INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE SIXTH MEETING OF OF THE AIM SUB-GROUP

(AIM SG/6)

(Cairo, Egypt, 21 – 23 January 2020)

The views expressed in this Report should be taken as those of the MIDANPIRG AIM Sub-Group and not of the Organization. This Report will, however, be submitted to the MIDANPIRG and any formal action taken will be published in due course as a Supplement to the Report.

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

TABLE OF CONTENTS

Page

PART I – HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1 The Sixth meeting of the MIDANPIRG AIM Sub-Group (AIM SG/6) was successfully held at the Meeting Room of the ICAO Middle East Regional Office in Cairo, Egypt, from 21 to 23 January 2020.

2. OPENING

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

2.2 Mr. Smaoui underlined that the 16th Edition of Annex 15 and the new PANS AIM have introduced important changes to the AIS/AIM business, which needs extensive efforts by Regions and States in order to prepare for the implementation of the new AIM provisions, in particular the implementation of digital datasets.

2.3 Mr. Smaoui provided the meeting with an overview of the subjects that will be addressed during the meeting and highlighted the main expected outcomes. In this respect, he thanked those States that have prepared presentations to share with the meeting their status of implementation, best practices, success stories, challenges and recommendations to improve AIM implementation in the Region.

2.4 With regard to the MID Region Air Navigation Strategy, Mr. Smaoui highlighted that the AIM SG/6 meeting is expected to initiate discussion on ASBU Threads/elements related to AIM, based on the GANP 2019 to agree on a draft proposal to be presented to the ACAO/ICAO ASBU Symposium that will be held in Cairo from 16 to 19 March 2020, before presentation to the MSG/7 meeting (Cairo, 13-15 April 2020) for final decision.

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

3. ATTENDANCE

3.1 The meeting was attended by a total of forty-one (41) participants from ten (10) States (Bahrain, Egypt, Iran, Iraq, Jordan, Oman, Qatar, Saudi Arabia, Sudan and United Arab Emirates) and three (3) International Organizations/Industries (IATA, IFAIMA and Jeppesen). The list of participants is at **Attachment A**.

4. OFFICERS AND SECRETARIAT

4.1 The AIM SG/6 meeting was chaired by Mr. Abdalla Al Rashidi, Director AIM, GCAA, UAE. Mr. Abbas Niknejad, Regional Officer, Air Navigation Implementation was the Secretary of the meeting, supported by Mr. Mohamed Smaoui, Deputy Regional Director.

5. LANGUAGE

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

6. AGENDA

6.1 The following Agenda was adopted:

Agenda Item 1:	Adoption of the Provisional Agenda and Election of Chairpersons
Agenda Item 2:	Follow-up on MIDANPIRG/17 Conclusions and Decisions relevant to AIM
Agenda Item 3:	Global developments related to AIM and SWIM
Agenda Item 4:	AIM Planning and Implementation in the MID Region
Agenda Item 5:	Review of Air Navigation Deficiencies in the AIM Field
Agenda Item 6:	Future Work Programme
Agenda Item 7:	Any other business

7. CONCLUSIONS AND DECISIONS – DEFINITION

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

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

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

8. LIST OF DRAFT CONCLUSIONS AND DRAFT DECISIONS

DRAFT CONCLUSION 6/1:	*DIGITAL DATASETS IMPLEMENTATION AD-HOC WORKING GROUP (DDI AD-HOC WG)*
DRAFT CONCLUSION 6/2:	*EAD CHARGING MECHANISM*
DRAFT CONCLUSION 6/3:	*MID AIR NAVIGATION STRATEGY (DAIM)*
DRAFT CONCLUSION 6/4:	*MID REGION AIM IMPLEMENTATION ROADMAP*
DRAFT DECISION 6/5:	*AIM SUB-GROUP TERMS OF REFERENCE (TORS)*

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA AND ELECTION OF CHAIRPERSONS

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

1.2 The meeting recalled that the AIM SG/3 meeting (Cairo, Egypt, 15-18 May 2017) unanimously elected Mr. Abdalla Al Rashdi, Director AIM, GCAA, UAE and Mr. Abdulla Hasan AlQadhi, Chief AIM and Airspace Planning, Civil Aviation Affairs, Bahrain, as the Chairperson and Vice-Chairperson of the AIM Sub-Group, respectively.

1.3 In accordance with the MIDANPIRG Procedural Handbook, Edition June 2017 (MID Doc 001), Part IV, para. 6.2, the meeting unanimously agreed to extend the chairmanship of the Chairperson and Vice-Chairperson for three meetings.

REPORT ON AGENDA ITEM 2: FOLLOW-UP ON MIDANPIRG/17 CONCLUSIONS AND DECISIONS RELEVANT TO AIM

2.1 The subject was addressed in WP/2 presented by the Secretariat. The meeting noted the status of the MIDANPIRG/17 Conclusions and Decisions relevant to AIM and the follow-up actions taken by concerned parties as at **Appendix 2A**.

REPORT ON AGENDA ITEM 3: GLOBAL AND REGIONAL DEVELOPMENTS RELATED TO AIM

3.1 The subject was addressed in WP/3 and WP/4, presented by the Secretariat.

40th Session of the ICAO Assembly

3.2 The meeting was apprised of the outcome of the 40th Session of ICAO Assembly (A40) held at the ICAO Headquarters in Montréal, Canada, from 24 September to 4 October 2019.

3.3 The meeting noted that the A40, through its plenary and committees reviewed the ICAO work programme in the technical, economic, legal and technical cooperation fields; and endorsed thirty four (34) Assembly Resolutions. The Assembly also elected its thirty six (36) members of the ICAO Council for three years. Egypt, Saudi Arabia, Sudan and UAE were elected from the MID Region. The A40 documentation is available on the ICAO website at: https://www.icao.int/Meetings/a40/Pages/default.aspx

6th Edition of the Global Air Navigation Plan (ICAO DOC 7950)

3.4 The meeting noted that the Sixth Edition of the Global Air Navigation Plan – GANP (ICAO DOC 7950) was endorsed by the ICAO A40. The 6th Edition of GANP introduced the Multilayer Structure for the Global Air Navigation Planning:

- Global Strategic Level: includes GATMOC vision, Global performance ambitious and the conceptual roadmap
- Global Technical Level: includes the BBBs, ASBUs and the performance-based decision making method
- Regional Level: includes Regional Air Navigation Plans and the Regional R&D programmes
- National Level: includes National Plans and their deployment

3.5 The meeting noted the baseline framework of the Aeronautical Information Services introduced in the Basic Building Block (BBB). The changes introduced by the GANP (6th Edition) in the ASBU Framework were also noted.

Update on IMP activities

3.6 The meeting was apprised of the activities of the Information Management Panel (IMP). It was noted that the IMP carries out its tasks through four working groups: WG-I (Information Architecture & Management), WG-S (Information Services under SWIM), WG-G (SWIM Governance) and WG-A (Aeronautical Information Management).

3.7 The meeting was informed of the outcome of the IMP/WG/9 meeting (Montreal, Canada, 21-25 October 2019) and noted that the ICAO Global SWIM Provisions are expected to be provided through a new *Procedures for Air Navigation Services – Information Management* (PANS-IM), which is expected to be delivered at the IMP/2 meeting in May 2020 (Applicability November 2022). It was also noted that the ICAO SWIM Manual (DOC 10039) will be available in two volumes (Volume I SWIM Concept and Volume II Implementation Guidance) by Q2-2020.

3.8 The meeting reviewed the outcome of the IMP/WG-A/2 (AIM Working Group) and noted the updates on its activities related to the QMS and AIM Training Manuals (target delivery Q4-2020), AIM Roadmap, AIS-related USOAP PQs, NOTAM improvements, Aeronautical Charts, Digital Datasets (AIS Manual Volume 4), WGS-84, Revision of Obstacle Limitation Surfaces (expected publication 2022 with applicability 2026) and GNSS information in AIP.

Outcome of the IFAIMA Global AIM Conference 2019

3.9 The meeting was apprised of the outcome of the IFAIMA Global AIM Conference 2019 held in Tunis, Tunisia from 11 to 13 June 2019. The main theme of the Conference was "**AIS to AIM 2.0**". The meeting noted the discussions of the Conference related to transition to AIM 2.0, and in particular the following:

- AIS to AIM 2.0 means yet better information (quality), increased qualified personnel as well as digitalization of information to be disseminated via SWIM;
- AIM 2.0 does not equal "SWIM implementation"; it is a pre-requisite as one of the information domains within SWIM;
- AIM 2.0 is about a more efficient delivery of service and the ability to select providers and integrators freely (there is the need to consider the service delivery context);
- AIM 2.0 is required to address the new entrants in our air navigation system, such as drones, high altitude flight etc.; and
- Before embarking the final stage of migration towards AIM 2.0, the implementation progress of AIM 1.0 globally should be strengthened, as there is still lack of investments for implementation, benefits of AIM as being the backbone for operational improvements, have not been clearly communicated to States and more awareness must be created among executives/decisions makers

3.10 The meeting noted that the next IFAIMA Global AIM Conference 2020 is scheduled to be held in Warsaw, Poland from 26 to 28 May 2020.

Outcome of the DGCA-MID/5 Meeting

3.11 The meeting noted the outcome of the DGCA-MID/5 meeting (Kuwait, 4-6 November 2019) relevant to AIM. In particular, it was highlighted that the DGCA-MID/5 meeting agreed that the MIDANPIRG and RASG-MID meetings be organized concurrently and on a biennial basis. The meeting also noted that the DGCA-MID/5 meeting endorsed the Second Edition of the MID Region NCLB Strategy.

3.12 The meeting agreed that the Global and Regional AIM-related developments should be considered in the Regional AIM planning (MID Region AIM Implementation Roadmap, MID Region Air Navigation Strategy, etc.) and the AIM Sub-Group should continuously follow-up and keep abreast of the Global activities related to AIM.

REPORT ON AGENDA ITEM 4: AIM PLANNING AND IMPLEMENTATION IN THE MID REGION

Digital Datasets implementation planning

4.1 The subject was addressed in WP/5, WP/6, PPT/1 and PPT/2 presented by UAE and the Secretariat.

4.2 The meeting reviewed the outcomes/deliverables of the Digital Datasets Implementation Ad-hoc Working Group (DDI Ad-hoc WG) and encouraged States to use the Document "Challenges, best practices and proposals for Digital Datasets", as at **Appendix 4A**.

