International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

IAIM — WP/08
18/10/2018

Integrated Aeronautical Information Management Transition Planning Meeting (IAIM) (AIM Strategy)
Mexico City, Mexico, 29 to 31 October 2018

Agenda Item 6: AIM measuring and monitoring

AIM IMPLEMENTATION IN THE CAR REGION

(Presented by Secretariat)

EXECUTIVE SUMMARY	
This paper presents the importance of measuring and monitor the status of implementation of AIM and the B0-DAIM elements in the CAR Region, and adopt a Methodology in **Appendix A** as well as Monitoring formats in **Appendices B and C.**	
Action:	Action by the meeting is at paragraph 3
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency
References:	• ICAO ASBU Manual • ICAO Roadmap for the Transition from AIS to AIM • CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) Version 4

1. Introduction

1.1 During the First and Second Meetings of the AIM Task Force held in Honduras and Miami respectively (2017 – 2018), the CAR Region Air Navigation Strategy (RPBANIP), was endorsed by the fourth Air Navigation Working Group Meeting (ANIWG/04), as the framework identifying the regional air navigation priorities, performance indicators and targets. The Strategy includes Tables for all ASBU Modules priorities along with their associated elements, applicability, performance Indicators, supporting Metrics and performance Targets.

2. Discussion

B0-DAIM (B0-DATM) Implementation

2.1 B0-DAIM (Service Improvement through Digital Aeronautical Information Management) as a priority 1 Module, is the initial introduction of digital processing and management of data and information, through AIS to 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, elements have been included in the CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP): A National AIM Implementation Plan/Roadmap, AIXM, eAIP, QMS, WGS-84, eTOD and inclusion of Digital NOTAM in National must be monitored.

2.2 The meeting may wish to recall that, the AIM Task Force is the main Regional monitoring body for the collection of data related to the AIM implementation in the CAR Region and the main data collection mechanism on the implementation would be through the CAR eANP and the AIM GREPECAS Project. It is also to be noted that, competent *Human Resources (training)* 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-DAIM and status of their implementation, as reviewed by the ANIWG/04 meeting are detailed in the respective report on the following web site:

https://www.icao.int/NACC/Pages/meetings-2018-aniwg4.aspx

Proposal of 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 of the Regional RPBANIP (future eANP Vol III), the reporting on the progress achieved in the transition from AIS to AIM should cover not only Phase I, but also Phase II and 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 NACC and AIM TF, as at **Appendix A**.

2.6 Based on the above, the meeting, it is urges States to provide the ICAO NACC 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 to be used as a global framework for the Global Air Navigation Report.

Measure of National AIM Implementation Roadmap/Plan advance

2.7 The meeting may wish to note that, as a follow-up to the AIM Transition should be on the implementation of phase II and III of the Roadmap for the transition from AIS to AIM and endorse the *ICAO AIM implementation Roadmap Format* at **Appendix B**. The meeting urged States to provide the ICAO CAR Regional Office with their National AIM Implementation Roadmap using the Template at **Appendix C**, taking into consideration the "CAR Region AIM implementation Roadmap" in planning for the transition from AIS to AIM in a prioritized manner.

3. Action by the Meeting

3.1 The meeting is invited to:

a) Review and adopt the draft Methodology for reporting and assessing the progress related to the transition from AIS to AIM in **Appendix A**; and

b) Review and adopt the **Appendices B and C**

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APPENDIX A

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). 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/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 adherence		P-03	FC/NC	eANP			
WGS-84 implementation		P-05	FC/PC/NC	eANP			
QMS		P-17	FC/NC	eANP			
Phase 2							
Data quality monitoring		P-01	FI/NI	TBD			
Data integrity monitoring		P-02	N/A	N/A			
Integrated aeronautical information database	AIXM-based AIS Database	P-06	FI/NI	eANP			
	Implementation of IAID		FI/PI/NI	TBD			
Unique identifiers		P-07	N/A	N/A			
Aeronautical information conceptual model		P-08	N/A	N/A			
Electronic AIP		P-11	FI/NI	eANP			
Terrain	Area 1	P-13	FC/NC	eANP			
	Area 4	P-13	FC/PC/NC	eANP			
	Area 2a	P-13	FC/PC/NC	eANP			
	Take-off flight path area	P-13	FC/PC/NC	eANP			
	An area bounded by the lateral extent of the aerodrome obstacle limitation surfaces	P-13	FC/PC/NC	eANP			
Obstacles	Area 1	P-14	FC/NC	eANP			

