ICAO

Fifth Meeting of Air Navigation Services Providers in Africa

(Lomé, Togo, March *28, – April 01, 2022)*

Point 5 of agenda: Support to the African Union Single African Air Transport Market (SAATM) flagship programme

WP/12/PPT: AFI Region AIS Database and ASECNA perspectives

(WP presented by ASECNA)

RESUME	
This document provides the position of ASECNA in the realization of AFI-CAD initiative and the further development planned by ASECNA to support various databases management in the scope of SWIM. The AFI-CAD initiative is an approach to fulfil the airspace user needs in timely, consistent and high-quality aeronautical data, aeronautical obstacles, and terrain data requirements. It does not include the provision of AIS services on behalf of participating States, which remains a State responsibility. These last years, ASECNA performed many efforts to implement a Regional AIS database in accordance with the AFI-CAD concept, on behalf of its member states, for effective transition from AIS to AIM.	
REFRENCE(S)	AN-Conf 12 Recommendation 3/8 (c) APIRG 20 Conclusion 20/33, 20/34 & 20/35 Global Air Navigation Plan (GANP), (Doc 9750) APIRG 21 Conclusion 21/14
Objectifs stratégiques	ICAO Roadmap for transition from AIS to AIM and further development on database infrastructure implementation in accordance with SWIM standard

1 INTRODUCTION

1.1 From Air Navigation Conference held in 2012, AFI states were invited to engage intraregional and interregional cooperation for an expeditious transition from AIS to AIM in a harmonized manner and to using digital data exchange and consider regional and sub regional AIS databases as a enabler for transition from AIS to AIM.

1.2 Several outcomes endorsed by APIRG meetings were achieved to set up AFI-CAD framework and guidance materials, project business plan and proposed 04 regional AFI-CAD centers in AFI Region (see figure 1). By APIRG 20 conclusion 20/34, states were invited to ensure the compatibility and the integration of their various AIS databases to facilitate implementation of a system wide information (SWIM), under ASBU B0-DATM

element.

1.3 This working paper reports on the progress made by ASECNA for AFI-CAD initiative and the further development planned to support reliable operations with AFI states which would desire to collaborate with ASECNA in the scope of their databases exchange and/or management.

2. DISCUSSION

2.1 ASECNA is composed of 17 member states in Western and Central Africa Region. Since 05th December 2019, ASECNA deployed full functionality of its centralized AIS Database, which covers its states via VPN connections. The database is based on AIXM 4.5 and enables automatic production of electronic AIP (eAIP), displayed on a web server. It is compliant with B0-DATM and B1-DATM of GANP and gives options for data exchanges under foreign inputs selection. It can be considered that ASECNA has achieved one of the four (04) proposed region pole in AFI-CAD initiative.

2.2 The database is based on a distributed architecture (see figure 2) on multiple sites and with cybersecurity measures.

2.3 To durably support the system with an integrated view with others operational databases (for Regional OPMET, IWXXM) ASECNA is engaged to put in place a robust infrastructure which consists in the acquisition of a high rate IP network in public cloud. A datacenter will be based on this infrastructure to ensure more services such PBCS, ATFM. The implementation of such a platform dedicated to civil aviation will also make it possible to integrate governance issues, to deliver the same level of services as large public clouds such as AWS and Azure in a more controlled and more reassuring way for air operators.

2.4 ASECNA will be able to offer a SOC/NOC supervision center for a fee to guarantee the level of security and availability of its customers' services. In line with the evolution of the networks and infrastructures of the international aeronautical telecommunications service required, to take into account current and future developments of the CNS/ATM system in the AFI region, and in accordance with the concept of SWIM, ASECNA already plan the implementation of AIXM 5.X database which will deliver and digital web services through a secure Cloud infrastructure able to deliver the following services to operators in the aviation sector and deliver the following services :

- Infrastructure as a Service (IAS) service provider ;
- Application as a Service (AAS) service provider;
- Network and Security as a service (NSAS) ;
- Desktop as a Service Provider (DAAS).

