International Civil Aviation Organization

Twenty-First Meeting of the ICAO Aeronautical Information Services – Aeronautical Information Management Implementation Task Force (AAITF/21)

Bangkok, Thailand, 19 – 22 May 2026

Agenda Item 4: AIS-AIM Updates

MODERNIZATION OF AIM SYSTEM IN INDONESIA TO MEET ICAO APAC AIM PERFORMANCE EXPECTATION PHASE 2

(Presented by Indonesia)

SUMMARY

This paper presents information regarding comprehensive strategy to modernize the AIM system through the implementation of the Automated Aeronautical Data Processing System (AADPS) Project in Indonesia. It explores the transition from traditional product-centric AIS to a modern, data-centric AIM environment, alignment with global ICAO mandates.

1. INTRODUCTION

1.1 Indonesia has developed a comprehensive strategy to modernize the AIM system through the implementation of the Automated Aeronautical Data Processing System (AADPS) Project. This project forms an integral part of the national strategy to meet ICAO APAC AIM Performance Expectation Phase 2 and supports the achievement of safe, efficient, and sustainable air transport development goals. This project also emerged from the urgent need to address various challenges in the conventional AIS system that has been operating for several decades.

2. DISCUSSION

Current AIS Operation Challenges

2.1 Several major challenges that form the background of the AADPS project development include:

a) Dominant Manual Processes

The existing AIS system still relies heavily on manual processes in aeronautical data management, making it vulnerable to human error and inefficient

b) Data Fragmentation

Aeronautical data is scattered across various work units without adequate integration, causing data inconsistencies and duplication

c) Capacity Limitations

The existing system has limitations in accommodating the growth of data volume and increasingly complex information demands

d) Compliance with Standards

he existing system does not fully meet the latest standards and recommendations from ICAO regarding AIM

e) Data Collection

Aeronautical data is collected through physical forms sent via post, email, or facsimile

f) Validation Process

Data validation is performed manually with cross-checks against reference documents.

Strategic Objective of The Project

2.2 The AADPS project has been designed with a clear set of strategic objectives that guide its implementation and evaluation. These objectives align with both the vision and mission of AirNav Indonesia as Indonesia's air navigation service provider. These objectives also form a comprehensive framework for transforming Indonesia's aeronautical information management capabilities while ensuring alignment with international standards and regional cooperation initiatives. These objectives include:

a) Modernization of Aeronautical Information Services

Transforming the paradigm from conventional AIS service provision to a modern, integrated, and data-based AIM system.

b) Data Quality Enhancement

Ensuring aeronautical data is accurate, complete, timely, and consistent through a standardized data management system.

c) Operational Efficiency

Improving business process efficiency through automation and digitalization of aeronautical data management workflows.

d) Compliance with International Standards

Meeting ICAO standards and recommended practices (SARPs) related to AIM implementation

e) Regional Interoperability

Preparing a system capable of interoperating with systems of other countries in the Asia-Pacific region.

Scope of The AIM System

2.3 The AADPS project encompasses a comprehensive implementation scope that covers the entire lifecycle of aeronautical data management, from initial collection through final distribution to end users. The project scope has been carefully designed to address all critical aspects of AIM implementation while ensuring compatibility with existing systems and organizational capabilities. System architecture and workflow are depicted on **Figure 1**. The system scope can be grouped into five main modules:

