International Civil Aviation Organization

ELEVENTH MEETING OF THE MIDANPIRG AIM SUB-GROUP (AIM SG/11)

(Amman, Jordan, 22 – 23 January 2025)

Agenda Item 6: MID Regional Implementation Plan for Digital Datasets

UAE AIP DIGITAL DATASET TECHNICAL SPECIFICATION

(Presented by United Arab Emirates)

SUMMARY

This working paper presents the UAE AIP Digital Dataset Technical Specification and proposes its adoption by ICAO MID to enhance digital dataset interoperability. The specification has been developed to align with global standards. By adopting this framework, ICAO MID can facilitate improved data exchange, standardization, and operational efficiency within the region.

REFERENCE

- ICAO Annex 15 "Aeronautical Information Services" (16th edition) Amendment 43
- 1st edition of Doc. 10066 "Procedures for Air Navigation Services – Aeronautical Information Management" (PANS-AIM)

1. INTRODUCTION

1.1 Implementing Annex 15 and PANS-AIM requirements poses significant challenges for State Aeronautical Information Services (AIS), particularly in the operational rollout of Digital Datasets. This complexity arises from various financial and technical factors that must be addressed to ensure a successful transition to digital operations.

1.2 This paper provides an overview of the UAE AIP Digital Dataset Technical Specification, detailing each section and its necessity for operational implementation of ICAO AIP Digital Datasets. This initiative aligns with the strategic plan of the UAE General Civil Aviation Authority (GCAA) to enhance Aeronautical Information Management (AIM) capabilities. By adopting these specifications, the UAE aims to support the transition to advanced AIP Digital Dataset implementation, ensuring compliance with international standards and fostering improved data accuracy, accessibility, and operational efficiency.

2. DISCUSSION

2.1 The UAE AIP Digital Dataset Technical Specification is designed to provide a structured framework for managing and sharing aeronautical information in a digital format. These datasets are organized into four primary sections, each addressing specific aspects of digital dataset management and interoperability. While these practices serve as a guideline for ensuring consistency and alignment with international standards, their adoption and implementation remain at the discretion

of individual Member States. The proposed approach allows AIS of Member States the flexibility to tailor the implementation of these practices based on their unique operational requirements and strategic objectives, encouraging both compliance and adaptability in aeronautical information management.

2.2 The first section of the document serves as an introduction, providing an overview of various AIP sections essential for the creation of AIP Digital Dataset. It addresses and resolves any possible inconsistencies that may be found in the ICAO guidance document, specifically ICAO Doc 10066 PANS-AIM, paragraph 5.2.1.1.3 and paragraph 5.3.3.1.1. By aligning the content with these guidelines, the introductory section establishes a solid foundation for the development and implementation of standardized digital datasets, ensuring greater coherence and alignment with ICAO's objectives for enhancing global aeronautical information management.

2.3 Also, it introduces additional AIP sections, such as AIP AD 1.3 (Index to Aerodromes/Heliports), AIP AD 2.12 (Runway Physical Characteristics), Aeronautical Ground Lights, En-route Holding, and others. These additions are specifically designed to address AIXM validation errors caused by missing reference data and to mitigate interoperability challenges within AIXM datasets. By including these additional sections, the document ensures a more comprehensive and accurate representation of aeronautical information, enhancing the consistency, reliability, and functionality of AIP digital datasets in line with ICAO & AIXM 5.1.1 standards.

2.4 The second section of the document provides a comprehensive mapping between PANS-AIM, the AIP Digital Dataset, and the AIXM 5.1.1 model, presented in a detailed tabular format. It systematically aligns all relevant data item properties and sub-properties for an AIP dataset with corresponding features and attributes in the AIXM 5.1.1 model. This structured approach addresses each AIP section, detailing PANS-AIM attributes, their AIXM 5.1.1 feature mappings, associated attributes, and required reference features to resolve validation errors.

2.5 The third section of the document provides a detailed description of the metadata requirements which are essential for the creation and provision of the AIP Digital Dataset. It outlines the specific metadata elements needed for accurate dataset formation, including data types, formats, and associated values. Each metadata item is explained in detail, accompanied by practical examples to illustrate their application. This section ensures that the metadata used in the AIP Digital Datasets is consistent, complete, and compliant with international standards, thereby facilitating proper data management, interoperability, and validation across different aeronautical information systems.

2.6 The final section of the document outlines the stages of development that Member States can follow to ensure the smooth and efficient creation of AIP Digital Datasets and operational rollout.

2.7 Based on UAE AIP Digital Dataset implementation experience following issues should be addressed before hosting the AIP Digital Dataset live:

i. Ensure that all data recommended in the UAE AIP Digital Dataset Technical Specification, relevant to the Member State AIP, is fully encoded in AIXM 5.1.1.

ii. Verify the encoded AIXM 5.1.1 data using automated tools and apply different quality control processes to ensure data accuracy and consistency.

iii. Validate the AIP Digital Dataset against the AIXM 5.1.1 schema to confirm compliance.

iv. Conduct data exchange tests with Member States, Data Originators and Data Houses that are AIXM compliant to ensure smooth interoperability.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note UAE's experience in the provided working paper; and

b) consider the adoption of UAE AIP Datasets technical specifications as an implementation guidance which can be used as a baseline for ICAO Member States.

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