPD	201803030700	China
109.		AFR276	LFPG	RJAA	201803021235	Japan
110.		JAL46	LFPG	RJTT	201803021800	Japan
111.		ANA216	LFPG	RJTT	201803021830	Japan
112.		AFR274	LFPG	RJTT	201803022220	Japan
113.		AFR166	LFPG	VTBS	201803011515	Thailand
114.		SIA335	LFPG	WSSS	201803021000	Thailand
115.		THA931	LFPG	VTBS	201803021130	Thailand
116.		HVN10	LFPG	VVTS	201803021235	Thailand
117.		SIA335	LFPG	WSSS	201803021000	Singapore
118.	GEORGIA	CSN6040	UGTB	ZWWW	201803030305	China
119.	GERMANY	BOX570	EDDP	ZSPD	201803021435	China
120.		FDX26	EDDK	ZSPD	201803021500	China

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
121.	GERMANY	GEC8396	EDDF	ZBAA	201803021610	China
122.		GEC8400	EDDF	ZSPD	201803022035	China
123.		MLWSG	EDDB	VHHH	201803022200	China
124.		CHH490	EDDT	ZBAA	201803030125	China
125.		JAL408	EDDF	RJAA	201803021830	Japan
126.		ANA210	EDDL	RJAA	201803021900	Japan
127.		ANA224	EDDF	RJTT	201803021945	Japan
128.		ANA218	EDDM	RJTT	201803021900	Japan
129.		GEC8386	EDDF	RJAA	201803022015	Japan
130.		ANA204	EDDF	RJTT	201803021030	Japan
131.		THA921	EDDF	VTBS	201803021245	Thailand
132.		THA923	EDDF	VTBS	201803011955	Thailand
133.		THA925	EDDM	VTBS	201803021235	Thailand
134.		BOX530	EDDP	VTBS	201803020745	Thailand
135.	HUNGARY	CCA722	LHBP	ZBAA	201803030310	China
136.	INDIA	AIC346	VOMM	WSSS	20180302605	Singapore
137.		CSN3028	VIDP	ZGGG	201803021505	China
138.		CDG8830	VIDP	ZPPP	201803021730	China
139.		AIC348	VIDP	ZSPD	201803021820	China
140.		FDX5384	VIDP	ZGGG	201803022100	China
141.		UTP9946	VABB	ZPPP	201803022135	China
142.		UTP9944	VIDP	ZPPP	201803022205	China
143.		KAL482	VIDP	RKSI	201803022210	China
144.		ANA830	VABB	RJAA	201803022230	China
145.		CES564	VIDP	ZSPD	201803022310	China
146.		CPA696	VABB	VHHH	201803030120	China
147.		AIC314	VIDP	VHHH	201803030145	China
148.		CSN360	VIDP	ZGGG	201803030235	China
149.		CES556	VECC	ZPPP	201803030250	China
150.		JAI76	VABB	VHHH	201803030335	China
151.		JAI78	VIDP	VHHH	201803030340	China
152.		CPA660	VABB	VHHH	201803030350	China
153.		CPA678	VOHS	VHHH	201803030415	China
154.		CPA066	VABB	VHHH	201803030445	China
155.		AAR768	VIDP	RKSI	201803030500	China
156.		KAL656	VABB	RKSI	201803030500	China
157.		CCA948	VIDP	ZBAA	201803030540	China
158.		AIC173	VIDP	KSFO	201803030630	China
159.		SEJ085	VAAH	VTBS	201803021500	Thailand
160.		DRK130	VEBD	VTBS	201803020630	Thailand
161.		AXM30	VEBS	WMKK	201803021825	Thailand

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
162.	INDIA	SIA517	VECC	WSSS	201803021825	Thailand
163.		AXM62	VECC	WMKK	201803021935	Thailand
164.		AIQ121	VECC	VTBD	201803022035	Thailand
165.		VJC8638	VEGY	VVTS	201803020450	Thailand
166.		KTK6121	VIAR	VTBU	201803020040	Thailand
167.		VTKNB	VIDP	VTSP	201803020600	Thailand
168.		SIA517	VECC	WSSS	201803021825	Singapore
169.		SLK455	VOCB	WSSS	201803021740	Singapore
170.	INDONESIA	ASY314	WIHH	YSCB	xxxxxxxx1245	Australia
171.		SJY1190	WADD	ZSNJ	201803020800	China
172.		CXA870	WIII	ZSAM	201803020900	China
173.		GIA898	WIII	ZGGG	201803020955	China
174.		LNI2621	WADD	ZGHA	201803020955	China
175.		CSN388	WIII	ZGGG	201803021005	China
176.		SJY1184	WADD	ZSHC	201803021010	China
177.		CTV5814	WADD	ZSQD	201803021340	China
178.		CSN3038	WIII	ZGGG	201803021435	China
179.		GIA802	WADD	ZLXY	201803021630	China
180.		GIA896	WADD	ZGGG	201803021810	China
181.		LNI2743	WAMM	ZGHA	201803021815	China
182.		GIA886	WADD	ZUUU	201803022000	China
183.		LNI2639	WADD	ZUUU	201803022010	China
184.		CTV8816	WADD	ZPPP	201803022010	China
185.		GIA890	WIII	ZBAA	201803022045	China
186.		LNI2633	WADD	ZLXY	201803022100	China
187.		SJY1140	WADD	ZGSZ	201803022120	China
188.		GIA892	WADD	ZBAA	201803030000	China
189.		CXA892	WADD	ZSAM	201803030020	China
190.		CSN626	WADD	ZGGG	201803030100	China
191.		CCA978	WIII	ZBAA	201803030115	China
192.		CSN8354	WIII	ZGSZ	201803030120	China
193.		CSN6066	WADD	ZGSZ	201803030130	China
194.		BTK7001	WIII	ZGKL	201803030400	China
195.		CXA896	WIII	ZSFZ	201803030750	China
196.		BTK7001	WIII	ZGKL	201803022000	Singapore
197.		BTK7083	WIHH	WIDD	20180302735	Singapore
198.		CES5070	WIII	ZSPD	201803021630	Singapore
199.		PKELX	WIDD	VTBD	201803020325	Thailand
200.		AWQ154	WIMM	VTBD	201803020335	Thailand
201.		CTV943	WIDD	WIII	20180302715	Singapore
202.		GIA850	WIMM	WSSS	20180302630	Singapore

