International Civil Aviation Organization

MIDANPIRG/19 and RASG-MID/9 Meetings

(Riyadh, Saudi Arabia, 14-17 February 2022)

Agenda Item 5.4: **Air Navigation Planning and Implementation - AIM**

AIM SWIM SERVICE

*(*Presented by United Arab Emirates/General Civil Aviation Authority*)*

SUMMARY
This paper outlines Next Generation UAE AIM SWIM Services capabilities for the provision of Aeronautical data in digital format (AIXM).

REFERENCES
− Doc 9750 "Global Air Navigation Plan" − Doc 9882 "Manual on Air Traffic Management Requirements" − Doc 10039 "Manual on SWIM Concept"

1. INTRODUCTION

1.1   System Wide Information Management (SWIM) is part of ICAO's Aviation System Block Upgrade (ASBU). The aim of SWIM is to provide information to users in relevant and commonly understandable format. It does not refer to a single solution or technology, but rather a global level of interoperability and standardization that enables users and providers to exchange data without having to use different interfaces or protocols. It is based on service-oriented architecture and open standard technologies.

1.2   SWIM global interoperability framework which includes Network Connectivity, (Technical Infrastructure, Information exchange models, Information exchange services) which are under scope of SWIM and SWIM Enabled application. In order to achieve this target UAE AIM has developed all necessary infrastructures and applications at all layers.

1.3   This paper highlights UAE AIM SWIM services capabilities for the provision of aeronautical data in digital format i.e. Aeronautical Information exchange model (AIXM) as well as graphical visualization features available as part of the UAE GCAA strategic milestone.

1.4   UAE AIM SWIM capabilities are improvement stages and the natural result of UAE AIM continuous services development process. These have created a solid platform of functionalities allowing better, quality-controlled and standardized interaction with other internal and external (third party) stakeholder systems.

1.5   The main driver for this approach is the regulatory compliance and alignment of UAE AIM with ICAO SARPs (Doc 9750, Doc 9882 and Doc 10039) as well as with the revised MID Region AIM Implementation Roadmap.

2.   DISCUSSION

2.1   Since 2016 the GCAA started defining the scope of AIM and this year we are ready to go live. This process went through different steps which are defining scope of AIM SWIM, System Development and testing of SWIM Environment to end up being ready to go live from 2022.

2.2   GCAA AIM SWIM adapted two approaches for Information exchange services.

-    GCAA AIM SWIM Service (Human to Machine Interface)

     https://aim.szcgateway.ae/uae-swim-ui/

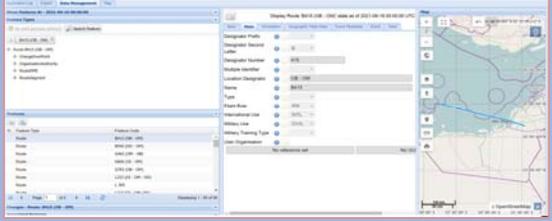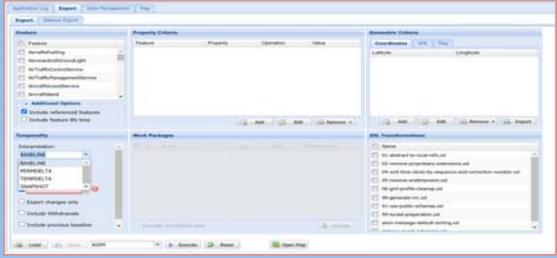-   GCAA AIM SWIM ICD (Machine to Machine Interface)

     Interface Control Document available allowing Aeronautical Stakeholder to understand, develop and implement the necessary counterpart interfaces to connect to AIM SWIM services provided by GCAA.
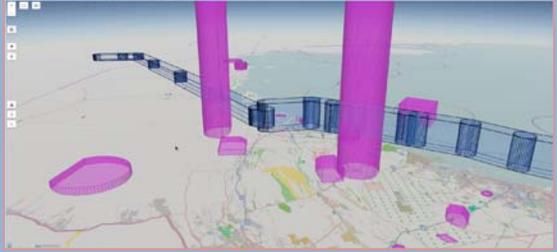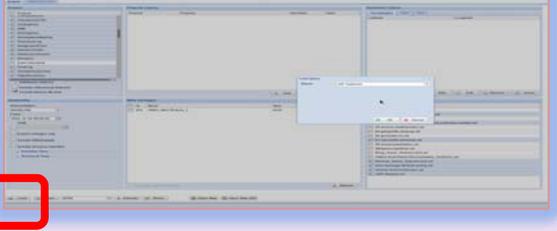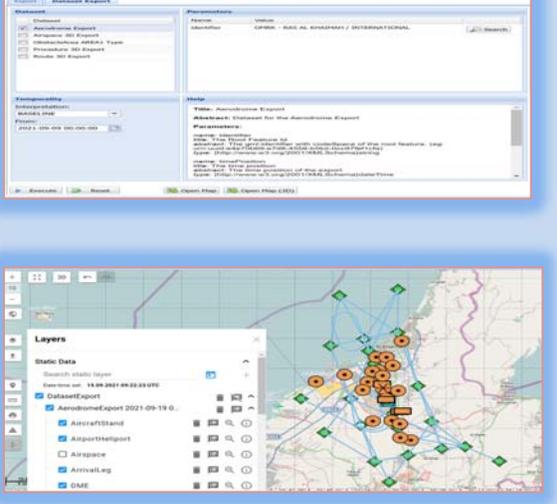
2.3   GCAA AIM SWIM information exchange are carried out through below Interfaces as follows:

