**INTERNATIONAL CIVIL AVIATION ORGANISATION (ICAO)
WORSHOP ON ASBU**

(Dakar, SENEGAL, 18 -22 September 2017)

Day n° 3: STRATEGY ASBU

STATUS OF IMPLEMENTATION OF ICAO ASBU

[Presented by the Agency for the Safety of Air Navigation in Africa and Madagascar]

<table>
<tr><td colspan="2" align="center">**Executive Summary**</td></tr>
<tr><td colspan="2">The purpose of this information note is to inform the meeting on ASECNA's ASBU modules implementation status of ASBU and the implementation strategy adopted.
Particularly it presents the implementation status of blocks 0 and 1 as well as the planned planning witihn the framework of its five-year investment program called ASECNA's Services and Facilties Plan (PSE).</td></tr>
<tr><td>*Specific Objectives*:</td><td>This briefing note relates to the strategic objectives: A, B, C and E.
 Safety, Air Navigation Capacity and Efficiency, and Environmental Protection.</td></tr>
<tr><td></td><td></td></tr>
<tr><td>References:</td><td>DOC 9750: Global Air Navigation Plan;
- Resolution A-38, relating to ASBU;
We conclude APIRG 19 and 20 on the adoption of a plan for the implementation of the AFI regional air navigation system in line with the upgrading of the ICAO Bloc aviation system (ASBU);
-ASECNA's SERVICEs and Facilities Plan (PSE ASECNA)</td></tr>
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1. **INTRODUCTION**

1.1 The Global Air Navigation Plan (GANP) and ASBU's Aviation System Upgrade Methodology, which is integrated into GANP, provides a framework for future improvements in air navigation technologies and procedures structured in a strategic consultative approach that combines specific global performance capabilities with timely flexibility for improvements associated with each component .

1.2 The ASBU modules are structured in blocks and their implementation must be in line with the operational requirements of the region. The ASBU framework and the technological roadmap have been established to ensure that all conditions for planning activities at national and regional level are met.

1.3 The AFI Region has adopted and classified the eighteen modules of block 0 for its implementation, and only 9 modules have priority 1 as they cover most AFI states. The remaining modules are Priority 2 and apply only to specific AFI Region States.

2. **IMPLEMENTATION STRATEGY IN ASECNA' STATES**

2.1 ASECNA is a provider of air navigation services for 18 of the AFI region (West, Central and Indian Ocean). Implementation of air navigation services improvement programs based on ASBU requires strong political commitment in such an institutional environment.
ASECNA's Strategic Orientation Plan, containing the ATM Strategic Plan to 2030, approved by the Board of Directors, the Committee of Ministers in charge of Civil Aviation, is based on the framework of the GANP and the AFI plan.

2.2 The projects relating to the modules contained in block 0 ASBU are included in the successive ASECNA investment plans since 2014 and included in the next covering the period 2018/2022 already adopted in July 2017 by the Committee of Ministers .

2.3 The Block 1 modules deemed relevant in the ASECNA Member States have also been planned, as shown in the table in appendix B, but this planning can be adjusted according to the provisions adopted by the AFI region and the progress made of technology.

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3. **STATUS OF IMPLEMENTATION**

3.1 ASECNA participated in the two (2) workshops organized by ICAO related to the implementation of the ASBU concept, including discussions on key safety performance areas.

3.2 For the 18 modules of block 0, only 12 modules were selected for the ASECNA member states and then ranked in order of priorities 1 and 2. Then 9 modules are classified in priority 1 and the 3 others in priority 2.

3.3 The table in appendix A shows the implementation status of modules in block 0 at the level of ASECNA member states

3.4 The ASBU tracker realized on the implementation level of the ASBUs in the ASECNA zone gives the graph above:
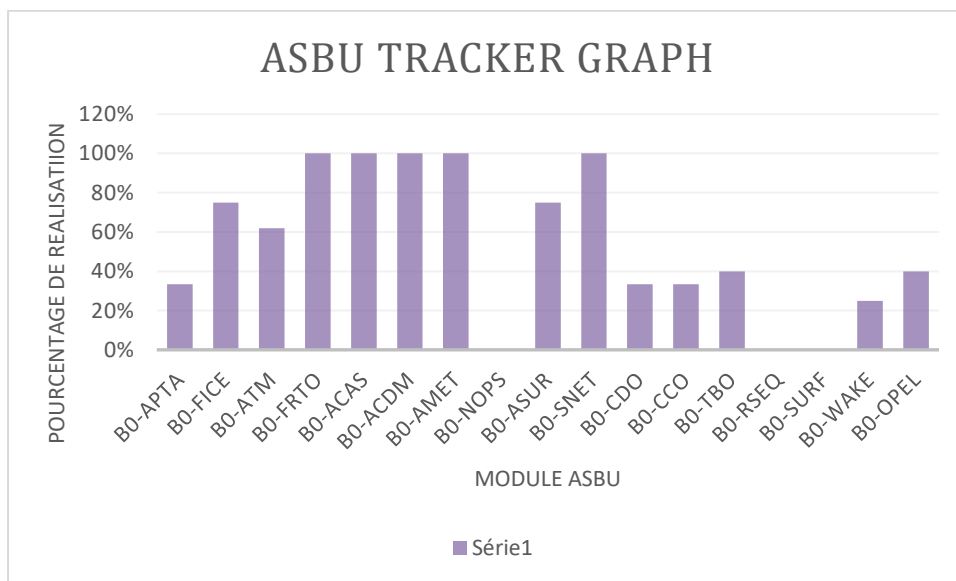
NB : Please note this table is only for information

