International Civil Aviation Organization

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Bangkok, Thailand, 24 to 26 November 2025

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.2: **ATM**

MODERNIZATION OF AIR NAVIGATION INFRASTRUCTURE IN INDONESIA

(Presented by Indonesia)

SUMMARY

This paper presents the comprehensive modernisation initiatives currently undertaken by Indonesia regarding its air navigation infrastructure. The update covers the installation of the new ATM Automation System (ATMAS) at the Jakarta Air Traffic Service Centre (JATSC), the implementation of a national Air Traffic Flow Management (ATFM) system, the enhancement of Aeronautical Message Handling Systems (AMHS) and Aeronautical Information Management (AIM) systems. These initiatives aim to improve operational efficiency, connectivity, and data exchange capabilities within the Jakarta and Ujung Pandang FIRs and to further strengthen cross-border operations with neighbouring States.

Strategic Objectives:

A:: ***Safety*** — Enhance global civil aviation safety

B: ***Air Navigation Capacity and Efficiency*** — Increase the capacity and improve the efficiency of the global aviation system

E: ***Environmental Protection*** — Minimize the adverse environment effects of civil aviation activities.

1. INTRODUCTION

1.1 Indonesia is currently undertaking significant upgrades to its air navigation infrastructure to meet the growing demand for air travel and to align with the technological blocks of the ICAO Global Air Navigation Plan (GANP), as well as the strategic objectives outlined in the Asia Pacific Seamless Air Navigation Services (ANS) Plan.

1.2 This paper provides a progress update on four critical system implementations: the new ATM Automation System (ATMAS) at the Jakarta Air Traffic Service Centre (JATSC), the deployment of a centralised Air Traffic Flow Management (ATFM) System, and the upgrading of the Aeronautical Message Handling System (AMHS) and AIM System.

2. DISCUSSION

New ATM Automation System (ATMAS) at JATSC

2.1 Indonesia is currently in the process of installing a new ATM Automation System (ATMAS) at the Jakarta Air Traffic Service Centre (JATSC). This state-of-the-art system is designed to enhance surveillance and communication capabilities significantly.

2.2 A key feature of the new ATMAS is its capability to support Automatic Dependent Surveillance-Contract (ADS-C) and Controller-Pilot Data Link Communication (CPDLC), ensuring robust coverage and communication over oceanic and remote areas. Furthermore, to streamline coordination between air traffic service units, the system incorporates ATS Interfacility Data Communication (AIDC) based on the latest Interface Control Document (ICD) Version 3.

2.3 The system supports a comprehensive suite of AIDC message types to automate coordination between units, covering all essential message exchanges required for seamless operational communication.

2.4 To manage traffic flow in tactical situations effectively, the ATMAS features an integrated Arrival Management (AMAN) and Departure Management (DMAN) capability. Additionally, the system is future-proofed with the ability to process current ATS messages via AMHS and is prepared for the future Flight Information Exchange Model (FIXM).

Air Traffic Flow Management (ATFM) System

2.5 Parallel to the ATMAS upgrade, Indonesia is installing a dedicated Air Traffic Flow Management (ATFM) System. This system is designed to manage traffic demand and capacity during the strategic and pre-tactical phases, with a specific focus on Indonesia's major airports: Soekarno-Hatta (Jakarta), Ngurah Rai (Denpasar), Juanda (Surabaya) and Sultan Hasanuddin (Makassar).

2.6 The ATFM system will function as a core component of the Indonesia Network Management Centre (INMC), supporting flow management operations for both the Jakarta and Ujung Pandang FIRs. It is designed to generate daily traffic flow plans and apply necessary flow management measures, including programs to regulate departure times, manage spacing between aircraft, adjust routing, and implement ground-based traffic controls.

2.7 Integration is a priority for this project; the ATFM system will be integrated with the new ATMAS at JATSC and the existing ATMAS at the Makassar Air Traffic Service Center (MATSC). It ensures the distribution of ATFM information to stakeholders via website, email, and AMHS. Looking ahead, the system is designed to integrate with Flight and Flow Information for a Collaborative Environment (FF-ICE) services.

Robust Aeronautical Message Handling System (AMHS)

2.8 To ensure seamless data exchange, a more robust and reliable AMHS is being implemented to cover both the Jakarta and Ujung Pandang FIRs. The primary purpose is to facilitate the exchange of aeronautical messages, including standard ATS messages, AIDC messages and other messages.

2.9 Furthermore, this system supports the exchange of the ICAO Weather Information Exchange Model (IWXXM), marking a significant step in Indonesia's preparation for the transition to System Wide Information Management (SWIM).

Transition to Aeronautical Information Management (AIM)

2.10 Finally, Indonesia is advancing the transition from Aeronautical Information Service (AIS) to Aeronautical Information Management (AIM). The new AIM system focuses on the provision of quality-assured aeronautical data and information. The system facilitates the management and distribution of digital datasets, including digital AIP, terrain data, aerodrome mapping data, and digital instrument flight procedure datasets.

2.11 The system supports current operational requirements by distributing data through AMHS and is ready for the future exchange of data using the Aeronautical Information Exchange Model (AIXM).

Implementation

2.12 The overall implementation of these systems is progressing according to plan. The completion of installation and system integration is scheduled for Q1 2026. This will be followed by operational readiness and transition activities in Q2 2026. And as the ultimate goal, full operational capability of the new JATSC is targeted for Q3 2026, marking the complete transition to the modernised air navigation service environment.

Conclusion

2.13 Through the implementation of these systems, Indonesia affirms its commitment to supporting the ICAO Global Air Navigation Plan (GANP). These modernisation efforts are not only aimed at increasing capacity and safety but also at fostering a more sustainable aviation operation by reducing delays and optimising flight trajectories.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to note the information contained in this paper.

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