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
203.	INDONESIA	GIA890	WIII	ZBAA	201803021350	Singapore
204.		GIA894	WIII	ZSPD	201803021655	Singapore
205.		LNI174	WILL	WIDD	20180302845	Singapore
206.		LNI237	WIDD	WIBB	20180302300	Singapore
207.		LNI810	WIDD	WITT	20180302400	Singapore
208.		LNI927	WADD	WIDD	20180302100	Singapore
209.		PKPAW	WIHH	WIDM	201803022200	Singapore
210.		PKTNE	WIDM	WIHH	20180302715	Singapore
211.		PKWLG	WIBI	WIDD	20180302305	Singapore
212.		SLK257	WIBB	WSSS	201803021125	Singapore
213.		SQS7239	WIDS	WIBB	20180302	Singapore
214.		SQS7240	WIBB	WIDT	20180302210	Singapore
215.		TMG022	WIHH	WSSS	20180302130	Singapore
216.		XAR753	WIDM	WIDN	20180302755	Singapore
217.	IRAN	IRM079	OIIE	ZBAA	201803022120	China
218.		IRM081	OIIE	ZGGG	201803022355	China
219.		IRM077	OIIE	ZSPD	201803022355	China
220.		IRM051	OIIE	VTBS	201803011915	Thailand
221.		IRM051	OIIE	VTBS	201803021825	Thailand
222.	ITALY	THA945	LIRF	VTBS	201803021230	Thailand
223.	JORDAN	RJA180	OJAI	VTBS	201803020015	Thailand
224.	KAZAKHSTAN	ABW539	UAKK	VHHH	201803021445	China
225.	KUWAIT	KAC417	OKBK	RPLL	201803020030	Thailand
226.	KYRGYZSTAN	THY342	UCFM	ZMUB	201803030445	China
227.	LAO PDR	CES2590	VLVT	ZPPP	201803021115	China
228.		CSC8710	VLVT	ZPPP	201803021130	China
229.		LAO855	VLVT	ZGHA	201803021550	China
230.		CES2574	VLVT	ZPPP	201803021715	China
231.		CHH446	VLVT	ZGSZ	201803021840	China
232.		LAO815	VLVT	ZPPP	201803030750	China
233.		LAO633	VLLB	VTBS	201803020030	Thailand
234.		BKP942	VLLB	VTBS	201803020520	Thailand
235.		BKP946	VLLB	VTBS	201803021025	Thailand
236.	LUXEMBOURG	CLX790	ELLX	RCTP	201803021335	China
237.		CLX976	ELLX	ZHCC	201803022045	China
238.		CLX742	ELLX	RJNK	201803030220	China
239.	MALAYSIA	APG7111	WMKK	RPVM	20180302320	Singapore
240.		AXM1285	WBGB	WSSS	20180302325	Singapore
241.		AXM138	WMKK	VHHH	201803022215	Singapore
242.		AXM1394	WMKJ	ZGGG	201803021355	Singapore
243.		AXM142	WMKK	ZGOW	20180302305	Singapore

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
244.	MALAYSIA	AXM1490	WMKJ	VVTS	201803022305	Singapore
245.		AXM1807	WMKJ	VTBD	201803021120	Singapore
246.		AXM328	WMKK	WAHS	201803022310	Singapore
247.		AXM478	WMKK	WIOO	20180302225	Singapore
248.		AXM5030	WMKJ	WBGS	20180302140	Singapore
249.		AXM5031	WBGS	WMKJ	20180302345	Singapore
250.		AXM5092	WMKL	WBGG	20180302220	Singapore
251.		AXM5433	WBGG	WMKP	20180302130	Singapore
252.		AXM5596	WMKJ	WBKW	20180302545	Singapore
253.		AXM5597	WBKW	WMKJ	20180302850	Singapore
254.		AXM5745	WBKW	WMKK	20180302215	Singapore
255.		AXM5871	WBGS	WMKK	201803021100	Singapore
256.		AXM5873	WBGS	WMKK	20180302710	Singapore
257.		AXM5875	WBGS	WMKK	201803021345	Singapore
258.		AXM5877	WBGS	WMKK	2018030220	Singapore
259.		AXM5879	WBGS	WMKK	20180302215	Singapore
260.		AXM5883	WBGS	WMKK	20180302415	Singapore
261.		AXM6415	WMKP	WMKJ	20180302945	Singapore
262.		AXM6419	WMKP	WMKJ	201803021335	Singapore
263.		AXM188	WMKK	VMMC	201803021010	China
264.		AXM142	WMKK	ZGOW	201803021110	China
265.		AXM186	WMKK	VMMC	201803021525	China
266.		AXM2138	WBKK	ZHHH	201803021800	China
267.		AXM174	WMKK	ZGHA	201803021805	China
268.		CXA8002	WBKK	ZBAA	201803021900	China
269.		MXD8106	WBKK	ZHCC	201803021900	China
270.		MAS518	WMKK	ZUCK	201803021940	China
271.		MXD640	WBKK	ZGHA	201803022035	China
272.		FDX6053	WMKP	ZGGG	201803022115	China
273.		AXM1394	WMKJ	ZGGG	201803022215	China
274.		MXD610	WMKL	ZUUU	201803022225	China
275.		AXM1241	WBGG	ZGSZ	201803022315	China
276.		CSN8404	WMKK	ZGHA	201803030735	China
277.		VDA3162	WMKK	ROAH	201803022030	Japan
278.		CSN8404	WMKK	ZGHA	201803022335	Singapore
279.		EVA218	WMKK	RCTP	20180302450	Singapore
280.		FFM3515	WMSA	WSSS	20180302705	Singapore
281.		JNA096	WMKJ	RKSI	201803021930	Singapore
282.		MAS2606	WMKK	WBKK	201803021100	Singapore
283.		MAS2636	WMKK	WBKL	201803021130	Singapore
284.		MXD304	WMSA	WIDD	20180302220	Singapore

