



International Civil Aviation Organization

MIDANPIRG/17 and RASG-MID/7 Meeting

(Cairo, Egypt, 15 – 18 April 2019)

Agenda Item 6.2: Air Navigation Planning and Implementation

MID Air Navigation Plan

(Presented by the Secretariat)

SUMMARY

This paper provides an update related to the MID Air Navigation Plan (MID eANP) since MIDANPIRG/15 and presents a revised version of Volume III for the meeting review and endorsement.

Action by the meeting is at paragraph 3.

REFERENCES

- MIDANPIRG/15 and 16 Reports
- MSG/5 and 6 Reports
- Proposals for Amendment to MID ANP

1. INTRODUCTION

1.1 The meeting may wish to recall that the ICAO Council approved the new eANP Template (Volumes I, II and III) and corresponding procedure for amendment on 18 June 2014 (202nd session, fourth meeting).

2.1 The MIDANPIRG/15 meeting (Bahrain, 8 – 11 June 2015) reviewed and endorsed the MID eANP VOL I, II and III through Conclusion 15/11. The MID Region was the first Region that completed the transition from the old Basic and FASID ANP to the new eANP format by 15 February 2016.

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

2. DISCUSSION

2.1 The meeting may wish to note that any amendment to the content of the MID eANP should be processed and approved in accordance with the Procedure for amendment of the ANP at Appendix A to the eANP Volume I prior to publication in States' AIPs and/or implementation. The following is to be highlighted:

- a) Volume I contains stable plan elements, the amendment of which require approval by the Council;

- b) Volume II contains dynamic plan elements, the amendment of which does not require approval by the Council (approval is by regional agreement involving the relevant PIRG); and
- c) Volume III contains dynamic/flexible plan elements providing implementation planning guidance for air navigation systems and their modernization taking into consideration emerging programmes such as the ASBUs and associated technology roadmaps described in the GANP. The ANP Volume III also includes appropriate additional guidance, particularly with regard to implementation, to complement the material contained in the ANP Volumes I and II. The amendment of Volume III does not require approval by the Council (approval of Part II is under the responsibility of the relevant PIRG).

2.3 The eANPs web-based platform is accessible through the ANP application under SPACE/iSTARS (<https://portal.icao.int/space/anp/Pages/newanp.aspx#>)

2.4 The meeting may wish to recall that MSG/5 meeting (Cairo, Egypt, 18 – 20 April 2016) agreed through MSG Conclusion 5/2 that States should assign a focal point for MID eANP in order to facilitate the coordination of all issues related to the MID eANP (collection and validation of information, notification of the changes/consultation, as deemed necessary, etc.). The list of MID eANP Focal Points is at **Appendix A**.

2.5 The following is an update on the MID eANP:

Volume I:

- PFA Serial No. MID-I 18/01-AOP approved on 21 February 2018, related to the amendment of *Table AOP I-1 International Aerodromes Required in The MID Region* for the removal of Amman/Mark and Juba Airports from the Table.
- Coordination is in progress for the processing of the PFA related to the delineation of Khartoum FIR and establishment of Juba FIR based on the outcome of the Fourth meeting of the Task Force on Air Navigation Services and Delineation of Khartoum FIR (TANS/4), which was held at the ICAO MID Regional Office, Cairo, Egypt, 16 – 18 May 2017.
- Based on Qatar request dated 28 August 2018 for the amendment of the MID ANP related to the establishment of a new FIR, the Qatar Proposal on the Amendment of MID Air Navigation Plan Task Force (QANPP TF) has been established, to ensure that coordination at regional level has been carried out before the processing of a PFA, in accordance with the applicable procedures.

FIR Boundary Descriptions

2.6 The meeting may wish to note that the MID eANP was published without the FIRs/UIRs boundary coordinates (Tables ATM I-1 *MID Region Flight Information Regions (FIRs)/ Upper Information Regions (UIRs)* and SAR I-1 *MID Region Search and Rescue Regions (SRRs)*). The publication of the FIR Boundary coordinates/descriptions necessitates bi-lateral/multi-lateral agreements between concerned States.

2.7 The meeting may wish to recall that the MSG/5 meeting agreed that the Guidelines for the publication of FIR boundary points, at **Appendix B** should be taken into consideration for the publication of the FIR descriptions in the States' AIPs. The meeting reviewed the Draft Table

ATM I-1 *MID Region Flight Information Regions (FIRs)/Upper Information Regions (UIRs)* at **Appendix C**, highlighting the inconsistencies between adjacent FIRs and agreed to the following MSG Conclusion:

MSG CONCLUSION 5/5: PUBLICATION OF FIR BOUNDARY POINTS

That, States be urged to:

- a) take into consideration the Guidelines at Appendix 5D for the description of their FIR boundaries;*
- b) review the Table ATM I-1 MID Region Flight Information Regions (FIRs)/Upper Information Regions (UIRs) at Appendix 5E and coordinate with neighboring States, as appropriate, the definition of common boundaries; and*
- c) provide the ICAO MID Regional Office with their updates and comments before 15 October 2016.*

2.8 As a follow-up action to the MSG/5 Conclusion 5/5, the ICAO MID Office issued State Letter Ref.: AN 6/3-16/338 dated 1 December 2016 requesting States to provide an update on the actions undertaken. Few replies were received.

Volume II

- PfA Serial No. MID-II-16/01-ATM approved on 11 October 2016 related to the amendment of TABLE ATM II-MID-1 MID Region ATS Route Network for the improvements of ATS routes between Egypt and Jordan.
- PfA Serial No. MID-II 17/01-AOP/CNS approved on 28 August 2017, related to the amendment of the requirements for Egypt, Jordan, Sudan and UAE with respect to Table AOP II-1 – Requirements and Capacity Assessment and deletion of the requirements for Iran with respect to TABLE CNS II-1 - Aeronautical Fixed Telecommunications Network (AFTN) Plan.
- PfA Serial No. MID-II 19/01 – ATM approved on 8 April 2019 with respect to adding the requirements related to contingency planning, ICARD, AIDC/OLDI and amendment of TABLE ATM II-MID-2 – MID SSR Code Allocation List.
- A comprehensive review of the *TABLE ATM II-MID-1 MID Region ATS Route Network* is ongoing for presentation of a revised version of the table to the ATM SG/5 meeting (Cairo, Egypt, 8 – 12 September 2019).

Volume III

2.9 The MID eANP Volume III was reviewed by MSG/6 meeting (Cairo, Egypt, 3 – 5 December 2018), which agreed to the changes, proposed by the AIM SG/4, ATM SG/4, CNS SG/8 and MET SG/7 meetings (Tables B0-ACDM, B0-DATM, B0-FICE, B0-FRTO, B0-NOPS, B0-ACAS, B0-SNET and B0-AMET), as reviewed by the ANSIG/3 meeting. The meeting approved the amendments to the MID eANP Volume III through MSG CONCLUSION 6/2.

2.2 Further to the MSG/6 meeting, the Secretariat updated the MID eANP Volume III as at **Appendix D**, based on the inputs received from States.

2.3 The meeting may wish to note that the MSG/6 meeting agreed that the Sixth meeting of the Runway and Ground Safety Working Group (RGS WG/6) should review and improve Table B0-SURF 3-1 to support a good monitoring and reporting related to the status of implementation of A-SMGCS Level 1 and 2.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) review and update the list of MID eANP Focal Points at **Appendix A**;
- b) review the Draft Table ATM I-1 *MID Region FIRs/UIRs* at **Appendix C** and take appropriate action related to the population of the Tables related to FIRs, UIRs and SRRs in the MID eANP Volume I; and
- c) review and approve the amendments to MID eANP Volume III at **Appendix D**; and agree to the following Draft Conclusion:

Why	To update the MID eANP Volume III
What	MID eANP Volume III
Who	MIDANPIRG/17
When	April 2019

DRAFT MIDANPIRG/17 CONCLUSION 17/XX: AMENDMENT TO THE MID eANP VOLUME III

*That, the amendment to the MID eANP Volume III at **Appendix D** is approved.*

APPENDIX A

MID eANP FOCAL POINTS

(Last updated 05/03/2017)

	States	Main Focal Point		
		Name	Title	Email/Tel/Mobile
1	Bahrain	Ahmed Al Sayed Abdulla Al Qadhi (Alt)	A/Director AN Systems Chief AIM & Airspace Planning	ahmed.alsayed@mtt.gov.bh 0097317321199 aalqadhi@mtt.gov.bh 0097317321180
2	Egypt	Khaled Reda		Khaled.reda@civilaviation.gov.eg 01005648346
3	Iran			
4	Iraq			
5	Jordan	Daoud Abu-Hussein	Planning and studies Director	Daoud@carc.gov.go Mob: 00962795885779 Tel:+96264799145
6	Kuwait	Adel S. Boresli	Director Air Navigation	as.buresli@dgca.gov.kw
7	Lebanon			
8	Libya			
9	Oman			
10	Qatar			
11	Saudi Arabia	Adnan Alhendi		aalhendi@gaca.gov.sa Mob: +966599993215
12	Sudan	Abdulmonem Elsheikh Ahmed	ANS Director	aelsheikh78@gmail.com; a.elshiekh@scaa.gov.sd Mob: +249914101300
13	Syria			
14	UAE	Robert Novac Bara	ANS inspector (AIM)	rbara@gcaa.gov.ae Mob: +971565015900
15	Yemen			

APPENDIX B

GUIDELINES FOR THE PUBLICATION OF FIR BOUNDARY POINTS

- 1) Where FIR is a list of geographical coordinates:
 - a) The list of points and their coordinates must follow a clockwise sequence.
 - b) The list must have a beginning point and an ending point that are the same coordinate.
 - c) The latitude and longitude coordinates must be reported in **DMS (degrees, minutes and seconds)**.
 - d) Where an FIR shares a common point with another neighbouring FIR, coordinates should be mutually agreed.

