Twenty-Fourth Meeting of the AFI Planning and Implementation Regional Group (APIRG/24)
(Virtual – 2 to 4 November 2021)

Agenda Item 4: Other Air Navigation Initiatives

Safety Work Group Webinars: SWIM

(Presented b CANSO Africa)

SUMMARY	
This working paper presents the initiatives that have been undertaken by CANSO Africa to support the implementation of the System Wide Management(SWIM). Action by the Meeting is at paragraph 3	
Strategic Objectives	Safety, Air Navigation Capacity and Efficiency, Security & Facilitation, Economic Development of Air Transport, Environmental Protection

1 INTRODUCTION

1.1 The aviation ecosystem, more especially Air Traffic Management (ATM) system has evolved at a considerable pace, especially in the last two decades. Technological enhancements in Communication, Navigation and Surveillance (CNS) combined with enhancements in aircraft construction and operations has ensured that significant progress has been made in the modernization of air traffic infrastructure and has transformed the aviation industry on a global level.

1.2 This evolution has placed a bigger emphasis on Air Traffic Management (ATM) to provide services that are technologically interoperable, procedurally harmonized, environmentally sustainable and universally safe whilst ensuring financial sustainability, seamless and operational efficiency, predictability and economical resilience within the aviation sector that benefits the user.

1.3 The Global Air Traffic Management Concept (GATMOC), ICAO Doc 9854 highlights the critical importance of an information rich environment to support the ATM system in terms of safety, efficiency, predictability and environmental sustainability.

1.4 As the ATM system evolves with the introduction of technological advancements and therefore becomes more automated, integrated and dependent on one another, it requires greater harmonization and standardization of the information exchanges between the various components of the ATM system both at regional as well as global level.

2. DISCUSSION

2.1 SWIM as an enabler of the information rich ATM environment consists of standards, infrastructure and governance, enabling the management and seamless exchanges of ATM-related information within the ATM Community via interoperable services.

2.2 SWIM therefore provides the platform for the timely dissemination of real-time accurate and validated information, covering information domains within the strategic pre-tactical as well as tactical planning phases of flight operations, and allowing for Information Sharing and Collaborative Decision-Making (CDM) between all ATM Stakeholders.

2.3 Clearly articulated in the Manual on System Wide Information Management Doc 10039, is that SWIM was not developed to be a single database, a mechanism to replace existing communication infrastructure nor a single new application to encompass all existing user application.

2.4 SWIM introduces a paradigm shift in ATM information management addressing constraints and limitation of legacy interfaces, which were designed to support point-to-point or application-to-application exchanges, with limited flexibility to accommodate new users, additional systems, new content or changed formats.

2.5 With the introduction of the Sixteenth Edition of Annex 15 — Aeronautical Information Services and the new Procedure for Air Navigation Services — Aeronautical Information Management (Doc 10066, PANS-AIM), the scope of traditional AIM has significantly changed. These have introduced new aspects for AIM products and services through the definition of various data sets (AIP, terrain, obstacle, aerodrome mapping and Instrument Flight Procedure data sets) as well as the introduction of aeronautical data catalogue requirements. These aeronautical datasets will be exchanged through globally standardized exchange modules such as the Aeronautical Information Exchange Model (AIXM).

2.6 SWIM enables the provision of Information Services through standardized exchange modules such as Aeronautical Information Exchange Model (AIXM), Flight Information Exchange Model (FIXM) and ICAO Meteorological Information Exchange Module (iWXXM). SWIM is crucial to enable the sharing of an integrated, accurate and real-time ATM situation on a system wide basis with the entire ATM Community in support of all phases of flight

2.7 On 29 September 2021 and 14 October 2021 CANSO Africa held a two-part series webinar. Part 1 had a regional focus on System Wide Information Management implementation in Africa (SWIM) whereas Part 2 on Globally Harmonized System Wide Information Management (SWIM) Implementation expanded on the SWIM developments at Global Scale. The objective of the two webinars was to discuss the in-depth explanation of the SWIM concept and its core principles and outline the benefits of implementing SWIM.

2.8 The CANSO webinar also touched on the requirements of a successful SWIM implementation and details of the current ICAO Panel activities in developing SARPs to support SWIM implementation. Speakers from ICAO, IATA, SAWS, EUROCONTROL, FAA and Africa Regional Members created thought invoking discussion around SWIM.

2.9 Understanding the critical importance of SWIM in enabling and supporting other key ICAO initiatives such as Remotely Piloted Aircraft Systems (RPAS) and Unmanned Traffic Management (UTM) integration into the ATM system, Flight and Flow of Information for Collaborative Environment (FF-ICE), Air Traffic Flow Management and eventually Trajectory Based Operations (TBO), CANSO Africa will be undertaking the following SWIM activities to support SWIM implementation in the AFI Region:

- Review the ICAO SWIM Implementation Plan and timelines
- Preparation of a CANSO AFI SWIM implementation plan and strategies
- Develop stakeholder engagement plan
- Conduct a SWIM implementation Gap analysis
- Draft Regional CONOPS
- Develop participation by other States Organs

2.10 These activities undertaken by CANSO Africa and the CANSO Africa members are to assist and support the AFI Region in achieving its implementation goals through the sharing of knowledge, expertise and innovation in alignment with the ICAO Initiative of “NO COUNTRY LEFT BEHIND (NCLB)”.

3 ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Support the work on SWIM by CANSO
b) Urge States and industry to participate in the planned CANSO activities for a seamless implementation of SWIM in AFI Region
c) Note the progress made in the implementation of SWIM by CANSO members