ICAO

**Twenty-Second Meeting of the AFI Planning and Implementation Regional Group
(APIRG/22)
(Accra, Ghana, 29 July – 2 August 2019)**

Agenda Item 4.5: REGIONAL AND INTERREGIONAL ACTIVITIES

MOMBASA AFI ATFM ROADMAP

(Presented by CANSO)

SUMMARY
This paper presents actions that states/ANSP, under CANSO, has agreed to implement to minimize the impact on environment, safety and efficiency during Air Traffic Management constraints. It will also address benefits for both States/ANSPs and the ATM community through seamless operations.

Action by the Meeting:

The Meeting is invited to:

a) Endorse the MOMBASA AFI ATFM ROADMAP as one of the pillars to achieve seamless operations concept.
b) Commit to the Mombasa AFI ATFM implementation schedule.

Strategic Objectives	Safety, Air Navigation Capacity and Efficiency and Environmental Protection

1   INTRODUCTION

1.1   The anticipated AFI traffic growth of about 4.6% by 2037, coupled with new airspace entrances requires States/ANSP to develop strategic ROADMAPs to ensure that the ATM systems continues to be able to safely, efficiently and seamlessly handle traffic. The MOMBASA ATFM ROADMAP is one of the Pillars to achieve seamless operations in the AFI Region. APIRG 21 conclusion 21/08 called for all Regional Economic Communities and ANSP's to develop a clear and agreed roadmap, in consultation with users for the implementation of seamless, harmonized, interoperable Air Traffic Management systems and procedures with clear benefits to the aviation stakeholders.

1.2   The 2018 CANSO Africa conference was held in Mombasa, Kenya, under the theme "Improving efficiency through collaborative decision making and air traffic management".

1.3   The Conference highlighted seven emerging issues to be addressed to ensure regional seamless operations, invisible borders and to better prepare the AFI region to cope with the anticipated traffic growth, Security situations and military conflicts or conflict zones (Ukraine and recently, Ethiopia and Pakistan) and to adapt to the ever-changing ATM environment while being able to promote safer and clean flights in line with the CANSO 2020 vision and the CANSO fit for future ATM.:

- Collaboration
- Technology and Innovation
- Policies and Regulations
- Data and information sharing
- Member commitment
- Implementation ROADMAP of CDM, A-CDM and ATFM
- Compliance with ICAO requirements

1.4   The Second Meeting of the APIRG Airspace and Aerodrome Operations Sub-Group (AAO SG/2) (Nairobi, Kenya, 21 to 25 May 2018), under Aerodromes, adopted project 7, Establishment and Implementation of A-CDM for the:

- Facilitation of passengers through immigrations &customs
- Improve the efficiency of airport infrastructure (terminal, stands/gates, runway, taxiways and apron.
- Ensure the availability of information related to the ACDM implementation
- Collaboration with other airports agencies (ATS, airlines, ground handling agencies,
- Efficiency of aircraft ground movements time…)
- Operations under adverse conditions
- Implementation of Surface Movement Guidance Control Systems

1.5   The objective of this project is to improve capacity and efficiency of air navigation infrastructure related to airports operations in the AFI region. This project requires Aerodromes to implement Airport Collaborative Decision Making (A-CDM) as part of Aviation System Block Upgrade (ASBU) Block 0, which CANSO is participating and leading. The Mombasa ATFM Roadmap addresses the implementation of A-CDM as detailed in the implementation plan (**Annex 1**).

2.   DISCUSSION

2.1.   AIR TRAFFIC FLOW MANAGEMENT (ATFM)

2.1.1   The fundamental concept of ATFM is the balancing of air traffic demand and capacity. ICAO Annex 11 states that 'Air traffic flow management (ATFM) shall be implemented for airspace where air traffic demand at times exceeds, or is expected to exceed, the declared capacity of the air traffic control services concerned.

2.1.2   ATFM measures are not currently utilised in most of the AFI regional airspaces, however the forecasted growth in traffic within the African continent will necessitate the use of ATFM measures to ensure that capacity is able to meet the demand of airspace users

2.1.3   While ANSPs and airport operators should strive to increase and optimize airspace and airport capacity to meet demand and traffic growth; surges in traffic, Security situations, military conflicts zones, diversions, and capacity constraining cause imbalances in air traffic management and thus the need for ATFM Roadmap

2.1.4   ATFM performance is dependent upon changes in several organisational and technical areas, namely:

- Human Enablers
- Technical Enablers
- Institutional Enablers
- Procedural Enablers

- Participation of ATM Community
- Collaborative Decision Making: Integration of CDM into ATFM Functions Concept, current situation and best practices

2.2 MOMBASA ATFM ROADMAP.

2.2.1   The Roadmap is established to integrate regional ATFM systems as per the resolution of the CANSO Africa Conference, Mombasa resolution and as per project 7 of the AAO/SG 2 under Aerodromes.