***Note:** Transfer of Control Points, ATS route significant points or waypoints may not necessarily be aligned with boundaries delineation.*
 - e) Where delineation of FIR/UIR follows an arc of specific dimension, it should be defined as follows:

[starting point of ARC] following an arc of a circle at a radius of [distance] NM centered on [coordinates in DMS] and ending at point [coordinates in DMS].
- 2) Where FIR is described using “sovereign” boundaries
 - a) The description should be simple
 - i) *Follow sovereign boundary between [State 1] and [State 2]).¹*
 - b) Where delineation of FIR/UIR is made by reference to sovereign boundaries common to neighbouring FIR/UIR, the delineation shall be mutually agreed upon.
 - c) Where an FIR/UIR follows a sovereign boundary, the United Nations international boundary data set is referred to by ICAO.

¹ Use short names of States as shown at: <http://www.icao.int/about-icao/pages/member-states.aspx>

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM ICAO	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	the national borders of Oman, Saudi Arabia and UAE meet to 224200N 0551200E, then the Saudi Arabia / Oman territorial boundary to 190000N 052000E 253000N 0490000E 263330N 0452130E 275000N 0455500E 275000N 0490800E thence along the limit of the Saudi Arabia territorial waters to 281500N 0485200E then back to starting point 284400N 0494000E	Description should match with the one in FIR Jeddah and Muscat This coordinate should match with FIR Kuwait and add starting point coordinate	1a 1d 2b 2c 2a	State's AIS Publication (AIP ENR 2.1-1 dated 17 October 2013) PfA (Serial MID Basic ANP 13/03 – ATM/SAR)-realignment of Bahrain and Jeddah FIRs pending approval
Beirut (OLBB)	FIR/UIR Beirut The geographical Lebanese/Syrian borders, then along the Lebanese/Palestinian borders, and a semicircular Arc, radius 45 NM centered KAD VOR		1d 2b 2c 2a 1e	Not Source: the State's AIS Publication
Cairo (HECC)	FIR/UIR Cairo *Northern border 340000N 0241000E 340000N 0271000E 333000N 0300000E *Eastern border 315000N 0335900E 313600N 0343000E then follow the International border to: 293000N 0345500E 293000N 0350000E 280600N 0343500E 220000N 0380000E *Southern border 220000N 0380000E 220000N 0250000E *Western border 220000N 0250000E 314000N 0251000E 340000N 0241000E	Coordinate should match with FIR Tripoli	1d 2a	Source: the State's AIS Publication
Damascus (OSTT)	FIR/UIR Damascus From 355500N 0354000E to 355600N 0355500E then along the national border of Syria with Turkey and Iraq to a point 332200N 0384800E, then along the national border of Syria with Jordan to 324100N 0353800E then along the		1a 1d 2b 2c 2a	Source: the State's AIS Publication

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM ICAO	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	Western Syrian border to 331500N 0353700E then along the Lebanese Syrian border to a point 343800N 0355700E then to a point 343800N 0354300E then northwards along a line maintaining 12 NM from the coastline, to 355500N 0354000E			
Emirates (OMAE)	FIR/UIR Emirates 262100N 0560600E 253600N 0561300E 250000N 0563500E 240000N 0553500E 224200N 0551200E to the point where the national borders of Oman, Saudi Arabia and UAE meet, then along the national border between Saudi Arabia and UAE to 240300N 0514700E 254900N 0530600E 260400N 0535700E 253800N 0552000E 262100N 0560600E			Source MID ANP Serial No. EUR 85/02-ATS/88-COM/400-MET/75-SAR/16-AIS/1 dated 9 December 1986 and PfA Serial 00/1 ATS approved 7 march 2005
Jeddah (OEJD)	FIR/UIR Jeddah 292124N 0345718E 291131N 0360356E 293001N 0362956E 295201N 0364456E 300002N 0372956E 302002N 0373956E 303002N 0375956E 313002N 0365956E 320002N 0385956E 320915N 0391203E 315653N 0402447E 312223N 0412627E 310642N 0420508E 291155N 0444318E 290340N 0462534E 290604N 0463311E then along the national boundary between Kuwait and Saudi Arabia and then along the limit of Saudi Arabian territorial waters to: 275000N 0490800E 275000N 0455500E 263330N 0452130E 253000N 0490000E 190000N 0520000E clockwise to 184720N 0504700E 183700N 0490700E 181000N 0481100E 172700N 0473600E 170700N 0472800E 165700N 0471100E 165700N 0470000E 171700N 0464500E 171400N 0462200E 171500N 0460600E 172000N 0452400E 172600N 0451300E 172600N 0443900E 172420N	Coordinates do not match with neighboring FIR Amman Coordinates should be defined as in this description within Baghdad FIR for perfect alignment with Jeddah FIR This coordinate does not match with shared FIR Kuwait and Baghdad Coordinates should be defined as in this description within Sanaa' FIR for perfect alignment with Jeddah FIR	1a 1d 2b 2c 2a	Source: the State's AIS Publication (AIP ENR 2.1-1 dated 11 March 2010) PfA (Serial MID Basic ANP 13/03 – ATM/SAR) realignment of Bahrain and Jeddah FIRs pending approval

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM ICAO	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	0443400E 172600N 0442800E 172600N 0442158E then follow Saudi Arabia and Republic of Yemen international boundaries in accordance with Jeddah treaty to the coast line boundary: 162415N 0424620E 162415N 0420900E 161724N 0414700E 160000N 0420000E 154700N 0415300E 153955N 0413947E 160000N 0410000E 200000N 0383000E 220000N 0380000E 280600N 0343500E then back to starting point 292124N 0345718E	This coordinate does not match with shared FIR Asmara coordinate Coordinates should match with FIR Amman and FIR Cairo		
Khartoum (HSSS)	FIR/UIR Khartoum 154500N 0240000E 200000N 0240000E 200000N 0250000E 220000N 0250000E 220000N 0380000E 200000N 0383000E 125500N 0360000E 080000N 0330000E 040000N 0360500E 040000N 0301200E Common national boundary: SUDAN /KINSHASA SUDAN/CONGO DROF SUDAN /BRAZZAVILLE SUDAN/CENTRAL AFRICA SUDAN/NDJMENA.	Replace text with the following to be consistent with the other MID FIR descriptions: Example: Then follow international boundary between Sudan and Congo, DRC, Central Africa and Chad then back to starting point 154500N 0240000E.	1a 2a	Source: the State's AIS Publication
Kuwait (OKAC)	FIR/UIR Kuwait 290604N 0463319E 291502N 0464211E 294319N 0470024E 295105N 0470454E 300001N 0470920E 300613N 0472217E 300613N 0474228E 300113N 0475528E 295924N 0480042E 300146N 0480434E 300120N 0480952E 295110N 0482451E 295121N 0484503E 291300N 0494000E 290000N 0492700E 284400N 0494000E 281500N 0485203E then following the Saudi Arabia territorial waters and Kuwait / Saudi Arabia International boundary to the point 290604N 0463319E	This coordinate does not match with shared FIR Jeddah and Baghdad These highlighted FIR Kuwait coordinates define the border shared with Baghdad FIR Shared coordinate with FIR Tehran and along FIR boundary of Baghdad Coordinates should match with FIR Bahrain As above in GREEN.	1a 1b 2b 2c 2a	Source: Limited MID RAN Jan 1996 the State's AIS Publication
Muscat (OOMM)	FIR/UIR Muscat 250000N 0563500E 253600N 0561300E 262100N 0560600E 264100N 0562700E 261000N			Source: the State's AIS Publication

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM ICAO	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	0564500E 253500N 0564500E 250000N 0573000E 244000N 0612000E 233000N 0612000E 233000N 0643000E 194800N 0600000E 174000N 0570000E 154000N 0533000E 163800N 0530400E 172200N 0524400E 190000N 0520000E thence along the common national boundary Sultanate of Oman/Kingdom of Saudi Arabia and along the common national boundary Sultanate of Oman/United Arab Emirates to 224200N 0551200E 240000N 0553500E 250000N 0563500E	Coordinate should match with Sanaa' FIR Description should match with BAHRAIN FIR	1d 2b 2c 2a	
Sanaa' (OYSC)	FIR/UIR Sanaa' 190000N 0520000E 173000N 0443500E 173500N 0430800E 164100N 0430800E 160800N 0412900E 145106N 0422354E 141542N 0423630E 123600N 0431800E 123142N 0432712E 121036N 0440206E 114500N 0441100E 114730N 0444348E 115900N 0470800E 121100N 0504500E 120718N 0510242E 120000N 0513000E 120000N 0600000E 161400N 0600000E 194800N 0600000E 174000N 0570000E 164618N 0552436E 160718N 0541648E 154000N 0533100E 163324N 0530612E 190000N 0520000	Add Coordinates should be defined in the description within Sana'a FIR for perfect alignment as in descriptions of Jeddah FIR and AFI FIR Asmara, Addis Ababa, Mogadishu See Appendix C for an example of this issue. Please verify with FIR Mogadishu coordinates for perfect alignment Coordinate should match with Muscat FIR for perfect alignment	1a 1d 2b 2c 2a	Source: the State's AIS Publication MID ANP
Tehran (OIIX)	FIR/UIR Tehran 372100N 0535500E 382630N 0485230E thence along the Islamic Republic of Iran / Azerbaijan, Armenia, Turkey and Iraq territorial borders to Persian gulf to 295110N 0484500E 291300N 0494000E 290000N 0492700E 270500N 0505500E 265500N 0511000E 253800N 0552000E 264100N 0562700E 261000N 0564500E 253500N 0564500E 250000N 0573000E 244000N 0612000E, thence along the Islamic Republic of Iran / Pakistan,	Coordinates are not consistent with FIR Kuwait	1d 2b 2c 2a	Source: the State's AIS Publication

