



International Civil Aviation Organization
Western and Central African Office

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)

Fourteenth Meeting of the Air Traffic Management/Aeronautical Information Management/Search and Rescue Sub-Group (ATM/AIM/SAR SG/14) (Dakar, Senegal, 11 to 14 May 2015)

Agenda Item 4: Linkage of remaining task of the Sub-Group with Aviation System Block Upgrades Modules (B0) and Regional Performance Objectives

4.2 Linkage of AIM Task with Block 0 Modules & Regional Performance Objectives

(Presented by the Secretariat)

SUMMARY

This paper identifies Linkage of AIM Task with Block 0 Modules & Regional Performance Objectives and updated ATM/AIM/SAR related tasks of the APIRG Infrastructure and Information Management Sub-Group (IIM/SG), including ASBU B0-DATM elements.

Action by the meeting is in paragraph 3.

References: Reports of APIRG/19 and APIRG/EO Meetings

1. Introduction

1.1 As indicated in Decision 19/01 of the APIRG Extraordinary (APIRG/EO) meeting called for the restructuration and reorganization of APIRG. In addition, Decision 19/03 of APIRG/EO called for transitional arrangements to operationalize the reorganization of APIRG, which urged APIRG Secretariat, Sub-Groups and Tasks Forces to continue to implement existing work programmes and carry out necessary actions to facilitate the operationalization of the new organizational structure and working methods of the APIRG. In this regard, the ATM/AIM/SAR/SG is expected to review the AIM related tasks defined for the new Infrastructure and Information Management Sub-Group (IIM/SG).

1.2 This paper therefore, first reviews and updates the AIM related tasks of the IIM/SG including ASBU B0-DATM elements.

2. Discussions

2.1 Review and Update of the AIM related Tasks of the IIM/SG

2.1.1 As described in Decision 19/03 of APIRG/EO meeting established transitional arrangements to enable the operation of the new organization of APIRG, the text of which is reproduced below:

“DECISION EO/03: TRANSITIONAL ARRANGEMENTS TO OPERATIONALIZE THE RE-ORGANIZATION OF APIRG

That the Secretariat and APIRG contributory bodies:

- a) *continue to implement the work programmes as previously endorsed by the Group; and*
- b) *carry out necessary action to facilitate the operationalization of the new organizational structure and working methods of the APIRG, including reformulation of existing activities that continue to have relevance, into the projects management formats, to be presented for endorsement by the next meeting of the Group.”*

2.1.2 Based on the remaining AIM activities as listed in **Appendix-A**, B0-DATM elements in **Appendix-D** and the AFI regional performance objectives in the AIM field given in **Appendices-B and C**, the Secretariat has developed a draft amendment of the AIM related Tasks of the IIM/SG in **Appendix A** to this paper, for review and update by the meeting. In this regard, the meeting may wish to formulate the following draft Decision:

Draft Decision 14/XX: Updating the AIM related Tasks of the IIM/SG

That, the updated information given in Appendix A to this paper, is endorsed as the AIM related Tasks of the Infrastructure and Information Management Sub-Group (IIM/SG).

2.2 Identification and development of AIM related APIRG Projects

2.2.1 The main areas of AIM activities to be included in the projects management formats, have been identified in the updated AFI regional performance framework forms (PFFs) and Air Navigation Reporting Forms (ANRF) in the AIM field given in **Appendices B, C and D**, listed below:

- a) **AFI B0-DATM PFF-1:** Transition from AIS to AIM in the AFI region; and
- b) **AFI B0-DATM PFF-2:** Implementation of WGS-84 and e-TOD in the AFI region.
- c) **AFI B0-DATM ANRF-1** Service improvement through Digital AIM

2.2.2 Based on the above mentioned PFFs and ANRF, the Secretariat developed and is proposing the AIM related APIRG Projects in **Appendix –A to WP/13** for the attention of the ATM/AIM/SAR/SG. In this regard, the meeting may wish to formulate the following draft Decision:

Draft Decision 14/XX: AIM Projects in the AFI region for the period 2015 to 2017

That, the information given in Appendices-A, B, C and D to this paper, is endorsed to formulate (AIM) Projects in the AFI region for the period 2015 to 2017.

