

**57th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGION**

*Incheon, Republic of Korea
4 – 8 July 2022*

Agenda Item 4: Air Navigation

**TRANSITIONING FROM AERONAUTICAL INFORMATION
SERVICE (AIS) TO AERONAUTICAL INFORMATION
MANAGEMENT (AIM) SYSTEM IN PCAA**

(Presented by the Islamic Republic of Pakistan)

SUMMARY

This information paper is about Pakistan initiative on transformation from AIS to AIM.

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| a: AIM Implementation | - <i>Pakistan Civil Aviation Authority (PCAA) is in transition from AIS to AIM for flight safety and efficiency in accordance with the ICAO APAC Regional Plan for Collaborative AIM.</i> |
| b: AIXM 5.1 Implementation | - <i>Digital Database of PCAA is compliant with System Wide Information Management (SWIM) which utilizes Aeronautical Information Exchange Model (AIXM) version 5.1.</i> |
| c: e AIP | - <i>Availability of complete AIP Pakistan digitally derived on PCAA's website along with all associated products such as valid AIP Supplements and AIC's etc.</i> |
| d: e TOD Application & AMHS up-gradation | - <i>PCAA has procured e TOD Application of M/s IDS for digital Chart productions AMHS in order to fulfil all the requirements of AIS to AIM transition.</i> |

TRANSITIONING FROM AERONAUTICAL INFORMATION SERVICE (AIS) TO AERONAUTICAL INFORMATION MANAGEMENT (AIM) SYSTEM IN PCAA

1. INTRODUCTION

- 1.1 Aeronautical Information Service is a core element of Air Navigation Services to ensure the safety, regularity, economy and efficiency of International air navigation. Although the flow of correct information was always necessary, the importance of aeronautical information has enhanced significantly with the implementation of Area Navigation (RNAV), Performance Based Navigation (PBN), Airborne Computer-Based Navigation Systems and Data Link Systems. Corrupted or erroneous aeronautical information can potentially effect the safety of air navigation, leading to serious consequences.
- 1.2 Pakistan Civil Aviation Authority, has acquired AIM System to meet the Standards and Recommended Practices of ICAO Annex-4, Annex-15, and to follow the Roadmap of transition from AIS to AIM. PCAA is actively working to implement new Performance-Based Communication Navigation & Surveillance strategy to meet the present and future growth of Air Traffic in the Asia Pacific Region.
- 1.3 The New AIM system acquired by PCAA uses AIXM 5.1 (XML Schema) platform for the digital database which provides the basis for the interoperability of AIP data among different users such as ANSP, Com. Ops, MET, Airlines, Chart Producing Agencies & Data Coders and Training Institutes.
- 1.4 ICAO's initial AIS-AIM roadmap has defined 21 elements which were to be implemented by each contracting State in accordance with the given timeline for harmonized achievement of GANP strategic objectives. One of the elements of roadmap was P-11 (Electronic AIP i.e. eAIP) to be implemented in letter and spirit. This element is transformed into Item No. 15 of Regional AIM Capability Phase II of APAC Regional Plan for Collaborative AIM.
- 1.5 Pakistan has prepared its 7th edition of AIP, which is derived from Aero DB (Digital Database of AIM System). It is available in electronic form on the PCAA website (https://caapakistan.com.pk/AIS/AIS_AMDT.aspx), hard copy and/or CD form. After continuous efforts, Copyright Protection has been successfully applied to AIP Pakistan (both Hard & Soft versions) in line with ICAO recommendation of Annex 15 (AIS).
- 1.6 Moreover, digital Aeronautical Charts of ICAO Annex 14 and 15 surfaces are being analyzed and produced on GIS platforms using e TOD system. The referred digital charts with obstacle data are available on PCAA website.

2. DISCUSSION

- 2.1 PCAA has made significant progress in the transition towards AIM guided by the ICAO APAC Regional Plan for Collaborative AIM. We have acquired Aeronautical Information Management (AIM) System from M/s IDS AirNav Italy. The Data Migration for the development of aeronautical database has been completed and all the textual Aeronautical Data has been transformed into AIM Database. The Static Data of AIS is migrated to AIMS in a manner that will ensure the availability of aeronautical information to all aviation stakeholders (ANSP's, Airlines, Training Simulators / Institutes etc.) using AIXM 5.1 platform.
- 2.2 PCAA has also acquired the latest ICAO recommended version of AIXM for its AIM System for the purpose of interoperability. This version of AXIM not only supports AIXM 5.1 platform but also supports AIXM 4.5. This property of latest version of AIXM is provided to ensure smooth transition, as most of the stakeholders are using AIXM 4.5 version.