4.3 The meeting commended the work that has been done by the DDI Ad-hoc WG and agreed that task 1 (*address the challenges associated with the implementation of digital datasets*) and task 2 (*propose Regional Implementation Plan for Digital Datasets*) could be considered completed. The meeting noted that there is a need for a detailed implementation plan for digital datasets outlining technical steps of the implementation, in line with the Global developments. It was also agreed that the composition of the DDI Ad-hoc WG should be reviewed to ensure active participation and contribution by all WG members. Accordingly, the meeting agreed to the following Draft Decision to replace and supersede MIDANPIRG Decision 17/17:

DRAFT DECISION 6/1: DIGITAL DATASETS IMPLEMENTATION AD-HOC WORKING GROUP (DDI AD-HOC WG)

That, the Digital Datasets Ad-hoc Working Group (DDI Ad-hoc WG):

a) is tasked to develop a detailed Regional Implementation Plan for Digital Datasets and update MID Doc 008, to be presented to AIM SG/7; and

b) be composed of:

- *Abdulla Hasan AlQadhi (Bahrain)*
- *Moataz Abdel Aziz Ahmed (Egypt)*
- *Rouhalah Salehi (Iran)*
- *Mohammad Hussien Al Anezi (Kuwait)*
- *Bassem Ali Nasser (Lebanon)*
- *Faisal Al Busaidi (Oman)*
- *Pamela Erice (Qatar)*
- *Hind A. Almohaimeed (Saudi Arabia)*
- *Sorin Dan. Onitiu (UAE, Rapporteur) ; and*
- *ICAO MID Office*

4.4 The meeting reviewed the provisions related to the availability, content, distribution and timelines related to digital datasets, as provided in Annex 15, PANS-AIM, GANP as well as the experience of the European Region. The meeting agreed to the following timelines for the implementation of digital datasets in the MID Region:

- **2020-2025**
  - Establishment of data-centric environment (implementation of AIS automation and relevant processes)
  - Availability of aeronautical information in AIXM 5.1+ format
  - Provision of eAIP

- Required terrain and obstacle datasets
  - area 1
  - area 2a, TKOF flight path area and OLS
  - area 4 for CAT II/III
- AMD, if applicable (based on the Regional Decision)

- **2023 – 2030**
  - AIP datasets
  - IFP Datasets
  - Other TOD areas, if applicable

- **2028 upward**
  - Dataset Distribution Services and Information Services over SWIM

MIDAD Project

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

4.6 The meeting recalled that the DGCA-MID/4 meeting agreed to the following way forward for the implementation of MIDAD Project:

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

4.7 The meeting recalled that the MIDANPIRG/17 meeting agreed that the development of a detailed action plan for the implementation of the MIDAD Project Phase B (set-up of MIDAD Manager) should be initiated when at least 7 States complete their migration to EAD. The meeting reviewed the status of migration to EAD as reflected in the Table below:

	Migrated	**Planning**	**Still under consideration**	**No Plan**	**Remarks**
Bahrain			√		
Egypt			√		
Iran				√	Sanctions
Iraq		√ **(2021)**			
Jordan	√				
Kuwait		√			
Lebanon		√			
Libya				√	
Oman		√			
Qatar		√ **(Q2-2020)**			
Saudi Arabia			√		
Sudan				√	Sanctions
Syria				√	Sanctions
UAE		√			
Yemen				√	

4.8 The meeting noted the concerns related to the costs of migration to the EAD and in particular the charging mechanism. It was agreed that the ICAO MID Office with the support of the MIDAD TF Chairperson should initiate discussion with EAD to review and reconsider the charging mechanism in order to add a lower/upper limit for charging States that are willing to migrate to EAD. The meeting also requested an update/briefing on the EAD benefits with regard to the implementation of digital datasets.

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

DRAFT CONCLUSION 6/2: EAD CHARGING MECHANISM

That, the ICAO MID Office, with the support of the MIDAD TF Chairperson, initiate discussions with EUROCONTROL/EAD, in order to reconsider the charging mechanism to add a lower/upper limit for charging States that are willing to migrate to EAD.

4.10 The meeting agreed that the migration to EAD and establishment of MIDAD, at a later stage, could be a viable solution for the implementation of Digital Datasets; and encouraged States to take this into consideration in their planning and decision-making process.

MID Region Air Navigation Strategy

4.11 The subject was addressed in WP/7 and PPT/3 presented by the Secretariat.

4.12 The meeting noted the changes of the ASBU framework and in particular in the DAIM thread, as introduced in the 6th Edition of GANP. The meeting reviewed and updated the MID Air Navigation Strategy (DAIM Table), as at **Appendix 4B**. In this respect, the meeting agreed that most of B1-DAIM elements are covered in the current MID Air Navigation Strategy, except digital datasets and NOTAM improvement. With regard to digital datasets, it was agreed that the Regional timelines for Digital Datasets implementation in the MID Region should be followed and these elements will not be included in the MID Air Navigation Strategy at this stage. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 6/3: MID AIR NAVIGATION STRATEGY (DAIM)

*That, the MID Air Navigation Strategy (DAIM) be updated, as at **Appendix 4B**.*

MID Region AIM Roadmap

4.13 The subject was addressed in WP/8 presented by the Secretariat.

4.14 The meeting reviewed and updated the MID Region AIM Implementation Roadmap, as at **Appendix 4C**. In this respect, it was agreed that the elements and timelines of the implementation of digital datasets should be considered in the MID Region AIM Implementation Roadmap. Nevertheless, the meeting encouraged States to continue their efforts in data exchange trials between States' AIS units.

4.15 Considering the major changes of the MID Region AIM Implementation Roadmap, it was agreed that States should review and update their National AIM Implementation Roadmap, using the template at **Appendix 4D**.

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

DRAFT CONCLUSION 6/4: MID REGION AIM IMPLEMENTATION ROADMAP

That,

*a) the MID Region AIM Implementation Roadmap be updated, as at **Appendix 4C**; and*

*b) States be urged to provide the ICAO MID Office with their updated National AIM Implementation Roadmap, using the template at **Appendix 4D**.*

ASBU Implementation Monitoring

4.17 The meeting recalled that the MIDANPIRG/17 meeting, through MIDANPIRG Conclusion 17/9, endorsed the Third Edition of the MID Region Air Navigation Report (2018). The MID Region Air Navigation Report (2018) is available on the ICAO MID website at: www.icao.int/mid

4.18 The meeting noted that the MIDANPIRG/17 meeting, through MIDANPIRG Conclusion 17/10, urged States to provide the ICAO MID Office, with relevant data necessary for the development of the Fourth Edition of the MID Region Air Navigation Report (2019).

Status of AIM Implementation in the MID Region

4.19 The subject was addressed in the PPTs and verbal briefings provided by Bahrain, Egypt, Iran, Iraq, Jordan, Oman, Qatar, Saudi Arabia, Sudan and UAE.

4.20 The meeting received with thanks the presentations delivered by Bahrain, Iran, Jordan, Oman, Qatar, Saudi Arabia and UAE, available at https://www.icao.int/MID/Pages/2020. This provided an opportunity for sharing States' experience and best practices as well as common challenges.

4.21 The meeting reviewed and updated the status of AIM implementation based on the info provided by States.

MID eANP Volume III

4.22 The meeting reviewed and updated the MID eANP Volume III (DAIM Tables), as at **Appendix 4E**.

REPORT ON AGENDA ITEM 5: REVIEW OF AIR NAVIGATION DEFICIENCIES IN THE AIM FIELD

5.1 The subject was addressed in WP/11 presented by the Secretariat. The meeting recalled that, the MIDANPIRG/17 urged States to use the MID Air Navigation Deficiency Database (MANDD) for the submission of requests for addition, update, and elimination of Air Navigation Deficiencies, including the submission of a specific Corrective Action Plan (CAP) for each deficiency. It was underlined that a deficiency would be eliminated only when a State submit a formal Letter to the ICAO MID Office containing the evidence(s) that mitigation measures have been implemented for the elimination of this deficiency.

5.2 The meeting noted that total number of AIM deficiencies, endorsed by the MIDANPIRG/17 was forty-six (46); forty (40) priority "A" and six (6) priority "B". Seventeen (17) deficiencies related to TOD; six (6) related to QMS; six (6) related to AIXM; six (6) related to WAC; three (3) related to pre-flight information services; three (3) related to AIP and aeronautical charts; three (3) related to AIRAC adherence; and two (2) related to WGS-84.

5.3 The meeting reviewed the list of deficiencies in the AIM field. The meeting noted with appreciation that Sudan has implemented AIXM-based AIS Database (AIXM 5.1) and has been providing eAIP since 2019. Accordingly, the meeting urged Sudan to send an official letter to the ICAO MID Office in order to eliminate the deficiency. In addition, Iraq informed the meeting that Mosul airport (ORBM) is closed and should be removed from the list of International Aerodromes. As a consequence, the deficiency related to the provision of instrument approach chart for Mosul airport should be removed from the list of air navigation deficiencies. In this respect, it was highlighted that a proposal for amendment to the MID Air Navigation Plan should be sent by Iraq to the ICAO MID Office to remove Mosul from the list of International Aerodromes (AOP 1 Table).

5.4 The meeting recalled that TOD "area 2a/take-off flight path area/OLS" is required by Annex 15 ("Shall" provision). Accordingly, it was agreed to propose the addition of area 2a terrain and obstacle datasets into the "Description" column of the current deficiencies related to TOD.

5.5 The list of deficiencies in the AIM field as updated by the meeting is at **Appendix 5A**.

REPORT ON AGENDA ITEM 6: FUTURE WORK PROGRAMME

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

6.2 The meeting recalled that the MIDANPIRG/17, through MIDANPIRG Decision 17/44, agreed that the Air Navigation Systems Implementation Group (ANSIG) be dissolved and its tasks be moved to the MSG Terms of Reference.

6.3 The meeting reviewed and updated the AIM SG TORs, as at **Appendix 6A**. Accordingly, the meeting agreed to the following Draft Decision:

DRAFT DECISION 6/5: TERMS OF REFERENCE OF THE AIM SUB-GROUP

That, the Terms of Reference of the AIM Sub-Group be updated as at ***Appendix 6A****.*

6.4 Taking into consideration, the planned ICAO MID Regional events, which are of relevance to the activity of the AIM Sub-Group, in particular the MSG/7, MIDANPIRG/18 and the Interregional AIM/SWIM Seminar/Workshop in 2021, it was agreed that the AIM SG/7 meeting be held during the second half of 2021. The venue will be Cairo, unless a State is willing to host the meeting.