3 Action by the Meeting

3.1 The ATM/AIM/SAR-SG is invited to:

- a) Note the information provided in this paper ; and
- b) Decide on the draft Decisions proposed for the Sub-Group’s consideration.

APPENDIX A: PROPOSED AIM TASKS OF THE IIM/SG

TASK	
1)	Ensure that the planning and implementation of AIM in the region, is coherent and compatible with the developments carried out within the framework of the ATM Operational Concept, the Global Air Navigation Plan and the associated ASBU Modules for B0-DATM and SWIM
2)	Monitor the implementation of WGS-84 in the AFI Region until complete implementation of the system by all States and take remedial action, as appropriate.
3)	Foster the standardized production of aeronautical charts in the AFI Region, identifying the obstacles that some States could have in adjusting to the specifications of ICAO Annex 4 and recommend possible course of action to be taken by those States in order to comply with the requirements.
4)	Monitor developments in the ATM/CNS/MET Systems with regard to AIM requirements in the AFI Region and in coordination with AFI ATM/CNS/MET Project Teams by conducting inter alia, meetings of AFI IIM Sub-Group project teams
5)	Foster the implementation of Quality Management System(QMS) within AIS/AIM in the AFI Region, identifying the difficulties that States could have to comply with the specifications of ICAO Annex 15.
6)	Monitor and review technical and operating developments in the area of automation and AIS/AIM databases and ensure a coordinated implementation of Rec. 3/8 c of the 12 th Air Navigation Conference.
7)	Follow up the implementation of PBN in the AFI Region and address PBN-related issues pertaining to the AIS/AIM field, as appropriate by addressing those AIM issues related to the implementation of PBN in the AFI Region
8)	Harmonize, coordinate and support the e-TOD implementation activities on a regional basis and ensure the implementation of all 21 steps of the AIS/AIM Transition Roadmap
9)	Ensure that the planning and implementation of AIM in the region, is coherent and compatible with the developments in adjacent regions, and that it is carried out within the framework of the ATM Operational Concept, the Global Air Navigation Plan and the associated ASBU Modules for DAIM, FF/ICE and SWIM
10)	Monitor the transition from AIS to AIM in the AFI Region and provide necessary assistance and guidance to States, in this respect and examine the status of implementation of the ICAO requirements in the field of AIS/AIM;
11)	Monitor and review the latest developments in the AIS/AIM field and foster the integrated improvement of AIS/AIM through proper training and qualification of the personnel performing technical duties in this aeronautical activity;
12)	Ensure a harmonize transition from RSFTA to AMHS for its complete implementation in the AFI Region as an enabler of the AIS/AIM/SWIM Transition Process

