International Civil Aviation Organization

Middle East Air Navigation Planning and Implementation Regional Group

Fifteenth Meeting (MIDANPIRG/15) (Bahrain, 8 – 11 June 2015)

Agenda Item 5.2.1: MID Region air navigation priorities and target (ASBU Implementation)

AIM IMPLEMENTATION IN THE MID REGION (B0-DATM)

(Presented by the Secretariat)

SUMMARY

This paper presents the status of implementation of AIM and the B0-DATM elements in the MID Region.

Action by the meeting is at paragraph 3.

REFERENCES

- AIM SG/1 Report
- ANSIG/1 Report
- MSG/4 Report

1. Introduction

- 1.1 The First Meeting of the MIDANPIRG AIM Sub-Group was held in Cairo, Egypt, from 6 to 8 May 2014. The meeting was attended by a total of twenty seven (27) participants from seven (7) States (Bahrain, Egypt, Iran, Jordan, Saudi Arabia, Sudan and UAE).
- 1.2 The MID Region Air Navigation Strategy was endorsed by the Fourth meeting of the MIDANPIRG Steering Group (MSG/4, Cairo, Egypt, 24-26 November 2014) as the framework identifying the regional air navigation priorities, performance indicators and targets. The Strategy includes Tables for all twelve priority 1 ASBU Modules along with their associated elements, applicability, performance Indicators, supporting Metrics and performance Targets.

2. DISCUSSION

B0-DATM Implementation

2.1 B0-DATM (Service Improvement through Digital Aeronautical Information Management) as a priority 1 Module, is the initial introduction of digital processing and management of information, through AIS/AIM implementation, use of aeronautical information exchange model (AIXM), migration to eAIP and better quality and availability of data. For the purpose of performance monitoring and reporting, seven (7) elements have been included in the MID Region Air Navigation Strategy: National AIM Implementation Plan/Roadmap, AIXM, eAIP, QMS, WGS-84, eTOD and inclusion of Digital NOTAM in National AIM Implementation Plan/Roadmap.

- 2.2 The meeting may wish to recall that, the MIDANPIRG AIM Sub-Group is the main Regional monitoring body for the collection of data related to the B0-DATM implementation in the MID Region and the main data collection mechanism on the implementation would be through the MID eANP and the AIM Sub-Group. It is also to be noted that, competent *Human Resource* and the *Financial Issues* are the most critical challenges faced by the States in the Transition from AIS to AIM
- 2.3 Performance Indicators/Supporting Metrics, Targets of the B0-DATM and status of their implementation, as reviewed by the ANSIG/1 meeting are detailed in **Appendix A**.

Methodology for reporting the progress related to the transition from AIS to AIM

- 2.4 The meeting may wish to recall that for the First Edition of the Global Air Navigation Report and the Regional Performance Dashboards, the implementation of 3 steps from Phase I of the ICAO Roadmap for transition from AIS to AIM (AIRAC, QMS and WGS-84) was monitored. It is to be highlighted that for the future Global Air Navigation Reports and necessary updates/upgrades of the Regional Performance Dashboards, the reporting on the progress achieved in the transition from AIS to AIM should cover not only Phase I, but also Phase II and eventually Phase III.
- 2.5 In connection with the above, a draft Methodology for reporting and assessing the progress related to the transition from AIS to AIM and its finalization/compliance criteria was developed by the ICAO MID and EUR/NAT Offices in collaboration with the MIDANPIRG AIM SG, EUROCONTROL AIM/SWIM Team and EANPG COG/AIM TF, as at **Appendix B**.
- 2.6 Based on the above, the MSG/4 meeting, through MSG Conclusion 4/16, urged States to provide the ICAO MID Regional Office with their comments/inputs related to the Methodology and the Finalization/Compliance Criteria. The draft Methodology was also coordinated with the ICAO HQ and other ROs to be used as a global framework for the Global Air Navigation Report for 2015-2016.

National AIM Implementation Roadmap/Plan

- 2.7 The meeting may wish to note that, as a follow-up to the MIDANPIRG Conclusion 14/19, the MSG/4 meeting agreed that focus in the AIM Transition should be on the implementation of phase II of the Roadmap for the transition from AIS to AIM and endorsed the "MID Region AIM implementation Roadmap" at Appendix C. The MSG/4 meeting through MSG Conclusion 4/17 urged States to provide the ICAO MID Regional Office with their National AIM Implementation Roadmap using the Template at Appendix D, taking into consideration the "MID Region AIM implementation Roadmap" in planning for the transition from AIS to AIM in a prioritized manner.
- 2.8 Following MSG Conclusion 4/17, ICAO MID Regional Office issued a State letter Ref. ME 3/1-15/034 dated 1 Feb 2015 requesting States to provide the ICAO MID Regional Office with their National AIM Implementation Roadmap before 1 March 2015. It is to be highlighted that twelve (12) States have so far provided their AIM National Plans and/or Roadmap to the ICAO MID Regional Office.