REPORT ON AGENDA ITEM 7: ANY OTHER BUSINESS

7.1 Nothing has been discussed under this agenda item.

APPENDICES

APPENDIX 2A

FOLLOW-UP ACTION PLAN ON MIDANPIRG/17 CONCLUSIONS & DECISIONS

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
C. 17/ 1	**MID REGION AIM DATABASE (MIDAD)** That: a) the status of individual migration by MID States to EAD (MIDAD Project Phase A) be monitored by the AIM Sub-Group; and b) the development of a detailed action plan for the implementation of the MIDAD Project Phase B (set-up of MIDAD Manager) be initiated when at least 7 States complete their migration to EAD.	Stepwise approach for the implementation of Regional/Sub-Regional AIM Database	Status of migration to EAD Action Plan for set-up of MIDAD Manager	AIM SG MIDAD TF	Continuous TBD	**Ongoing**
C. 17/9	**THIRD EDITION OF THE MID REGION AIR NAVIGATION REPORT (2018)** That, the Third Edition of the MID Region Air Navigation Report (2018) is endorsed and be posted by the ICAO MID Office on the website.	Monitoring and Reporting of ASBU implementation in the MID Region	MID AN Report	MIDANPIRG/17	Apr. 2018	**Completed**
C. 17/10	**MID REGION AIR NAVIGATION REPORT (2019)** That, a) States be urged to provide the ICAO MID Office, with relevant data necessary for the development of the Fourth Edition of the MID Region Air Navigation Report (2019), by 1 December 2019; and b) the MID Region Air Navigation Report (2019) be presented to	Monitoring and Reporting of ASBU implementation in the MID Region	State Letter Data for AN Report 2017 Air Navigation	ICAO States MSG/7	Dec. 2019 Apr. 2019	**Ongoing**

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
	the MSG/7 for endorsement.		Report (2019)			
C. 17/11	**JOINT ACAO/ICAO ASBU SYMPOSIUM** That, a Joint ACAO/ICAO ASBU Symposium be organized beginning of 2020.	Raise awareness about the 6th Edition of the GANP and align the MID AN Strategy	Draft Revised MID AN Strategy	ICAO/ACAO	Mar. 2020	**Ongoing**
C. 17/13	**AMENDMENT TO THE MID eANP VOLUME III** That, the amendment to the MID eANP Volume III at **Appendix 6.2D** is approved.	To amend/update the MID eANP Vol III	Amendment	MIDANPIRG/17	Apr. 2019	**Ongoing**
C. 17/14	**INTERREGIONAL WORKSHOP/SEMINAR ON AIM/SWIM** That, an Interregional Workshop/Seminar on AIM/SWIM be organized in 2020-2021.	To review the latest developments related to AIM/SWIM	Workshop/Seminar		2020-2021	**Ongoing**
C. 17/15	**ICAO ROADMAP FOR THE TRANSITION FROM AIS TO AIM** That, ICAO consider the review/reshuffling of the Roadmap for the transition from AIS to AIM to keep pace with the developments.	Roadmap outdated	New Roadmap	ICAO HQ	TBD	**Ongoing**
C. 17/16	**MID REGION AIM IMPLEMENTATION ROADMAP** That, the MID Region AIM Implementation Roadmap at **Appendix 6.2E** is endorsed.	Planning for AIM implementation in	MID Region AIM Implementation	MIDANPIRG/17	Apr. 2020	**Completed**

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
		the MID Region	Roadmap			
D. 17/17	**ESTABLISHMENT OF THE DIGITAL DATASETS IMPLEMENTATION AD-HOC WORKING GROUP (DDI AD-HOC WG)** That, the Digital Datasets Ad-hoc Working Group be: a) established to: - address the challenges associated with the implementation of digital datasets; - propose Regional Implementation Plan for Digital Datasets; and - review/update the MID Doc 008; and b) composed of: - Abdulla Hasan AlQadhi (Bahrain) - Moataz Abdel Aziz Ahmed (Egypt) - Rouhalah Salehi (Iran) - Mohammad Hussien Al Anezi (Kuwait) - Bassem Ali Nasser (Lebanon) - Mazen Mohammed Alshihri (Saudi Arabia) - Sorin Dan. Onitiu (UAE, Rapporteur) - Marek Franko (NG Aviation): and - ICAO MID Office	Development of a Regional Implementation Plan for Digital Datasets	Regional Digital Datasets Implementation Plan	MIDANPIRG/17	Apr. 2020	**Actioned**

DIGITAL DATASETS IMPLEMENTATION (DDI)

Challenges, Best Practices and Proposals

MID Digital Datasets Implementation Ad-Hoc Working Group (MID DDI Ad-Hoc WG)

Version 2.2
23 June 2019

1. INTRODUCTION

ICAO Annex 15 *"Aeronautical Information Services"* (16th edition) and 1st edition of Doc. 10066 *"Procedures for Air Navigation Services – Aeronautical Information Management"* (PANS-AIM) represent a paradigm shift for the role and importance of aeronautical data/information provisions as performed by a State AIS.

The new edition of Annex 15 denotes a major restructuring of the prevision Annex in order to facilitate the incorporation of new technical requirements and how to manage Aeronautical Information (AI) within a modern and technological AIM environment for paving the way to SWIM implementation.

The first edition of Doc. 10066 has incorporated the existing provisions in Annex 15 that were appropriate for a PANS document in order to span the gap between the guidance in Doc. 8126 *"AIS Manual"* and the Annex 15 SARPS. The PANS-AIM is complementary to the SARPS contained in Annex 15 and Annex 4 respectively and it includes provisions in support of the transition from product-based AIS to data-centric AIM.

2. PROBLEM STATEMENT

Generally, the main areas subject to Annex 15 and PANS-AIM changes are related to digital data exchanges, to Quality Indicators, to integration of modern aeronautical information products (Digital Data Sets) and to the scope of aeronautical data/information (Aeronautical Data Catalogue).

The Data Quality Specifications have been expanded by adding four (4) data characteristics i.e. timeliness, completeness, traceability and format to the existing three (3) parameters i.e. accuracy, resolution and integrity. All seven (7) parameters are defined and consolidated from other Annexes into a "one-stop shop" PANS-AIM. However, the data quality parameter list has not only been extended to seven (7) parameters, but the application guidance is now in industry standards i.e. the State challenge is directed now to the prerequisite of an automated system implementation.

The description of the AIM data scope is contained in the Aeronautical Data Catalogue (ADC). The Catalogue provides detailed explanation on the data subjects, properties and sub-properties and the data quality requirements applicable from origination through to publication.

The Aeronautical Information Products have been enlarged with the provision of five (5) Digital Data Sets: AIP, Terrain, Obstacle, Aerodrome Mapping and Instrument Flight Procedure (IFP) Dataset.

Also, a new point of view was introduced with the new Annex 15 i.e. the division of the Aeronautical Information Products into two (2) basic categories: Aeronautical Information in a standardized presentation (Aeronautical Information Publication (AIP), AIP Amendments, AIP Supplements, AIC, NOTAM and aeronautical charts) and Digital data sets.

The previous 15th edition of Annex 15 identified three (3) main categories: Terrain, Obstacle and Aerodrome Mapping datasets while the new document edition has been added two (2) other classes: AIP and IFP datasets respectively.

From the perspective of transposing the Annex 15/PANS-AIM requirements, the most demanding activity for States appeared to be the digital datasets operational implementation. This challenge would be related to different factors, namely institutional, financial and technical issues as well as lack and/or insufficient guidance material.

Consideration is also given that, despite the yearlong provision requirements and adequate assistance and support, as of today, in many regions there is (still) an inconsistent or lack of delivery of terrain,

obstacle and aerodrome mapping datasets. However, the experience gathered in the provision of the first three categories of data may have a constructive influence on the new ones delivery.

In summary, the problem statement resides in the risk for States not being capable to deliver a consistent or complete provision of aeronautical datasets, hence resulting in a proliferation of different ways of providing digital information and, consequently, jeopardizing the interoperability of data exchanges.

3. CHALLENGES

In regard of national planning and implementation, the general consent is that States should follow a general strategy covering (1) institutional, (2) financial and (3) technical aspects related to digital datasets provisions.

Also, a potential challenge may reside in the specific status of the AIS organization within the Aviation Administration as well as the operation structure i.e. working arrangements with other national service providers which can be different from one State to another.

Typically, the State AIS HQs is covering the provisions of "GEN and "ENR" type of data in the respective AIP sections while airport AISs and/or other ANSPs should cover the airport(s) related data/information. Hence, digital datasets provision is subject of the "split" in respect of responsibility for data gathering and, most important, for the data quality.

The classical example of "splitting responsibility" is inside the Terrain and Obstacle Data Sets where Area 1 (entire State territory) is part of central AIS while the Area 2 to 4 data have to be covered by ANSPs/Airports. Moreover, the IFP Datasets provision may be more complex in cases where the IFPD process is not "centralized", but dispersed among several regional CAAs/ANSPs and/or airports. Mindful that the IFP datasets would imply a "consolidated" file of all procedures in the country, the integration (technical) challenge is to be highly considered i.e. different AIXM file versions or paper base documentation that have to be converted/encoded by the AIM HQs staff.

The initial impact assessment of the above listed factors has identified the following high-level challenges, issues and open questions:

3.1 Institutional/Regulatory Challenges

The transposing of the new Annex 15 and PANS-AIM requirements is not only a simple task of identifying the references in the existing national regulations and updating the processes to notify or stop notify significant differences to ICAO in the AIP GEN section.

The regulatory approach should comprise the following stages:

1) Update of AIM rules, instructions, operational procedures, add new processes for, especially, new AIP & IFP datasets,
2) Review by the Regulator of the national AIM roadmap and,
3) Update/ establishment of the responsibilities among the AIM as prerequisite for successful Dataset publishing which may include:

- Established rules for Data originators to participate in the data chain. For example, to have guidelines for airport how to manage and create aerodrome mapping database and how to exchange this information with regulator/ANSP.

- Establish the environment for the end-user to participate in the data-chain to define the use-cases for the data and Data Quality Requirements. For example, the airlines requesting the

declared distances to input data for the performance calculation software or ATC to receive the information for ATC controllers in order to enhance situation awareness.

The Regulator's strategic engagement and directives should trigger the track of AIM "operational" implementation. Needless to say, this should be a well-founded and important activity, but, in the same time, it is a bureaucratic and lengthy process.

Moreover, to be well noted that Amendment 40 is endorsing new categories of datasets among which the IFP dataset is a complete "new world" for AIM. This is adding much more complexity to the "picture", not only on the technical implementation side, but in the regulatory update process as well.

