



ICAO

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Agenda Item 3: Implementation of air navigation goals, targets and indicators, including the priorities set in the Regional Air Navigation Plan

ZAMBIA'S PROGRESS IN TRANSITIONING FROM AIS TO AIM

(Presented by Zambia.)

SUMMARY	
This information paper describes Zambia's progress in transitioning from Aeronautical Information Services (AIS) toward Aeronautical Information Management (AIM) which supports the International Civil Aviation Organization (ICAO) Roadmap for the transition from AIS to AIM.	
Strategic Objectives	<ul style="list-style-type: none"> A. Safety – Enhance global civil aviation safety B. Air Navigation Capacity and Safety
References	<ul style="list-style-type: none"> ICAO Doc 8126, Aeronautical Information Services Manual ICAO Annex 15 — Aeronautical Information ICAO Doc 9750, Global Air Navigation Plan ICAO Doc 9854, Global Air Traffic Management Operational Concept ICAO Roadmap for Transition from AIS to AIM

1 INTRODUCTION

- 1.1. To achieve the ICAO Global Air Traffic Management Concept, which notes the role and significance of aeronautical information in support of the future air traffic management (ATM) system, the traditional product-centric Aeronautical Information Services (AIS) of today will evolve into the enlarged scope of datacentric Aeronautical Information Management (AIM) to satisfy the requirements and needs of the aviation industry as described by the “*ICAO Roadmap for the Transition from AIS to AIM*”.
- 1.2. The ICAO Roadmap envisages the transition towards AIM in three phases:
 - (a) Phase 1 – Consolidation
 - (b) Phase 2 – Going Digital
 - (c) Phase 3 – Information Management
- 1.3. This change towards AIM needs, amongst others, the implementation of new technology and processes, a solid knowledge of aviation in general and of the principles of AIS / AIM in particular,

and an understanding of the significance of aeronautical data used in aircraft cockpits and in the air traffic management system as a whole.

- 1.4. Zambia is therefore dedicated through Zambia Airport Corporation Limited to ensure the full transition from AIS to AIM taking into consideration the three phases of the transition.
- 1.5. Zambia Airports Corporation Limited (ZACL) is a Limited Company which is wholly owned by the Government of the Republic of Zambia. It was established in 1989 through an Act of Parliament as a service provider for both airport and air navigation services in Zambia. The Corporation is mandated to enhance safety and improve standards of service provision at all international airports and Air Navigation in the Zambian air space.
- 1.6. ZACL embarked on a project to transition from AIS to AIM as per the National and ICAO requirements to transition to AIM.

2 DISCUSSION

- 2.1 In response to the ICAO requirements and as guided by the Global Air Navigation Plan (ICAO Doc 9750), ZACL implemented the first phase of the AIMS implementation plan in 2012, by acquiring an ATS Message Handling System (AMHS) and Aeronautical Information Management (AIM) system from IDS North America (IDSNA). The introduction of AIMS/AMHS system by ZACL came with the following benefits:
 - (a) Realisation of AMHS compliance for seamless interoperability with existing and future ATM systems.
 - (b) Full AIS management for NOTAM, MET, FPL 2012 and Pre-flight Information Bulletin (PIB)
 - (c) Establishment of a central database based on the AIXM 5.1 conceptual model that is fully integrated for current and future AIM applications.
- 2.2 The AIMS/AMHS project established an AIM platform which enabled ZACL to partially implement the ICAO's strategic plan in compliance with the AIS to AIM transition roadmap as follows:
 - (a) AIS Conceptual Model (AICM/AIXM)
 - (b) Unique identifiers
 - (c) Integrated database
 - (d) Communication Networks
 - (e) Aeronautical Information Briefing
 - (f) MET/AIM interoperability
 - (g) Aeronautical Data Exchange
 - (h) Training (ongoing)
- 2.3 In 2018 ZACL re-contracted the services of IDS AIRNAV for a complete AIM solution which complimented the upgrade of the AIMS/AMHS. The following were implemented:
 - (a) Instrument Flight Procedures (IFPs) for four (4) airports;
 - (b) WGS84 survey services for nine (09) airports; and
 - (c) Production of the Aeronautical Information Publication (AIP) in paper and electronic versions.
- 2.4 This solution was a continuation of the AIS to AIM Implementation Strategy and makes full use of the existing Aeronautical Central Database (AIXM 5.1), which was implemented in line with CRONOS

version 6.7.0.94 connected to all local stations and Johannesburg via the VSAT network. A secondary AIM system was installed at Simon Mwansa Kapwepwe International Airport (SMKIA) to act as backup to the main AIM System at Kenneth Kaunda International Airport (KKIA).

- 2.5 Due to the successful transition to AIM in the second phase of the project, the following activities were achieved in support of future System Wide Information Management (SWIM) and other AIM regional goals:
- (a) Electronic Aeronautical charts (work in progress)
 - (b) Electronic AIP
 - (c) Aerodrome Mapping
 - (d) Obstacles
 - (e) Terrain
 - (f) Agreement with Data Originators
 - (g) Data Integrity Monitoring
 - (h) Data Quality Monitoring
 - (i) Quality Management System (work in progress)
 - (j) Training (ongoing)
 - (k) Digital NOTAM (work in progress)
 - (l) WGS84
- 2.6 The status of AIS to AIM implementation is at 98%. Most importantly AIMS/AMHS upgrade project when effectively implemented will ensure interoperability with all ATM Systems. The AIMS/AMHS upgrade project underpins ZACL's commitment under the ICAO Aviation System Upgrade (ASBU) and will remove the long-standing deficiencies to improve aviation. The fully upgraded system will include seamless integration between the dynamic and static AIM processes while combining the essential data originator/user capabilities for design, verification, and validation of procedures and airspaces in accordance with regional and international PBN objectives.

3 CHALLENGES

- (a) Although the AMHS was implemented, we are still using AFTN addresses because other states have not implemented AMHS;
- (b) Lack of aeronautical data exchange with other States; and
- (c) Integration with Johannesburg Message Transfer Agent (MTA) during the transition.

4 ACTION BY THE MEETING

- 4.1 The meeting is invited to:
- (a) note the information provided in this paper;
 - (b) encourage member states to upgrade their system to AIXM 5.1;
 - (c) take note of the implementation status of AIS to AIM transition including challenges encountered during implementation and the opportunities for collaboration.