Formal arrangement between AIS and Data Originators

2.9 The meeting may wish to recall that, the MIDANPIRG/14 meeting urged States to take necessary follow-up actions on the outcome of the ICAO EUR/MID AIM/SWIM Seminar (Istanbul, Turkey, 14-17 May 2013). In this respect, the AIM SG/1 meeting noted in particular the conclusion related to the need for formal arrangements with data originators. Accordingly, the meeting agreed to the following Draft Conclusion:

Why	To ensure aeronautical data quality and timeliness					
What Sign formal arrangement between AIS and Data Originato						
Who	States					
When	December 2015					

DRAFT CONCLUSION 1/1: FORMAL ARRANGEMENTS BETWEEN AIS AND DATA ORIGINATORS

That, States be urged to:

- a) take necessary measures for the signature of formal arrangements between AIS/AIM and the data originators, commensurate with the Aerodrome operators, Air Navigation Service Providers (ANSPs) and the Military Authority; and
- b) inform the ICAO MID Regional Office of the actions taken before 31 December 2015.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
 - a) review the draft Methodology for reporting and assessing the progress related to the transition from AIS to AIM as an initial MID Regional framework for monitoring the progress achieved for the AIM transition; and
 - b) endorse the Draft Conclusion in para. 2.9.

APPENDIX A

STATUS OF IMPLEMENTATION OF THE **B0-DATM** ELEMENTS

Elements	Applicability	at through Digital Aeronautical Information Market Performance Indicators/Supporting	Targets	Status
		Metrics	1411 8012	
1- National AIM Implementation Plan/Roadmap	All States	Indicator: % of States that have National AIM Implementation Plan/Roadmap	80% by Dec. 2016	80% (12 States)
		Supporting Metric: Number of States that have National AIM Implementation Plan/Roadmap	90% by Dec. 2018	
2-AIXM	All States	Indicator: % of States that have implemented an AIXM-based AIS database	60% by Dec. 2015 80% by Dec. 2017	47% (7 States)
		Supporting Metric: Number of States that have implemented an AIXM-based AIS database	100% by Dec. 2019	
3-eAIP	All States	Indicator: % of States that have	60% by Dec. 2016	27%
		implemented an IAID driven AIP Production (eAIP)	80% by Dec. 2018	(4 States)
		Supporting Metric: Number of States that have implemented an IAID driven AIP Production (eAIP)	100% by Dec. 2020	
4-QMS	All States	Indicator: % of States that have implemented QMS for AIS/AIM	70% by Dec. 2016	53% (8 States)
		Supporting Metric: Number of States that have implemented QMS for AIS/AIM	90% by Dec. 2018	
5-WGS-84	All States	Indicator: % of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD)	Horizontal: 100% by Dec. 2017	87% (13 States)
		Supporting Metric: Number of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD)	Vertical: 90% by Dec. 2018	80% (12 States)
		Indicator: % of States that have implemented WGS-84 Geoid Undulation		
		Supporting Metric: Number of States that have implemented WGS-84 Geoid Undulation		
6-eTOD	All States	Indicator: % of States that have implemented required Terrain datasets	Area 1: Terrain: 50% by Dec. 2015, 70% by Dec. 2018	Area 1: Terrain: 40% (6 States)

		Supporting Metric: Number of		Obstacles:
		States that have implemented	Obstacles:	33%
		required Terrain datasets	40% by Dec. 2015,	(5 States)
		Indicator: % of States that have	60% by Dec. 2018	
		implemented required Obstacle		Area 4:
		datasets	Area 4:	Terrain:
			Terrain:	40%
		Supporting Metric: Number of States that	50% by Dec. 2015,	(6 States)
		have implemented required Obstacle	100% by Dec. 2018	Obstacles:
		datasets		33%
			Obstacles:	(5 States)
			50% by Dec. 2015,	
			100% by Dec. 2018	
7-Digital	All States	Indicator: % of States that have included the	80% by Dec. 2016	60%
NOTAM*		implementation of Digital NOTAM into		(9 States)
		their National Plan for the transition from		
		AIS to AIM		
		Supporting Metric: Number of States that	90% by Dec. 2018	
		have included the implementation of Digital		
		NOTAM into their National Plan for the		
		transition from AIS to AIM		

