International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

MEVA/TMG/33 — WP/09
16/05/18

Thirty-third MEVA Technical Management Group Meeting (MEVA/TMG/33)
Willemstad, Curaçao, 29 – 31 May 2018

Agenda Item 3: **New Challengers (Services, Aeronautical Information Management (AIM), Air Traffic Flow Management (ATFM), System Wide Information Management (SWIM) and Automatic Dependent Surveillance – Broadcast (ADS- B) Satellite)**
3.2 Strategy to face these new challenges

AIM, ATFM, SWIM UPDATES

(Presented by United States)

EXECUTIVE SUMMARY	
The purpose of this working paper is to present information the ATFM, SWIM, and AIM Systems already implemented or in the process of being implemented in the Federal Aviation Administration	
Action:	The suggested actions are detailed under Section 4.
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency

1. Introduction

1.1 The size and complexity of these programs create difficult challenges for States. We are fronting an environment where requirements continue to grow faster than resources.

2. Discussion

2.1. Air Traffic Flow Management (ATFM)

2.1.2 Air Traffic Flow Management (ATFM) procedures and data exchange arrangements with providers adjacent to the United States are very important in creating a bigger picture of real-time airspace demand. FAA Air Traffic Office currently shares real-time traffic flow management system flight data with providers in Canada, Mexico, Central America, Colombia, Chile, the United Kingdom and EUROCONTROL just to name a few. On the operational side, the ATO is connected to Canada, Mexico, Japan, EUROCONTROL, Brazil and other service providers through daily conference calls with the Air Traffic Control System Command Center (ATCSCC) and other FAA field facilities.

2.1.3 Seamless operations are accomplished through bilateral and multilateral agreements, local letters of agreements (LOA), participation in formal ICAO Planning and Implementation Regional Groups (PIRG), and participation in informal airspace-specific coordination groups.

3. System Wide Information Management (SWIM)

3.1 System Wide Information Management (SWIM) facilitates the data sharing requirements for NextGen, providing the digital data-sharing backbone of NextGen. This information-sharing platform offers a single point of access for aviation data.

3.1.1 Established in 2007, SWIM is a technology enabler that gives airlines and other airspace users access to multiple categories of aviation information through a single connection. The SWIM program has expanded to the point of providing about four terabytes of data per day to users. While that high output is a milestone for the program, at times it can be too much data for users to sort, as they have unique needs and operations.

3.1.2 Recently, a SWIM Industry-FAA Team was created as a potential catalyst for enabling operational improvements. Also, SWIM's security profile has improved so that users know they are exchanging valid aviation data on a secure network.

3.1.3 FAA is offering enterprise monitoring and a SWIM help desk based in Atlanta, Georgia, providing legacy data sets in an enterprise way, so there is cost savings and security advantages.

3.1.4 With hundreds of US data consumers accessing Federal Aviation Administration (FAA)-provided data over its System Wide Information Management (SWIM) system, the agency is now coordinating with Europe to perfect SWIM interfaces and assisting the Asia Pacific region on its SWIM planning.

4. Aeronautical Information Management (AIM)

4.1 The FAA currently employs 373 Aeronautical Information Specialists who perform most of our charting, eTOD and Aeronautical Information database management functions. These specialists are not located in a single, consolidated location, but spread across the country. These groups, FAA's NOTAM, AIP, Aeronautical Information database management and charting groups, are all moving toward meeting the goals identified in the ICAO Roadmap for the Transition from AIS to AIM. FAA's progress toward each of the goals in The Roadmap is presented in phases:

Phase 1 - Consolidation

- Monitoring of Annex Differences
- AIRAC Adherence Monitoring
- Quality
- WGS-84 Implementation
    - The goal of expressing coordinates in the WGS-84 reference system is not being pursued by the FAA's AIM groups.

Phase 2 – Going Digital

- Electronic AIP: Currently the US AIP is available as a free .pdf file on the FAA's Air Traffic Publications website. An HTML version will be provided but is not expected to be publically available until 2020.
- Aerodrome Mapping
- Obstacles
- Terrain
- Data Quality Monitoring
- Data Integrity Monitoring
- Aeronautical Information Conceptual Model
- Unique Identifiers
- Integrated Aeronautical Information Database

Phase 3 – Information Management

Training - As we transition to data-driven processes and products, training will be required to support these initiatives. These will include software applications and database management. Current training opportunities available to FAA employees and international partners include:

- Introduction to Flight Procedures
- Principles of Performance Based Navigation (PBN) Approaches
- Departure Procedures
- Basic PANS-OPS (& Refresher)
- PBN PANS-OPS
- TARGETS (Terminal Area Route Generations, Evaluations and Traffic Simulations)
- Overview of Flight Procedure Development
- Introduction to Aeronautical Charts
- Agreements with Data Originators
- Electronic Aeronautical Charts
- Aeronautical Information Briefing
- Communication Networks

➢ The FAA uses a satellite-based network (MEVA) for ATS services in the Caribbean, which supports IP based data flows over frame relay. The biggest question is around bandwidth requirements. Currently most of our ground-to-ground services over MEVA are 64Kbps, but bandwidth services up to 2Mbps, are available. There has been no determination made as whether or not AIM data will be required to use dedicated network services like the Aeronautical Telecommunications Network, an open network such as the internet, or even a combination of the two based on the product. Until that is decided, we will not know whether the current international services will be capable of supporting the future AIM data flows.

- Interoperability with Meteorological Products
- Digital NOTAM

- Aeronautical Data Exchange:
  - The FAA is committed to providing the public with free aeronautical data in a wide variety of in open data formats best suited for pilots, developers and other stakeholders. Currently we release aeronautical data/information in the following formats: Comma-Separated Value (CSV), Keyhole Markup language Zipped (KMZ), Shapefiles (SHP), ARINC 424 and Text (TXT) formats. To see or access this data, please go to: https://www.faa.gov/got_data/aero_data/

3. **Suggested Actions**

3.1 The Meeting is invited to review the information presented in this Working Paper and continue its work towards implementation of ATFM, SWIM and AIM.

— END —