FIR/UIR Location Indicator	Lateral limits coordinates	COMMENTS FROM ICAO	# of FIR/UIR Description Requirement	Remarks
1	2		See FIR/UIR Definition #	3
	Afghanistan and Turkmenistan territorial borders to 372100N 0535500E			
Tripoli (HLLL)	FIR/UIR Tripoli 342000N 0113000E 342000N 0233500E 340000N 0241000E 314100N 0250800E 200000N 0250000E 200000N 0240000E 193000N 0240000E 220000N 0190000E 220000N 0113000E to Western Border Libya-GSPAJ along Western Border Libya-GSPAJ to 322200N 0113000E 342000N 0113000E	This coordinate should match with FIR Cairo	1d 2b 2c 2a	Source: the State's AIS Publication

MID AIR NAVIGATION PLAN
VOLUME III

MID AIR NAVIGATION PLAN

VOLUME III

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MID ANP, VOLUME III
PART 0 – INTRODUCTION

1. INTRODUCTION

1.1 The background to the publication of ANPs in three volumes is explained in the Introduction in Volume I. The procedure for amendment of Volume III is also described in Volume I. Volume III contains dynamic/flexible plan elements related to the implementation of the air navigation system and its modernization in line with the ICAO Aviation System Block Upgrades (ASBUs) and associated technology roadmaps described in the Global Air Navigation Plan (GANP).

1.2 The information contained in Volume III is related mainly to:

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

1.3 The management of Volume III is the responsibility of the MIDANPIRG.

1.4 Volume III should be used as a tool for monitoring and reporting the status of implementation of the elements planned here above, through the use of tables/databases and/or references to online monitoring tools, as endorsed by MIDANPIRG. The status of implementation is updated on a regular basis as endorsed by MIDANPIRG.

2. AVIATION SYSTEM BLOCK UPGRADES (ASBUs), MODULES AND ROADMAPS

2.1. The ASBU Modules and Roadmaps form a key component to the GANP, noting that they will continue to evolve as more work is done on refining and updating their content and in subsequent development of related provisions, support material and training.

2.2. Although the GANP has a worldwide perspective, it is not intended that all Block Upgrade Modules are required to be applied in every State, sub-region and/or region. Many of the Block Upgrade Modules contained in the GANP are specialized packages that should be applied only where the specific operational requirement exists or corresponding benefits can be realistically projected. Accordingly, the Block Upgrade methodology establishes an important flexibility in the implementation of its various Modules depending on a region, sub-region and/or State's specific operational requirements. Guided by the GANP, ICAO MID regional, sub-regional and State planning should identify Modules which best provide the needed operational improvements.

MID ANP, VOLUME III
PART I - GENERAL PLANNING ASPECTS (GEN)

1. PLANNING METHODOLOGY

1.1 Guided by the GANP, the regional planning process starts by identifying the homogeneous ATM areas, major traffic flows and international aerodromes. An analysis of this data leads to the identification of opportunities for performance improvement. Modules from the Aviation System Block Upgrades (ASBUs) are evaluated to identify which of those modules best provide the needed operational improvements. Depending on the complexity of the module, additional planning steps may need to be undertaken including financing and training needs. Finally, regional plans would be developed for the deployment of modules by drawing on supporting technology requirements. This is an iterative planning process which may require repeating several steps until a final plan with specific regional targets is in place. This planning methodology requires full involvement of States, service providers, airspace users and other stakeholders, thus ensuring commitment by all for implementation.

1.2 Block 0 features Modules characterized by technologies and capabilities which have already been developed and implemented in many parts of the world today. It therefore features a near-term availability milestone, or Initial Operating Capability (IOC), of 2013 for high density based on regional, sub-regional and State operational need. Blocks 1 through 3 are characterized by both existing and projected performance area solutions, with availability milestones beginning in 2018, 2023 and 2028 respectively.

2. REVIEW AND EVALUATION OF AIR NAVIGATION PLANNING

2.1. The progress and effectiveness against the priorities set out in the regional air navigation plans should be annually reported, using a consistent reporting format, to ICAO.

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

2.3. The air navigation planning and implementation performance framework prescribes reporting, monitoring, analysis and review activities being conducted on a cyclical, annual basis. An Air Navigation Reporting Form (ANRF) reflecting selected key performance areas as defined in the Manual on Global Performance of the Air Navigation System (ICAO Doc 9883) has been developed for each ASBU Module. The ANRF is a customized tool which is recommended for the application of setting planning targets, monitoring implementation, and identifying challenges, measuring implementation/performance and reporting. If necessary, other reporting formats that provide more details may be used but should contain as a minimum the elements described in the ANRF template. A sample of the ANRF is provided in **Appendix A**. A sample Template of a planning table which may be used to show the elements planned in an ICAO region is provided in **Appendix B**.

3. REPORTING AND MONITORING RESULTS

3.1 Reporting and monitoring results will be analyzed by the PIRGs, States and ICAO Secretariat to steer the air navigation improvements, take corrective actions and review the allocated objectives, priorities and targets if needed. The results will also be used by ICAO and aviation partner stakeholders to develop the annual Global Air Navigation Report. The report results will provide an opportunity for the international civil aviation community to compare progress across different ICAO regions in the establishment of air navigation infrastructure and performance-based procedures.

3.2 The reports will also provide the ICAO Council with detailed annual results on the basis of which tactical adjustments will be made to the performance framework work programme, as well as triennial policy adjustments to the GANP and the Block Upgrade Modules.

3.3 **Table GEN III-1** contains a minimum set of Implementation Indicator(s) for each of the eighteen ASBU Block 0 Modules necessary for the monitoring of these Modules (if identified as a priority for implementation at regional or sub-regional level). These indicators are intended to enable comparison between ICAO Regions with respect to ASBU Block 0 Modules and will apply only to commonly selected ASBU Modules. All regions/PIRGs reserve the right to select the ASBU Modules relevant to their needs and to endorse additional indicators, as deemed necessary. No reporting is required for ASBU Block 0 Modules that have not been selected.

Note: The priority for implementation as well as the applicability area of each selected ASBU Block 0 Module is to be defined by the MIDANPIRG.

TABLE GEN III-1 – IMPLEMENTATION INDICATOR(S) FOR EACH ASBU BLOCK 0 MODULE**Explanation of the Table**

- 1 Block 0 Module Code
 2 Block 0 Module Title
 3 Implementation Indicator
 4 Remarks

Module Code	Module Title	Implementation Indicator	Remarks
1	2	3	4
B0-APTA	Optimization of Approach Procedures including vertical guidance	% of international aerodromes having at least one runway end provided with APV Baro-VNAV or LPV procedures	
B0-WAKE	Increased Runway Throughput through Optimized Wake Turbulence Separation	% of applicable international aerodromes having implemented increased runway throughput through optimized wake turbulence separation	1. Not to be considered for the first reporting cycles due to lack of maturity. 2. List of ADs to be established through regional air navigation agreement.
B0-RSEQ	Improve Traffic flow through Runway Sequencing (AMAN/DMAN)	% of applicable international aerodromes having implemented AMAN / DMAN	1. Not to be considered for the first reporting cycles due to lack of maturity. 2. List of ADs to be established through regional air navigation agreement.
B0-SURF	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)	% of applicable international aerodromes having implemented A-SMGCS Level 2	List of ADs to be established through regional air navigation agreement.
B0-ACDM	Improved Airport Operations through Airport-CDM	% of applicable international aerodromes having implemented improved airport operations through airport-CDM	List of ADs to be established through regional air navigation agreement.
B0-FICE	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	% of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC / OLDI with neighbouring ACCs	
B0-DATM	Service Improvement through Digital Aeronautical Information Management	- % of States having implemented an AIXM based AIS database - % of States having implemented QMS	

Module Code	Module Title	Implementation Indicator	Remarks
1	2	3	4
B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	- % of States having implemented SADIS / WIFS - % of States having implemented QMS	
B0-FRTO	Improved Operations through Enhanced En-Route Trajectories	% of FIRs in which FUA is implemented	
B0-NOPS	Improved Flow Performance through Planning based on a Network-Wide view	% of FIRs within which all ACCs utilize ATFM systems	
B0-ASUR	Initial capability for ground surveillance	% of FIRs where ADS-B OUT and/or MLAT are implemented for the provision of surveillance services in identified areas.	Not to be considered for the first reporting cycles due to lack of maturity.
B0-ASEP	Air Traffic Situational Awareness (ATSA)	% of States having implemented air traffic situational awareness	Not to be considered for the first reporting cycles due to lack of maturity.
B0-OPFL	Improved access to optimum flight levels through climb/descent procedures using ADS-B	% of FIRs having implemented in-trail procedures	Not to be considered for the first reporting cycles due to lack of maturity.
B0-ACAS	ACAS Improvements	% of States requiring carriage of ACAS (with TCAS 7.1 evolution)	
B0-SNET	Increased Effectiveness of Ground-Based Safety Nets	% of States having implemented ground-based safety-nets (STCA, APW, MSAW, etc.)	
B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDO)	- % of international aerodromes / TMAs with PBN STAR implemented - % of international aerodromes/TMA where CDO is implemented	
B0-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route	% of FIRs utilising data link en-route in applicable airspace	
B0-CCO	Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)	- % of international aerodromes / TMAs with PBN SID implemented - % of international aerodromes/TMA where CCO is implemented	

Appendix A

SAMPLE TEMPLATE

1. AIR NAVIGATION REPORT FORM (ANRF)

(This template demonstrates how ANRF to be used.