In brief, following institutional issues could be encountered:

- Absence of National Policy for digital datasets, hence there is no clear assignment of responsibilities concerning origination, processing, managing and distributing the digital data;
- Lack of National Strategic Plan originated by the Regulator and identifying the major milestones for DDI and an uniform AIM evolution across the country;
- Bureaucratic and time-consuming process for the Regulator strategic involvement and directions;
- Deficiency of establishing the responsibility for the datasets as 'authoritative data source" in regard of the end-users;

The ICAO regional and implementation plan is deemed for update as a top-down approach for the national evaluation (regulatory framework, financial & technical) and set up of the implementation plan. To date, the ICAO Global AIM roadmap does not contain the "digital datasets" step. The datasets are interlinked with some of the roadmap Phase I *("Consolidation"),* Phase II "*Going Digital*" and (mostly) with Phase III "*Information Management*".

The setup of Quality Management (QM) system could be strongly connected to the updates of the database, from which the datasets are being published.

The QM should present the overview picture on how the organizations will work and establish the structure that enables data flow like, for example:
- Receiving the requests from originators,
- How to make data accessible effectively for end users.

This step could prepare the base for the working environment and AIM departments for dataset provisions.

It is obvious that the existence of an "integrated database" (Phase II) is a pre-requisite for the datasets implementation as the dataset is the logical, natural result derived from database and automation. Other transition steps (Phase 3) are directly related to datasets, like the aeronautical data exchange/system interoperability, Service Level Agreement (SLA) and training.

3.2 Financial Challenges

Evidently, the DDS provisions are intrinsically dependent on a functional and up-and-running AIM system. Therefore, consideration should be given by States on the financial impact, economical effort amount and investment strategy aspects when transitioning to a full A(IM) environment.
Definitively, the financial effort for a State is quite significant in terms of equipment and resources regardless of the level of implementation i.e. the economical factor is different for States having already AIM systems in operation compared to those who have not, but, in both cases, the investment may be considerable. Therefore, a phased-approach investment strategy may be envisaged.

Nowadays, with the releasing of new scenarios like digital datasets etc., the investment to upgrade an existing system is very complicated. For this purpose, a use-case oriented investment should be considered, as follows:

Situation:
The already established AIM system has its database and the data inside are only partial and there is no connection between data originators and end-users.

Goal:
AIM system is able to produce datasets directly from database and these datasets are ready to be used by end-user with complete information from Data originators.

What is missing?
The systems which should be able to fit into existing environment in order to cover the entire data chain i.e. from data originator integration to dataset export and publishing.

Example of the steps:
Prepare environment research, prepare requirements for the industry, make market research, formulate the strategy for multiple/single providers and prepare the financial planning.

However, the implementation of datasets (fully or partially) cannot start without an operational AIM database. This prerequisite demands already a large investment, resources and training.

Moreover, the process for having a new AIM database/system operational is a multi-year activity. To name a few, the budget approval, technical specifications, tender procedure, selection and contract finalization, system implementation/operation, bugs fixing, staff training, capability enhancements are a "long way" from "zero to full" system running. This is also the case if some States decide to do a one-time Commercial Off-the Shelf (COTS) acquisition, the "real life" experience has shown that, actually, there is no key-turn solution.

Just as importantly, for an existing AIM system, the technical "adaption' for handling the datasets provision implies an extra (significant) financial effort mindful of the necessary technical enhancements e.g. SWIM as delivery mechanism, AIXM 5.1 model and its temporality concept update.

One State best practices have shown that the financial effort and investment may be surmounting the initial system setup costs due to "heavy" modules (required) implementation as SWIM services/infrastructure, business rule engine, possible migration/exchange within regional databases, data visualization (graphic) capabilities, etc. compared to the initial system setup envisaging, mainly, eAIP application only.

Concisely, following financial issues can be identified:

- **States without an AIM system**: Lack of financial resources i.e. large investment and multi-year activity for implementation from "scratch" of an AIM system, even in case of COTS purchase or,
- **States with AIM system in place**: Serious effort in allocation of additional investments for enhancing/adapting the existing AIM system capabilities, for example, SWIM infrastructure, in order to technically handle the datasets provision;
- Consideration for further resources i.e. adequate qualified AIS personnel and relevant trainings;
- Lack of cost-recovery policy for producing the digital datasets;

Currently, the challenge is to establish complete AIM data chain, which is fulfilling the end-user requirements. So, without satisfied customer (end-user) and active supplier (data originator), it is

demanding to financially evaluate the business case and the investor (ANSP/Regulator/ buyer of the AIM system) may not satisfied with the investment into the such business.

Integration of the data into other systems could play another very important role in cost-benefit analyses.
Preliminary step for this could be the integrated set of practical use cases.

3.3 Technical Challenges

3.3.1 General considerations

Openly said, the commercial vendors are not following closely and in full the AIM "technological" developments, but rather in a "selective mode" due to their business-driven decisions. To date, there are some "datasets" already implemented by industry like Aerodrome Mapping Database as this has a commercial benefit within the cockpit-based Airport Moving Map application. Same situation is with eTOD, but from data integration aspect only i.e. not from "raw" terrain and obstacle package side.

At the lower end in respect of implementation progress by industry, there is the IFP dataset due to the lack of the specific expertise for producing/encoding and providing the datasets associated with the procedure design and charting.

A better position for the industry support should be for AIP dataset implementation as many AIM vendors have developed an eAIP application generated from a Static Database repository (SDO).

Therefore, the general opinion may well be that the industry might bring their support i.e. helping States to have an AIM system operationally dealing with DDI in a long run only and lesser during the initial implementation phase.

This practical aspect is particularly difficult in respect of implementation challenges. The "deep-dive" technical analysis has resulted in, but not limited, following issues that are grouped below per each dataset type:

3.3.2 AIP Dataset Technical Challenges

The AIP Dataset (AIP DS) is a new requirement and one of the most challenging topics among the five (5) digital sets. It covers the extent of information as provided in the AIP including the core data necessary for flight planning and en-route navigation (waypoints, navaids, routes, airspace, airport and runway data). The PANS-AIM document contains an explicit list of the minimal features and properties that should be included in an AIP DS.
Specifically, following challenges have been identified:

- **Cross-border data duplication** (common FIR boundaries, route segments, navigational aids, terminal procedure segments/routes): Some feature are listed "twice" and non-consistent in neighbouring State AIPs. More explicit, as example, for AIP Data Sets, the level of AIS coordination between the neighbouring States can range from none to full. By lack of coordination or due to operational needs, some data might be duplicated in the data sets provided by different States. In addition, there is a risk that each (neighbouring) State will code the same data based on their own interpretation of the data exchange format/model.
  Following below are some issues that require special attention in case of "shared" data:
  Airspace borders that refer to State or other natural e.g. along the river, along common border, etc.

  - Shared waypoints on the border w/ different coordinates,
  - Cross-border route segments;
  - Terminal navaids used for procedures that extend in the neighbouring State airspace;

- Mixed versions of AIXM model (mapping necessary for AIXM 4.5 versus 5.x),
- Common/agreed between States of encoding specifications;
- Same data is present in more than one dataset: It should not be an issue, as long as there is a possibility to verify that it is the same data i.e. either by a "natural key" or by a unique identifier (e.g. UUID).

- **Information inconsistency:** The AIP DS description is provided in two places in PANS-AIM. The paragraph 5.2.1.1.3 mentions the AIP sections that may be left blank when AIP DS are available. Totally, the list contains nineteen (19) AIP sections e.g. GEN 2.5, ENR 2.1, ENR 3.1, 3.2, 3.3. & 3.4…AD 2.19, 3.18 and 3.18.
  The paragraph 5.3.3.1.1 describes the data subjects and properties minimum list like, for example, ATS airspace, Special activity areas, ATS Routes, Waypoints, Runway, etc.
  By comparing and crosschecking both information, some sections listed in 5.2.1.1.3 are missing in the subjects list of paragraph 5.3.3.1.1 and vice-versa as follows:

  - GEN 2.5 (List of Radio Navigation Aids) – *missing;*
  - ENR 3.6 (En-route Holdings) – *missing;*
  - ENR 4.1 (Radio Navigation Aids – en-route) – *missing;*
  - ENR 4.5 (Aeronautical Ground Lights – en-route) – *missing;*

  In reverse:

  - Aerodrome/Heliport Information (AD 2.1/2.2 AD 3.1/3.2) – *missing;*
  - Runway, Runway direction, Declared Distances, FATO/TLOF (AD 2.12, 2.13, 2.16 and AD 3.12, 3.13 & 3.18) – *missing*;
  - Radio Navigation Aids En-route (ENR 4.1) – *missing;*

- **AIP Data Set or Data Sets:** According to Annex 15, paragraph 5.3.2.2 "*Recommendation*", a State may provide a data sub-set instead of the complete AIP Dataset. Mindful of the ultimate intention i.e. data feed of end-user applications, one question is arising:
  The grouping of the available data sub-set does or doesn't have to follow certain criteria for a logical combination?
  Yet, the grouping of the available data sub-set is not defined in order that the file should be of value for the end-users/consumers. For example, if a State decides to provide lower ATS Routes, En-route holdings and AD 2.2 information, it would be theoretically filing compliance, but is the digital "package" of any (end) use?

- **Delivery mechanism:** There is no guidance in PANS-AIM of the delivery solutions (manual processing of existing data, queries?) or, most preferably, as SWIM service on AIS website and WFS interface (expose current export HMI, push/pull interfaces, ICD, etc.) including service description, discoverability, user management, security thru Internet Protocols.

- **Missing Metadata**: Regarding the technical challenges for delivery mechanism – refer above, the clarification on the required minimum set of metadata (Annex 15, paragraph 5.3.2) at the Timeslice level is missing.

- **Data Set Format:** There is no specific recommendation for an AIXM version suitable to digital datasets exchange. PANS-AIM is continuing to require like in the former Annex 15 that aeronautical data exchange model should apply a commonly used data-encoding format, covering all the classes, attributes, data types and associations and provide an extension mechanism. A new AIXM version might introduce new data items, additional properties to existing data, different coding capabilities (such as a new type of time slice), etc.
  Therefore, mixing data from different AIXM versions might lead to incompatibilities/errors.