AFI REGIONAL PERFORMANCE OBJECTIVE- **APPENDIX-B**

8. TRANSITION FROM AIS TO AIM				
Benefits				
Environment	<ul style="list-style-type: none"> • reductions in fuel consumption 			
Efficiency	<ul style="list-style-type: none"> • improved planning and management of flights 			
	<ul style="list-style-type: none"> • efficient use of airspace 			
Safety	<ul style="list-style-type: none"> • improved safety 			
KPI	<ul style="list-style-type: none"> • Status of implementation of the AIRAC system in the AFI Region 			
	<ul style="list-style-type: none"> • Status of implementation of QMS in the AFI Region 			
	<ul style="list-style-type: none"> • Status of implementation of AIS Automation in the AFI Region 			
	<ul style="list-style-type: none"> • Status of implementation of the Centralised AIS database in the AFI Region 			
Proposed metrics	<ul style="list-style-type: none"> • Number of States complying with the AIRAC procedures 			
	<ul style="list-style-type: none"> • Number of Posting of AIS information on the ICAO AFI Forum 			
	<ul style="list-style-type: none"> • Number of States having developed and signed service Level Agreements between AIS and data originators 			
	<ul style="list-style-type: none"> • Number of States having organized QMS awareness campaigns and training programmes 			
	<ul style="list-style-type: none"> • Number of States having implemented QMS 			
	<ul style="list-style-type: none"> • Number of States with AIM QMS Certification 			
	<ul style="list-style-type: none"> • Number of States having developed eAIP 			
	<ul style="list-style-type: none"> • Number of States having developed a National Plan for the transition from AIS to AIM 			
	<ul style="list-style-type: none"> • Number of states having implemented the Digital NOTAM 			
Strategy				
Short term (2014-2015) : Medium term (2015 – 2017)				
ATM OC COMPONENTS	TASKS	TIMEFRAME START-END	RESPONSIBILITY	STATUS
AUO, ATM SDM	a) Improve the compliance with the AIRAC system	Ongoing	States & APIRG	In progress
	b) Use of the internet, including the ICAO AFI Forum, for the advance posting of the aeronautical information considered of importance to users;	2015 – 2017	States & ICAO	IISMG to examine progress
	c) Signing of service Level Agreements between AIS and data originators;	2015 – 2017	States	IISMG to examine progress
	d) Foster the implementation of AFI QMS based on the AFI Region Methodology for the implementation of QMS ;	2015 – 2017	ICAO & APIRG & States	IISMG to examine progress
	e) Monitor the implementation of QMS until complete implementation of the requirements by all AFI States;	2015 – 2017	ICAO & APIRG	IISMG to examine progress
	f) Monitor QMS certification & maintenance by the AFI states	2015 –2017	States, APIRG & ICAO	Ongoing
	g) Foster the development of eAIPs by AFI States;	2015 – 2017	States & APIRG	IISMG to examine progress
	h) Monitor the implementation of AIS automation that shall enable digital aeronautical data exchange and use aeronautical information exchange models and data exchange models designed to be globally interoperable.	2015 – 2017	ICAO & APIRG	IISMG to examine progress
	i) Monitor the Implementation of the digital NOTAM	2015 – 2017	ICAO & APIRG & States	IISMG to examine progress
	j) Foster the development of National and/or regional AIS databases;	2015 – 2017	ICAO & APIRG & States	IISMG to examine progress
Linkage to GPIs	GPI-5: performance-based navigation; GPI-11: RNP and RNAV SIDs and STARs; GPI-8: Aeronautical Information			