The data inserted here refers to ASBU B0-05/CDO as an example only)

Regional and National planning for ASBU Modules

2. REGIONAL/NATIONAL PERFORMANCE OBJECTIVE – B0-05/CDO: Improved Flexibility and Efficiency in Descent Profiles					
Performance Improvement Area 4: Efficient Flight Path – Through Trajectory-based Operations					
3. ASBU B0-05/CDO: Impact on Main Key Performance Areas (KPA)					
	Access & Equity	Capacity	Efficiency	Environment	Safety
Applicable	N	N	Y	Y	Y
4. ASBU B0-05/CDO: Planning Targets and Implementation Progress					
5. Elements			6. Targets and implementation progress (Ground and Air)		
1. CDO					
2. PBN STARs					
7. ASBU B0-05/CDO: Implementation Challenges					
Elements	Implementation Area				
	Ground system Implementation	Avionics Implementation	Procedures Availability	Operational Approvals	
1. CDO					
2. PBN STARs					
8. Performance Monitoring and Measurement 8A. ASBU B0-05/CDO: Implementation Monitoring					

Elements	Performance Indicators/Supporting Metrics
1. CDO	Indicator: Percentage of international aerodromes/TMAs with CDO implemented Supporting metric: Number of international aerodromes/TMAs with CDO implemented
2. PBN STARs	Indicator: Percentage of international aerodromes/TMAs with PBN STARs implemented Supporting metric: Number of international aerodromes/TMAs with PBN STARs implemented

8. Performance Monitoring and Measurement 8 B. ASBU B0-05/CDO: Performance Monitoring	
Key Performance Areas (Out of eleven KPAs, for the present until experienced gained, only five have been selected for reporting through ANRF)	Where applicable, indicate qualitative Benefits,
Access & Equity	Not applicable
Capacity	Not applicable
Efficiency	Cost savings through reduced fuel burn. Reduction in the number of required radio transmissions.
Environment	Reduced emissions as a result of reduced fuel burn
Safety	More consistent flight paths and stabilized approach paths. Reduction in the incidence of controlled flight into terrain (CFIT).
9. Identification of performance metrics: It is not necessary that every module contributes to all of the five KPAs. Consequently, a limited number of metrics per type of KPA, serving as an example to measure the module(s)' implementation benefits, without trying to apportion these benefits between module, have been identified on page 5. For the family of ASBU modules selected for air navigation implementation, States/Region to choose the applicable performance (benefit) metrics from the list available on page 5. This approach would facilitate States in collecting data for the chosen performance metrics. States/Region, however, could add new metrics for different KPAs based on maturity of the system and ability to collect relevant data.	

AIR NAVIGATION REPORT FORM HOW TO USE - EXPLANATORY NOTES

1. **Air Navigation Report Form (ANRF):** This form is nothing but the revised version of Performance Framework Form that was being used by Planning and Implementation Regional Groups (PIRGs)/States until now. The ANRF is a customized tool for Aviation System Block Upgrades (ASBU) Modules which is recommended for application for setting planning targets, monitoring implementation, identifying challenges, measuring implementation/performance and reporting. Also, the PIRGs and States could use this report format for any other air navigation improvement programmes such as Search and Rescue. If necessary, other reporting formats that provide more details may be used but should contain as a minimum the elements described in this ANRF template. The results will be analysed by ICAO and aviation partners and utilized in the Regional Performance Dashboards and the Annual Air Navigation Report. The conclusions from the Air Navigation Report will serve as the basis for future policy adjustments, aiding safety practicality, affordability and global harmonization, amongst other concerns.
2. **Regional/National Performance objective:** In the ASBU methodology, the performance objective will be the title of the ASBU module itself. Furthermore, indicate alongside corresponding Performance Improvement area (PIA).
3. **Impact on Main Key Performance Areas:** Key to the achievement of a globally interoperable ATM system is a clear statement of the expectations/benefits to the ATM community. The expectations/benefits are referred to eleven Key Performance Areas (KPA) and are interrelated and cannot be considered in isolation since all are necessary for the achievement of the objectives established for the system as a whole. It should be noted that while safety is the highest priority, the eleven KPAs shown below are in alphabetical order as they would appear in English. They are access/equity; capacity; cost effectiveness; efficiency; environment; flexibility; global interoperability; participation of ATM community; predictability; safety; and security. However, out of these eleven KPAs, for the present, only five have been selected for reporting through ANRF, which are Access & Equity, Capacity, Efficiency, Environment and Safety. The KPAs applicable to respective ASBU module are to be identified by marking Y (Yes) or N (No). The impact assessment could be extended to more than five KPAs mentioned above if maturity of the national system allows and the process is available within the State to collect the data.
4. **Planning Targets and Implementation Progress:** This section indicates planning targets and status of progress in the implementation of different elements of the ASBU Module for both air and ground segments.
5. **Elements related to ASBU module:** Under this section list elements that are needed to implement the respective ASBU Module. Furthermore, should there be elements that are not reflected in the ASBU Module (example: In ASBU B0-80/ACDM, Aerodrome certification and data link applications D-VOLMET, D-ATIS, D-FIS are not included; Similarly in ASBU B0-30/DAIM, note that WGS-84 and eTOD are not included) but at the same time if they are closely linked to the module, ANRF should specify those elements. As a part of guidance to PIRGs/States, every Regional ANP will have the complete list of all 18 Modules of ASBU Block 0 along with corresponding elements, equipage required on the ground and in the air as well as metrics specific to both implementation and performance (benefits).
6. **Targets and implementation progress (Ground and Air):** Planned implementation date (month/year) and the current status/responsibility for each element are to be reported in this section. Please provide as much details as possible and should cover both avionics and ground systems. This ANRF being high level document, develop necessary detailed action plan separately for each element/equipage.

7. **Implementation challenges:** Any challenges/problems that are foreseen for the implementation of elements of the Module are to be reported in this section. The purpose of the section is to identify in advance any issues that will delay the implementation and if so, corrective action is to be initiated by the concerned person/entity. The four areas, under which implementation issues, if any, for the ASBU Module to be identified, are as follows:

- Ground System Implementation:
- Avionics Implementation:
- Procedures Availability:
- Operational Approvals:

Should be there no challenges to be resolved for the implementation of ASBU Module, indicate as “NIL”.

8. **Performance Monitoring and Measurement:** Performance monitoring and measurement is done through the collection of data for the supporting metrics. In other words, metrics are quantitative measure of system performance – how well the system is functioning. The metrics fulfil three functions. They form a basis for assessing and monitoring the provision of ATM services, they define what ATM services user value and they can provide common criteria for cost benefit analysis for air navigation systems development. The Metrics are of two types:

A. **Implementation Monitoring:** Under this section, the indicator supported by the data collected for the metric reflects the status of implementation of elements of the Module. For example- Percentage of international aerodromes with CDO implemented. This indicator requires data for the metric “number of international aerodromes with CDO”.

B. **Performance Monitoring:** The metric in this section allows to asses benefits accrued as a result of implementation of the module. The benefits or expectations, also known as Key Performance Areas (KPA), are interrelated and cannot be considered in isolation since all are necessary for the achievement of the objectives established for the system as a whole. It should be noted that while safety is the highest priority, the eleven KPAs shown below are in alphabetical order as they would appear in English. They are access/equity; capacity; cost effectiveness; efficiency; environment; flexibility; global interoperability; participation of ATM community; predictability; safety; and security. However, out of these eleven KPAs, for the present until experienced gained, only five have been selected for reporting through ANRF, which are Access & Equity, Capacity, Efficiency, Environment and Safety. Where applicable, mention qualitative benefits under this section.

9. **Identification of performance metrics:** It is not necessary that every module contributes to all of the five KPAs. Consequently, a limited number of metrics per type of KPA, serving as an example to measure the module(s)’ implementation benefits, without trying to apportion these benefits between module, have been identified on page 6. For the family of ASBU modules selected for air navigation implementation, States/Region to choose the applicable performance (benefit) metrics from the list available on page 6. This approach would facilitate States in collecting data for the chosen performance metrics. States/Region, however, could add new metrics for different KPAs based on maturity of the system and ability to collect relevant data.