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
	Area 4	P-14	FC/PC/NC	eANP			
	Area 2a	P-14	FC/PC/NC	eANP			
	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			
	penetrations of the aerodrome obstacle limitation surfaces	P-14	FC/PC/NC	eANP			
Aerodrome mapping		P-15	FI/PI/NI	TBD			
Phase 3							
Aeronautical data exchange		P-09	FI/PI/NI	TBD			
Communication networks		P-10	N/A	N/A			
Aeronautical information briefing		P-12	FI/PI/NI	TBD			
Training		P-16	N/A	N/A			
Agreement with data originators		P-18	FI/PI/NI	eANP			
Interoperability with meteorological products		P-19	N/A	N/A			
Electronic aeronautical charts		P-20	FI/NI	TBD			
Digital NOTAM		P-21	FI/NI	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
2018	AIRAC adherence WGS-84 implementation QMS	P-03 P-05 P-17	
2019	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	
2020	Terrain (Area 2a) Obstacles (Area 2a) Agreement with data originators	P-13 P-14 P-18	
2021+	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 2018-2019 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

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[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 B

CAR REGION AIM IMPLEMENTATION ROADMAP FOR THE TRANSITION FROM AIS TO AIM

	2018				2019				2020				2021				2022				Priority	Remarks
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
AIXM																					**1**	The target is to have 40% by 2019, 80% by 2021 and 100% by 2022
eAIP																					**1**	The target is to have 60% by 2020, 70% by 2021 and 100% by 2022
Terrain A-1																					**2**	The target is to have 50% by 2020, 70% by 2021
Obstacle A-1																					**2**	The target is to have 50% by 2020, 70% by 2021
Terrain A-4																					**2**	The target is to have 40% by 2019, 100% by 2022
Obstacle A-4																					**2**	The target is to have 40% by 2019, 100% by 2022
Terrain A-2a																					**3**	The target is to have 25% by 2021, 40% by 2022
Obstacle A-2a																					**3**	The target is to have 25% by 2021, 40% by 2022
Data Quality Monitoring																					**3**	Target for 2020: To be implemented by 50% of the States that have implemented QMS at least for the segment originator-AIS (excluding the segment AIS-End user)
Data Integrity Monitoring																					**3**	
Agreement with data originators																					**3**	Target for 2020: 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 C

NATIONAL AIM IMPLEMENTATION ROADMAP TEMPLATE

Phase/Step	Step No.	Timeline																		Start	End	Remarks
		2018				2019				2020				2021				2022						
Phase I																						
AIRAC adherence	P-03																					
Monitoring of Annex Differences	P-04																					
WGS-84 implementation	P-05																					
QMS	P-17																					
Phase II																						
Data Quality Monitoring	P-01																					
Data Integrity Monitoring	P-02																					
AIXM	P-06																					
Unique identifiers	P-07																					
Aeronautical information conceptual model	P-08																					
eAIP	P-11																					
Terrain A-1	P-13																					
Obstacle A-1	P-14																					
Terrain A-4	P-13																					
Obstacle A-4	P-14																					
Terrain A-2	P-13																					Please specify implementation of Area 2a, 2b, 2c and/or 2d

APPENDIX C

Phase/Step	Step No.	Timeline																		Start	End	Remarks
		2018				2019				2020				2021				2022						
Obstacle A-2	P-14																					Please specify implementation of Area 2a, 2b, 2c and/or 2d
Terrain A-3	P-13																					
Obstacle A-3	P-14																					
AD Mapping	P-15																					
Phase III																						
Aeronautical data exchange	P-09																					
Communication networks	P-10																					
Aeronautical information briefing	P-12																					
Training	P-16																					
Agreement with data originators	P-18																					
Interoperability with meteorological products	P-19																					
Electronic aeronautical charts	P-20																					
Digital NOTAM	P-21																					

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