APPENDIX B

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

1. Introduction

Transition from Aeronautical Information Services (AIS) to Aeronautical Information Management (AIM) is a high-priority area for air navigation progress. This is a strategic positioning initiative to drive the delivery of improved aeronautical information in terms of quality, timeliness and the identification of new services and products to better serve aeronautical users (ICAO Global Air Navigation Report-2014). This methodology aims to develop a method and plan for the reporting by the States on the progress achieved for transition from AIS to AIM, based on the ICAO Roadmap for Transition from AIS to AIM.

2. Need for reporting and assessing the progress related to the transition from AIS to AIM

The ICAO air navigation planning and implementation performance framework requires that reporting, monitoring, analysis and review activities be conducted on a cyclical, annual basis (ICAO DOC 9750). Data gathered would have a number of uses, inter alia:

- ICAO monitoring functions: a purpose of this Methodology is to meet the ICAO monitoring requirements related to air navigation planning and implementation. Reporting and monitoring results will be analyzed by ICAO and aviation stakeholders and then utilized in developing the annual Global Air Navigation Report, as well (ICAO DOC 9750).
- Global Air Navigation Report (GANR): all or part(s) of data would be reflected in the Global Air Navigation Report (GANR). The report results will provide an opportunity for the world civil aviation community to compare progress across different ICAO Regions in the establishment of air navigation infrastructure and performance-based procedures (ICAO DOC 9750).
- Regional Performance Dashboards: all or part(s) of data would be reflected in the Regional Performance Dashboards.

3. Methodology approach

Main approach of this Methodology in data collection and reporting is quantitative, based on the SMART rule. All Elements and Metrics/Indicators used for reporting should be Specific, Measurable, Achievable, Relevant and Time-bounded. Moreover, the Methodology has to reflect 4Ws (Why, What, Who and When) related to each Element. Accordingly, some steps of the ICAO Roadmap for the transition from AIS to AIM (i.e. P-02 Data integrity monitoring, P-07 Unique identifiers, P-10 Communication networks, P-16 Training and P-19 Interoperability with meteorological products) are not considered for reporting purposes, whereas they are already part of other steps and/or measurement of which could not be carried out in a quantitative manner.

4. Data collection strategy

In order to avoid confusion using numerous reporting forms for data collection from States, the data collection intended by this Methodology would be carried out through current data collection tools (i.e. eANP Tables, etc.). Special excel sheets in support of the collection of data may be used, if needed

5. Structure of the Methodology Plan

The structure of the Methodology Plan consists of the following elements:

- 1- Element (Phase/Step/Step No.): refers to the Phase number (1-3), Step and Step number (1-21) of the ICAO Roadmap for transition from AIS to AIM. Some steps of the ICAO Roadmap for the transition from AIS to AIM (i.e. P-02, P-07, P-10, P-16 and P-19) are not considered for reporting purposes, whereas they are already part of other steps and/or measurement of which could not be carried out in a quantitative manner.
- 2- Metric/Indicator: refers to the status of compliance/implementation of step and could be e.g. Non-Compliance (NC), Partially Compliance (PC) or Fully Compliance (FC).
- 3- Source of data (How to collect data): the main tool for the collection of data would be eANP Tables. Special excel sheets in support of the collection of data may be used, if needed.
- 4- Who will collect data: data should be collected by ICAO HQ/ICAO Regional Office.
- 5- When to collect data: data for each report would be collected in December.
- 6- Year of publishing Report: the year, on which the Reports (Global Air Navigation Report & Regional Performance Dashboard) would be published.
- 7- Remarks: any additional information, e.g. in case of status of implementation is PC; list of sub-elements that have been implemented.