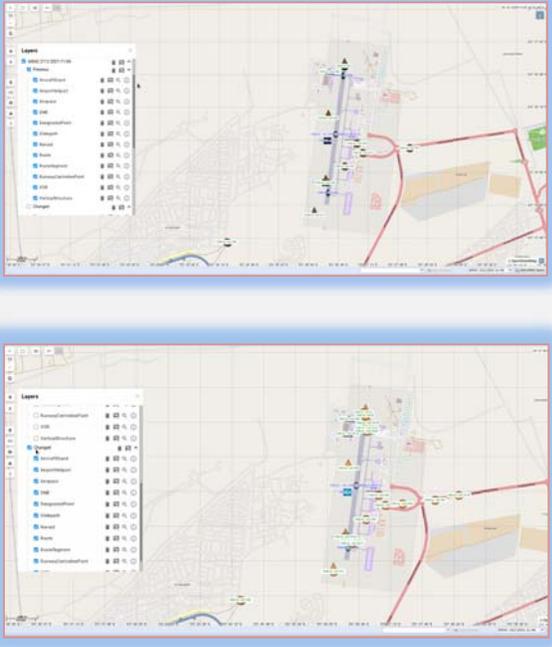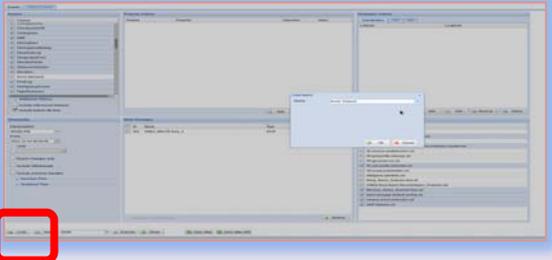| Interface Request/Reply	Publish/Subscribe Message	Security Services
https://aim.szcgateway.ae/uae-swim-ws/wfs/	amqps://broker.szcgateway.ae	EUROCONTROL SWIM Yellow Profile

2.4   GCAA AIM SWIM Service is internet based portal; which has many unique features which will help aeronautical information stakeholders to retrieve & view AIXM data in text and graphical format. Below table will provide few of major highlights:

Feature	Description	Screenshot
Login Page	On any browser once the AIM SWIM URL is specified it will land on this page. Only authorized AIM SWIM registered users will get access to this service.	

Human Machine Interface	In this tab of AIM SWIM Service, you can view information both in text format and can visualize data in Graphical format.	
Graphical Visualization Tool	This is graphical visualization tool result for UAE Airspace.	
Data Exchange Services	Using this tab, aeronautical data exchange is possible with various filtration options: – All features – Specific feature – Specific AIXM Format (BASELINE, PERMDELTA, TEMPDELTA & SNAPSHOT) – Date filtration – Absolute search specific to name – Graphical filtration based on coordinates – Graphical filtration based on GML – Graphical filtration based on Map plotting	

3D Visualization Tool	Using this tool you will visualize data in 3D format in addition to this tool has vertical filtration option.	
UAE AIP Dataset	From the evolution of PANS AIM document most demanding activity of states AIM is publish certain section of AIP in dataset format (AIXM), using this tool we made generation of UAE AIP Dataset in simple three steps.	
Aerodrome Based filtering	Using this feature you can filter specific UAE Aerodrome data can and. view data in AIXM format or in graphical option.	

AIRAC Changes Visualization	Using this feature you can view AIRAC changes in graphical format and can compare before and after changes in layer format.	
UAE Obstacle Area1 Dataset	From the evolution of PANS AIM document obstacle dataset has given to stakeholders in AIXM format, using this tool we made process of generation of Obstacle Area1 Dataset in simple three steps.	

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

a)   note the information/details provided in this information paper; and

b)   consider the UAE GCAA AIM SWIM services experience while planning SWIM Services implementation.

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