- **Allowed Feature Types**: PANS-AIM contains in paragraph 5.3.3 the following note: "A *data subject may appear in multiple data sets."* The question is to which extent a Data Set can contain features that are not explicitly specified by ICAO as being part of that dataset? For example, can an AIP Dataset contain also obstacles or SID/STAR procedures?
  The provisions for obstacle, airport mapping and terrain data sets existed already in the ICAO SARPS before the new Annex.
  The common understanding is that an obstacle data set shall contain obstacles only, neither terrain, nor other AIS data. However, by the fact that Annex 15 provides separate specifications for the AIP and for the Instrument Flight Procedures data sets respectively, it indicates that the intention would not be to mix these topics. The classical example is that the procedure design expert has the obligation to provide on charts the obstacle(s) considered critical per one procedure segment. Would that not mean that obstacles & terrain "may appear in multiple datasets" i.e. IFP, Obstacle and Terrain?

- **Provision and Update Process**: AIP Data Set "*shall contain the digital representation of aeronautical information of lasting character (permanent information and long duration temporary changes) essential to air navigation."* i.e. AIP AIRAC Amendment + AIP SUPPs (refer to PANS 5.3.3.1.1, Note 2). Therefore, States have the option either to re-issue the complete data set or to publish an update that contains only the differences.
  The AIXM Temporality Concept supports both options i.e. baseline or Permdelta. When a State starts providing an AIP dataset, there should always be an initial data set that is complete, in the sense that it includes all the data provided by that State. The provision of just listing the differences puts the effort of compiling the actual data set on the end-users which task would become increasingly complex.
  Regarding the content validity requirement (Baseline + 3 month-time Tempdelta), this would be feasible from the AIXM 5 temporality perspective, but it triggers a change in the way the State AIM database is handled i.e. the maintenance process should be modified in order to include updates of the static data (SDO) component + AIP SUPP.

- **Prefix *#AIP-DS#* and *#OBS-DS#*:** PANS-AIM, Appendix 2, Note 1 states that: *"The information elements prefixed with "#AIP-DS" may be left out when available through the AIP data set (as specified in Chapter 5, 5.2.1.1.3)"*. An analysis of AIM database versus eAIP application should be performed i.e. eAIP specifications need to be updated for revising the template with *#AIP-DS#* annotation;

3.3.3 Terrain, Obstacle and Aerodrome Mapping Datasets

For all three (3) datasets, the requirements were already defined in the "old" Annex 15 i.e. Chapter 10 "*Electronic Terrain and Obstacle Data*" and Chapter 11 "*Airport Mapping Database*" respectively. Basically, they were relocated and split between new Annex 15 as well as in the PANS-AIM.

There are no significant changes (area definition, collection surfaces, data quality requirements and product specifications) introduced by the new Annex 15 and PANS-AIM. Among the three (3) datasets, Terrain & Aerodrome mapping information never had a "dedicated" section within the AIP i.e. not part before of the AIP section, but Obstacles only. However, a special note for an inconsistency regarding Obstacle Dataset. PANS-AIM states in paragraph 5.2.1.1. 4, that:

"When Obstacle Data Set (as specified in 5.3.3.2.2) is provided, the following sections of the AIP may be left blank and a reference to the data set availability shall be provided:
17. ENR 5.4 Air navigation obstacles
18. AD 2.10 Aerodrome obstacles;
19. AD 3.10 Heliport obstacles;

PANS-AIM preferred to simply copy-paste the existing text related to ETOD from old Annex 15 without clarifying the "link" between obstacles data Area 1 to 4 provisions per se and the respective

AIP sections. Consequently, it is not clear which obstacle dataset would be fulfilling State compliance for Aerodrome/Heliport obstacles? Are the Area 2 and 3 or only Area 2? If only Area 2, would the minimum set of Area 2a + T/O flight path area + OLS obstacle data be sufficient?

3.3.4 Instrument Flight Procedure Dataset

The implementation of IFP dataset should be the most demanding process for AIS among the five (5) Datasets accomplishments. However, the guidance material dedicated in PANS-AIM is the briefest from all guidance material dedicated to other datasets.
There are several reasons for the IFP dataset implementation challenge:

- By structure, IFP was never, in essence, within AIS responsibilities and functions;
- AIXM 5.x model does partially cover IFP dataset elements i.e. procedure coding only. Therefore, a new AIXM extension to capture IFP dataset should be necessary;
- IFP content is a combination of charting elements required by PANS-OPS for procedure promulgation as well as Procedure Designer (specific) data, typically parameters/entry data. This type of information (free text or non-AIM related) is not "digitizable" or to a certain extent only.
- There is no Obstacle requirement in the IFP DS, but PANS-OPS & Annex 4 publication & charting respectively clearly requires the design expert to identify for charting purpose, the obstacle(s) considered critical for the respective procedure;
- IFP dataset includes data subjects (procedure designator, procedure segment, procedure fix, holding, etc.) and their properties according to AIXM 5.1 model together with aeronautical data publication requirements contained in the Doc. 8168 PANS-OPS, Vol. II, Part III, Section 5, Chapter 2. Consequently, this source 'mixture" has the result that not all IFP dataset features are covered entirely by the latest exchange model version AIXM 5.1.1, therefore the existing standard has to be adapted and/or supplemented with extensions in order to fully respond to the ICAO requirements.
  With other words, the IFP dataset implementation necessitates for information mapping a supporting model, either being AIXM 5.2 or the existing 5.1.1 plus the appropriate extensions. Besides the option of "upgrading" AIXM model which requires a long formal process thru its CCB mechanism, one (quicker) alternative would be to assess the output of Procedure Design Tools (PDT). Some tools on the market have the capability to generate the designed procedure in an AIXM 5 format (including metadata) which can be ingested by the compatible AIM (AIXM 5-based) system. The PDT suppliers may seek to assess/align their product with the respective ICAO SARPS in Doc. 10066 PANS-AIM and EUROCONTROL specifications (to date, in preparation).

3.3.5 Summary of Technical Issues

Throughout the assessment, there are several technical aspects associated with digital datasets that need to be addressed for direction and clarification:

- Most challenging topics are AIP and IFP Data Sets respectively;
- Provision of an AIP sub-dataset is recognized, however there is no PANS-AIM guidance on the logical grouping of the subjects. A random selection would be resulting for end-user/consumers in a useless dataset;
- Missing details on digital datasets delivery method from AIM (modern) perspective. The options are paper or electronic distribution only, but not digital, i.e. making certain the " *full move into an automated data-centric environment*";

- Suitable (AIXM) dataset format in order to handle files containing information with permanent status combined with temporary data (SUPPs);
- Missing detailed coding specifications for datasets resulting in the risk that each State AIS may code differently same type of data;
- Possible disconnect between States and industry (vendors) supportive plan for DDI AIM system;
- IFP dataset should also attempt to support charting generation as one of many endeavours in the effort of providing a data-driven charting solution;
- IFP dataset provisions need guidance in respect of content i.e. one or sub-group of airport procedures or all procedures for all airports within the State integrated in one file?

3.3.6 Distribution of Datasets

The 16th edition of Annex 15 recommends that: *"Global communication networks and Web services should, whenever practicable, be employed for the provision of Aeronautical Information Products."*

In the dedicated paragraph 5.4 "Distribution Services", PANS-AIM does not provide any further details on this topic. Actually, the following paragraph 5.4.1.1 is considering two delivery options to the next intended user i.e. (a) physical distribution and (b) direct electronic distribution.

Based on the method description for option (b), it is not very clear if the automatically link "*through the use of a direct electronic connection between the AIS and the next intended user",* it is meaning the employment of web-based services or not?

3.4 Implementation Transition Plan

The implementation time is highly dependent on how ready the user community is to dealing with / ingesting digital data. Therefore, the implementation success shall be seen as "binomial" i.e. both actors prepared and ready to exchange the data. An important aspect regarding the impact for States is the need for establishing a "transition period" in order to give the chance to AIP users to reach the technical capability for handling digital datasets. The typical example should be mentioning an airline dispatch office who is relying on paper/eAIP published information. Once the State AIP is "made of" co-existing published/paper + digital datasets, the reference *#AIP-DS#* would simply mean, "missing information".

4. MATRIX OF PROPOSED ACTIONS RELATED TO DDI			
No.	**Implementation Activity**	**Description of the Proposed Action**	**Estimated Time Frame**
1.	**Regional Plan (ICAO MID)**	• ICAO to update the regional AIM Roadmap with new steps of Digital Datasets;	
		• ICAO to update the Regional Plan to enforce States for completion of Integrated AIM Database step (Phase II) as prerequisite condition for DDIs.	
2.	**Institutional/Regulatory (National Level)**	• State Regulator to establish an AIM Task Force group comprising of Inspectors and AIM units' representatives for assessment of new ICAO SARPS.	
		• State Regulator to elaborate the necessary amendments of the AIM regulatory framework (rules, regulatory obligations and local instructions);	
		• State Regulator official approval of the AIM-related national regulations and Means of Compliance (MoC);	
		• Plan (actions and timelines) with introduction of digital datasets.	
		• State Regulator is engaged for updating the national Roadmap, Phase 3 "Information Management" with the new steps of "Datasets"	
		• AIS units to amend the procedures and processes in accordance with the new procedural changes;	
3.	**Financial**	• State Regulator to initiate and conduct a financial evaluation/assessment for AIM system evolution, AIM processes adaptation, resources anticipation; • Irrespective if the State have/not have an AIM system in place, the investment is serious. Therefore, based on best practices, the envisaged investment strategy should be as phased-approach: Establish a stabile platform of basic system functionalities, for example, ensuring the State eAIP creation, integrated terrain and obstacles database, plugging in charting tool, etc., then gradually invest for system abilities enhancement to handle AIP & IFP datasets, upgrade model temporality and adaptation of SWIM interfaces for datasets inter-change. • State to consider the adequate budget for further resources i.e. adequate qualified AIS personnel and relevant training; • State to ensure that in the project budget are including costs for technical specifications, tender procedure, procurement and contract finalization, system implementation/operation, maintenance/bugs fixing, staff hiring, training; • The system capability enhancements (next phases) should be treated as a full iteration process of the initial financial/investment steps.	