6. Methodology plan for annual reporting

Element (Phase/Step	p/Step No.)		Metric/ Indicator	Source of data (How to collect data)	Who will collect data*	Year of the Report	Remarks
1			2	3	4	5	6
Phase 1							
AIRAC adh	nerence	P-03	FC/NC	eANP	ICAO HQ/RO	2014	
WGS-84 im	nplementation	P-05	FC/PC/NC	eANP	ICAO HQ/RO	2014	
QMS		P-17	FC/NC	eANP	ICAO HQ/RO	2014	
Phase 2							
Data quality	y monitoring	P-01	FI/NI	TBD	TBD	TBD	
Data integri	ity monitoring	P-02	N/A	N/A	N/A	N/A	N/A (Merged in P-01)
Integrated aeronautical information		P-06	FI/NI	eANP	ICAO HQ/RO	2015	Structured Aeronautical Information Database with digital exchange capabilities (e.g. AIXM) Ongoing
database	Implementation of IAID		FI/PI/NI	TBD	TBD	TBD	In case of PC, list name of AI Products of IAID
Unique ider	ntifiers	P-07	N/A	N/A	N/A	N/A	Linked to P-06
Aeronautica conceptual	al information model	P-08	N/A	N/A	N/A	N/A	Linked to P-06
Electronic A	AIP	P-11	FI/NI	eANP	ICAO HQ/RO	2015	Ongoing-2015
	Area 1	P-13	FC/NC	eANP	ICAO HQ/RO	2015	Ongoing-2015
Terrain	Area 4	P-13	FC/PC/NC	eANP	ICAO HQ/RO	2015	In case of PC, list name of ADs Ongoing-2015
Terrain	Area 2a	P-13	FC/PC/NC	eANP	ICAO HQ/RO	2016	In case of PC, list name of ADs
	Take-off flight path area	P-13	FC/PC/NC	eANP	ICAO HQ/RO	2016	In case of PC, list name of ADs
	_		W				

Element (Phase/Step	p/Step No.)		Metric/ Indicator	Source of data (How to collect data)	Who will collect data*	Year of the Report	Remarks
1			2	3	4	5	6
	An area bounded by the lateral extent of the aerodrome obstacle limitation surfaces	P-13	FC/PC/NC	eANP	ICAO HQ/RO	2016	In case of PC, list name of ADs
	Area 1	P-14	FC/NC	eANP	ICAO HQ/RO	2015	Ongoing-2015
	Area 4	P-14	FC/PC/NC	eANP	ICAO HQ/RO	2015	In case of PC, list name of ADs Ongoing-2015
	Area 2a	P-14	FC/PC/NC	eANP	ICAO HQ/RO	2016	In case of PC, list name of ADs
Obstacles	objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take- off flight path area	P-14	FC/PC/NC	eANP	ICAO HQ/RO	2016	In case of PC, list name of ADs
	penetrations of the aerodrome obstacle limitation surfaces	P-14	FC/PC/NC	eANP	ICAO HQ/RO	2016	In case of PC, list name of ADs
Aerodrome	mapping	P-15	FI/PI/NI	TBD	TBD	TBD	In case of PC, list name of ADs
Phase 3							
Aeronautica	al data exchange	P-09	FI/PI/NI	TBD	TBD	TBD	In case of PC, list name of Units (Data Originators/Users)
Communica	ation networks	P-10	N/A	N/A	N/A	N/A	N/A
Aeronautica	al information briefing	P-12	FI/PI/NI	TBD	TBD	TBD	In case of PC, list name of ADs

Element (Phase/Step/Step No.)		Metric/ Indicator	Source of data (How to collect data) Who will collect data*		Year of the Report	Remarks
1		2	3	4	5	6
Training	P-16	N/A	N/A	N/A	N/A	N/A
Agreement with data originators	P-18	FI/PI/NI	eANP	ICAO HQ/RO	2016	In case of PC, list name of Data Originator(s)
Interoperability with meteorological products	P-19	N/A	N/A	N/A	N/A	N/A
Electronic aeronautical charts	P-20	FI/NI	TBD	TBD	TBD	
Digital NOTAM	P-21	FI/NI	TBD	TBD	TBD	

FC: Fully Compliant; PC: Partially Compliant; NC: Not Implemented; FI: Fully Implemented; PI: Partially Implemented; NI: Not Compliant; N/A: Not Applicable * Data collection will be carried out by ICAO Headquarters and Regional Offices.



7. Data collection timeframe

Year of reporting	Element	Step No.	Remarks
2014	AIRAC adherence WGS-84 implementation QMS	P-03 P-05 P-17	Completed
2015	AIXM-based AIS Database Electronic AIP Terrain (Area 1 and Area 4) Obstacles (Area 1 and Area 4)	P-06 P-11 P-13 P-14	Ongoing
2016	Terrain (Area 2a) Obstacles (Area 2a) Agreement with data originators	P-13 P-14 P-18	
2017 +	TBD	TBD	

8. Finalization/Compliance Criteria

The Criteria by which finalization and compliance with the Metric (Step) can be realized.