AFI REGIONAL PERFORMANCE OBJECTIVE

APPENDIX-C

9. REGIONAL/NATIONAL PERFORMANCE OBJECTIVE IMPLEMENTATION OF WGS-84 AND e-TOD				
Benefits				
Environment	<ul style="list-style-type: none"> Supporting benefits described in performance objectives for PBN 			
Efficiency	<ul style="list-style-type: none"> WG8 -84 is a prerequisite for performance-based navigation, benefits described in performance objectives for PBN 			
	<ul style="list-style-type: none"> support approach and departure procedure design and implementation 			
	<ul style="list-style-type: none"> improve aircraft operating limitations analysis 			
	<ul style="list-style-type: none"> support aeronautical chart production and on-board databases 			
Safety	<ul style="list-style-type: none"> improve situational awareness 			
	<ul style="list-style-type: none"> support determination of emergency contingency procedures 			
	<ul style="list-style-type: none"> support technologies such as ground proximity and minimum safe altitude warning systems 			
	<ul style="list-style-type: none"> see benefits described in performance objectives for PBN 			
KPI	<ul style="list-style-type: none"> Status of implementation of WGS-84 in the AFI Region 			
	<ul style="list-style-type: none"> status of implementation of e-TOD in the AFI Region (for Areas 1 & 4) 			
Proposed metrics	<ul style="list-style-type: none"> Number of States having fully implemented WGS-84 			
	<ul style="list-style-type: none"> Number of States having organized e-TOD awareness campaigns and training programmes 			
	<ul style="list-style-type: none"> Number of states having implemented e-TOD for Areas 1 & 4 			
Strategy				
Short term (2014-2015) : Medium term (2015 - 2017)				
ATM OC COMPONENTS	TASKS	TIMEFRAME START-END	RESPONSIBILITY	STATUS
ATM CM	Electronic terrain and obstacle data (e-TOD)			
	a) share experience and resources in the implementation of e-TOD through the establishment of an e-TOD working group	2015 - 2017	APIRG States	e-TOD WG has been established
	b) report requirements and monitor implementation status of e-TOD	2015 - 2017	APIRG States	IIMSG to examine progress
ATM, AUO	c) develop a high level policy for the management of a national e-TOD programme	2008 - 2014	States	
ATM, AUO	d) Provide Terrain and Obstacle data for area 1	2015 – 2017	States	IIMSG to examine progress
	e) Provide Terrain and Obstacle data for area 4 in airports where it is applicable	2015 – 2017	States	IIMSG to examine progress
	f) assessment of Annex 15 requirements related to the provision of e-TOD for area 2 and 3	2015 – 2017	States	IIMSG to examine progress
	g) development of an action plan for the provision of e-TOD for area 2 and 3 as applicable	2015 – 2017	States	IIMSG to examine progress
	h) provide necessary Terrain and Obstacle data for area 2 as applicable	2015 – 2017	States	IIMSG to examine progress
	i) provide necessary Terrain and Obstacle data for area 3	2015 – 2017	States	IIMSG to examine progress
	WGS-84			
	j) establish WGS-84 implementation goals in coordination with the national PBN implementation plan	2015-2017	States	IIMSG to examine progress

	k) report requirements and monitor implementation status of WGS-84	2015- 2017	APIRG States	IIMSG to examine progress
	l) complete WGS-84 implementation	2015-2017	States	IIMSG to examine progress
	m) Monitor the maintenance of WGS-84	2015 - 2017	APIRG States	IIMSG to examine progress
Linkage to GPIs	GPI-5: Performance-based navigation; GPI/9: Situational awareness; GPI/11: RNP and RNAV SIDs and STARs; GPI/18: Aeronautical Information; GPI/20: WGS-84; GPI/21: Navigation systems			

AIR NAVIGATION REPORT FORM (ANRF)

APPENDIX-D

AFI Regional Planning for ASBU Modules

2. REGIONAL /NATIONAL PERFORMANCE OBJECTIVE – B0-30/DATM					
Service Improvement through Digital Aeronautical Information Management					
Performance Improvement Area 2: Global Interoperable Systems and Data					
– Through Globally Interoperable System-Wide Information Management					
3. ASBU B0-30/DATM: Impact on Main Key Performance Areas (KPA)					
	Access & Equity	Capacity	Efficiency	Environment	Safety
Applicable	N	N	Y	Y	Y
4. ASBU B0-30/DATM: Planning Targets and Implementation Progress					
5. Elements			6. Targets and Implementation Progress (Ground and Air)		
1. QMS for AIM			2015-2017		
2. e-TOD implementation			2015-2017		
3. WGS-84 implementation			Implemented		
4. AIXM implementation			2015-2017		
5. e-AIP implementation			2015-2017		
6. Digital NOTAM			2015-2017		
7. ASBU B0-30/DATM: Implementation Challenges					
Elements	Implementation Area				
	Ground System Implementation	Avionics Implementation	Procedures Availability	Operational Approvals	
1. QMS for AIM	Lack of electronic database. Lack of electronic access based on	NIL	Lack of procedures to allow digital AIS data provision to all users i.e. on-board devices, in particular electronic flight	NIL	
2. e-TOD implementation					
3. WGS-84 implementation					