4.	**Technical**	• Data Duplication: State to examine the conclusion of a service level agreement (SLA) between neighbouring/adjacent States as a collaborative mechanism for defining an "authoritative source" i.e. SLA should avoid the duplication of information and it should establish which source should be accessed; • AIP Dataset Grouping: The grouping for data sub-set, if decided, should follow certain logical criteria mindful of service consumers' needs and data utility, like for example: - All ENR sections content, and/or, - All AD sections content, and/or, - By data type: Complete Airspace data, complete Route network, complete Airport pertaining information, etc., and/or, - A "serving a purpose" sub-set: ATS Routes + En-route Holding + Navaids + Significant Points or ENR Controlled + Restrictive Airspaces, and/or, - Particular mapping of AIP sections combining e.g. GEN 2.5, ENR 2.1, ENR 4.4 and AD 2.19. • Delivery Mechanism: Primary delivery mechanism to be SWIM service (registry, service description, discoverability, user management, security, etc.) thru SWIM interfaces i.e. exposing current export HMI, push/pull interfaces, ICD, etc. The "quick solution" of manually processing/generating from a SDO/posting on the AIS website is to be discouraged. • If a "quick fix" manual processing would be envisaged, the metadata should be based on Eurocontrol two-way mapping AIXM 5.1/AIP Dataset and follow the coding guidance of the same document. • Dataset Format: AIXM version 5.1.1 should be the best suitable from temporality mechanism standpoint i.e. compatible with the required combination of perm + tempo data. • IFP Dataset: The AIXM 5.1 file output from PD tools on the market can facilitate an effective/quick solution, but State AIS assessment i.e. mapping with PANS-AIM should be conducted subsequently.	
4.	**Implementation Transition Plan**	• State Regulatory Authority to perform a national survey of operators, aviation entities, AIP subscribers and other users for assessing their capability in ingesting digital data and for understanding their plan and deadline. • ICAO to recommend States a dedicated survey questionnaire with a specific set of questions (web-based or a paper template). • State to set up a transition time for provisions of eAIP in parallel with Dataset(s) and determine a "closing date" based on the survey conclusions. • ICAO to propose a (general) text for the content of the Aeronautical Information Circular (AIC) describing State plan regarding datasets (partially or fully) implementation and stating the decided "grace period" after when the datasets are provided in digital format only.	

APPENDIX 4B

~~*B0 – DATM*~~*DAIM*: ~~*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~~

Improved aeronautical information based on enhanced data quality (accuracy, resolution, integrity, timeliness, traceability, completeness, format) to support Performance-Based Navigation (PBN), airborne computer-based navigation systems and ground automation. In addition, digital exchange and processing of aeronautical information allows a more efficient management of information by avoiding reliance on manual processing and manipulation.

Main performance impact:

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

Applicability consideration:

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

~~*B0 – DATM*~~*DAIM*: ~~*Service Improvement through*~~ *Digital Aeronautical Information Management*				
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**	**Timelines**
~~AIXM~~ DAIM-B1/1	All States	Indicator: % of States that ~~have implemented an AIXM based AIS database~~ ensure that aeronautical data and information comply with quality standards in order to meet the needs of airspace users and support the safety of flight operations Supporting Metrics: 1- -Number of States that have implemented QMS for AIS/AIM 2- Number of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) and have implemented WGS-84 Geoid Undulation 3- Number of States that have implemented an AIXM-based AIS database (AIXM V5.1+) 4- Number of States that have established formal arrangements with at least 50% of their AIS data originators	80%	Dec. 2020~~18~~
~~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~~

~~*B0—DATM*~~*DAIM: ~~Service Improvement through~~ Digital Aeronautical Information Management*				
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**	**Timelines**
~~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~~
DAIM-B1/3	All States	Indicator: % of States that provide required Terrain digital datasets Supporting Metric: Number of States that provide required Terrain digital datasets	80%	Dec. 2020
DAIM-B1/4	All States	Indicator: % of States that provide required Obstacle digital datasets Supporting Metric: Number of States that provide required Obstacle digital datasets	80%	Dec. 2020

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MID REGION AIM IMPLEMENTATION ROADMAP

Light Green: Timeframe for implementation (implemented / ongoing)
Dark Green: Implementation completed (by all States)

Steps/Elements	2019 & before	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031+	Priority	Remarks
AIXM database (AIXM 5.1+)														**1**	
eAIP														**1**	
Terrain area 1, 2a and 4 Datasets														**1**	Terrain area 2a dataset (and its supplementary areas according to Annex 15, 5.3.3.3.3)
Obstacle area 1, 2a and 4 Datasets														**1**	Obstacle area 2a dataset (and its supplementary areas according to Annex 15, 5.3.3.4.5)
Terrain area 2b, 2c, 2d and 3 Datasets														**2**	Based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs
Obstacle area 2b, 2c, 2d and 3 Datasets														**2**	Based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs
AIP datasets														**1**	(sub-datasets/grouping TBD)
Aerodrome Mapping Dataset(s)														**2**	Based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs
Instrument Flight Procedure (IFP) Dataset(s)														**1**	
Agreement with data originators														**1**	
Provision of quality-assured aeronautical data and information														**1**	
Training														**1**	Continuous
NOTAM Improvements														**2**	Step 1: identification of operational conditions under which a NOTAM shall or shall not be originated Step 2 (TBD): replacement of current NOTAMs by a digital version through the use of AIXM
Aeronautical Data Exchange														**2**	Continuous trials between States' AISs should be ongoing
Dissemination of Aeronautical Information in SWIM environment														**2**	

Light Green: Timeframe for implementation (implemented / ongoing)
Dark Green: Implementation completed (by all States)

Steps/Elements	2019 & before	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031+	Priority	Remarks
Electronic Aeronautical Charts														**2**	
Interoperability with MET														**2**	
Aeronautical Information Briefing														**2**	(Digital briefing)

APPENDIX 4D

NATIONAL AIM IMPLEMENTATION ROADMAP

STATE	
DATE	

Phase/Step	**Timeline**														**Start**	**End**	**Remarks**
	2019-	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032+**			
WGS-84																	
AIRAC																	
QMS																	
AIXM database (AIXM 5.1+)																	
eAIP																	
Terrain Area 1																	
Obstacle Area 1																	
Terrain Area 2a (plus TKOF flight path and OLS)																	
Obstacle Area 2a (plus TKOF flight path and OLS)																	
Terrain Area 2b, 2c, 2d																	
Obstacle Area 2b, 2c, 2d																	
Terrain Area 3																	
Obstacle Area 3																	
Terrain Area 4																	
Obstacle Area 4																	
AIP Datasets																	

Aerodrome Mapping Datasets																	
IFP Datasets																	
Agreement with data originators																	
Provision of quality-assured aeronautical data and information																	
Training																	
NOTAM Improvements																	
Aeronautical data exchange																	
Dissemination of Aeronautical Information in SWIM environment																	
Electronic aeronautical charts																	
Interoperability with MET products																	
Aeronautical information briefing																	

Legend		Not Started
		In Progress
		Implemented

APPENDIX 4E

~~B0-DATM~~ DAIM 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~~DAIM 3-1** sets out the requirements for the Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID). It reflects the transition from the current product centric AIS to data centric AIM. For the future digital environment it is important that the authoritative databases are clearly designated and such designation must be published for the users. This is achieved with the concept of the Integrated Aeronautical Information Database (IAID), a single access point for one or more authoritative databases (AIP, Terrain, Obstacles, AMDB, data-driven charting, etc.) for which the State is responsible. This Table will be used for the monitoring of the ~~Key Performance Indicators (KPIs) related to~~ GANP and MID Region Air Navigation Strategy element~~s Nr. 1 and 2 of the Module B0-DATM~~ DAIM-B1/1.~~.~~

2- **Table DAIM ~~B0-DATM~~ 3-2** sets out the requirements for aeronautical data quality. It will be used for the monitoring of the GANP and MID Region Air Navigation Strategy element DAIM-B1/1~~Key Performance Indicators (KPIs) related to the element Nr. 3 of the Module B0-DATM~~DAIM.

3- **Table DAIM~~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 GANP and MID Region Air Navigation Strategy element DAIM-B1/1~~Key Performance Indicators (KPIs) related to the element Nr. 4 of the Module B0-DATM~~DAIM.

4- **Table DAIM~~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 GANP and MID Region Air Navigation Strategy elements DAIM-B1/3 and DAIM-B1/4.~~Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATM~~DAIM.

5- **Table DAIM~~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 GANP and MID Region Air Navigation Strategy elements DAIM-B1/3 and DAIM-B1/4.~~Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATM~~DAIM.

6- **Table DAIM~~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 GANP and MID Region Air Navigation Strategy elements DAIM-B1/3, DAIM-B1/4

and B1/5.~~Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATMDAIM.~~

Table ~~B0-DATM~~ DAIM 3-1

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

EXPLANATION OF THE TABLE

Column:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TABLE ~~B0-DATM~~DAIM-3-1

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

State	IAID	AIP	NOTAM	SNOWTAM	PIB	Procedure Design	ATS	Action Plan	Remarks
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
BAHARAIN	FI	FI	FC	FI	FC	~~PI~~FI	FI		**AIXM:** 5.1
EGYPT	FI	PI	FC	FI	FC	~~NI~~PI	PI		**AIXM:** 5.1 (by 2020) 3 and 7 by ~~2018~~2020
IRAN, ISLAMIC REPUBLIC OF	NI	NI	NC	NI	NC	NI	NI		**AIXM:** NI Separate semi-automated NOTAM/SNOWTAM system is operative
IRAQ	NI	NI	NC	NI	NC	NI	NI		**AIXM:** NI
JORDAN	~~NI~~FI	NI	FC	~~NI~~FI	FC	NI	NI	2021	**AIXM:** 4.5 ~~database~~ (through EAD)
KUWAIT	NI	NI	FC	NI	PC	NI	NI		**AIXM:** NI (5.1 in progress)
LEBANON	NI	NI	NC	NI	NC	NI	NI		**AIXM:** 4.5
LIBYA	NI	NI	NC	NI	NC	NI	NI		**AIXM:** NI
OMAN	NI	NI	NC	NI	NC	NI	NI	Apr 2021	**AIXM:** NI (5.1 in progress)
QATAR	~~NI~~PI	PI	FC	NI	FC	PI	NI	~~Q4/2017~~2021 – Data Integration (AIP, Terrain, Obstacle, Procedure Design and AMDB)	**AIXM:** 5.1
SAUDI ARABIA	~~FI~~NI	~~FI~~NI	NC	NI	~~PC~~NC	~~FI~~NI	~~FI~~NI	AIXM 5.1 & NOTAM: ~~2019~~2020	**AIXM:** 4.5
SUDAN	~~NI~~FI	~~NI~~FI	FC	NI	FC	~~PI~~FI	~~PI~~FI		**AIXM:** ~~NI~~ 5.1
SYRIAN ARAB REPUBLIC	NI	NI	NC	NI	NC	NI	NI	No Action Plan	**AIXM:** NI
UNITED ARAB EMIRATES	~~NI~~FI	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	**AIXM:** 5.1.1
YEMEN	NI	NI	NC	NI	NC	NI	NI	No Action Plan	**AIXM:** NI

