



International Civil Aviation Organization

MIDANPIRG AIM Sub-Group

Third Meeting (AIM SG/3)
(Cairo, Egypt, 15 - 18 May 2017)

Agenda Item 4: AIM Planning and Implementation in the MID Region

TOWARDS B1-DATM AND SWIM

(Presented by the Secretariat)

SUMMARY

This working paper provides an update on the activities related to the preparation of B1-DATM and SWIM.

Action by the meeting is at paragraph 3.

REFERENCES

- ASBU Document – 2016 edition
- IMP portal
- MIDANPIRG/16 Report

1. INTRODUCTION

1.1 B1-DATM addresses the need for increased information integration and will support a new concept of ATM information exchange fostering access via internet -protocol-based tools .This includes the cross-exchange of common elements with the initial introduction of the ATM Information Reference Model (AIRM), which integrates and consolidates ATM information in a transversal way. Exchange models such as AIXM, FIXM (for flight and flow information; and aircraft performance-related data), iWXXM (for meteorological information) and others relate their concepts to the AIRM fostering convergence, re-use, and collaborative alignment.

1.2 Implementation of system-wide information management (SWIM) services (applications and infrastructure) would create the aviation intranet based on standard data models, and internet-based protocols to maximize interoperability.

2. DISCUSSION

B1-DATM

2.1 While B0-DATM will have created a nucleus of modern information management and provided experience to move forward in domains other than aeronautical information management (AIM); B1-DATM will in parallel allow ATM information to be structured and managed in a fully digital and consistent manner, using the same standards for their description.

2.2 The baseline at the implementation level is the use of AIS data, resulting from B0-DATM. The AIXM, iWXXM, and FIXM models are compatible with the ATM information reference model (AIRM).

2.3 This module expands the approach pioneered by AIXM to the other forms of information by providing the overall reference model framework, allowing each type of data to fit into a harmonized structure, with the implementation of AIXM providing the foundation for data from other domains that are associated with AIM data. It also proceeds with the additional capability to manage, distribute and process the weather data, flight and flow data and aircraft performance-related data. In addition to interoperable data, the module provides interoperable information services as part of the transition to a service-oriented architecture.

B1- SWIM

2.4 System-wide information management (SWIM) is an essential enabler for ATM applications which provides an appropriate infrastructure and ensures the availability of the information needed by the applications run by the users. The availability of SWIM will make possible the deployment of advanced end-user applications as it will provide extensive information sharing and the capability to find the right information wherever the provider is.

2.5 The scope of information sharing extends to all information that is of potential interest to ATM including trajectories, surveillance data, aeronautical information of all types, meteorological information, etc.

2.6 The phased implementation of SWIM will consider three interrelated dimensions of SWIM (applications, information and infrastructure):

- a) **applications** represent the user side of SWIM. They will be addressed through the identification of “communities of interest” gathering stakeholders that have to share information to serve their interests. The partners in the community know the information they need to share with what quality of service and for effective collaboration they require a common understanding of the information and the information has to be available in a commonly agreed structure.;
- a) **information** covers both the semantic and syntactic aspects of data representing information and the information management functions. The former is dealt with by modelling activities which aim to use and or define common standards while the latter include mainly distribution, quality, maintenance, user identity and profile to enable data exchange and sharing within a community of interest and between communities independently of the underlying communication infrastructure; and
- b) **infrastructure** will be built on existing legacy infrastructure as far as practicable until an internet protocol (IP)-based network is available. The air/ground segment is an example of SWIM connectivity that is intended to be added at a later stage as aircraft are integrated into the communities of interest.

2.7 B1-SWIM ensures that the right, up-to-date and accurate data is timely available to the right user with the service performance specified in the information access agreement. It represents the achievement of a significant paradigm shift in ATM and is the enabler, together with the appropriate telecommunication infrastructure, of the most advanced features of the Global concept, in particular seamless trajectory based operations.