4. **FOLLOW-UP**

4.1 The meeting is invited to take note of the contents of this information note and the implementation plan and implementation planning attached in Appendix A and B

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APENDIX A: ASBU and ASECNA Projects on Investment Plan

Performance Improvement Areas (PIA)	ASBU BLOCK 0 Modules	Module description	Implementation status	ASECNA
PIA 1 –airports operations	B0-APTA	Optimization of approach procedures including vertical guidance	- 40% of ASECNA major airports with SID/STAR PBN RNP1 - Work are going on Tananarive, Libreville, Brazzaville and Bamako after Abidjan and Dakar airports - All ASECNA major airports' instrument runways with APV (Baro VNAV) except Bangui and N'Djamena airports	2018-2022
			GBAS experimentation in Dakar airport beginning on 2013	2018-2022
			-Phase B studies towards EGNOS deployment including CBA - Ionosphere characterization - SAFIR/JPO Project for capacity building and to oversee baseline of GNSS implementation on AFI region	

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			- RAIM monitoring and prediction tool	
	B0-SURF	Improved Airport operations through Departure, Surface and Arrival Management	- already installed in Dakar new airport, extension on other airports planned on 2017/2018	2018-2022
PIA 2 – Global interoperable system and data	B0-FICE	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	- Activation of AIDC functionality of EUROCAT X et TOPSKY Systems for 100% coordination and transfer of intra ASECNA messages ; tests between DKR and ABJ to be generalized - program for harmonization and coordination of messages between ASECNA and adjacent FIRs by testing AIDC/OLDI compatibility - AMHS ongoing implementation over ASECNA states	End of 2017
	B0-DATM	Service Improvement through Digital Aeronautical Information Management	-AIMANT project relating to the transition AIS to AIM - QMS obtained on year 2014 - e-TOD project - Pursuit of WGS-84 campaign - AIXM in development (using AMHS support and data exchange based on IP)	2019-2022

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			- e-AIP using web site www.ais-asecna.org - NOTAM project	
	B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	- QMS obtained on year 2014 -SAAPI - WAFS (use of new products: Turbulence, icing, CB) - Surveillance of tropical cyclones - Wind shear detection project - Thunderstorms warning and alert systems project	2019-2022
PIA3 - **Optimum Capacity and Flexible Flights – Through Global Collaborative ATM**	B0-FRTO	Improved Operations through Enhanced En-Route Trajectories	- PBN strategy -UPR through the INSPIRE initiative in the Indian Ocean region -IFLEX through AORRA airspace in the oceanic FIR	2018-2022
	B0-NOPS	Improved Flow Performance through Planning based on a Network-Wide view	Project planned on year 2017	2019-2022
	B0-ASUR	Initial surveillance capability ADS-B Out, MLAT	- Successful assessment by ASECNA/Seychelles and La Reunion of ground based ADS-B surveillance in Antananarivo FIR in 2013 ;	2017-2022

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			- Successful ADS-B space based tests at Dakar, N'Djamena, and Nouakchott Airports on 2015; - Total airspace surveillance coverage with ADS-B ground based to complete actual Radar coverage. Ongoing project; - Study case and CBA for ADS-B space based for oceanic airspace and remote airspace planed after 2018 initial tests planned on 2016).	
	B0-SNET	Baseline ground-based safety nets	- Automated ATM and Surveillance systems related safety nets (TOPSKY) ; - 17 CCR are equipped with automation systems (TOPSKY) with ADS- C/CPDLC, FDPS, FPASD, RDP, SDP functions	2017
PIA4 - **Efficient Flight Path** **– Through** **Trajectory-based** **Operations**	B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDOs)	- Dakar and Abidjan airports as Pilots sites in 2014 - Ongoing projects at Libreville, Brazzaville, Bamako airports	2022
	B0-CCO	Improved Flexibility and Efficiency in Departure Profiles (CCOs)	- Dakar and Abidjan airports as Pilots sites in 2014 - Ongoing projects at Libreville, Brazzaville, Bamako airports	2022
	B0-TBO	Improved Safety and Efficiency through the	- ADS-C/CPDLC and Mode S Radar systems implemented in all ASECNA FIRs	2018

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		initial application of Data Link En-Route	- Experimentations with HFDL and VDL planned for 2017 - Study case for D-ATIS and D-VOLMET implementation in progress	

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APPENDIX B: PLANNING THE IMPLEMENTATION OF BLOCKS ASBU 0 and BLOC 1 FOR THE ASECNA AREA Up to 2024 (Source PSE ASECNA)

Domaines de Performance (PIA)	Module	2019	2020	2021	2022	2023	2024
PIA 1 **Aérodrome Operations**	B1-APTA	X	X	X	X	X	X
	B1-WAKE	X	X	X			
	B1-RSEQ						
	B1-SURF						
	B1-ACDM	X	X	X	X		
	B1-RATS			X		X	X

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PIA 2 Global interoperable system and data	B1-FICE	X	X	X	X		
	B1-DATM	X	X	X			
	B1-SWIM		X	X	X		
	B1-AMET	X	X	X	X		
PIA 3 Optimum Capacity and Flexible Flights – Through Global Collaborative ATM	B1-FRTO	X	X	X	X	X	X
	B1-NOPS	X	X	X	X	X	X
	B1-ASEP	X	X	X	X	X	X
	B1-SNET	X	X	X	X	X	X

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PIA 4 Efficient Flight Path – Through Trajectory-based Operations	B1-CDO	X	X	X	X	X	X
	B1-TBO						
	B1-RPAS			X	X	X	X

END.