Table ~~B0-DATM~~DAIM-3-2
Aeronautical Data Quality

EXPLANATION OF THE TABLE

Column:

1 Name of the State or territory.

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

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

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

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

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

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

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

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

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

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

TABLE ~~B0-DATM~~DAIM-3-2
Aeronautical Data Quality

State	QMS	Establishment of formal agreements	Digital data exchange with originators	Metadata	Data quality monitoring	Data integrity monitoring	AIRAC adherence	Action Plan	Remarks
1	2	3	4	5	6	7	8	9	10
BAHARAIN	FC	~~PC~~FC	~~PI~~FI	FC	FC	FC	FC		
EGYPT	FC	~~PC~~FC	PI	FC	PC	PC	FC	~~3,~~ 4, 6 and 7 by ~~2018~~2022	
IRAN, ISLAMIC REPUBLIC OF	FC	PC	NI	NC	FC	FC	FC		
IRAQ	NC	~~NC~~PC	NI	NC	NC	NC	FC		
JORDAN	FC	PC	NI	FC	FC	FC	FC	3, 4: 2021	
KUWAIT	FC	PC	NI	NC	NC	NC	FC		
LEBANON	NC	PC	NI	PC	PC	PC	FC		
LIBYA	NC	NC	NI	NC	NC	NC	NC	No Action Plan	
OMAN	NC	~~NC~~PC	NI	NC	PC	PC	FC	Apr 2021	
QATAR	FC	PC	~~PI~~NI	FC	~~PC~~FC	~~PC~~FC	FC	4: 2021, 3: 2020	
SAUDI ARABIA	FC	FC	NI	FC	FC	FC	FC	4: 202~~019~~	
SUDAN	FC	FC	~~NI~~PI	~~NC~~FC	FC	FC	FC	4: 2021	
SYRIAN ARAB REPUBLIC	NC	NC	NI	NC	NC	NC	NC	No Action Plan	
UNITED ARAB EMIRATES	FC	PC	PI	FC	FC	FC	FC	4: implemented for some of internal stakeholders. Completion by 2020	
YEMEN	NC	NC	NI	PC	NC	NC	NC	No Action Plan	

Table ~~B0-DATM~~DAIM-3-3

World Geodetic System-1984 (WGS-84)

EXPLANATION OF THE TABLE

Column:

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

2 Compliance with the requirements for implementation of WGS-84 for FIR and 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~~DAIM-3-3
World Geodetic System-1984 (WGS-84)

State	FIR/ENR	Terminal	AD	GUND	Action Plan	Remarks
1	2	3	4	5	6	7
BAHARAIN	FC	FC	FC	FC		
EGYPT	FC	FC	FC	FC		
IRAN, ISLAMIC REPUBLIC OF	FC	FC	FC	FC		
IRAQ	FC	FC	FC	NC		
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
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~~DAIM-3-4-1
Provision of Terrain and Obstacle data sets for Areas 1 and 4

EXPLANATION OF THE TABLE

Column

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

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

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

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

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

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

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

TABLE ~~B0-DATM~~DAIM-3-4-1

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

State	Terrain data sets		Obstacle data sets		Action Plan	Remarks
	Area 1	Area 4	Area 1	Area 4		
1	2	3	4	5	6	7
BAHARAIN	FC	FC	FC	FC		
EGYPT	FC	FC	NC	NC	Completion of area 4 (HECA & HESH): Dec. 2019	
IRAN, ISLAMIC REPUBLIC OF	FC	FC	FC	FC		
IRAQ	NC	NC	NC	NC		
JORDAN	PC	~~FC~~PC	~~PC~~NC	~~FC~~NC	2021	
KUWAIT	FC	FC	FC	FC		
LEBANON	NC	N/A	NC	N/A	2 & 4: Q2-2019	
LIBYA	NC	N/A	NC	N/A		
OMAN	NC	N/A	NC	N/A	Apr 2021	
QATAR	FC	FC	FC	FC		
SAUDI ARABIA	FC	FC	FC	FC		
SUDAN	NC	N/A	NC	N/A	2021	
SYRIAN ARAB REPUBLIC	NC	N/A	NC	N/A	No Action Plan	
UNITED ARAB EMIRATES	~~PC~~FC	FC	~~PC~~FC	FC		
YEMEN	NC	N/A	NC	N/A	No Action Plan	

Table ~~B0-DATM~~DAIM-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~~DAIM-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		
EGYPT	PC	PI	PI	PI	NC	NI	NI	NI	To be completed by 2020	
IRAN, ISLAMIC REPUBLIC OF	FC	FI	FI	FI	FC	FI	FI	FI		
IRAQ	NC	NI	NI	NI	NC	NI	NI	NI		
JORDAN	~~PC~~NC	~~PI~~NI	~~PI~~NI	NI	~~PC~~NC	~~PI~~NI	~~PI~~NI	NI	2021	Area 2a, 2b and 2c implemented for OJAI RWY 26R/08L
KUWAIT	NC	NI	NI	NI	NC	NI	NI	NI		
LEBANON	NC	NI	NI	NI	NC	NI	NI	NI	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	Apr 2021	
QATAR	FC	FI	FI	FI	FC	FI	FI	FI		
SAUDI ARABIA	~~NC~~PC	~~NI~~PI	~~NI~~PI	~~NI~~PI	~~NC~~FC	~~NI~~FI	~~NI~~FI	~~NI~~FI	To be completed by ~~2020~~2022	
SUDAN	NC	NI	NI	NI	NC	NI	NI	NI	2021	
SYRIAN ARAB REPUBLIC	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	
UNITED ARAB EMIRATES	~~NC~~PC	PI~~NI~~	PI~~NI~~	PI	~~FC~~PC	PI~~FI~~	PI~~FI~~	PI	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~~DAIM-3-4-3
Provision of Terrain and Obstacle data sets for Area 3 and Airport Mapping Databases (AMDB)

EXPLANATION OF THE TABLE

Column

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

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

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

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

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

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

TABLE ~~B0-DATM~~DAIM-3-4-3

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

State	Terrain data sets (Area 3)	Obstacle data sets (Area 3)	AMDB	Action Plan	Remarks
1	2	3	4	5	6
BAHARAIN	NI	FI	NI	To be completed by 2021	
EGYPT	NI	NI	NI	To be completed by 2020	
IRAN, ISLAMIC REPUBLIC OF	FI	FI	NI	~~No Action Plan~~ AMDB 2021	
IRAQ	NI	NI	NI		
JORDAN	PI	PI	NI		Area 3 implemented for OJAI RWY 26R/08L
KUWAIT	FI	FI	NI		
LEBANON	NI	NI	NI	Area 3: Q4-2019 AMDB: no plan	
LIBYA	NI	NI	NI	No Action Plan	
OMAN	NI	NI	NI	Apr 2021	
QATAR	FI	~~PI~~FI	PI	~~Q4/2017~~ AMDB: 2021 ~~implementation~~	
SAUDI ARABIA	~~NI~~PI	~~NI~~PI	NI	~~No Action Plan~~Area 3 2022	
SUDAN	NI	NI	NI	2021	
SYRIAN ARAB REPUBLIC	NI	NI	NI	No Action Plan	
UNITED ARAB EMIRATES	FI	FI	NI	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	

APPENDIX 5A

Deficiencies in the AIM Field

BAHRAIN

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

EGYPT

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 15: Para. 5.3.3.4.3, Para. 5.3.3.4.10	-	Lack of the required Obstacle Datasets for Area 1 and Area 4	May, 2014	-	O	Phase 1: Determine the required specification for Obstacles area 1 and 4 (1/1/2018 to 1/3/2018); Phase 2: provide the required specification to Consultancy office to determine the implementing entity (1/3/2018 to 1/3/2019); Phase 3: Determine the implementing entity and begin to produce new software for eTOD (1/03/2019 to 1/12/2019); Phase 4: finish the new software and begin to produce eTOD area 4 (from existing raw data from Cairo International Airport Company) (1/1/2020 to 1/6/2020); Phase 5 (in parallel with phase 4): begin to produce eTOD area 1 after get raw data (1/1/2020 to 31/12/2020)	Egypt	Dec, 2020	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

IRAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 15: Para. 2.3.10 and 3.5.3	-	Lack of AIXM-based AIS Database	Dec, 2007	-	O	Corrective Action Plan has not been formally provided by the State	Iran	Dec, 20~~18~~21	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

IRAQ

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 4: Para. 16.2	-	Non-production of World Aeronautical Chart – ICAO 1:1 000 000	May, 1995	-	F H S	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, ~~2018~~2020	B
2	ANNEX 15: Para. 1.2.1.1	-	Implementation of geoid undulation referenced to the WGS-84 ellipsoid	Dec, 1997	-	F H O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, ~~2018~~2024	A
3	ANNEX 15: Para. 3.6	QMS Implementation	Lack of Implementation of QMS	Jan, 2003	-	F H O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, ~~2018~~2020	A
4	ANNEX 4: Para. 11.2	-	Non-production of Instrument Approach Chart-ICAO for Mosul Intl. Airport	Jan, 2003	Iraq to send an official letter regarding the status of Mosul Airport	F H O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, 2018	A
5	ANNEX 15: Para. 5.5	-	Non provision of pre-flight information service at international airports	Mar, 2004	-	F H O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, ~~2018~~2023	A
6	ANNEX 15: Para. 5.3.3.3.2 and 5.3.3.3.8	-	Lack of the required Terrain Datasets for Area 1 and Area 4	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, ~~2018~~2024	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	**Facilities/ Services**	**Description**	**Date First Reported**	**Remarks/ Rationale for Non-elimination**		**Description**	**Executing Body**	**Date of Completion**	**Priority for Action**
7	ANNEX 15: Para. 5.3.3.4.3 and 5.3.3.4.10	-	Lack of the required Obstacle Datasets for Area 1 and Area 4	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, ~~2018~~2024	A

[(1)] Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

JORDAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 4: Para. 16.2	-	Non-production of World Aeronautical Chart – ICAO1:1 000 000	Feb, 2008	-	F H	Corrective Action Plan has not been formally provided by the State	Jordan	Dec, ~~2018~~2021	B
2	ANNEX 15: Para. 5.3.3.3.2 and 5.3.3.3.8	-	Lack of the required Terrain Datasets for Area 1 and Area 4	May, 2014	-	F H	Corrective Action Plan has not been formally provided by the State	Jordan	Dec, ~~2018~~2021	A
3	ANNEX 15: Para. 5.3.3.4.3 and 5.3.3.4.10	-	Lack of the required Obstacle Datasets for Area 1 and Area 4	May, 2014	-	F H	Corrective Action Plan has not been formally provided by the State	Jordan	Dec, ~~2018~~2021	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

