



International Civil Aviation Organization

MIDANPIRG/21 & RASG-MID/11 Meetings

(Abu Dhabi, UAE, 4 – 8 March 2024)

Agenda Item 5.3: ANS (AIM, PBN, AA-AOP, ATM-SAR, CNS and MET)

UAE AIM DATASET LIVE OPERATION

(Presented by United Arab Emirates)

SUMMARY

This Working Paper describes UAE's experience in implementing the Datasets i.e. AIP and Obstacle Area – 1 Datasets. This plan has faced different challenges that was mitigated and led to a Major Milestone i.e. "UAE AIM Dataset Live Operations".

Action by the meeting is at paragraph 3.

REFERENCE

- ICAO Annex 15 "Aeronautical Information Services" (16th edition) Amendment 41
- 1st edition of Doc. 10066 "Procedures for Air Navigation Services – Aeronautical Information Management" (PANS-AIM)

1. INTRODUCTION

1.1 From the perspective of implementing Annex 15/PANS-AIM requirements, the most challenging activity for a State AIS is the operational implementation of the digital datasets. The challenge resides with different factors and subjects which involves financial and technical issues.

1.2 This paper outlines UAE AIM high-level plan and experience with the main activities to set up the stage to go operational with the implementation of ICAO Digital Datasets as part of the strategic GCAA plan for enhancing AIM capabilities, it also includes the required actions for successful dataset implementation.

1.3 Enhancing AIM system capabilities are improvement stages and the natural results of UAE AIM continuous services development process. These have created a solid platform of functionalities allowing better quality-controlled and standardized interaction with other internal and external (third party) stakeholder systems.

1.4 The main driver for the planned approach employed by the UAE and described in this paper, is the regulatory compliance and alignment of UAE AIM with ICAO SARPs (Annex 15 and PANS-AIM) as well as with the revised MID Region AIM Implementation Roadmap.

2. DISCUSSION

2.1 To a large extent, ICAO Digital Datasets are Recommended Practices (“should”) i.e. their implementation is left at the discretion of the Member States.

2.2 By analyzing the DAIM Thread based on the Priority level as well as considering the ICAO datasets “shall” vs. “should” requirements, subsequent consideration for UAE AIM strategic approach was deemed necessary as follows:

- UAE AIP Datasets (Block B1/2);
- Terrain Area 1 & 4 and complete Area 2 (Block B1/3);
- Obstacles Area 1 & 4 and complete Area 2 (Block B1/4);

2.2.1 According to the MID Air Navigation Strategy (Doc002), in particular, the MID region DAIM Thread/Elements prioritization, AIP Dataset is categorized as Priority 2. However, UAE AIM has decided to proceed with the implementation activities for UAE AIP dataset by considering a strong pilot-case due to (1) existing AIM SWIM System and (2) availability of the required UAE AIP aeronautical data in AIXM format.

2.2.2 Additionally, Obstacle Dataset (eTOD) Area 1 is being provided as per the ICAO requirements.

2.3 The remaining Digital Datasets i.e. AMDB (B1/5), IFPD (B1/6) as well as NOTAM Improvements (B1/7) is to be considered for a later stages.

2.4 Decision Matrix (High level Plan) for Datasets Provisions:

UAE AIP Dataset Plan			
Section	Elements	Tech Specs/ Implementation Plan	Description
How	Implementation Scenarios	Implementation Plan	<ul style="list-style-type: none"> • In-house/stand-alone built XSLT application which will filter the required features from the entire AIM Database to the selected Dataset; • Prepare the Dataset as data mart (new AIM product); • Integrated within AIM SWIM service;
	Content	UAE AIP Dataset Technical Specification	<ul style="list-style-type: none"> • Resolve PANS-AIM document inconsistencies i.e. filling the gaps between Doc 10066 – 5.2.1.1.3 and 5.3.3.1 • Mapping PANS-AIM to AIXM 5.1 database i.e. every field of AIP Sections to be mapped with AIP Data catalog requirements which resolved the validation errors. • Implementing the Technical Specs provided by Doc 10066 for mapping the metadata.
	Completeness	UAE AIP Dataset Technical	<ul style="list-style-type: none"> • Full UAE AIP dataset, not subsets.

		Specification	
	Delivery mechanism (SWIM)	UAE AIP Dataset Technical Specification	<ul style="list-style-type: none"> AIP & Obstacle Area 1 Dataset is posted as AIM SWIM service; GCAA Registration Data sharing form is created for SWIM Registry which specifies requirements vs operational features.
Milestone Completed	Activity	Status	Date
	Implementation Plan	Completed	Q1-2021
	UAE AIP Dataset Technical Specification	Completed	Q2-2021
	AIP Dataset Sample	Completed	Q4-2021
	AIXM Data Cleanup and filling gaps	Completed	Q2-2023
	Testing Datasets on SWIM	Completed	Q4-2023
	Go Live	Completed	Q4-2023

Transition Plan

Section	Elements	Timeframe	Description
Transition	Time	2024 – Q2 2026	<ul style="list-style-type: none"> Transition period for provision of eAIP <u>in parallel</u> with AIP Datasets; The AIP content removal to be done in close coordination with the users; Co-existing time of eAIP format with Datasets files will be decided based on an assessment (national survey & questionnaire); Expected transition period is estimated to 5 years, as per the Regional Plan for Digital Data Sets and users readiness which shall assure “no one is left behind”.
Publication	AIC	TBD	<ul style="list-style-type: none"> UAE AIM alignment with ICAO SARPS; Duration of the “grace period” (AIP Datasets & UAE AIP);
	GEN 3.1.6 Notification	TBD	<ul style="list-style-type: none"> Brief description in UAE AIP following PANS-AIM, Appendix 2;

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note UAE’s experience & information in the provided working paper; and
- b) task the DDI Ad-hoc WG to address the possible challenges and to propose a unified solutions for the region.

possible challenges	Cross border features ownership will challenging;
	Common route update will raise this issues needs to be resolved;
	Having common International Routes will lead on having Multiple Universally Unique Identifier which may be an issue while searching the Route by the Users.
	Regular Minimum Security Baseline needs to update to avoid cyber-attacks;
	Automated AIXM 5.1 Business Rules needs to be defined and unified:
	Automated system needs to be created to validate AIP Dataset vs AIP Amendment which will be additional taken step towards quality controlled Data;
	Traceability and accountability specification needs to be defined in case of manual modification of AIP Dataset;
	For AIP Supplements more than three months for text and graphics what solution needs to adopted;
	For SWIM Interfaces (PUB/SUB and Request/Reply) for updating in AIM Database new specification needs to be defined;
	For users who does not have AIM Database or AIXM Compliant applications, how to share data with them;
How to adapt future AIXM 5.2 release and its migration;	

- c) Consider UAE AIP Implementation plan activities as specified below.

Key Areas	Strategic Achievements
Technical	In-house developed tool, no dependency on supplier;
	All-inclusive mapping PANS-AIM to UAE AIP to be adapted by all GCC States;
	Resolving gaps/inconsistencies in PANS-AIM i.e. AIP sections versus minimum data fields;
	Content: Relevant AIP Amendment + AIP SUPP (dataset series);
	Full AIP dataset i.e. no subsets;
	Metadata at dataset level;
	Data validation via automated methods
Inter-operability	AIXM 5.1 interchange model;
	Timeslice: SNAPSHOT(long duration AIP SUPP);
	SWIM Service: Overview and Registry;
Financial	No direct costs;
	Indirect savings for investment on external project;
	Technical solution i.e. XSLT Program may be “exported” Regionally to assist states in filtering the required features;