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
285.	MALAYSIA	MYU901	WMKP	WICC	20180302600	Singapore
286.		N110TP	WMKI	WMKJ	2018030230	Singapore
287.		N188TL	WMKI	WBKW	20180302700	Singapore
288.		N555LK	WMKI	WSSL	20180302900	Singapore
289.		NR1	WBKK	WMKN	201803021230	Singapore
290.		PKPBS	WMSA	WIDD	20180302400	Singapore
291.		PKPBT	WMSA	WIDD	20180302330	Singapore
292.		AXM1807	WMKJ	VTBD	201803021120	Thailand
293.		AXM562	WMKK	VLLB	201803020455	Thailand
294.		MXD271	WMKK	VIAR	201803021000	Thailand
295.		XAX184	WMKK	VIJP	201803021100	Thailand
296.		MAS518	WMKK	ZUCK	201803021155	Thailand
297.		AXM31	WMKK	VEBS	201803021410	Thailand
298.		KLM810	WMKK	EHAM	201803021550	Thailand
299.		MXD590	WMSA	VTSS	201803020150	Thailand
300.		XAX501	WMKK	RKPC	201803022240	Singapore
301.	MEXICO	ANA179	MMMX	RJAA	201803020700	Japan
302.		AMX058	MMMX	RJAA	201803020650	Japan
303.	MYANMAR	JSA582	VYYY	WSSS	20180302500	Singapore
304.		JSA584	VYYY	WSSS	201803021305	Singapore
305.		MMA711	VYYY	ZGGG	201803021030	China
306.		CCA416	VYYY	ZPPP	201803021430	China
307.		CES2032	VYYY	ZPPP	201803021640	China
308.		CSN8472	VYYY	ZGGG	201803021910	China
309.		ANA814	VYYY	RJAA	201803022340	China
310.		CCA906	VYYY	ZBAA	201803030120	China
311.		ANA814	VYYY	RJAA	201803021540	Japan
312.		AIQ245	VYMD	VTBD	201803020625	Thailand
313.		BKP706	VYYY	VTBS	201803012320	Thailand
314.		UBA001	VYYY	WSSS	201803020045	Thailand
315.		MMA335	VYYY	VTBS	201803020100	Thailand
316.		MMA231	VYYY	WSSS	201803020150	Thailand
317.		MMA711	VYYY	ZGGG	201803020210	Thailand
318.		UBA8027	VYYY	VHHH	201803020230	Thailand
319.		SLK511	VYYY	WSSS	201803020300	Thailand
320.		SIA997	VYYY	WSSS	201803020355	Thailand
321.		CAL7916	VYYY	RCTP	201803020420	Thailand
322.		MAS741	VYYY	WMKK	201803020450	Thailand
323.		JSA582	VYYY	WSSS	201803020500	Thailand
324.		HVN942	VYYY	VVTS	201803020540	Thailand
325.		AIQ256	VYYY	VTBD	201803020625	Thailand

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
326.	MYANMAR	NOK4223	VYYY	VTPM	201803020630	Thailand
327.		BKP724	VYYY	VTCC	201803020710	Thailand
328.		THD302	VYYY	VTBS	201803020830	Thailand
329.		HDA275	VYYY	VHHH	201803021050	Thailand
330.		SLK519	VYYY	WSSS	201803021105	Thailand
331.		CSN8472	VYYY	ZGGG	201803021110	Thailand
332.		BKP704	VYYY	VTBS	201803021150	Thailand
333.		UAE388	VYYY	VDPP	201803021150	Thailand
334.		VJC918	VYYY	VVNB	201803021245	Thailand
335.		HVN956	VYYY	VVNB	201803021255	Thailand
336.		TLM207	VYYY	VTBD	201803021255	Thailand
337.		JSA584	VYYY	WSSS	201803021305	Thailand
338.		THA306	VYYY	VTBS	201803021320	Thailand
339.		NOK4239	VYYY	VTBD	201803021430	Thailand
340.		AIQ258	VYYY	VTBD	201803021510	Thailand
341.		KAL472	VYYY	RKSI	201803021720	Thailand
342.		MXD553	VYYY	WMKK	201803021725	Thailand
343.		HDA251	VYYY	VHHH	201803021835	Thailand
344.		SIA997	VYYY	WSSS	20180302355	Singapore
345.		UBA001	VYYY	WSSS	2018030245	Singapore
346.	NETHERLANDS	YZR7480	EHAM	ZBTJ	201803021635	China
347.	NEW CALEDONIA	ACI800	NWWW	RJAA	201803021400	Japan
348.	NEW ZEALAND	CHH7932	NZAA	ZGSZ	201803020800	China
349.		CSN618	NZCH	ZGGG	201803021730	China
350.		CSN306	NZAA	ZGGG	201803021800	China
351.		CSN336	NZAA	ZGGG	201803030500	China
352.	OMAN	OMA851	OOMS	ZGGG	201803021415	China
353.		OMA811	OOMS	VTBS	201803012310	Thailand
354.		OMA815	OOMS	VTBS	201803020500	Thailand
355.		OMA843	OOMS	RPLL	201803020510	Thailand
356.		OMA817	OOMS	VTBS	201803021800	Thailand
357.	PAKISTAN	CCA946	OPKC	ZBAA	201803030305	China
358.		ETD9886	OPKC	VVTS	201803021300	Thailand
359.	PHILIPPINES	CEB255	RPVI	WSSS	201803021450	Singapore
360.		JSA762	RPLL	WSSS	20180302240	Singapore
361.		MAS807	RPLL	WMKK	20180302515	Singapore
362.		CXA8004	RPVM	ZSAM	201803021240	China
363.		PAL720	RPLL	EGLL	201803021300	China
364.		OKA2762	RPVK	ZGHA	201803021415	China
365.		PAL330	RPLL	ZSAM	201803021430	China
366.		APG9820	RPVK	ZSHC	201803021545	China

