AIDC/NAM/ICD/5 — WP/07
22/06/22

**Fifth NAM/CAR Follow-up Meeting on the implementation of Air Traffic Services Interfacility Data Communications (AIDC) and the Interface Control Document (NAM/ICD) (AIDC/NAM/ICD/5)**
Hybrid, from June 28 to 30, 2022

**Agenda Item 5:** Elements of the Global Air Navigation Plan (GANP) linked to Flight and Flow Information for the Cooperative Environment (FF-ICE)

**AERONAUTICAL INFORMATION MANAGEMENT (AIM)**

(Presented by the Secretariat)

| EXECUTIVE SUMMARY |
|---|
| This working paper presents the most recent and important worldwide developments in Aeronautical Information Management (AIM). |

| | |
|---|---|
| **Action:** | Action required in Section 3. |
| *Strategic Objectives:* | • Safety<br>• Capacity and efficiency of air navigation |
| *References:* | • 40th. ICAO Assembly, 24 Sep. 4 Oct. 2019, Montreal, Canada<br>• Aeronautical Information Management PANS AIM Doc. 10066<br>• Fourth Meeting of the Aeronautical Information Management Implementation Task Force (AIM/TF/4) of the North America, Central America and Caribbean Working Group (NACC/WG) (AIM/TF/4), Online, 11 May 2021AIM TF/04<br>• Fifth Meeting of the Working Group on Implementation of Air Navigation for the NAM/CAR Regions (ANI/WG/5), May 2019.<br>• Global Recommendations AIM Tunisia 2019 |

## 1. Introduction

1.1 According to its Terms of Reference (TOR), the AIM Task Force (AIM TF) is expected to monitor and address relevant global and regional developments. This working paper provides information on the activities of ICAO 40 Assembly, the sixth edition of the GANP and the Information Management Panel (including the AIM Task Force) among others.

## 2. Discussion

2.1 The achievement in the near and medium future of the Global Air Navigation Priorities in AIM is an essential enabler to achieve the Global Air Navigation Priorities such as Performance-Based Navigation (PBN), CDO/CCO, Management of Air Traffic Flow, which is an example of a requirement for high-quality digital data.

2.2        It seeks to provide support to Airspace Users, with Quality Assured information and digital and electronic aeronautical data that are necessary for all Airspace Users that have new technologies in their systems, obtaining:

- Greater Operational Safety
- Greater autonomy in decision making
- Greater capacity in conflict resolution
- Greater equity in access to air space

2.3        In the Digital-AIM (D-AIM) of the Aviation System Block Upgrades (ASBU) and the Basic Building Blocks (BBBs) the Aeronautical Information Management and the Aeronautical Information Services Focused on the Guaranteed Quality Product through the following Blocks:

- **B1-DAIM -** Service enhancement through improved data quality and digital exchange and information processing
- **B2-DAIM -** Service improvement through digital aeronautical information exchanged through a SWIM infrastructure and new information requested to support the exchange and processing of information from new users.

2.4        Likewise, the transition from AIM 1.0 to AIM 2.0 means taking additional steps, such as:
- Apply Service Oriented Architecture (SOA) to Aeronautical Information and data
- Allow interoperable exchanges of data and Aeronautical Information
- Integrate Aeronautical information and data with other information domains
- Facilitate the implementation of effective feedback mechanisms to deal with changing user requirements of new technologies.
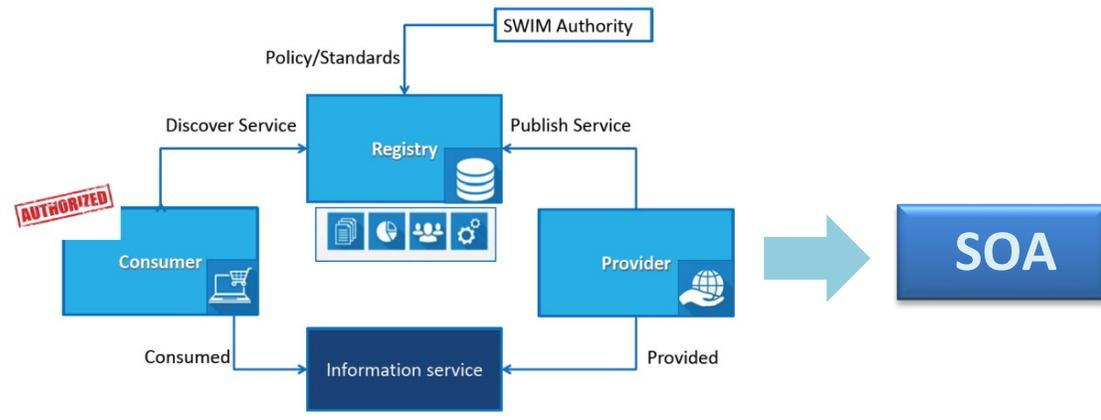


**AIM Challenges and Priorities**

2.5        Institutional challenges of the States:

- Lack of effective regulatory frameworks to support the AIM transition
- Lack of clear requirements for interested/involved parties (quality of services is affected)
- Lack of understanding that multiple and/or uncoordinated rules can be costly and risk Safety.
- Lack of competent AIM/AIS personnel/training