MID ANP, VOLUME III
PART II – AIR NAVIGATION SYSTEM IMPLEMENTATION

1. INTRODUCTION

1.1 The planning and implementation of the ICAO Aviation System Block Upgrades (ASBUs) should be undertaken within the framework of the MIDANPIRG with the participation and support of all stakeholders, including regulatory personnel.

1.2 The ASBU Blocks and Modules adopted by the MID Region should be followed in accordance with the specific ASBU requirements to ensure global interoperability and harmonization of air traffic management. The MIDANPIRG should determine the ASBU Block Upgrade Modules, which best provide the needed operational improvements in the ICAO MID Region.

2. ICAO MID REGION AIR NAVIGATION OBJECTIVES, PRIORITIES AND TARGETS

2.1 In accordance with Recommendation 6/1 of the Twelfth Air Navigation Conference (AN-Conf/12), PIRGs are requested to establish priorities and targets for air navigation, in line with the ASBU methodology.

2.2 The achievement of the intended benefits along each routing or within each area of affinity is entirely dependent on the coordinated implementation of the required elements by all provider and user stakeholders concerned.

2.3 Considering that some of the block upgrade modules contained in the GANP are specialized packages that may be applied where specific operational requirements or corresponding benefits exist, States and PIRGs should clarify how each Block Upgrade module would fit into the national and regional plans.

2.4 As Block 0 modules in many cases provide the foundation for future development, all Block 0 modules should be assessed, as appropriate, for early implementation by States in accordance with their operational needs.

2.5 In establishing and updating the MID air navigation plan, the MIDANPIRG and States should give due consideration to the safety priorities set out in the Global Aviation Safety Plan (GASP) and MID Region safety strategy.

2.6 States in the MID Region through the MIDANPIRG should establish their own air navigation objectives, priorities and targets to meet their individual needs and circumstances in line with the global and regional air navigation objectives, priorities and targets.

3. MONITORING OF ASBU MODULES IMPLEMENTATION

3.1 The monitoring of air navigation performance and its enhancement should be carried out through identification of relevant air navigation Metrics and Indicators as well as the adoption and attainment of air navigation system Targets.

3.2 The monitoring of the regional implementation progress and performance metrics/indicators should be done for all elements planned by MIDANPIRG. The monitoring should allow global correlation of status and expectations, appreciation of benefits achieved for the airspace users, as well as corrective actions to be taken by the PIRG on implementation plans.

3.3 The MIDANPIRG should determine appropriate mechanisms and tools for the monitoring and the collection of necessary data at national and regional levels.

MID Region ASBU Block 0 Modules Prioritization and Monitoring

3.4 On the basis of operational requirements and taking into consideration the associated benefits, MID Region has prioritized the implementation of the Block “0” Modules, also agreed on the subsidiary bodies that will be monitoring and supporting the implementation of the modules as in Table below:

MID REGION ASBU BLOCK 0 MODULES PRIORITIZATION AND MONITORING

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

Note:

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.

APPENDIX

ASBU BLOCK 0 MODULES APPLICABLE 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.

<i>B0 – APTA: Optimization of Approach Procedures including vertical guidance</i>				
Elements	Applicability	Performance Indicators/Supporting Metrics	Targets	Timelines
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)	100% (All runway ends at Int'l Aerodromes, either as the primary approach or as a back-up for precision approaches)	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)	100% (All runway ends at Int'l Aerodromes, either as the primary approach or as a back-up for precision approaches)	Dec. 2017

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

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

Main performance impact:

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

Applicability consideration:

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

- 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;
- 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
- 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	Timelines
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% (for the identified Aerodromes/TMAs)	Dec. 2018
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% (for the identified Aerodromes/TMAs)	Dec. 2018

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	Timelines
PBN STARs	OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OISS, OIKB, OIMM, OIFM, ORER, ORNI, OJAM, OJAI, OJAJ, OJAJ, 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% (for the identified Aerodromes/TMAs)	Dec. 2018
International aerodromes/TMAs with CDO	OBBI, HESH, HEMA, HEGN, OIIE, OIKB, OIFM, OJAI, OJAJ, 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 for the identified Aerodromes/TMAs)	Dec. 2018

TABLE B0-APTA/CCO/CDO 3-1**EXPLANATION OF THE TABLE**

Column

1	Name of the State / International Aerodromes' Location Indicator
2	Runway Designator
3, 4, 5	Conventional Approaches (ILS / VOR or NDB)
6, 7, 8, 9	Elements of B0-APTA (Status of PBN Plan and implementation of LNAV, LNAV/VNAV), where: Y – Yes, implemented N – No, not implemented
10	PBN Runway: where any type of PBN approach is implemented
11, 12, 13	Elements of B0-CCO (Status of implementation of RNAV SID, CCO) per runway end and per aerodrome, where: Y – Yes, implemented N – No, not implemented
14, 15, 16	Elements of B0-CDO (Status of implementation of RNAV STAR, CDO) per runway end and per aerodrome, where: Y – Yes, implemented N – No, not implemented
18	Remarks

Int'l AD (Ref. MID ANP) (1)	RWY (2)	Conventional Approaches (3)		APTA (6)			PBN RWY (10)	CCO (11)				CDO (14)				Remarks	
		Precision (4)		VOR or NDB (5)	PBN PLA N (7)	LNA V (8)		LNAV/ VNAV (9)	RNAV SID (12)		CCO (13)		RNAV STAR (15)		CDO (16)		
		xL S	CA T						U p d a t e d a t e	RW Y	A D	RW Y	A D	RW Y	A D		RW Y
BAHRAIN																	1
OBBI	12L	IL S	I	VORDME		Y	Y	Y			Y	Y	Y	Y	Y	Y	
	12R			VORDME		Y	Y	Y									
	30L			VORDME		Y	Y	Y									

	30R	IL S	I	VORDME		Y	Y	Y			Y		Y		Y		
Total	4	2		4	Y	4	4	4	0	0	2	1	2	1	2	1	
%		50		100	Y	100	100	100	0	0	50	100	50	100	50	100	
EGYPT																	7
HEBA	14					Y		Y		Y							
	32	IL S	I			Y		Y	Y								
HESN	17			VORDME		Y	Y	Y	Y	Y			Y	Y			
	35	IL S	I	VORDME		Y	Y	Y	Y				Y				
HECA	05L	IL S	I	VORDME		Y		Y									
	05C	IL S	II	VORDME		Y		Y									
	05R	IL S	II			Y		Y									
	23L	IL S	II	VORDME		Y		Y									
	23C	IL S	II	VORDME		Y		Y									
	23R	IL S	I	VORDME		Y		Y									
HEGN	16L			VORDME		Y	Y	Y		Y				Y			
	16R			VORDME		Y	Y	Y									
	34L			VORDME		Y	Y	Y	Y				Y				
	34R	IL S	I	VORDME		Y	Y	Y	Y				Y				
HELX	2	IL S	I	VORDME		Y	Y	Y	Y	Y			Y	Y			
	20	IL S	I	VORDME		Y	Y	Y	Y				Y				
HEMA	15			VORDME		Y		Y	Y	Y			Y	Y			
	33			VORDME		Y		Y	Y				Y				
HESH	04L	IL S	I	VORDME		Y	Y	Y	Y	Y			Y	Y			
	04R			VORDME		Y	Y	Y	Y				Y				
	22L			-		Y	Y	Y	Y				Y				
	22R			-		Y	Y	Y	Y				Y				

Total	22	12		17	Y	22	12	22	13	6	0	0	12	5	0	0	
%		55		77	Y	100	55	100	59	86	0	0	55	71	0	0	
I.R. IRAN																	9
OIKB	03L																
	03R			VORDME / NDB													
	21L	IL S	I	VORDME / NDB													
	21R																
OIFM	08L			VORDME / NDB													
	08R			VORDME / NDB													
	26L			VORDME / NDB													
	26R	IL S	I	VORDME / NDB													
OIMM	13L			VORDME													
	13R			VORDME													
	31L			VORDME / NDB													
	31R	IL S	I	VORDME / NDB													
OISS	11L																
	11R																
	29L	IL S	I	VORDME / NDB													
	29R			VORDME / NDB													
OITT	12L			VORDME / NDB													
	12R			VORDME / NDB													
	30L	IL S	I	VORDME / NDB													
	30R	IL S	I	VORDME / NDB													

OIIE	11L	-	-	VORDME								Y	Y			
	11R			VORDME								Y				
	29L			-								Y				
	29R	IL S	II	VORDME		Y	Y	Y				Y				
OIII	11L			VORDME												
	11R			VORDME												
	29L	IL S	I	VORDME		Y	Y	Y								
	29R			VORDME												
OIZH	17					Y	Y	Y				Y	Y			
	35	IL S	I	VORDME		Y	Y	Y				Y				
OIYY	13			VORDME												
	31			VORDME												
Total	32	9		26	Y	4	4	4	0	0	0	0	6	2	0	0
%		28		81	Y	13	13	13	0	0	0	0	19	22	0	0
IRAQ																6
ORBI	15L	IL S	I	VORDME												
	15R					Y		Y								
	33L					Y		Y								
	33R	IL S	I	VORDME												
ORMM	14			VORDME												
	32	IL S	I	VORDME												
ORER	18	IL S	II			Y		Y								
	36	IL S	I			Y		Y								
ORSU	13	IL S	I	VOR		Y		Y								
	31	IL S	I	VOR		Y		Y								
ORNI	10	IL S	I	VOR		Y	Y	Y	Y	Y		Y	Y			