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
367.	PHILIPPINES	RYL098	RPVK	VMMC	201803021555	China
368.		CXA8688	RPVK	ZSFZ	201803021740	China
369.		CEB074	RPVK	ZSPD	201803021745	China
370.		GAP9745	RPVK	ZSPD	201803021820	China
371.		CEB370	RPLC	VMMC	201803022131	China
372.		PAL398	RPVK	ZBAA	201803022135	China
373.		GAP2388	RPVK	ZUUU	201803022250	China
374.		APG028	RPVK	ZSPD	201803030050	China
375.		PAL382	RPLL	ZGGG	201803030325	China
376.		JSA763	RPLL	RJBB	201803022255	Japan
377.		DAL180	RPLL	RJAA	201803020150	Japan
378.		ANA870	RPLL	RJTT	201803020650	Japan
379.		UAE333	RPLL	OMDB	201803020940	Thailand
380.		THY85	RPLL	LTBA	201803021440	Thailand
381.		TGW373	RPVK	WSSS	20180302750	Singapore
382.	POLAND	CCA738	EPWA	ZBAA	201803022010	China
383.		LOT97	EPWA	RKSI	201803022240	China
384.		LOT79	EPWA	RJAA	201803021340	Japan
385.	PORTUGAL	CBJ460	LPPT	ZBAA	201803020910	China
386.	REP. OF KOREA	JNA095	RKSI	WMKJ	201803021210	Singapore
387.		LNI2736	RKSI	WIDD	201803022100	Singapore
388.		HVN423	RKPK	VVTS	201803020905	China
389.		HVN409	RKSI	VVTS	201803020915	China
390.		VJC863	RKSI	VVTS	201803020950	China
391.		HVN407	RKSI	VVTS	201803021005	China
392.		CES5054	RKTN	ZSPD	201803021100	China
393.		KAL471	RKSI	VYYY	201803021730	China
394.		B2226	RKPC	ZSPD	201803021730	China
395.		TWB129	RKTN	VVDN	201803022100	China
396.		TWB149	RKTN	VVDN	201803022210	China
397.		AAR731	RKSI	VVTS	201803030630	China
398.		ABL116	RKTN	RJAA	201803022350	Japan
399.		TWB311	RKTN	RJBB	201803022335	Japan
400.		TWB277	RKTN	ROAH	201803020025	Japan
401.		TWB287	RKTN	RJBB	201803020615	Japan
402.		ABL152	RKTN	RJFF	201803020500	Japan
403.		ABL128	RKTN	RJBB	201803020615	Japan
404.		ABL184	RKTN	RJCC	201803020610	Japan
405.		TWB233	RKTN	RJFF	201803020900	Japan
406.		VJT570	RKSS	VTSM	201803020730	Thailand
407.		TWB105	RKTN	VTBS	201803021240	Thailand

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
408.	RUSSIA	SIA361	UUDD	WSSS	201803021145	Singapore
409.		SHU1761	UHHH	ZYJM	201803020830	China
410.		SBI503	UIII	RKSI	201803021040	China
411.		SHU9757	UHHH	ZYFY	201803021325	China
412.		KAR2511	UNKL	VVCR	201803021655	China
413.		ABG8585	UNOO	VTSP	201803021800	China
414.		SBI583	UNNT	VTBS	201803021940	China
415.		ABW585	USSS	ZUUU	201803022030	China
416.		TYA519	UHWW	ZJSY	201803022205	China
417.		SHU5468	UHWW	ZBAA	201803022245	China
418.		SVR873	USSS	ZBAA	201803022325	China
419.		KTK5443	UNNT	VVCR	201803022335	China
420.		KTK8543	UIII	VVCR	201803030020	China
421.		ABG8539	USNN	VTBU	201803030025	China
422.		KTK2421	UNKL	VTBU	201803030030	China
423.		SBI873	UNNT	ZBAA	201803030110	China
424.		KTK4221	UNEE	VTBU	201803030130	China
425.		SBI509	UIII	ZBAA	201803030145	China
426.		CSC8100	ULLI	ZUUU	201803030245	China
427.		SBI501	UNNT	RKSI	201803030340	China
428.		SBI581	UNNT	VTBS	201803030420	China
429.		ABG8515	UIII	VTSG	201803030430	China
430.		KAR2553	UHBB	VVCR	201803030430	China
431.		RSY9885	USSS	ZJSY	201803030740	China
432.		JAL422	UUDD	RJAA	201803021400	Japan
433.		ABG8587	UHHH	VTBU	201803021645	Thailand
434.		KTK7843	ULLI	VVCR	201803021235	Thailand
435.		KTK4221	UNEE	VTBU	201803021730	Thailand
436.		KTK2421	UNKL	VTBU	201803021630	Thailand
437.		SBI581	UNNT	VTBS	201803012000	Thailand
438.		KTK5421	UNNT	VTBU	201803012100	Thailand
439.		SBI583	UNNT	VTBS	201803021140	Thailand
440.		THA975	UUDD	VTBS	201803011540	Thailand
441.		SIA361	UUDD	WSSS	201803021145	Thailand
442.		KTK7733	UUDD	VTSP	201803021300	Thailand
443.		KAR2929	UUOB	VTSP	201803021235	Thailand
444.		KAR2497	UWKD	VTSP	201803020005	Thailand
445.	SAUDI ARABIA	SVA884	OERK	ZGGG	201803030730	China
446.		SVA2060	OEJN	WAAA	201803021725	Singapore
447.		SVA816	OEJN	WIII	201803021625	Singapore
448.		PAL683	OEDF	RPLL	201803021625	Thailand