2.5 Therefore, ASECNA can support AIXM 4.5 in uploading and downloading aeronautical data in SDO and also uploading and downloading in AIXM 5.X format.

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3 ACTIONS BY THE MEETING

3.1 The Take note of :

- the willingness of ASECNA to host AFICAD regional center as its AIS database is already operational and assure the on-line availability of AFI States aeronautical information via AIS ASECNA website https://aim.asecna.aero, in the form of specified tab
- the perspectives of further development of its IP network and database infrastructure based on datacenter standard and integrating performance and monitoring services.

3.2 Encourage volunteer's states in West and Central AFICAD willing to migrate national data into AIXM database, upon agreement with ASECNA and other states in AFI region to move on digital data exchange through implementation of appropriate IP network and database infrastructures.

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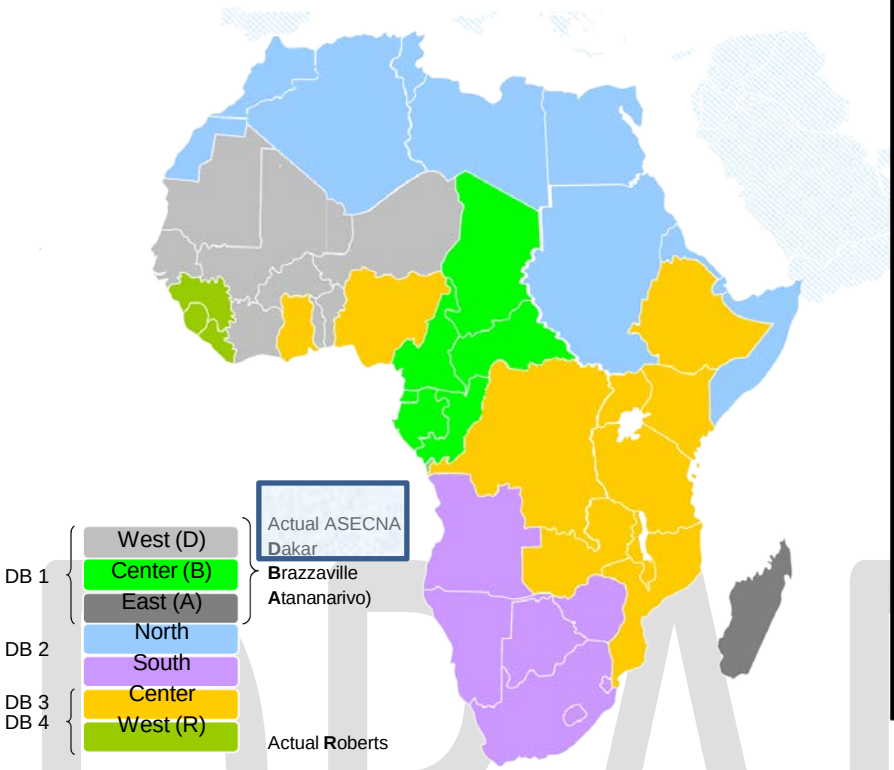
Figure 1 : AFI-CAD Region



1	Mauritania
2	Senegal
3	Gambia
4	Guinea Bissau
5	Mali
6	Coate d'Ivoire
7	Burkina Faso
8	Togo
9	Benin
10	Niger
11	Cameroon
12	Equatoria Guinea
13	Gabon
14	Congo
15	Central African Republic
16	Chad
17	Angola
18	Namibia
19	Botswana
20	Zimbabwe
21	Swaziland
22	Lesotho
23	South Africa

24	Guinea
25	Sierra Leone
26	Liberia
27	Ghana
28	Nigeria
29	Democratic Rep Congo
30	Uganda
31	Kenya
32	Ethiopia
33	Tanzania
34	Burundi
35	Malawi
36	Mozambique
37	Rwanda
38	Sychelles
39	Zambia
40	Comores
41	La Reunion *
42	Madagascar
43	Eritrea
44	Sudan
45	Egypt
46	Somalia