	28	IL S	I	VOR		Y	Y	Y	Y				Y				
ORB	15																
	33																-
Total	14	9		8	N	8	2	8	2	1	0	0	2	1	0	0	
%		64		57		57	14	57	14	17	0	0	14	16.6 7	0	0	
JORDAN																	2
OJAI	08L	IL S	I	NDB		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	08R			NDB		Y	Y	Y	Y				Y				
	26L	IL S	II	VOR		Y	Y	Y	Y				Y				
	26R	IL S	I	VORDME		Y	Y	Y	Y				Y				
OJAJ	1	IL S	I	-		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	19	IL S	I			Y	N/A	Y	Y				Y				LNAV/VNAV not feasible
Total	6	5		4	Y	6	6	6	6	2	2	2	6	2	2	2	
%		83		67		100	100	100	100	100	33	100	100	100	33	100	
KUWAIT																	1
OKBK	15L	IL S	II	VORDME		Y	Y	Y	Y	Y			Y	Y			
	15R	IL S	II	VORDME		Y	Y	Y	Y				Y				
	33L	IL S	II	VORDME		Y	Y	Y	Y				Y				
	33R	IL S	II	VORDME		Y	Y	Y	Y				Y				
Total	4	4		4	Y	4	4	4	4	1	0	0	4	1	0	0	
%		100		100		100	100	100	100	100	0	0	100	100	0	0	
LEBANON																	1
OLBA	3	IL S	I	VORDME		Y		Y			Y	Y	Y	Y	Y	Y	
	16	IL S	I	VORDME		Y		Y			Y		Y		Y		
	17	IL S	I	VORDME / NDB		Y		Y			Y		Y		Y		

	21					Y		Y			Y		Y		Y		
	34	N/A		N/A							Y						Not used for landing
	35	N/A		N/A							Y						Not used for landing
Total	4	5		5	N	4	0	4	0	0	6	1	4	1	4	1	
%		125		125		100	0	100	0	0	150	100	100	100	100	100	
LIBYA																	3
HLLB	15R			VORDME													
	15L			VORDME													
	33R			VORDME													
	33L	IL S	I	VORDME													
HLLS	13	IL S	I	VORDME													
	31			VORDME													
HLLT	9			VORDME													
	27	IL S	I	VORDME													
Total	8	3		8	N	0	0	0	0	0	0	0	0	0	0	0	
%		38		100		0	0	0	0	0	0	0	0	0	0	0	
OMAN																	2
OOMS	08L	IL S	I	VORDME		Y	Y	Y	Y	Y			Y	Y			
	26R	IL S	I	VORDME		Y	Y	Y	Y				Y				
OOSA	7	IL S	I	VORDME		Y	Y	Y	Y	Y			Y	Y			
	25	IL S	I	VORDME		Y	Y	Y	Y				Y				
Total	4	4		4	Y	4	4	4	4	2	0	0	4	2	0	0	
%		100		100		100	100	100	100	100	0	0	100	100	0	0	
QATAR																	2
OTBD	15	IL S	I	VORDME		Y	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	LNAV/VNAV not feasible
	33	IL S	II/III	VORDME/NDB		Y	Y	Y	Y		Y		Y		Y		CCO/CDO tactically achieved

OTHH	16L	IL S	I/II/I II	VORDME		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	CCO/CDO tactically achieved
	16R	IL S	I/II/I II	VORDME		Y	Y	Y	Y		Y		Y		Y		CCO/CDO tactically achieved
	34L	IL S	I/II/I II	VORDME		Y	Y	Y	Y		Y		Y		Y		CCO/CDO tactically achieved
	34R	IL S	I/II/I II	VORDME		Y	Y	Y	Y		Y		Y		Y		CCO/CDO tactically achieved
Total	6	6		6	Y	6	5	6	6	2	6	2	6	2	6	2	
%		100		100		100	100	100	100	100	100	100	100	100	100	100	
SAUDI ARABIA																	4
OEDF	16L	IL S	I	VORDME													
	16R	IL S	I	VORDME													
	34L	IL S	I	VORDME													
	34R	IL S	I	VORDME													
OEJN	16L	IL S	I			-		-									
	16C	IL S	I														
	16R	IL S	I	VORDME		-		-									
	34L	IL S	I	VORDME		-		-									
	34C	IL S	I	VORDME													
	34R	IL S	I			-		-									
OEMA	17	IL S	I	VORDME		Y		Y	Y	Y			Y	Y			
	18			VORDME		Y		Y	Y				Y				
	35	IL S	I	VORDME		Y		Y	Y				Y				

	36	IL S	I	VORDME		Y		Y	Y				Y					
OERK	15L	IL S	I	VORDME		Y	Y	Y	Y	Y			Y	Y				
	15R	IL S	I			Y	Y	Y	Y				Y					
	33L	IL S	I			Y	Y	Y	Y				Y					
	33R	IL S	I	VORDME		Y	Y	Y	Y				Y					
Total	18	17			13	Y	8	4	8	8	2	0	0	8	2	0	0	
%		94			72		44	22	44	44	50	0	0	44	50	0	0	Plan needs update
SUDAN																		4
HNNN	4					Y	-	Y										
	22					Y	-	Y										
HNOB	1					Y	-	Y										
	19					Y	-	Y										
HNSN	18	IL S	I	VORDME		Y	-	Y	Y	Y			Y	Y				
	36	IL S	I	VORDME		Y	-	Y	Y				Y					
HNSP	17			VORDME / NDB		Y	-	Y										
	35	IL S	I	VORDME / NDB		Y	-	Y										
Total	6	3			4	Y	6	0	6	2	1	0	0	2	1	0	0	
%		50			67		100	0	100	33	25	0	0	33	25	0	0	
SYRIA																		3
OSAP	9			VORDME														
	27	IL S	II	VORDME / NDB														
OSLK	17	IL S	I	VORDME / NDB														
	35																	
OSDI	05L			VOR														
	05R	IL S	II	VORDME / NDB														

	23L			VORDME / NDB DME													
	23R	IL S	II	VORDME		Y	Y	Y									
Total	8	4		7		1	1	1	0	0	0	0	0	0	0	0	
%		50		88		13	13	13	0	0	0	0	0	0	0	0	
UNITED ARAB EMIRAT ES																	8
OMAA	13L	IL S	II			AR	AR	Y	Y	Y	Y	Y	Y	Y	Y	Y	RNP AR
	13R	IL S	I	VOR		AR	AR	Y	Y		Y		Y		Y		RNP AR
	31L	IL S	II/III	VOR		AR	AR	Y	Y		Y		Y		Y		RNP AR
	31R	IL S	II			AR	AR	Y	Y		Y		Y		Y		RNP AR
OMAD	13			VORDME		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	
	31	IL S	I	VORDME		Y		Y	Y		Y		Y		Y		
OMAL	1	IL S	I	VOR		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	19			VOR		Y	Y	Y	Y		Y		Y		Y		
OMDB	12L	IL S	I/II/I II	-		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	12R	IL S	I/II/I II	-		Y	Y	Y	Y		Y		Y		Y		
	30L	IL S	I/II/I II			Y	Y	Y	Y		Y		Y		Y		
	30R	IL S	I/II/I II	-		Y	Y	Y	Y		Y		Y		Y		
OMDW	12	IL S	II/III			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	30	IL S	II/III			Y	Y	Y	Y		Y		Y		Y		
OMFJ	11					N/A	N/A	N/A	Y	Y	Y	Y		Y		Y	Not used for landing

	29	IL S	I	VOR		Y	Y	Y	Y		Y		Y		Y		
OMRK	16			VOR		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	34	IL S	I	VOR		Y	Y	Y	Y		Y		Y		Y		
OMSJ	12	IL S	I			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RNP AR
	30	IL S	II			Y	Y	Y	Y		Y		Y		Y		RNP AR
Total	20	16		9	Y	20	18	20	20	8	20	8	19	8	19	8	
%		80		45		100	90	100	100	100	100	100	95	100	95	100	
YEMEN																	5
OYAA	8	IL S	I	VORDME													
	26			VORDME													
OYHD	3			VOR									Y				
	21			VOR / NDB		Y		Y					Y				
OYRN	6																
	24			VORDME													
OYSN	18	IL S	I	VORDME/N DB		Y	Y	Y	Y	Y			Y	Y			
	36			VOR		Y	Y	Y	Y				Y				
OYZZ	1																-
	19																
Total	10	2		7		3	2	3	2	1	0	0	3	2	0	0	58
%		20		70		30	20	30	20	20	0	0	30	40	0	0	
Results					Plans	LNAV	LNAV/VNAV	PBN RWYs		SI D		CC O		STA R		CD O	
Total	166	101		126	13	100	66	100	67	26	36	14	78	30	33	14	10 PBN APV + 101 ILS (111/166)
Percentage (%)		61		76	87	60	40	60	40	45	22	24	18	52	20	24	67% RWY Ends with Vertical guidance

58	Aerodrm es									
Note. 6 RNP AR Approach were implemented in UAE (OMAA and OMSJ)										

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	Timelines
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%	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%	Dec. 2017