Element (Step)	Finalization criteria or Implementation/Compliance Criteria (for the 2015-2016 Metrics)
AIXM-based AIS Database	National aeronautical data and information is stored and maintained in AIXM-based AIS database.
Electronic AIP	National AIP GEN 3.1.3 'Aeronautical publications' provides information about the availability of the National AIP in electronic format (eAIP)
Terrain Dataset Area 1	National AIP GEN 3.1.6 'Electronic terrain and obstacle' provides information on how the dataset can be obtained
Terrain Dataset Area 4	National AIP GEN 3.1.6 'Electronic terrain and obstacle' provides information on how the dataset for specific CAT II/III RWY can be obtained. States should indicate in remarks the

	number of existing CAT II/III RWY. N/A for States with no CAT II/III RWY.						
Terrain Dataset Area 2 ¹	National AIP GEN 3.1.6 'Electronic terrain and obstacle' provides information on how the dataset can be obtained. States should indicate in remarks the number of AD eligible for provision of Area 2 data. This number should come from the Regional eANP Table AOP II-1 – for aerodromes with one of the following designation:						
	— RS: international scheduled air transport, regular use						
	— RNS: international non-scheduled air transport, regular use						
	— RG: international general aviation, regular use.						
Obstacle Dataset Area 1	National AIP GEN 3.1.6 'Electronic terrain and obstacle provides information on how the dataset can be obtained						
Obstacle Dataset Area 4	National AIP GEN 3.1.6 'Electronic terrain and obstacle data' provides information on how the dataset for specific CAT II/III RWY can be obtained. States should indicate in remarks the number of existing CAT II/III RWY. N/A for States with no CAT II/III RWY.						
Obstacle Dataset Area 2 ²	National AIP GEN 3.1.6 'Electronic terrain and obstacle provides information on how the dataset can be obtained. States should indicate in remarks the number of AD eligible for provision of Area 2 data. This number should come from the Regional eANP Table AOP II-1 – for aerodromes with one of the following designation:						
	— RS: international scheduled air transport, regular use						
	— RNS: international non-scheduled air transport, regular use						
	— RG: international general aviation, regular use.						
Agreement with data originators	TBD						

¹ Data set requirements in accordance with Annex 15 (10.1.5) ² Data set requirements in accordance with Annex 15 (10.1.6)

APPENDIX C MID REGION AIM IMPLEMENTATION ROADMAP FOR THE TRANSITION FROM AIS TO AIM

		20)14			20	15			20	16			20	17			20)18	2018		Remarks
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
AIXM																					1	The target is to have 60% by 2015, 80% by 2017 and 100% by 2019
eAIP																					1	The target is to have 60% by 2016, 70% by 2018 and 100% by 2020
Terrain A-1																					2	The target is to have 50% by 2015, 70% by 2018
Obstacle A-1																					2	The target is to have 40% by 2015, 60% by 2018
Terrain A-4																					2	The target is to have 50% by 2015, 100% by 2018
Obstacle A-4																					2	The target is to have 50% by 2015, 100% by 2018
Terrain A-2a																					3	The target is to have 30% by 2017, 50% by 2018
Obstacle A-2a																					3	The target is to have 30% by 2017, 50% by 2018
Data Quality Monitoring																					3	Target for 2018: To be implemented by 50% of the States that have implemented QMS at
Data Integrity Monitoring																					3	least for the segment originator-AIS (excluding the segment AIS-End user)
Agreement with data originators																					3	Target for 2018: 50% of the States that have implemented QMS
Terrain and Obstacle for Areas 2b, 2c, 2d and 3																					4	Optional based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs
Aerodrome Mapping (AMDB)																					4	Optional based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs

White: Not started Yellow: Initial Target

Orange: Intermediate Target

Green: Target for full implementation

APPENDIX D

NATIONAL AIM IMPLEMENTATION ROADMAP TEMPLATE

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

Phase/Step	Step			Timeline			Start	End	Remarks					
	No.	2014	2015	2016	2017	2018								
Terrain A-3	P-13													
Obstacle A-3	P-14													
AD Mapping	P-15													
Phase III														
Aeronautical data exchange	P-09	***************************************												
Communication networks	P-10													
Aeronautical information briefing	P-12													
Training	P-16													
Agreement with data originators	P-18													
Interoperability with meteorological products	P-19													
Electronic aeronautical charts	P-20													
Digital NOTAM	P-21													