a) Data Collection Module

b) Data Center Management and Production Module

c) NOTAM Management Module

d) Data Distribution Module

e) System Management Module

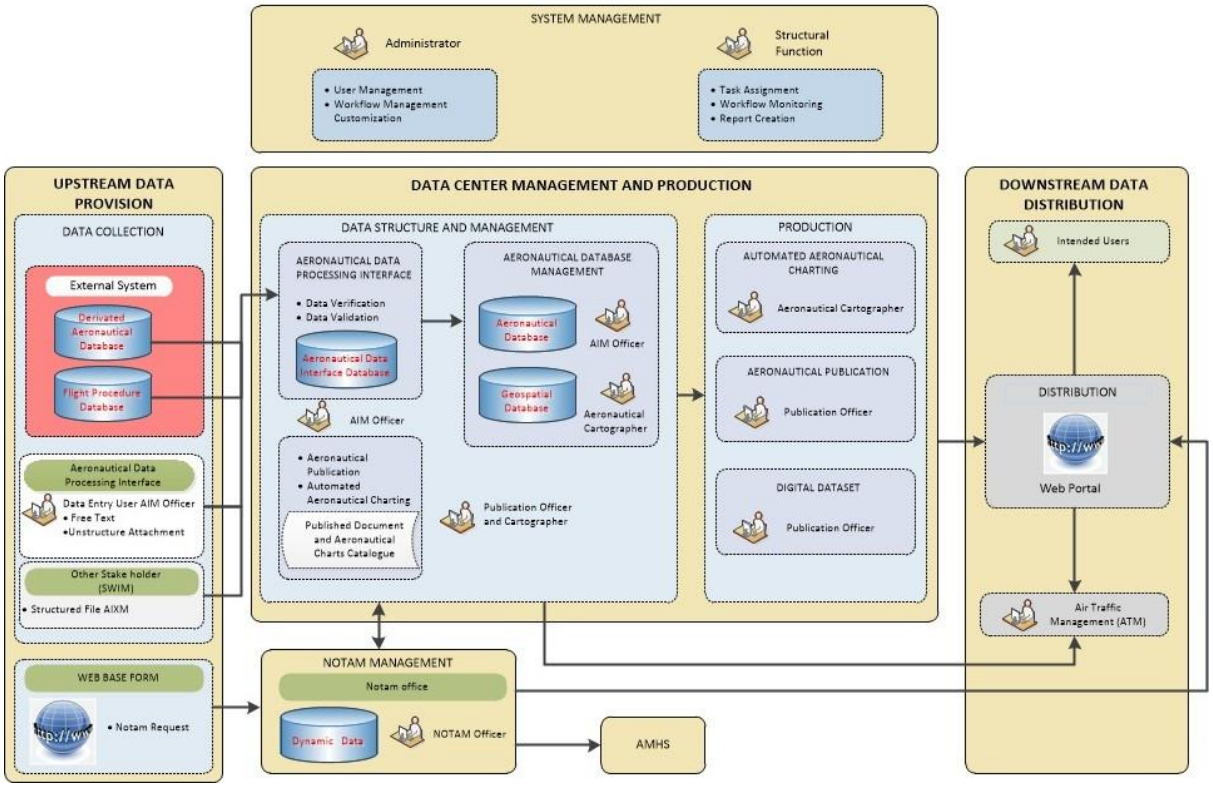

Figure 1: System architecture and workflow

Core Capabilities of The AIM System

2.4 Based on the technical specifications and requirements documents which have been developed, the system have a wide range of capabilities that transform how aeronautical data is managed, processed, and distributed. Core capabilities of the system such as:

a) The end-to-end digital workflow management capability represents the cornerstone of AADPS functionality, providing comprehensive automation and control over the entire lifecycle of aeronautical data. The system supports various workflows tailored to different types of aeronautical data including AIP data, NOTAM, and temporary changes, each designed with appropriate validation steps, approval processes, and distribution mechanisms. These workflows implement standardized procedures that ensure compliance with ICAO requirements while accommodating the unique characteristics of different data types and operational requirements.

b) Advanced data validation and quality assurance capabilities This engine applies comprehensive validation rules that check aeronautical data for format compliance according to ICAO standards, spatial integrity for aeronautical features, temporal consistency across different data elements, and cross-reference validation between related data elements. This comprehensive validation approach significantly reduces the potential for human error while ensuring that published aeronautical information meets the highest standards of accuracy and reliability.

c) The integrated AIP production and management capabilities. This capability includes digital AIP data editing with version control that tracks all changes to aeronautical information and maintains a complete history of modifications. The system implements automated generation of eAIP from structured data, eliminating the need for manual creation and ensuring consistency between textual and graphical information. Web-based e-AIP publishing with advanced search capabilities enhances accessibility and usability, enabling users to quickly locate and retrieve the information they need for flight planning and operational activities.

d) Automated NOTAM validation and quality checking apply comprehensive rules to identify potential errors, inconsistencies, or conflicts before NOTAM distribution, significantly improving the quality of temporary aeronautical information.

e) Collaboration and stakeholder management capabilities. The system provides secure portals for data providers to submit aeronautical information with guided forms, validation checks, and submission tracking that improve data quality while reducing processing times. Role-based access control for different user categories ensures that personnel have appropriate access to information and system functions based on their responsibilities and requirements.

Project Milestones

2.5 The transition to AADPS project will be executed through a carefully planned timeline that balances the need for rapid modernization with the requirement for stable operations and effective change management

Phase	Timeline	Key Activities
System Planning and Procurement	Q4 2022 – Q4 2024	- Compose User Requirement Specification - Vendor selection process and contract signing
Deployment and Testing	Q4 2024 – Q2 2026	- Vendor delivers and configures system components - Technical and operation test
Data Migration	Q2 2026 – Q3 2026	- Static and Basic data for Notam - AIP and Aeronautical Chart - Issued Notam message
Training and Familiarization	Q1 2026 – Q2 2026	- Factory training - Site training - Familiarization for all operator
Transition	Q2 2026 – Q4 2026	- Dry and Wet shadow operation for NOF - 3 AIRAC cycle transition for static data operation and AIP production
Full implementation	Q1 2027	- eAIP generate from database, first edition release - AIP datasets for specific sub-set - Aerodrome Mapping data (pilot project version)

Conclusion

2.6 The modernization of Indonesia's AIM system through the implementation of the AADPS project represents a strategic step of great importance in meeting ICAO APAC AIM Performance Expectation Phase 2. This implementation is not merely about adopting new technology but about fundamental change in how aeronautical information is managed to support the safety, security, and efficiency of flight operations. It brings fundamental transformation from manual/semi-automated processes to fully digital workflows, including implementation of e-AIP, digital NOTAM, digital data sets and standardized AIM data format.

2.7 Indonesia recognizes that successful AIM implementation cannot be conducted alone but requires strong collaboration among regulator, national stakeholders and other countries in the Asia-Pacific region as well as support from ICAO.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper.

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