



**AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
TWENTY FIRST MEETING (APIRG/21)
(Nairobi, Kenya (09 - 11 October 2017))**

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

3.4 Status of ASBU Implementation and evolution of the Global Air Navigation Plan

AERONAUTICAL INFORMATION EXCHANGE MODEL (AIXM)

(Presented by South Africa)

SUMMARY

This paper provides information and requirements which need to be considered by each State to successfully implement an Aeronautical Information Exchange Model (AIXM) within the State, based on the ICAO requirements relating to data integrity and accuracy, source data collection methods, data management and maintenance and quality standards consideration.

REFERENCE(S):

**Annex 15 — Aeronautical Information Services
Doc 9750 – Global Air Navigation Plan
APIRG 20 – Conclusion 20/33 and 20/34**

Related ICAO Strategic Objective(s): Safety (A)

1. INTRODUCTION

1.1 The APIRG 20 list of Conclusions and Decisions listed two conclusions directly related to AIXM:

1.1.1 That States which have taken the initiative of the AFI-CAD concept of implementing Centralised AIS databases should ensure compliance with the provisions of the AN-Conf/12 Recommendation 3/8(c) calling for intra- and inter-regional cooperation for an expeditious transition from Aeronautical Information Service (AIS) to Aeronautical Information Management (AIM) in a harmonised manner, using digital data exchange and regional or sub-regional AIS databases as an enabler for the transition from AIS to AIM.

1.1.2 That States should ensure the compatibility of the various versions of AIXM databases and integration of the different aeronautical data domains to facilitate implementation of System Wide Information Management (SWIM), under the Aviation System Block Upgrade (ASBU) B0-DATM element on AIXM in the AFI Region.

1.2 The Extraordinary APIRG Meeting held between 10-11 July 2015 in Zambia, tabled AIXM as an AIM project under the Information and Infrastructure Management Sub-group (IIM/SG).

1.3 A set of project deliverables was developed for AIXM under the AIM projects of the IIM/SG.

1.4 A schedule for AIXM implementation based on the project deliverables for the AFI-Region would need to be defined by the IIM/SG for approval by the APIRG Project Coordination Committee (APCC).

2. DISCUSSION

2.1 South Africa implemented a Centralised Aeronautical Database in 2011. The South Africa AIXM database is capable of exchanging AIXM data seamlessly with the European Aeronautical Database (EAD).

2.2 ASBU Module upgrade B0-DATM (Service improvement through digital aeronautical information management) requires the initial introduction of digital processing and management of information, through Aeronautical Information Service (AIS)/Aeronautical Information Management (AIM) implementation, use of Aeronautical Information Exchange Model (AIXM), migration to Electronic Aeronautical Information Publication (e-AIP), as well as better quality and availability of data.

2.3 Successful implementation of AIXM, requires each State to:

- i. Implement adequate regulations to support the collection and management of aeronautical data with regards to the responsible authority - State/Government Authorities, ANSPs, Aerodromes, etc. (*Aeronautical Data Quality (ADQ), certification of ANSPs by CAAs to provide AIM services, Aerodrome survey data, requirement for annual/maintenance surveys to aerodromes, collection of geometrical data of aerodrome layouts for Aerodrome Mapping Database (AMDB) and charting, WGS-84 survey standards for surveyors to comply with when conducting aerodrome surveys, etc.*)
- ii. Implement Service Level Agreements (SLA's) with data originators defining the data quality and integrity standards and submission timelines/process of data.
- iii. Define the method in which the data will be collected, either through surveying (WGS-84) or through other means (photographic/stereo graphic/LIDAR information processing).
- iv. Define the format in which the data will be stored / distributed.
- v. Ensure that information is published in accordance with AIRAC.
- vi. Implement the required infrastructure (a database) capable of managing/hosting the AIXM data. (The database must be capable of loading data in the latest AIXM format).
- vii. Ensure the State has the required resources to manage/maintain the AIXM database.
- viii. Ensure the resources of the State adequately trained in managing AIXM data. (understanding XML and AIXM schema's to be able to migrate IAIP data into the AIXM database).
- ix. Ensure the State has implemented a QMS system with associated processes and procedures to ensure the quality process of the data from originator to publication (Controlled Harmonised Aeronautical Information Network – CHAIN) in the AIP

AD 2.10 section (or other related IAIP documents)

2.4 Over and above these requirements, States are also faced with integration issues, due to various AIXM systems suppliers/vendors providing solutions to different African States.

2.5 Various States/Service providers like ASECNA, Kenya, Nigeria and South Africa have already implemented AIXM Databases within the AFI Region using different suppliers/vendors.

2.6 States that have been identified to host the Regional AIXM Databases in accordance with APIRG Conclusions should ensure seamless interoperability between their AIXM databases and other AIXM databases which are being deployed within the region.

2.7 Implementation of Aeronautical Data Quality regulations and standards and compliance to the Annex 14/15 requirements would be a pre-requisite for any State connecting to the regional AIXM databases.

2.8 In accordance with recommendation 3/8(c) of AN-Conf/12, including recommendations made at APIRG/17 and -18, endorsed the possibility of AFI States migrating to the South African Regional AIS Database in accordance with the AFI-CAD Concept.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the information contained in this working paper;
- b) Support the adoption of items listed under point 2.3 above as project deliverables under the IIM/SG Project for AIXM;
- c) Comply with the schedule for AIXM implementation based on the project deliverables for the AFI-Region as defined by the IIM/SG for approval by the APIRG Project Coordination Committee (APCC); and
- d) Urge States to comply with the migration to the identified Regional AIS Regional Databases in accordance with the AFI-CAD Concept.

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