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

**TABLE B0-SURF 3-1
(A-SMGCS Level 1-2)**

EXPLANATION OF THE TABLE

Column

- 1 Name of the State
- 2 Name of City/Aerodrome and Location Indicator
- 3 Status of implementation of A-SMGCS Level 1, where:
Y – Yes, implemented
N – No, not implemented
- 4 Status of implementation of A-SMGCS Level 2, where:
Y – Yes, implemented
N – No, not implemented
- 5 Action plan — short description of the State’s Action Plan with regard to the implementation of A-SMGCS Level 1-2, especially for items with “N”.
- 6 Remarks

	City/ Aerodrome Location Indicator	Level 1	Level 2	Action Plan	Remarks
State					
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
BAHRAIN	Bahrain/Bahrain Intl (OBBI)	Y	Y	A-SMGCS Level 1-2 Project is under Execution phase. expected completion on Dec 2015	
EGYPT	Cairo/Cairo Intl (HECA)	Y	Y		
IRAN	Tehran/Mehrabad Intl (OIII)	N	N		
KUWAIT	Kuwait/Kuwait Intl (OKBK)	N	N		
OMAN	Muscat/Muscat Intl (OOMS)	N	N		
QATAR	Doha/Doha Intl (OTBD)	Y	Y		
	Doha/Hamad Intl (OTHH)	Y	Y		
SAUDI ARABIA	Dammam/King Fahad Intl (OEDF)	N	N		
	JEDDAH/King Abdulaziz Intl (OEJN)	N	N		
	RIYADH/King Khalid Intl (OERK)	N	N		
UAE	Abu Dhabi/Abu Dhabi Intl (OMAA)	Y	Y	Level 4 2017	
	Dubai/Dubai Intl (OMDB)	Y	Y	Level 4 2017	
	DUBAI/Al Maktoum Intl (OMDW)	Y	N	Level 4 2018	
Total Percentage		54%	46%		

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	Timelines
A-CDM	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEJN, OERK, OMDB, OMAA	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%	Dec. 2018

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.

State	Aerodrome Location Indicator	ACDM IMPLEMENTATION 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									

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

Description and purpose

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

Main performance impact:

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

Applicability consideration:

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

<i>B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration</i>				
Elements	Applicability	Performance Indicators/Supporting Metrics	Targets	Timelines
AMHS capability	All States	Indicator: % of States with AMHS capability Supporting metric: Number of States with AMHS capability	70% 90	Dec. 2017 2020
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% 90	Dec. 2017 2020
Implementation of AIDC/OLDI between adjacent ACCs	As per the AIDC/OLDI Applicability Table*	Indicator: % of priority 1 AIDC/OLDI Interconnection have been implemented Supporting metric: Number of AIDC/OLDI interconnections implemented between adjacent ACCs	70%	Dec. 2020

* Note – the required AIDC/OLDI connection is detailed in the MID eANP Volume II Part III

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
 4 **File Transfer Body Part (FTBP) Capability**
 Y – Fully Implemented
 N – Not Implemented
 5 Number of required AIDC/OLDI Interconnections
 6 Number of implemented AIDC/OLDI Interconnection.
 7 Remarks

State	AMHS Capability	AMHS Interconnection	FTBP Capability	AIDC/OLDI Capability	Required AIDC/OLDI Interconnections	AIDC/OLDI Implementation	Remarks
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>4</i>	<i>5*</i>	<i>6</i>	<i>7</i>
Bahrain	Y	Y		Y	5	1	connection with ABU Dhabi
Egypt	Y	Y		Y	4	1	
Iran	Y	N		Y	4	0	Contract signed for AMHS
Iraq	N	N		N	2	0	Thales Topsky ATM system
Jordan	Y	Y		Y	2	0	
Kuwait	Y	Y		Y	2	0	
Lebanon	Y	Y		Y	1	0	
Libya	Y	N		Y	0	0	0Contract signed for AMHS
Oman	Y	Y		Y	4	1	
Qatar	Y	Y		Y	2	1	local implementation for OLDI
Saudi Arabia	Y	Y		Y	7	2	local implementation for AIDC
Sudan	Y	Y		Y	4	0	
Syria	N	N		N	0	0	
UAE	Y	Y		Y	4	3	
Yemen	N	N		N	0	0	Contract signed for AMHS
Total Percentage / Number	73% 80%	67%		80%	41 42	9 (22 21 %)	

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

<i>B0 – DATM: Service Improvement through Digital Aeronautical Information Management</i>				
Elements	Applicability	Performance Indicators/Supporting Metrics	Targets	Timelines
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%	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%	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%	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% Vertical: 90%	Dec. 2018 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 their AIS data originators	80%	Dec. 2020
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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 (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
 - NI – Not Implemented

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

Note 2 — The information related to the designation of the authoritative IAID should be published in the AIP (GEN 3.1)
- 3 Requirement for an IAID driven AIP production, shown by:
 - FI – Fully Implemented (eAIP: Text, Tables and Charts)
 - PI – Partially Implemented
 - NI – Not Implemented

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

Note 4 — Charts' GIS-based database should be interoperable with AIP database
- 4 Requirement for an IAID driven NOTAM production, shown by:
 - FC – Fully Compliant
 - NC – Not Compliant
- 5 Requirement for an IAID driven SNOWTAM processing, shown by:
 - FI – Fully Implemented
 - NI – Not Implemented
- 6 Requirement for an IAID driven PIB production, shown by:
 - FC – Fully Compliant
 - PC – Partially Compliant
 - NC – Not Compliant
- 7 Requirement for Procedure design systems to be interoperable with the IAID, shown by:
 - FI – Fully Implemented
 - PI – Partially Implemented
 - NI – Not Implemented

Note 5 — full implementation includes the use of the IAID for the design of the procedures and for the storage of the encoded procedures in the IAID
- 8 Requirement for ATS systems to be interoperable with the IAID, shown by:
 - FI – Fully Implemented
 - PI – Partially Implemented

NI – Not Implemented

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

TABLE 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	Procedure Design	ATS	Action Plan	Remarks
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
BAHARAIN	FI	FI	FC	FI	FC	PI	FI	National AIM Roadmap 2016	AIXM: 5.1
EGYPT	FI	PI	FC	FI	FC	NI	PI	National AIM Roadmap 2018	AIXM: 5.1 3 and 7 by 2018
IRAN, ISLAMIC REPUBLIC OF	NI	NI	NC	NI	NC	NI	NI	National AIM Roadmap 2016	AIXM: NI Separate semi-automated NOTAM/SNOWTAM system is operative
IRAQ	NI	NI	NC	NI	NC	NI	NI	National AIM Roadmap 2015	AIXM: NI
JORDAN	NI	NI	FC	NI	FC	NI	NI	National AIM Roadmap 2017	AIXM: database through EAD
KUWAIT	NI	NI	FC	NI	PC	NI	NI	National AIM Roadmap 2016	AIXM: NI (5.1 in progress)
LEBANON	NI	NI	NC	NI	NC	NI	NI	National AIM Roadmap 2016	AIXM: 4.5
LIBYA	NI	NI	NC	NI	NC	NI	NI	No Action Plan	AIXM: NI
OMAN	NI	NI	NC	NI	NC	NI	NI	National AIM Roadmap 2018	AIXM: NI (5.1 in progress)
QATAR	NI	PI	FC	NI	FC	PI	NI	National AIM Roadmap 2016 Q4/2017 – Data Integration (AIP, Terrain, Obstacle, Procedure Design and AMDB)	AIXM: 5.1 Q4/2017 – Data Integration (AIP, Terrain, Obstacle, Procedure Design and AMDB)
SAUDI ARABIA	FI	FI	NC	NI	PC	FI	FI	National AIM Roadmap 2017 AIXM 5.1 & NOTAM: 2019	AIXM: 4.5
SUDAN	NI	NI	FC	NI	FC	PI	PI	National AIM Roadmap 2017	AIXM: NI (5.1 in progress) AIS Automation Project ongoing
SYRIAN ARAB REPUBLIC	NI	NI	NC	NI	NC	NI	NI	No Action Plan	AIXM: NI
UNITED ARAB EMIRATES	NI	FI	NC	NI	PC	NI	PI	AMDB: 2016-2021; PIB: AVBL at OMAA, OMDB, OMDW, OMFJ, other ADs 2020; Procedure Design 2020; ATS: ACC AVBL, ADs 2020 Digital NOTAM: 2016-2021 National AIM Roadmap 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
YEMEN	NI	NI	NC	NI	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