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
449.	SAUDI ARABIA	SVA840	OEJN	WMKK	201803011735	Thailand
450.		SVA836	OEJN	WSSS	201803012235	Thailand
451.		SVA834	OEJN	WMKK	201803020115	Thailand
452.		PAL663	OEJN	RPLL	201803021220	Thailand
453.		SVA816	OEJN	WIII	201803021625	Thailand
454.		SVA840	OEJN	WMKK	201803021735	Thailand
455.		SVA828	OERK	WMKK	201803012225	Thailand
456.		SVA860	OERK	RPLL	201803012250	Thailand
457.		PAL655	OERK	RPLL	201803021625	Thailand
458.		SVA822	OERK	WIII	201803022225	Singapore
459.		SVA836	OEJN	WSSS	201803022235	Singapore
460.	SINGAPORE	SAF7801	WSAT	VTUN	201803020045	Thailand
461.	SOUTH AFRICA	SAA286	FAOR	VHHH	201803021145	Thailand
462.	SPAIN	SIA387	LEBL	WSSS	201803021055	Singapore
463.		CCA908	LEMD	ZBAA	201803021810	China
464.		CCA840	LEBL	ZSPD	201803021815	China
465.		IBE6889	LEMD	ZSPD	201803021920	China
466.		KAL916	LEBL	RKSI	201803030310	China
467.	SWEDEN	N4CP	ESSA	WSSL	201803022150	Singapore
468.		TOM402	ESGG	VTSP	201803021055	Thailand
469.		THA963	ESSA	VTSP	201803011945	Thailand
470.		TOM532	ESSA	VTSP	201803021130	Thailand
471.		THA961	ESSA	VTBS	201803021230	Thailand
472.	SWITZERLAND	SWR196	LSZH	ZBAA	201803021930	China
473.		SWR188	LSZH	ZSPD	201803022000	China
474.		SWR138	LSZH	VHHH	201803030540	China
475.		SWR160	LSZH	RJAA	201803021200	Japan
476.		SWR160	LSZH	RJAA	201803021200	Japan
477.		SWR178	LSZH	WSSS	201803022145	Singapore
478.		SWR180	LSZH	VTBS	201803011655	Thailand
479.		THA971	LSZH	VTBS	201803021215	Thailand
480.	THAILAND	SAF9812	VTUN	WSAP	20180302550	Singapore
481.	TURKEY	THY88	LTBA	RKSI	201803030040	China
482.		THY70	LTBA	VHHH	201803030700	China
483.		THY24	LTBA	RCTP	201803030710	China
484.		THY52	LTBA	RJAA	201803030710	China
485.		THY90	LTBA	RKSI	201803030720	China
486.		THY26	LTBA	ZSPD	201803030720	China
487.		THY20	LTBA	ZBAA	201803030745	China
488.		THY72	LTBA	ZGGG	201803030755	China
489.		THY52	LTBA	RJAA	201803022310	Japan

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
490.	TURKEY	THY056	LTBA	WIII	201803022335	Singapore
491.		THY64	LTBA	VTBS	201803011750	Thailand
492.		THY68	LTBA	VTBS	201803012255	Thailand
493.		THY54	LTBA	WSSS	201803012325	Thailand
494.		THY54	LTBA	WSSS	201803022325	Singapore
495.	UKRAINE	AUI287	UKBB	ZBAA	201803021730	China
496.	UAE	SQC7395	OMSJ	WSSS	201803021835	Singapore
497.		UAE366	OMDB	RCTP	201803020845	China
498.		ETD818	OMAA	ZUUU	201803021215	China
499.		UAE312	OMDB	RJTT	201803021235	China
500.		ABY270	OMSJ	ZWWW	201803021335	China
501.		UAE362	OMDB	ZGGG	201803021345	China
502.		ETD888	OMAA	ZBAA	201803030145	China
503.		ETD834	OMAA	VHHH	201803030150	China
504.		ETD434	OMAA	RPLL	201803030240	China
505.		ETD424	OMAA	RPLL	201803030700	China
506.		UAE316	OMDB	RJBB	201803030705	China
507.		UAE316	OMDB	RJBB	201803022305	Japan
508.		UAE312	OMDB	RJTT	201803020435	Japan
509.	UK	BAW11	EGLL	WSSS	201803021905	Singapore
510.		BAW15	EGLL	WSSS	201803022145	Singapore
511.		SIA317	EGLL	WSSS	201803021055	Singapore
512.		SIA319	EGLL	WSSS	201803022035	Singapore
513.		SIA321	EGLL	WSSS	201803022205	Singapore
514.		BAW1039	EGLL	ZBAA	201803021850	China
515.		BAW17	EGLL	RKSI	201803022055	China
516.		BAW169	EGLL	ZSPD	201803022200	China
517.		CCA938	EGLL	ZBAA	201803030140	China
518.		KAL908	EGLL	RKSI	201803030250	China
519.		AAR522	EGLL	RKSI	201803030410	China
520.		CES552	EGLL	ZSPD	201803030500	China
521.		CAL070	EGKK	RCTP	201803030515	China
522.		PAL721	EGLL	RPLL	201803030550	China
523.		CBJ432	EGLL	ZSQD	201803030600	China
524.		CSN304	EGLL	ZGGG	201803030630	China
525.		BAW5	EGLL	RJAA	201803021350	Japan
526.		ANA212	EGLL	RJTT	201803021900	Japan
527.		JAL44	EGLL	RJTT	201803021900	Japan
528.		JAL42	EGLL	RJTT	201803020930	Japan
529.		BAW7	EGLL	RJTT	201803021050	Japan
530.		NRS7409	EGKK	WSSS	201803012235	Thailand

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
531.	UK	BAW9	EGLL	VTBS	201803011535	Thailand
532.		EVA068	EGLL	VTBS	201803012120	Thailand
533.		THA917	EGLL	VTBS	201803012135	Thailand
534.		SIA317	EGLL	WSSS	201803021055	Thailand
535.		THA911	EGLL	VTBS	201803021150	Thailand
536.	USA	SIA31	KSFO	WSSS	201803021730	Singapore
537.		UAL1	KSFO	WSSS	20180302640	Singapore
538.		B3277	KSFO	ZBAA	201803021000	China
539.		CPA899	KEWR	VHHH	201803021400	China
540.		CCA996	KIAH	ZBAA	201803021405	China
541.		CLX731	PANC	ZHCC	201803021410	China
542.		CCA770	KLAX	ZGSZ	201803021450	China
543.		DAL129A	KSEA	ZBAA	201803021515	China
544.		CAO1050	KJFK	ZSPD	201803021555	China
545.		CCA838	PHNL	ZBAA	201803021600	China
546.		AAL193	KLAX	VHHH	201803021625	China
547.		HAL897	PHNL	ZBAA	201803021750	China
548.		CAO1054	KORD	ZBAA	201803021940	China
549.		CSN300	KJFK	ZGGG	201803022340	China
550.		UAL89	KEWR	ZBAA	201803030115	China
551.		UAL807	KIAD	ZBAA	201803030215	China
552.		CSC8646	PGSN	ZGGG	201803030230	China
553.		UAL86	KEWR	ZSPD	201803030305	China
554.		UAL851	KORD	ZBAA	201803030320	China
555.		CPA807	KORD	VHHH	201803030405	China
556.		CXA846	KSEA	ZGSZ	201803030425	China
557.		CES588	KJFK	ZSPD	201803030425	China
558.		DAL39	KSEA	VHHH	201803030540	China
559.		ANA9	KJFK	RJAA	201803021545	Japan
560.		UAL79	KEWR	RJAA	201803021550	Japan
561.		JAL3	KJFK	RJAA	201803021605	Japan
562.		N51GJ	PADK	RJCC	201803022200	Japan
563.		JAL7	KBOS	RJAA	201803021740	Japan
564.		JAL5	KJFK	RJTT	201803021750	Japan
565.		UAL143	KDEN	RJAA	201803021920	Japan
566.		UAL151	PGUM	RJBB	201803022105	Japan
567.		UAL137	PGUM	RJGG	201803022125	Japan
568.		UAL828	PGUM	RJAA	201803022100	Japan
569.		ANA109	KJFK	RJTT	201803022215	Japan
570.		UAL165	PGUM	RJFF	201803022245	Japan
571.		UAL196	PGUM	RJAA	201803020305	Japan