2.6        Challenges in service provision:

- Quality issues in aeronautical information products
- The relationship with the originators of the data is not easy
- Lack of competent resources, need for training
- Digital data sets are still considered immature for implementation:
- Reliable sharing of data between stakeholders remains a challenge

2.7        Technological challenges:

- The Aeronautical Information Exchange Model (AIXM) poses challenges in terms of data exchange;
- AIXM is very permissive. Great multilateral coordination is required;
- Lack of Global trade rules to facilitate the exchange of information;
- Need for mapping rules to convert AIXM to ARINC (Aeronautical Radio, INC) (temporary factor);
- No incremental updates of AIXM (Universally Unique Identifier - UUID -)

2.8        Priorities - Top priorities to support the AIM transition (AIM 2.0):

- AIM Global Framework (set of provisions to facilitate the transition to data-centric environments)
- Set of practical tools and guidance to support the daily work of AIM officers
- "AIM Implementation Strategy":
  – A plan for future AIM enhancements
  – Initial phase: ICAO needs to identify what is needed in each case
  – Need for stakeholders to provide additional information on what needs to be done to support implementation

2.9        Important reference for the National Regulatory Framework AIM.

- Better identifies the responsibilities and roles of the stakeholders involved, including data originators
- Clear set of data requirements to be collected and maintained by the AIS
- Focuses stakeholders' attention on the right things: quality first
- Begin to address well-known issues (eg, what information qualifies a NOTAM)
- Modern concepts: divide data collection from data provision in accordance with System Wide Information Management (SWIM) requirements.
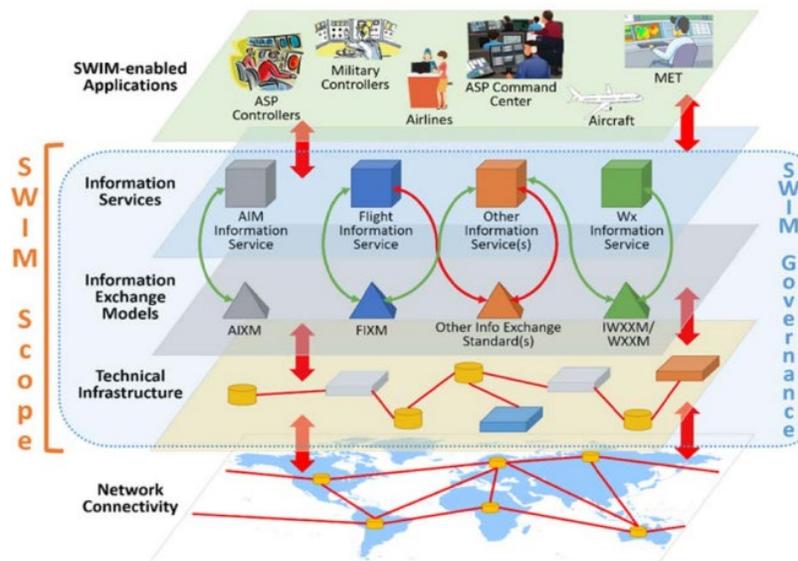
2.10            The latest AIM provisions and new AIM requirements.

- Guidance material on various AIM topics, such as TRAIN (training), QMS (Quality Management System), Personnel licensing, etc.
- USOAP Audit Protocol Questions, none for AIM
- Future AIM provisions and roadmap for AIM 2.0 and later
- AIS to AIM 2.0 means yet better information (quality), increased qualified personnel as well as digitalization of information to be disseminated via SWIM;
- AIM 2.0 does not equal "SWIM implementation"; it is a pre-requisite as one of the information domains within SWIM;
- AIM 2.0 is about a more efficient delivery of service and the ability to select providers and integrators freely (there is the need to consider the service delivery context);
- AIM 2.0 is required to address the new entrants in our air navigation system, such as drones, high altitude flight etc.; and
- Before embarking the final stage of migration towards AIM 2.0, the implementation progress of AIM 1.0 globally should be strengthened, as there is still lack of investments for implementation, benefits of AIM as being the backbone for operational improvements, have not been clearly communicated to States and more awareness must be created among executives/decisions makers

2.11            Globally, ICAO seeks to accelerate the establishment of work to address future AIM domain-specific topics, such as:

a) facilitate the migration of existing paper-based aeronautical charting products to the digital environment and identify requirements for the graphical representation of aeronautical data and information in a SWIM environment;
b) facilitate the supply of Digital Data-sets, through SWIM services;
c) develop an operational concept and provisions for the establishment of an information service as a replacement for the information currently provided by NOTAM
d) develop provisions on data coding standards, based on the work initiated by the AIXM World community

2.12        Finally, four (4) working groups were established to carry out the tasks of the Information Management Panel (IMP) at ICAO Headquarters:

1. Information/Data Services and NOTAM
2. Architecture and management of information and data
3. SWIM Awareness and Communication - Share situational awareness in a broader operational community, targeting new types of Users
4. SWIM Governance - develop provisions on governance aspects for information services for aeronautical digital datasets

**3.        Suggested actions**

3.1        The meeting is invited to:

a) consider developments related to AIM and AIM 2.0 in regional AIM planning;
b) follow up and keep abreast of the Global activities related to AIM and the recommendations of the IMP of ICAO Headquarters;
c) work jointly with the AIM Task Force to understand how changes in aeronautical information management impact the implementation of other areas of air navigation; and
d) any other applicable actions.

— END —