47	Tunesia
48	Algeria
49	Morocco *
50	Sahrawi
51	Lybia
52	Djibouti
53	Cape Verde

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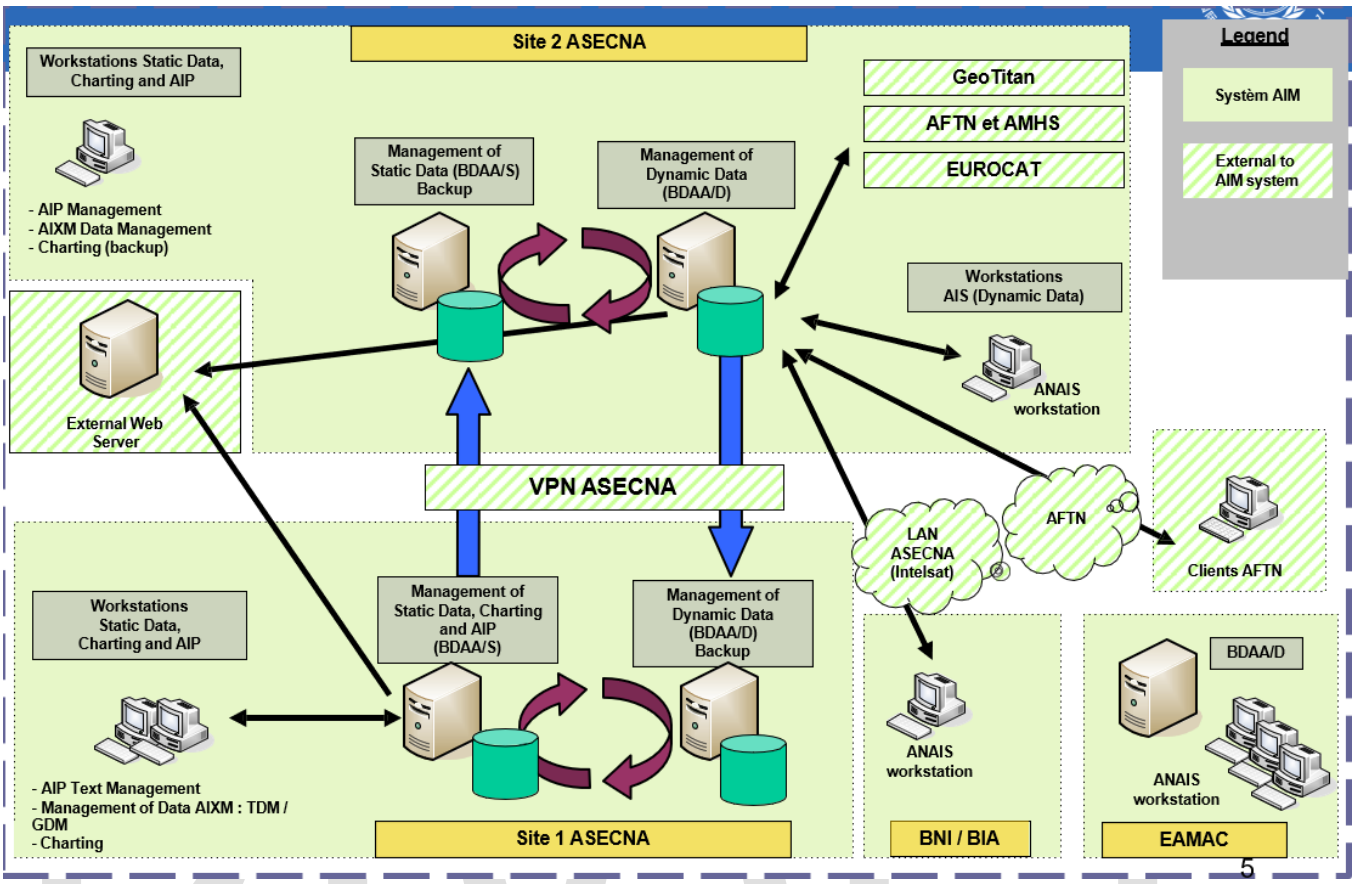
Figure 2 : ASECNA Centralized AIS Database



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