	State of Departure	Aircraft ID	Departure Aerodrome	Destination Aerodrome	EOBT	Reporting State
572.	USA	HAL855	PHNL	RJTT	201803020305	Japan
573.		TWB312	PGUM	RJBB	201803020610	Japan
574.		TWB9326	PGUM	RJAA	201803020710	Japan
575.		UAL171	PGUM	RJGG	201803020655	Japan
576.		UAL873	PGUM	RJAA	201803020710	Japan
577.		DAL297	PGSN	RJAA	201803020620	Japan
578.		JAL942	PGUM	RJAA	201803020715	Japan
579.		REPAT59	PGUA	VTBU	201803011807	Thailand
580.	VIET NAM	CSN8348	VVPQ	ZGGG	201803022125	China
581.		CSC8074	VVCR	ZUUU	201803030230	China
582.		BKP992	VVPQ	VTBS	201803020650	Thailand

APPENDIX 4F

Part I: Data Communication, the table below shows the required intra-regional data connection over CRV Network

State	**Bahrain**	**Egypt**	**Iran**	**Iraq**	**Jordan**	**Kuwait**	**Lebanon**	**Libya**	**Oman**	**Qatar**	**Saudi**	**Sudan**	**Syria**	**UAE**	**Yemen**
Bahrain	▨		🟩			🟩	🟩			🟩	🟩			🟩	
Egypt		▨			🟩		🟩								
Iran	🟩		▨	🟩		🟩			🟩						
Iraq			🟩	▨		🟩					🟩		🟩		
Jordan		🟩			▨						🟩				
Kuwait	🟩		🟩	🟩		▨				🟩	🟩		🟩		
Lebanon	🟩	🟩		🟩			▨				🟩				
Libya								▨				🟩			
Oman			🟩						▨		🟩				🟩
Qatar	🟩					🟩			🟩	▨	🟩			🟩	
Saudi	🟩			🟩	🟩	🟩	🟩		🟩	🟩	▨	🟩		🟩	🟩
Sudan								🟩			🟩	▨			
Syria				🟩		🟩							▨		
UAE	🟩										🟩			▨	
Yemen									🟩		🟩				▨

Notes:

1- Package A is selected for all states in the MID Region.
2- The bandwidth of each data connection is 64K.
3- 🟩 Means data connection between two states
4- The table below shows the required inter-regional connections between APAC and MID regions over the CRV Network:

State	**Inter-regional connection with APAC Region**
Bahrain	Singapore
Iran	Pakistan
Kuwait	Pakistan, China
Oman	India, Pakistan

Safety Assessment

The following Intra-regional connections should be maintained as backup in case of total CRV disruption

State	**Inter-regional Backup line**
Bahrain	Oman
Egypt	Saudi Arabia, Sudan
Iran	UAE
Iraq	Bahrain, Jordan
Jordan	Lebanon, UAE
Kuwait	Lebanon
Lebanon	Jordan, Kuwait
Libya	Egypt
Oman	Bahrain, UAE
Qatar	Bahrain, UAE
Saudi	Egypt
Sudan	Egypt
Syria	Bahrain
UAE	Jordan, Oman
Yemen	VSAT Net.

Required Bandwidth for data

State	Number of data Connections	Total Bandwidth
Bahrain	7	512 K
Egypt	2	128 K
Iran	5	256 K
Iraq	4	256 K
Jordan	2	128 K
Kuwait	8	512 k
Lebanon	4	256 K
Libya	1	64 K
Oman	5	256 k
Qatar	5	256 K
Saudi	10	1024 K
Sudan	2	128 K
Syria	2	128 K
UAE	2	128 K
Yemen	2	128 K

Part II: Voice Communication (*pls fill*)

State	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi	Sudan	Syria	UAE	Yemen
Bahrain	▒									🟩					
Egypt		▒			🟩										
Iran			▒												
Iraq				▒											
Jordan		🟩			▒						🟩				
Kuwait						▒									
Lebanon							▒								
Libya								▒							
Oman									▒						
Qatar	🟩									▒	🟩			🟩	
Saudi					🟩					🟩	▒				
Sudan												▒			
Syria													▒		
UAE										🟩				▒	
Yemen															▒

The table shows the required intra-regional **Voice** connection over CRV Network.

Notes:

1- Package A is selected for all states in the MID Region.
2- Each voice call session requires 104Kbps as voice will be converted to VoIP.
3- 🟩 Means **VOIP** connection between two states

4- The table below shows the required inter-regional VOIP between APAC and MID regions over the CRV Network:

State	**Inter-regional connection with APAC Region**
Bahrain	Singapore
Iran	Pakistan
Kuwait	Pakistan, China
Oman	India, Pakistan

Safety Assessment

In case of total failure of the CRV service, the dialup connection may be used or *mention any voice connection you wish to maintain*

State	**Voice Backup line**
Jordan	Dialup used with all
Qatar	Bahrain, UAE

Required Bandwidth for VOIP

State	Number of Voice Connections	Total Bandwidth
Bahrain		
Egypt		
Iran		
Iraq		
Jordan	3	512 k (Cairo,Jeddah,Riyadh)
Kuwait		
Lebanon		
Libya		
Oman		
Qatar	10	1 M
Saudi		
Sudan		
Syria		
UAE		
Yemen		