- 2.3 We also fulfill System Wide Information Management (SWIM) concept requirements. The AIM products of Pakistan CAA are also interoperable with other GIS platforms such as ArcGIS, Google earth etc (using KML extension). We have already transformed aeronautical data into WGS-84 coordinate system and is being published in AIP Pakistan. The WGS-84 data is based on the survey of all 36 (Thirty-Six) airports, associated facilities, Obstacles and Terrain around 45 KM conducted by the Survey of Pakistan.
- 2.4 A new edition of AIP has been produced after a period of 17 years and is available in electronic form on website / CD and in printed form. The 7th edition of AIP Pakistan is completely derived from digital database of AIM system. AIM specialists have put in enormous efforts in migrating, validating entire Aeronautical Data in new AIM system as per ICAO guidelines. It is available on PCAA's website in the form of AIP Pakistan 7th edition and their consequent amendments.
- 2.5 In order to protect the investment in the products of a State's AIS, as well as to ensure better control of their use, ICAO recognizes that States may apply copyright protection to those products in accordance with their national laws. After continuous efforts, **Copyright Protection** has been successfully applied to AIP Pakistan (both Hard & Soft version) since April 2019.
- 2.6 Furthermore, with addition of eTOD application in our existing AIM system. PCAA is now capable of producing electronic terrain and obstacle datasets, electronic Aeronautical Charts (Annex 14 and 15, AIXM 5.1 compliant) etc. And with the up-gradation of existing AMHS system with AIXM 5.1 compliant system, requirements of Digital NOTAM, Electronic Aeronautical briefing, interoperability with MET products, Aeronautical Data Exchange will be adequately met
- 2.7 According to report of Ninth Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/9) held in Bangkok in 2019, AIM of PCAA ranked had been **ranked 7th** in Asia/Pacific in Regional AIS – AIM Implementation. The latest Regional AIM capability performance of PCAA is submitted in AIS-AIM Implementation Task Force (AAITF) forum for year 2022. Its comparison with the APAC Region is summarised in the following table;

Phases	Pakistan AIM Compliance	APAC Region, Compliance
Phase-I	95.5% achieved	54.0% achieved
Phase-II	84.3% achieved	39.0% achieved
Phase-III	66.6% achieved	In progress(to be implemented in the year 2026)

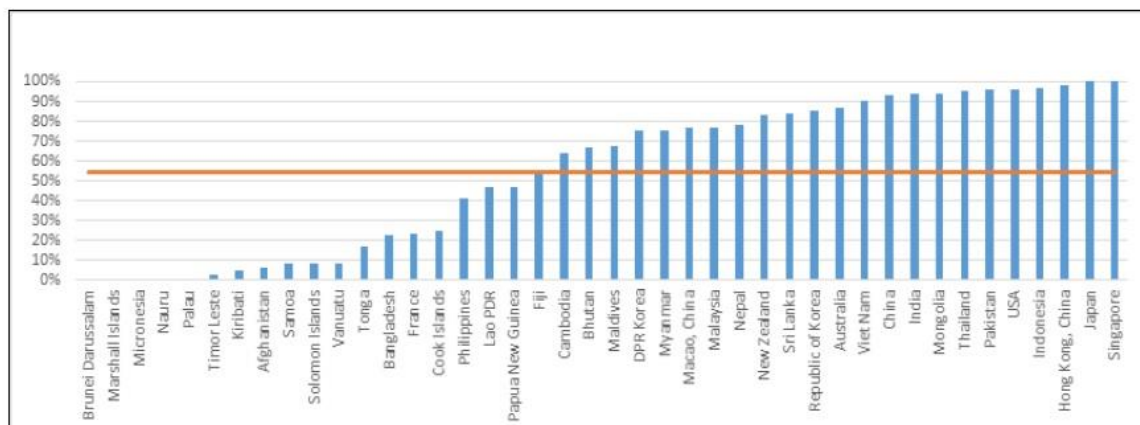


Figure 1: Regional Phase I Implementation Progress (updated on 21 March, 2022)

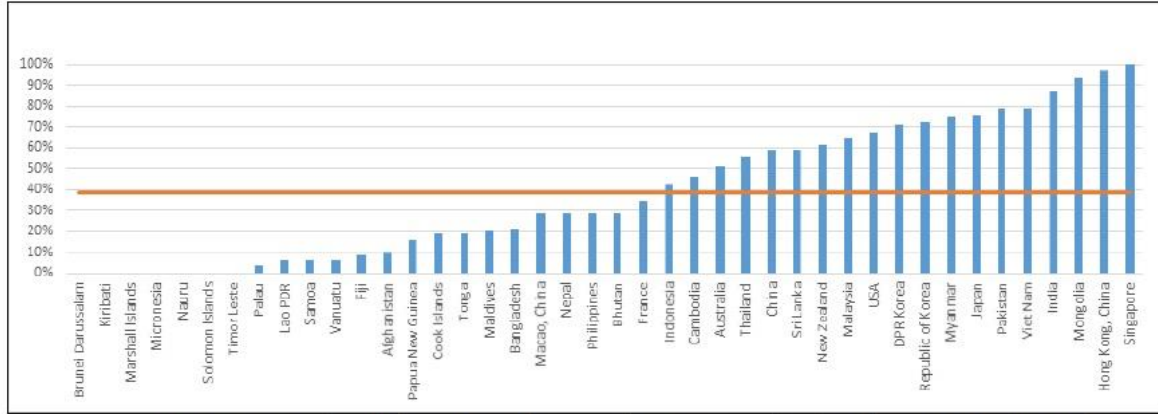


Figure 2: Regional Phase II Implementation Progress (updated on 21 March 2022)

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to note the information contained in this Paper.

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