	QMS	Establishment of formal agreements	Digital data exchange with originators	Metadata	Data quality monitoring	Data integrity monitoring	AIRAC adherence	Action Plan	Remarks
State	2	3	4	5	6	7	8	9	10
BAHARAIN	FC	PC	PI	FC	FC	FC	FC	National AIM Roadmap 2016	
EGYPT	FC	PC	PI	FC	PC	PC	FC	National AIM Roadmap 2018 3, 4, 6 and 7 by 2018	3, 4, 6 and 7 by 2018
IRAN, ISLAMIC REPUBLIC OF	FC	PC	NI	NC	FC	FC	FC	National AIM Roadmap 2016	
IRAQ	NC	NC	NI	NC	NC	NC	FC	National AIM Roadmap 2015	
JORDAN	FC	PC	NI	FC	FC	FC	FC	National AIM Roadmap 2017	
KUWAIT	FC	PC	NI	NC	NC	NC	FC	National AIM Roadmap 2016	
LEBANON	NC	PC	NI	PC	PC	PC	FC	National AIM Roadmap 2016	
LIBYA	NC	NC	NI	NC	NC	NC	NC	No Action Plan	
OMAN	NC	NC	NI	NC	PC	PC	FC	National AIM Roadmap 2018	
QATAR	FC	PC	PI	FC	PC	PC	FC	National AIM Roadmap 2016	
SAUDI ARABIA	FC	FC	NI	FC	FC	FC	FC	National AIM Roadmap 2017 4: 2019	
SUDAN	FC	FC	NI	NC	FC	FC	FC	National AIM Roadmap 2017	
SYRIAN ARAB REPUBLIC	NC	NC	NI	NC	NC	NC	NC	No Action Plan	
UNITED ARAB EMIRATES	FC	PC	PI	FC	FC	FC	FC	National AIM Roadmap 2017 4: implemented for some of internal stakeholders. Completion by 2020	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		
EGYPT	FC	FC	FC	FC		
IRAN, ISLAMIC REPUBLIC OF	FC	FC	FC	FC		
IRAQ	FC	FC	FC	NC	National AIM Roadmap 2015	
JORDAN	FC	FC	FC	FC		
KUWAIT	FC	FC	FC	FC		Last survey FEB 2015
LEBANON	FC	FC	FC	FC		
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	NC	NC	Completion of area 4: Dec. 2019 National AIM Roadmap 2018	4 and 5 (HECA & HESH): 2019
IRAN, ISLAMIC REPUBLIC OF	FC	FC	FC	FC		
IRAQ	NC	NC	NC	NC	National AIM Roadmap 2015	
JORDAN	PC	FC	PC	FC	National AIM Roadmap 2017	
KUWAIT	FC	FC	FC	FC		
LEBANON	NC	N/A	NC	N/A	National AIM Roadmap 2016, 2 & 4: Q2-2019	
LIBYA	NC	N/A	NC	N/A	No Action Plan	
OMAN	NC	N/A	NC	N/A	National AIM Roadmap 2018	
QATAR	FC	FC	FC	FC		
SAUDI ARABIA	FC	FC	FC	FC		
SUDAN	NC	N/A	NC	N/A	National AIM Roadmap 2017	
SYRIAN ARAB REPUBLIC	NC	N/A	NC	N/A	No Action Plan	
UNITED ARAB EMIRATES	PC	FC	PC	FC	National AIM Roadmap 2017	A recurrent data acquisition TOD 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	FC	FI	FI	FI	National AIM Roadmap 2016	
EGYPT	PC	PI	PI	PI	NC	NI	NI	NI	National AIM Roadmap 2018 To be completed by 2020	To be completed by 2020
IRAN, ISLAMIC REPUBLIC OF	FC	FI	FI	FI	FC	FI	FI	FI	National AIM Roadmap 2016	
IRAQ	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap 2015	
JORDAN	PC	PI	PI	NI	PC	PI	PI	NI	National AIM Roadmap 2017	Area 2a, 2b and 2c implemented for OJAI RWY 26R/08L
KUWAIT	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap 2016	
LEBANON	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap 2016 To be completed by Q4-2019	
LIBYA	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	
OMAN	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap 2018	
QATAR	FC	FI	FI	FI	FC	FI	FI	FI	National AIM Roadmap 2016	
SAUDI ARABIA	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap 2017 To be completed by 2020	
SUDAN	NC	NI	NI	NI	NC	NI	NI	NI	National AIM Roadmap 2017	
SYRIAN ARAB REPUBLIC	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	
UNITED ARAB EMIRATES	NC	NI	NI	PI	FC	FI	FI	PI	National AIM Roadmap 2017 To be completed by 2020	TOD 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	FI	NI	National AIM Roadmap 2016 To be completed by 2021	
EGYPT	NI	NI	NI	National AIM Roadmap 2018 To be completed by 2020	A3: 2019; AMDB: 2020
IRAN, ISLAMIC REPUBLIC OF	FI	FI	NI	National AIM Roadmap 2016 No Action pPlan	
IRAQ	NI	NI	NI	National AIM Roadmap 2015	
JORDAN	PI	PI	NI	National AIM Roadmap 2017	Area 3 implemented for OJAI RWY 26R/08L
KUWAIT	FI	FI	NI	National AIM Roadmap 2016	
LEBANON	NI	NI	NI	National AIM Roadmap 2016 Area 3: Q4-2019 AMDB: no plan	
LIBYA	NI	NI	NI	No Action Plan	
OMAN	NI	NI	NI	National AIM Roadmap 2018	
QATAR	FI	PI	PI	National AIM Roadmap 2016 Q4/2017 AMDB implementation	Q4/2017 AMDB implementation
SAUDI ARABIA	NI	NI	NI	National AIM Roadmap 2017 No Action pPlan	
SUDAN	NI	NI	NI	National AIM Roadmap 2017	
SYRIAN ARAB REPUBLIC	NI	NI	NI	No Action Plan	
UNITED ARAB EMIRATES	FI	FI	NI	National AIM Roadmap 2017 AMDB: completed by 2021	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	

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.

<i>B0 – AMET: Meteorological information supporting enhanced operational efficiency and safety</i>				
Elements	Applicability	Performance Indicators/Supporting Metrics	Targets	Timelines
SADIS FTP	All States	Indicator: % of States having implemented SADIS FTP service Supporting Metric: Number of States having implemented SADIS FTP service	100%	Dec. 2018
QMS	All States	Indicator: % of States having implemented QMS for MET Supporting metric: number of States having implemented QMS for MET	80%	Dec. 2018
SIGMET	All States with MWOs in MID Region	Indicator: % of States having implemented SIGMET Supporting metric: number of States having implemented SIGMET	100%	Dec. 2018
OPMET	All States	Indicator: % of States having implemented METAR and TAF Supporting metric: number of States having implemented METAR and TAF	95%	Dec. 2018
WIND SHEAR	TBD	Indicator: TBD Supporting metric: TBD	TBD	TBD

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 <u>Y</u>	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

Table B0-AMET 3-3

Tropical Cyclone Advisory Centers

Not Applicable

Table B0-AMET 3-4
Quality Management System

EXPLANATION OF THE TABLE

Column

- 1 Name of the State
 2, 3, 4, Status of implementation of Quality Management System of meteorological information –
 5 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
BAHRAIN			√	2008		
EGYPT			√	23 May 2012		Recertification: May 2015
IRAN, ISLAMIC REPUBLIC OF			√	Oct 2015		
IRAQ	√				No Action Plan	
JORDAN			√	2 Apr 2014		Recertification: 14 April 2017
KUWAIT			√	23 Aug 2013		Recertification: 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		Recertification: 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)
N – No, not implemented (less than 95% of received SIGMET messages reveal the correct format for the first two lines of SIGMET)
- 4 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	

Draft Table B0-AMET 3-6

Draft 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	METAR 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

Table B0-AMET 3-7
WIND SHEAR Availability

TBD

B0 – FRT0: 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.

<i>B0 – FRT0: Improved Operations through Enhanced En-Route Trajectories</i>				
Elements	Applicability	Performance Indicators/Supporting Metrics	Targets	Timelines
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%	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%	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%	Dec. 2022

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
Implementation should be based on the published aeronautical information:
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				

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	Timelines
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%	Dec. 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 %	Dec. 2019

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	<u>Y</u>		
Egypt			
Iran			
Iraq			
Jordan			
Lebanon			
Libya			
Kuwait			
Oman			
Qatar			
Saudi Arabia			
Sudan			
Syria			
UAE			
Yemen			
Total			
Percentage			

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	Timelines
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%	Dec. 2017

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	<u>1 Jan 2017</u>	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 by FAA and EASA shall to be implemented by Iranian AOC holders.
Iraq	N			

State	Status	Regulation Reference	Effective Date	Remarks
1	2	3	4	5
Jordan	Y	JCAR-OPS.1 (1.668 airborne collision avoidance system)	15 April 2015	
Kuwait	Y	Kuwait Civil Aviation Safety Regulations – Part 6 – Operation of Aircraft, Para. 6.20.4		
Lebanon	Y	Lebanese Aviation Regulations Part V subpart 6 605.12		http://dgca.gov.lb/index.php/en/pd-cat-8-lar6-en/file/72-part-vi-subpart-5-general-operating-and-flight-rules-new-2015 Regulation reference needs to be provided
Libya	N			
Oman	Y	CAR-OPS 1, Subpart K, CAR-OPS 1.668-Airborne Collision Avoidance System		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	1 July 2011	https://www.gcaa.gov.ae/en/ePublication/Pages/CARs.aspx?CertD=CARs
Yemen	Y			Reference need to be provided

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	Timelines
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 %	Dec. 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 %	Dec. 2018

Table B0-SNET 3-1**EXPLANATION OF THE TABLE**

Column

- | | |
|---|---|
| 1 | Name of the State and ATS Units within a State providing En-route and Approach services |
| 2 | En-route and Approach ATS Units providing Radar services: “R” |
| 3 | En-route and Approach ATS Units providing Procedural services: “P” |
| 4 | En-route and Approach ATS Units within a State providing radar services where Short-Term Conflict Alert (STCA) was implemented (Y/N or N/A) |
| 5 | En-route 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/ (ENR & APP)	ATS Units		STCA	MSAW	Action Plan	Status
	2	3				
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
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		

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

State/ ATS Units (ENR & APP)	ATS		STCA	MSAW	Action Plan	Status
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Khartoum APP	R		Y	Y		
Elobeid APP		P	N/A	N/A		
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%

- END -