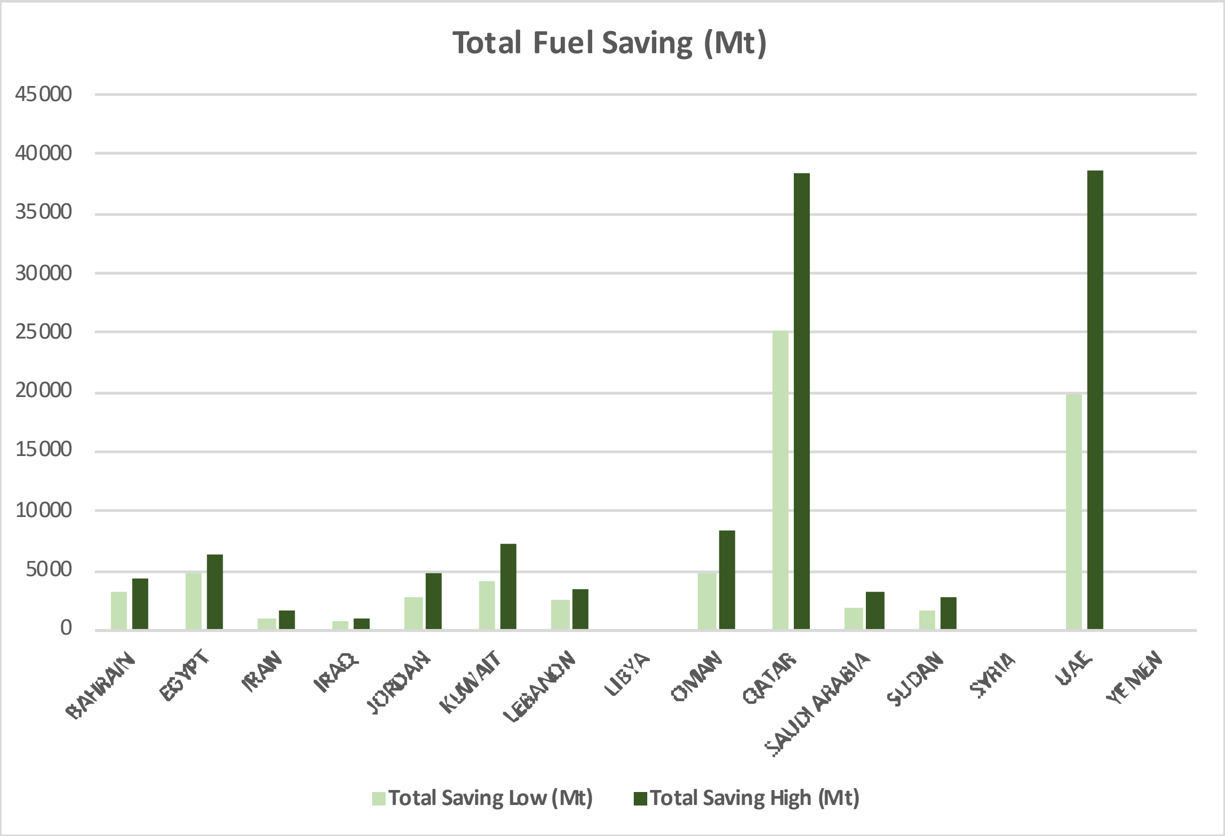
Module		B0-CCO						B0-CDO					B0-APTA			Total - low (Mt)	Total - high (Mt)
Title		CCO 1 (CCO)			CCO 2 (PBN SIDs)			CDO 1 (CDO)		CDO 2 (PBN STARs)			APTA 1 (PBN -enabled Radius to Fix approach)				
State / RoT	Departures 2017	Impl.	Low (90kg/Dep)	High (150kg/Dep)	Impl.	Low (0kg/Dep)	High (30kg/Dep)	Impl.	60kg/Arr	Impl.	Low (20kg/Arr)	High (50kg/Arr)	APTA Impl.	RF Impl.	Fuel Saving (kg)		
BAHRAIN																	
OBBI	40803	0%	0	0	0%	0	0	0%	0	100%	816060	2040150	100%	100%	3129590.1		
Total	40803		0	0		0	0		0		816060	2040150			3129590.1	3945.7	5169.7
EGYPT																	
HEBA	10697	0%	0	0	50%	0	160455	0%	0	0%	0	0	50%	0%	0		
HESN	2781	0%	0	0	100%	0	83430	0%	0	100%	55620	139050	100%	0%	0		
HECA	69732	0%	0	0	0%	0	0	0%	0	0%	0	0	100%	33%	1764986.652		
HEGN	11031	0%	0	0	50%	0	165465	0%	0	50%	110310	275775	100%	0%	0		
HELX	3069	0%	0	0	100%	0	92070	0%	0	100%	61380	153450	100%	0%	0		
HEMA	2333	0%	0	0	100%	0	69990	0%	0	100%	46660	116650	100%	100%	178941.1		
HESH	7138	0%	0	0	100%	0	214140	0%	0	100%	142760	356900	100%	0%	0		
Total	106781		0	0		0	785550		0		416730	1041825			1943927.752	2360.7	3771.3
IRAN																	
OIKB	4460	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OIFM		0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OIMM	28308	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OISS	13838	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OITT	6756	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OIIE	26540	0%	0	0	0%	0	0	0%	0	100%	530800	1327000	25%	0%	0		
OIII	54678	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OIZH	2035	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OIYY	2846	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
Total	139461		0	0		0	0		0		530800	1327000			0	530.8	1327.0
IRAQ																	
ORBI		0%	0	0	0%	0	0	0%	0	0%	0	0	50%	0%	0		
ORMM	4253	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
ORER	8137	0%	0	0	0%	0	0	0%	0	100%	162740	406850	100%	100%	624107.9		
ORSU		0%	0	0	0%	0	0	0%	0	0%	0	0	100%	0%	0		
ORNI		0%	0	0	100%	0	0	0%	0	100%	0	0	100%	100%	0		
ORBM		0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
Total	12390		0	0		0	0		0		162740	406850			624107.9	786.8	1031.0
JORDAN																	
OJAI	34454	0%	0	0	100%	0	1033620	0%	0	100%	689080	1722700	100%	0%	0		
OJAQ	684	0%	0	0	100%	0	20520	0%	0	100%	13680	34200	100%	0%	0		
Total	35138		0	0		0	1054140		0		702760	1756900			0	702.8	2811.0
KUWAIT																	
OKBK	52970	0%	0	0	100%	0	1589100	0%	0	100%	1059400	2648500	100%	0%	0		
Total	52970		0	0		0	1589100		0		1059400	2648500			0	1059.4	4237.6
LEBANON																	
OLBA	31527	0%	0	0	0%	0	0	0%	0	100%	630540	1576350	100%	0%	0		
Total	31527		0	0		0	0		0		630540	1576350			0	630.5	1576.4
LIBYA																	
HLLB	461	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
HLLS	36	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
HLLT	2020	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
Total	2517		0	0		0	0		0		0	0			0	0.0	0.0
OMAN																	
OOMS	54867	0%	0	0	100%	0	1646010	0%	0	100%	1097340	2743350	100%	0%	0		
OOSA	6942	0%	0	0	100%	0	208260	0%	0	100%	138840	347100	100%	0%	0		
Total	61809		0	0		0	1854270		0		1236180	3090450			0	1236.2	4944.7
QATAR																	