2.2.2   The Roadmap provides guidance on how the regional stakeholders will collaborate through CDM and A-CDM to optimise traffic flow and ensure participation of all African Stakeholders:

2.2.3   To support successful implementation of ATFM Roadmap, Stakeholders must coordinate and collaborate on issues of:

- Training,
- Operational organisation,
- Sharing of information, and
- To ensure agreements are in place

2.2.4   Successful implementation of Mombasa AFI ATFM Roadmap requires sequential steps to be taken to establish an AFTM structure from initiation to post implementation review analysis including all stakeholders. The implementation

2.2.5   Utilising a Project approach, it is recommended that a program be broken down into the following actions with tasks:

- Demand and capacity Determination
- Regional ATFM preparations
- Initial regional ATFM system

2.3 ESTABLISHMENT OF REGIONAL ATFM SECTORS.

2.3.1   The aim is to establish four (04) blocks of airspace defined according to Countries geographical proximity and on AFI traffic flows, existing CNS-ATM infrastructure and areas of routing in consultations with the ICAO AFI region.

2.3.2   It is proposed that AFI States be organised under the following four (04) blocks of airspace (sectors):

- Southern Africa (SADC Region)
- Eastern Africa
- Central Africa
- Western Africa as illustrated in the map below

2.3.3   The image below outlines the proposed block of airspace as mentioned in 2.3.2 above.
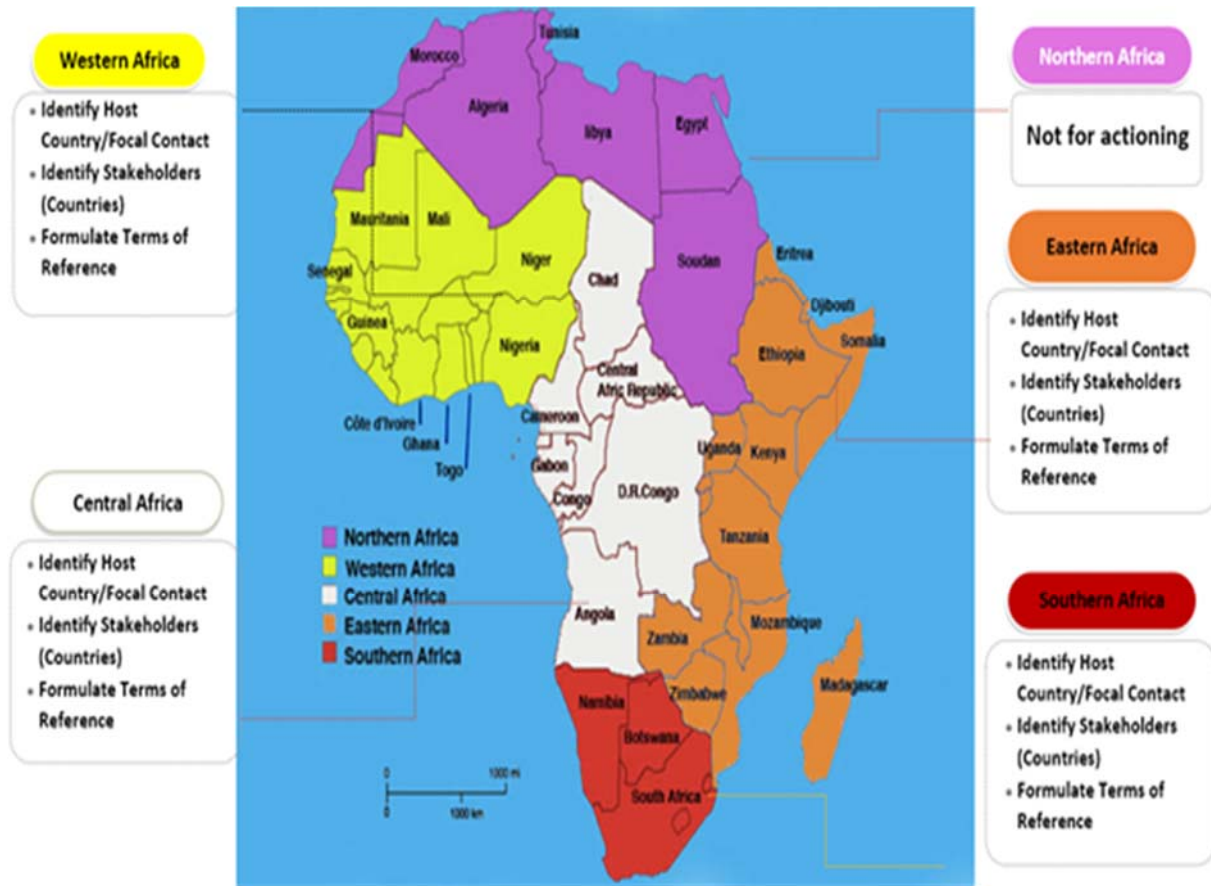
2.4   BENEFITS

2.4.1   The expected benefits of implementing ATFM include:
- Reduction of ground and En-route delays
- Maximisation of capacity and Optimisation of the flow of air traffic.
- Enhancement of operational safety
- Improvement in operational efficiency
- Provide an informed choice between departure delay, re-routing and/or flight level selection.
- Alleviate unplanned in-flight re-routing; and Assist ATS Units in planning for and managing future workload in the light of forecast increased traffic flows within the region.
- Provide a better Coordination platform during Air Traffic Management constraints

3   ACTIONS BY THE MEETING

3.1   The meeting is invited to:

a)   Endorse the MOMBASA AFI ATFM ROADMAP as one of the pillars to achieve seamless operations concept and A-CDM implementation.

b)   Commit to the Mombasa AFI ATFM implementation schedule (Annex 1).

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