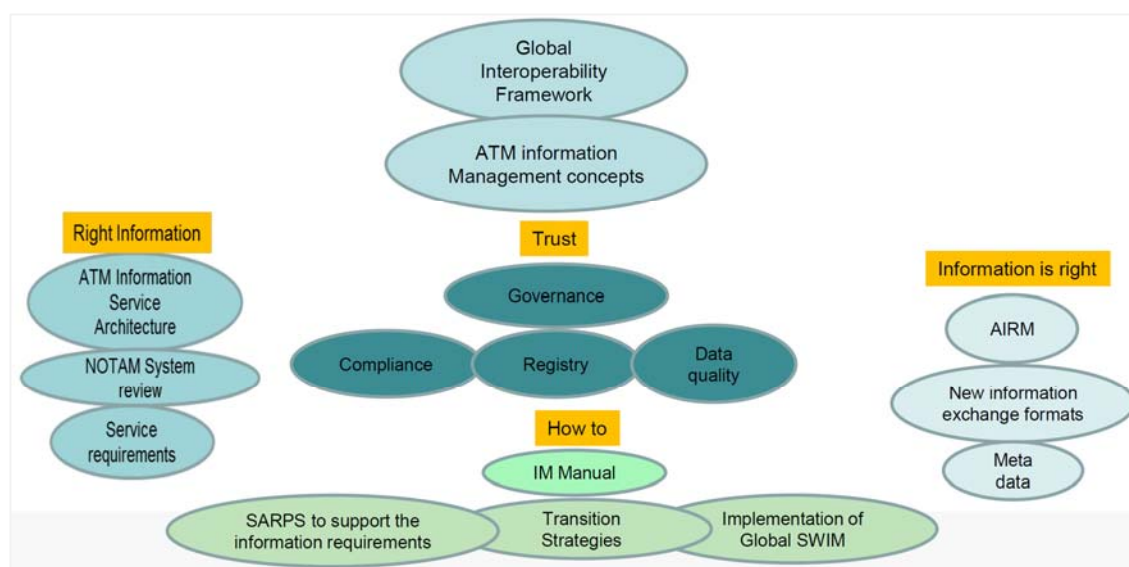
IMP Activities

2.8 The meeting may wish to recall that the Information Panel (IMP) was established in 2015 by the ICAO Air Navigation Commission to elaborate on necessary concepts and develop a global and interoperable approach to ensure effective management of information within the global air navigation system. Four (4) Working Groups were established within IMP to undertake tasks of the Panel:

- SWIM Services WG
- SWIM Architecture WG
- SWIM Awareness & communication WG
- SWIM Governance WG

2.9 The objectives of the IMP WGs' ongoing activities are as follows:

- Providing a global interoperability framework
- Developing ATM information management concepts
- Defining ATM information service architecture
- Proposing SARPs to support the information requirements
- Developing transition strategies and guidance for the implementation of global SWIM



2.10 The meeting may wish to recall that the Manual on SWIM Concept (Doc 10039) was developed by the ATM Requirements & Performance Panel to support achieving global interoperability and describe a common framework to facilitate discussions and promote interoperability. Focus is on all required global interoperability aspects around (initially ground to ground) exchange of data through information services between providers and consumers of information; aeronautical, meteorological, flight & flow and surveillance.

2.11 The meeting may wish to note that the IMP and its working groups are working to develop, by end of 2018:

- SWIM related SARPs (High-level IM provisions; and NOTAM replacement); and
- Guidance Materials (updated SWIM Concept – Doc 10039; and AIRM Package).

2.12 IMP meetings' documentations are available on the ICAO Secure Portal at: <https://portal.icao.int/imp/Pages/default.aspx>

Interregional Seminar on “Service improvement through integration of digital AIM, MET and ATM Information”

2.13 The meeting may wish to recall that the Fourth Inter-Regional Coordination meeting between APAC, EUR/NAT and MID (IRCM/4) which was held in Bangkok, Thailand from 14 to 16 September 2015, agreed that an Interregional Seminar be held jointly between the APAC, EUR/NAT and MID Regions on “*Service Improvement through Integration of Digital AIM, MET and ATM Information*” in 2017.

2.14 The objective of the Seminar will be to review implementation status of the ASBU Block 0 Modules of the PIA 2 (i.e. B0-DATM, B0-AMET and B0-FICE) and associated challenges/lessons learned and to focus on the pre-requisites for an efficient and timely planning for the implementation of the Block 1 Modules related to SWIM (B1-DATM, B1-AMET, B1-SWIM and B1-FICE). The Seminar is planned to be held in EUROCONTROL, Brussels, Belgium, 2 - 5 October 2017.

2.15 Coordination on the preparation of the Seminar is ongoing between the three ICAO Regional Offices and EUROCONTROL. Initiation letter of the Seminar is expected to be issued early June 2017.

2.16 Based on the above, the MIDANPIRG/16 meeting, through Conclusion 16/12, invited States, Organizations and Industry to actively participate in the Interregional Seminar on “Service Improvement through Integration of Digital AIM, MET and ATM Information Services”.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) urge States to follow-up on the developments related to SWIM through the work of the Information Management Panel; and
- b) encourage State, Organizations and Industry to actively participate in the Interregional Seminar on “Service Improvement through Integration of Digital AIM, MET and ATM Information Services (Brussels, Belgium, 2 - 5 October 2017).