OTBD	111051	100%	9994590	16657650	100%	0	3331530	100%	6663060	100%	2221020	5552550	100%	0%	0		
OTHH			0	0		0	0		0		0	0	100%	0%	0		
Total	111051		9994590	16657650		0	3331530		6663060		2221020	5552550			0	18878.7	32204.8
SAUDI ARABIA																	
OEDF	39427	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OEJN	108676	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OEMA	23550	0%	0	0	100%	0	706500	0%	0	100%	471000	1177500	100%	0%	0		
OERK	92451	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
Total	264104		0	0		0	706500		0		471000	1177500			0	471.0	1884.0
SUDAN																	
HSNN			0	0	0%	0	0	0%	0	0%	0	0	100%	0%	0		
HSOB	600		0	0	0%	0	0	0%	0	0%	0	0	100%	0%	0		
HSSS	18641		0	0	100%	0	559230	0%	0	100%	372820	932050	100%	0%	0		
HSPN	1751		0	0	0%	0	0	0%	0	0%	0	0	100%	0%	0		
Total	20992		0	0		0	559230		0		372820	932050			0	372.8	1491.3
SYRIA																	
OSAP		0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OSLK	33	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OSDI	2755	0%	0	0	0%	0	0	0%	0	0%	0	0	25%	0%	0		
Total	2788		0	0		0	0		0		0	0			0	0.0	0.0
UAE																	
OMAA	71803	0%	0	0	100%	0	2154090	0%	0	100%	1436060	3590150	100%	100%	5507290.1		
OMAD		0%	0	0	100%	0	0	0%	0	100%	0	0	100%	0%	0		
OMAL	482	0%	0	0	0%	0	0	0%	0	0%	0	0	100%	0%	0		
OMDB	200954	0%	0	0	100%	0	6028620	0%	0	100%	4019080	10047700	100%	0%	0		
OMDW		0%	0	0	100%	0	0	0%	0	100%	0	0	100%	0%	0		
OMFJ		0%	0	0	100%	0	0	0%	0	100%	0	0	50%	0%	0		
OMRK	2210	0%	0	0	100%	0	66300	0%	0	100%	44200	110500	100%	0%	0		
OMSJ	37854	0%	0	0	100%	0	1135620	0%	0	100%	757080	1892700	100%	50%	1451700.9		
Total	313303		0	0		0	9384630		0		6256420	15641050			6958991	13215.4	31984.7
YEMEN																	
OYAA	107	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OYHD		0%	0	0	0%	0	0	0%	0	50%	0	0	50%	0%	0		
OYRN	86	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
OYSN	615	0%	0	0	100%	0	18450	0%	0	100%	12300	30750	100%	0%	0		
OYTZ	30	0%	0	0	0%	0	0	0%	0	0%	0	0	0%	0%	0		
Total	838		0	0		0	18450		0		12300	30750			0	12.3	49.2

TOTAL FIGURES	Total Dep 2017		CCO 1 (low)	CCO 1 (high)		CCO 2 (low)	CCO 2 (high)		CDO 1		CDO 2 (low)	CDO 2 (high)			APTA1	TOTAL LOW (Mt)	TOTAL HIGH (Mt)
MID Region	1196472		99945.9	166576.5		0.0	192834.0		66630.6		148887.7	372219.3			126566.2	44203.0	92482.7

State	Total Saving Low (Mt)	Total Saving High (Mt)
BAHRAIN	3098.7	4322.8
EGYPT	4792.2	6202.9
IRAN	902	1698.2
IRAQ	618	862.1
JORDAN	2668.5	4776.8
KUWAIT	4022.8	7201
LEBANON	2394.3	3340.1
LIBYA	0	0
OMAN	4694	8402.6
QATAR	25091.3	38417.4
SAUDI ARABIA	1788.5	3201.5
SUDAN	1547.2	2665.7
SYRIA	38.5	38.5
UAE	19766.9	38536.2
YEMEN	46.7	83.6

TOTAL	71469.6	119749.4



APPENDIX 5B

Assessment of environmental benefits accrued from the implementation of ASBU Block 0

STATE: …………………… REPORTING YEAR: ………………									Aircraft Weight		
	Intl AD (Location Indicator)	Total no. of Departures	% of traffic (departures) using CCO	% of traffic (departures) using PBN SIDs	Total no. of Arrivals	% of traffic (arrivals) using CDO	% of traffic (arrivals) using PBN STARs	% of arrivals using PBN Approach Procedures (APTA)	% of fleet (Light) (7000kg or less)	% of fleet (Medium) (7000-136000 kg)	% of fleet (Heavy) (136000 kg or more)
1					*See Note*						
2											
3											
4											
5											
6											
7											
8											
9											
10											

Notes:

- *Blue Cells are mandatory information (Location indicator of the international airports and annual number of departures). Without this data, estimation could not be carried out.*

- *White cells are those information to be used for the estimation of the amount of fuel saving using the Rules of Thumb (RoT). Providing the percentages, would make the final estimation of the total fuel saving more precise and accurate.*

- *Number of arrivals is considered almost equal to the number of departures.*

ATTACHMENT A

LIST OF PARTICIPANTS

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Mr. Mohammed Faisal Al Dossari	Director Air Navigation & Aerodromes Department General Civil Aviation Authority (GCAA) Abu Dhabi - UNITED ARAB EMIRATES

NAME	TITLE & ADDRESS
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Mr. Raouf Helmy Nashed	IFATCA Representative Middle East Region Cairo - EGYPT

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