KUWAIT

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

LEBANON

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 4: Para. 16.2	-	Non-production of World Aeronautical Chart – ICAO1:1 000 000	May, 1995	-	H	Corrective Action Plan was provided in August 2016.	Lebanon	Dec, 20~~18~~20	B
2	ANNEX 15: Para. 3.6	QMS Implementation	Lack of Implementation of QMS	Jan, 2003	(USOAP-CMA finding)	H	Corrective Action Plan was provided in August 2016.	Lebanon	Dec, 20~~18~~20	A
3	ANNEX 15: Para. 5.3.3.3.2	-	Lack of the required Terrain Datasets for Area 1	May, 2014	-	O	Corrective Action Plan was provided in August 2016.	Lebanon	Dec, 2020~~18~~	A
4	ANNEX 15: Para. 5.3.3.4.3	-	Lack of the required Obstacle Datasets for Area 1	May, 2014	-	O	Corrective Action Plan was provided in August 2016.	Lebanon	Dec, 2020~~18~~	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

LIBYA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 4: Para. 16.2	-	Non-production of World Aeronautical Chart – ICAO 1:1 000 000	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2020~~18~~	B
2	ANNEX 15: Para. 3.6	QMS Implementation	Lack of Implementation of QMS	May, 2014	(USOAP-CMA finding)	O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2020~~18~~	A
3	ANNEX 15: Para 6.2	-	Lack of a system for AIRAC adherence monitoring	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2020~~18~~	A
4	ANNEX 15: Para. 2.3.10 and 3.5.3	-	Lack of AIXM-based AIS Database	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2020~~18~~	A
5	ANNEX 15: Para. 5.3.3.3.2	-	Lack of the required Terrain Datasets for Area 1	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2020~~18~~	A
6	ANNEX 15: Para. 5.3.3.4.3	-	Lack of the required Obstacle Datasets for Area 1	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2020~~18~~	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

OMAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 15: Para. 3.6	QMS Implementation	Lack of Implementation of QMS	Jan, 2003	(USOAP-CMA finding)	O	- An agreement with an international quality company is established to assist for progressive implementation of quality systems within DGAN AIS. - QMS is expected to be fully implemented by September 2019.	Oman	Sep, ~~2019~~2020	A
2	ANNEX 15: Para. 2.3.10 and 3.5.3	-	Lack of AIXM-based AIS Database	Jul, 2005	-	O	A contract is going to be signed with a company specializing in this area for AIP Data Migration. AIM equipment installation will be completed by end of February 2017. The target is to have 70% of the data by June 2018	Oman	~~Dec~~Apr, ~~2019~~2021	A
3	ANNEX 15: Para. 5.3.3.3.2	-	Lack of the required Terrain Datasets for Area 1	May, 2014	-	O	An agreement with National survey authority is going to be established to assist for progressive implementation of terrain datasets for area1. The target is to have the required data by Dec 2019.	Oman	Dec, ~~2019~~2021	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	**Facilities/ Services**	**Description**	**Date First Reported**	**Remarks/ Rationale for Non-elimination**		**Description**	**Executing Body**	**Date of Completion**	**Priority for Action**
4	ANNEX 15: Para. 5.3.3.4.3	-	Lack of the required Obstacle Datasets for Area 1	May, 2014	-	O	Area 1 obstacles are published in AIP Oman ENR 5.4 "Air Navigation (En-Route) Obstacles". Data originators for obstacles will be consulted for Area 1 obstacle completeness and update.	Oman	Dec, ~~2019~~2021	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

QATAR

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

SAUDI ARABIA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
~~1~~	~~ANNEX 15: Para. 5.5~~	~~-~~	~~Pre-flight information service not provided at International Airports~~	~~Nov, 2007~~	~~-~~	~~O~~	~~Corrective Action Plan has not been formally provided by the State~~	~~Saudi Arabia~~	~~Apr, 2018~~	~~A~~

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

SUDAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 15: Para. 2.3.10 and 3.5.3	-	Lack of AIXM-based AIS Database	May, 2014	Sudan to send a letter to MID Office about the implementation of AIXM (V 5.1) for the deletion of this deficiency	O	Corrective Action Plan has not been formally provided by the State	Sudan	Dec, 2018	A
2	ANNEX 15: Para. 5.3.3.3.2	-	Lack of the required Terrain Datasets for Area 1	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Sudan	Dec, ~~2018~~2021	A
3	ANNEX 15: Para. 5.3.3.4.3	-	Lack of the required Obstacle Datasets for Area 1	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Sudan	Dec, ~~2018~~2021	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

SYRIA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 15: Para 6.2	-	Lack of a system for AIRAC adherence monitoring	May, 1995	-	F H	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	A
2	ANNEX 4: Para. 16.2	-	Non-production of World Aeronautical Chart – ICAO1:1 000 000	May, 1995	-	F H S	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	B
3	ANNEX 15: Para. 3.6	QMS Implementation	Lack of Implementation of QMS	Jan, 2003	(USOAP-CMA finding)	F H	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	A
4	ANNEX 15: Para. 1.2.1.1	-	Implementation of geoid undulation referenced to the WGS-84 ellipsoid.	Jan, 2003	-	F H	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	A
5	ANNEX 15 Para. 5.2 and 6.3.1	-	Lack of consistency in AIP information and lack of regular and effective updating of the AIP.	Jul, 2005	-	H	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	A
6	ANNEX 15: Para. 2.3.10 and 3.5.3	-	Lack of AIXM-based AIS Database	Jul, 2005	-	F H	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	A
7	ANNEX 15: Para. 5.5	-	Non provision of pre-flight information service at international airports	Jul, 2005	-	F H	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
8	ANNEX 15: Para. 5.3.3.3.2	-	Lack of the required Terrain Datasets for Area 1	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	A
9	ANNEX 15: Para. 5.3.3.4.3	-	Lack of the required Obstacle Datasets for Area 1	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2020~~18~~	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

UAE

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the AIM Field

YEMEN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	ANNEX 15: Para 6.2	-	Lack of a system for AIRAC adherence monitoring	May, 1995	-	H O	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2020~~18~~	A
2	ANNEX 4: Para. 16.2	-	Non-production of World Aeronautical Chart – ICAO1:1 000 000	May, 1995	-	F	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2020~~18~~	B
3	ANNEX 15: Para. 3.6	QMS Implementation	Lack of Implementation of QMS	Jan, 2003	-	F	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2020~~18~~	A
4	ANNEX 4: Para. 11.2	-	Non-production of Instrument Approach Chart-ICAO for TAIZ Intl. Airport	Jan, 2003	-	O	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2020~~18~~	A
5	ANNEX 15: Para. 5.5	-	Non provision of pre-flight information service at international airports	Mar, 2004	-	F H	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2020~~18~~	A
6	ANNEX 15: Para. 2.3.10 and 3.5.3	-	Lack of AIXM-based AIS Database	Jul, 2005	-	F	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2020~~18~~	A
7	ANNEX 15: Para. 5.3.3.3.2	-	Lack of the required Terrain Datasets for Area 1	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2020~~18~~	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	**Facilities/ Services**	**Description**	**Date First Reported**	**Remarks/ Rationale for Non-elimination**		**Description**	**Executing Body**	**Date of Completion**	**Priority for Action**
8	ANNEX 15: Para. 5.3.3.4.3	-	Lack of the required Obstacle Datasets for Area 1	May, 2014	-	O	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 202018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

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

'U' priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

'A' priority = Top priority requirements necessary for air navigation safety.

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

'B' priority = Intermediate requirements necessary for air navigation regularity and efficiency.

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

Definition:

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

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(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

APPENDIX 6A

MIDANPIRG AERONAUTICAL INFORMATION MANAGEMENT SUB-GROUP (AIM SG)

1. TERMS OF REFERENCE

1.1 The Terms of Reference of the AIM Sub-Group are:

a) ensure that the implementation of AIM in the MID Region is coherent and compatible with developments in adjacent regions, and is in line with the Global Air Navigation Plan (GANP), the Aviation System Block Upgrades (ASBU) framework ~~methodology~~ and the MID Region Air Navigation Strategy;

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

c) keep under review the MID Region AIM performance objectives/priorities, develop action plans to achieve the agreed performance targets and propose changes to the MID Region AIM plans/priorities~~, through the ANSIG~~;

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

e) provide a platform for harmonization of developments and deployments in the AIM domain;

f) monitor and review the latest developments in the area of AIM and procedure design issues associated to AIM, provide expert inputs for AIM-related issues; and propose solutions for meeting ATM operational requirements;

g) provide regular progress reports to the ~~ANSIG~~ MSG and MIDANPIRG concerning its work programme; and

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

1.2 In order to meet the Terms of Reference, the AIM Sub-Group shall:

a) monitor the status of implementation of the required AIM facilities, products and services in the MID Region;

b) assist States in the development of National AIM Plans/Roadmaps through the development and continuous update of the Regional AIM Roadmap identifying the priorities and timelines for implementation, in particular for the implementation of Digital Datasets;

~~b)~~c) assess and provide progress reports on the transition from AIS to AIM in the MID Region;

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

~~d)~~e) provide necessary inputs to the MID Region Air Navigation Strategy through the monitoring of the agreed Key Performance Indicators related to AIM;

~~e)~~f) identify and review those specific deficiencies and problems that constitute major obstacles to the provision of efficient AIM services, and recommend necessary remedial actions;

~~f)~~g) keep under review the adequacy of ICAO SARPs requirements in the area of AIM, taking into account, inter alia, changes in user requirements, the evolution of operational requirements and technological developments;

~~g)~~h) develop proposals for the updating of relevant ICAO documentation related to AIM, including the amendment of relevant parts of the MID ANP, as deemed necessary;

~~h)~~i) monitor and review technical and operating developments in the area of AIM and foster their implementation in the MID Region in a harmonized manner; and

~~i)~~j) foster the integrated improvement of AIM services through proper training and qualification of the AIM personnel.

2. COMPOSITION

2.1 The Sub-Group will compose of:

a) MIDANPIRG Member States;

b) concerned International and Regional Organizations as observers; and

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

ATTACHMENT A

LIST OF PARTICIPANTS

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