4. AIXM implementation	internet protocol services		bags (EFBs).	
5. e-AIP implementation			Lack of training for AIS/AIM personnel.	
6. Digital NOTAM				
8. ASBU B0-30/DATM: Performance Monitoring and Measurement				
8A. ASBU B0-30/DATM: Implementation				
Elements	Performance Indicators / Supporting Metrics			
1. QMS for AIM	Indicator: Percentage of States QMS certified Supporting metric: Number of States with QMS certification			
2. e-TOD implementation	Indicator: Percentage of States e-TOD implemented Supporting metric: Number of States with e-TOD implemented			
3. WGS-84 implementation	Indicator: Percentage of WGS-84 implemented Supporting metric: Number of States with WGS-84 implemented			
4. AIXM implementation	Indicator: Percentage of States with AXIM implemented Supporting metric: Number of States with AXIM implemented			
5. e-AIP implementation	Indicator: Percentage of States with e-AIP implemented Supporting metric: Number of States with e-AIP implemented			
6. Digital NOTAM	Indicator: Percentage of States with Digital NOTAM implemented Supporting metric: Number of States with Digital NOTAM implemented			
8. ASBU B0-30/DATM: Performance Monitoring and Measurement				
8B. ASBU B0-30/DATM: Performance Monitoring				
Key Performance Areas	Metrics (if not, indicate qualitative benefits)			
Access & Equity	N/A			
Capacity	N/A			
Efficiency	Support Instrument procedure design implementation; Support aeronautical chart production and on-board databases; Support the implementation of PBN			
Environment	Reduced amount of paper for promulgation of information			
Safety	Reduction in the number of possible data inconsistencies Timely dissemination of information			

APPENDIX – E**RELATIONSHIP BETWEEN AFI PFFS AND ASBU BLOCK 0 MODULES SELECTED FOR THE AFI REGION**

	PIA1					PIA2			PIA3						PIA4		
	B0-15 RSEQ	B0-65 APTA	B0-70 WAKE	B0-75 SURF	B0-80 ACDM	B0-25 FICE	B0-30 DATM	B0-105 AMET	B0-10 FRTO	B0-35 NOPS	B0-84 ASUR	B0-86 OPFL	B0-101 ACAS	B0-102 SNET	B0-05 CDO	B0-20 CCO	B0-40 TBO
PFF AFI ATM/01									X			X					
PFFAFI ATM/02									X								X
PFFAFI ATM/03		X							X						X	X	X
PFF AFI ATM/04									X						X	X	X
PFF AFI CNS/01						X		X		X							X
PFFAFI MET/01								X									
PFF AFI MET/02				X				X									
PFFAFI SAR/01																	
PFF AFI AIM/01							X										
PFF AFI AIM/02							X	X									
PFF AFI AGA/01				X	X												

APPENDIX-F**B0-DATM Service Improvement through Digital Aeronautical Information Management**

The initial introduction of digital processing and management of information through, aeronautical information service (AIS)/aeronautical information management (AIM) implementation, use of aeronautical exchange model (AIXM), migration to electronic aeronautical information publication (e-AIP) and better quality and availability of data.

Applicability

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

Benefits

Environment: Reducing the time necessary to promulgate information concerning airspace status will allow for more effective airspace utilization and allow improvements in trajectory management.

Safety: Reduction in the number of possible inconsistencies. Module allows reducing the number of manual entries and ensures consistency among data through automatic data checking based on commonly agreed business rules.

Interoperability: Essential contribution to interoperability.

Cost: Reduced costs in terms of data inputs and checks, paper and post, especially when considering the overall data chain, from originators, through AIS to the end users. The business case for the aeronautical information conceptual model (AIXM) has been conducted in Europe and in the United States and has shown to be positive.

The initial investment necessary for the provision of digital AIS data may be reduced through regional cooperation and it remains low compared with the cost of other ATM systems. The transition from paper products to digital data is a critical pre-requisite for the implementation of any current or future ATM or Air Navigation concept that relies on the accuracy, integrity and timeliness of data.