



INFORMATION PAPER

Third Meeting of the APIRG Airspace and Aerodrome Operations Sub Group (AAO/SG3), Virtual meeting, 3 to 5 August 2020

Agenda Item 3: Planning and Implementation (Projects and ASBU Modules)

[Aviation System Block Upgrade Implementation Status in Nigeria]

(Presented by [Nigeria])

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SUMMARY

This working paper presents the status of implementation of ASBU Block 0 Modules in Nigeria, encourages States to develop and implement their national ASBU plans and national air navigation plans based on national operational needs and priorities.

The WP also recommends further training and sensitization on ASBU and air navigation planning, as well as integration of air navigation plans and ASBU plans into State National Economic Development Plans.

In summary, Nigeria has fully implemented 8 modules in ASBU Block 0, while the implementation of 8 modules is at various stages of completion. However, the implementation of 2 modules (B0-WAKE and B0-ASEP) has not commenced.

1. Fully Implemented Modules (8): 44%
2. Ongoing implementation (8): 44%
3. Modules not yet commenced (2): 12%

Action by APIRG is contained in **Paragraph 3**.

References:

- _ICAO Global Air Navigation Plan (GANP, Doc 9750)
- _AFI Air Navigation Plan (ANP, Doc 7474), Volume III
 - _ Nigerian Air Navigation Plan
 - _ Nigerian ASBU Implementation Plan.

Related ICAO Strategic Objective(s): Safety, Capacity and Efficiency

1. INTRODUCTION

The 4th Edition of the Global Air Navigation Plan (GANP, Doc 9750), was approved in 2012 by the ICAO Council, and became effective in 2013 with the Aviation System Block Upgrade (ASBU) as a framework and strategies for the effective implementation of the GANP from 2013 - 2028.

Following the approval of the GANP and ASBU Framework, Nigeria developed a National Air Navigation Plan from 2015 – 2030, as well as an ASBU National Implementation Plan from 2015 – 2030.

2. ASBU IMPLEMENTATION STATUS IN NIGERIA

Below is the implementation status of ASBU Block 0 18 Modules in Nigeria:

1. **Meteorological information supporting enhanced operational efficiency and safety (AMET):** This Module Digital Aero Met has been fully implemented in Nigeria with Low Level Wind Shear Alerting Systems, Automatic Weather Observation Systems, World Aeronautical Forecast Service (WAFS), full implementation of QMS with ISO 9001 and SADIS.
2. **Improved Operations through Enhanced En-Route Trajectories (FRTO):** Nigeria has implemented Flexible Use of Airspace (FUA) and Joint Use Airspace, as well as effective Civil/Military Cooperation.
3. **Initial Capability for Ground Surveillance (ASUR):** Nigeria in 2010 implemented ground surveillance under the Total Radar Coverage of Nigeria (TRACON) with 9 MSSRs and 4 PSRs providing total surveillance over Nigeria.
4. **Improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B (OPFL):** Nigeria implemented Automatic Dependent Surveillance Contract (ADS-C) in November 2015 covering the entire Nigerian airspace to enhance climb and descent profiles during enroute over Nigerian airspace.
5. **Increased Effectiveness of Ground-Based Safety Nets (SNETS):** Nigeria has fully implemented Ground Safety Nets in her Total Radar system. These safety nets include: Short Term Conflict Alert (STCA), Medium Term Conflict Detection (MTCD), Minimum Safe Altitude Warning (MSAW), Danger Area Infringement Warning (DAIW), Route Adherence Monitoring (RAM), Cleared Level Adherence Monitoring (CLAM), RVSM Adherence (RA), etc.
6. **Improved Flexibility and Efficiency in Descent Profiles (CDO):** Nigeria has implemented Continuous Descent Operations with the implementation of Standard Arrival Routes and RNAV 1 approach procedures at Lagos, Abuja, Kano and Port Harcourt airport.
7. **Improved Safety and Efficiency through the initial application of Data Link En-Route (TBO):** Nigeria in November 2015, implemented Controller Pilot Data Link Communication system (CPDLC) over the entire Nigerian airspace.
8. **Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO):** Nigeria in line with the ASBU Block 0 Module, implemented Continuous Climb Operations (CCO) at Lagos, Abuja, Kano and Port Harcourt with Standard Instrument Departures (RNAV1).

9. **Improved Airport Operations through Airport-CDM:** Nigeria is currently developing protocols for the implementation of Airport Collaborative Decision Making (ACDM) to facilitate the implementation of Air Traffic Flow Management.
10. **Safety and Efficiency of Surface Operations (SURF):** Nigeria is in the process of implementing Surface Movement Radar and Ground Control Systems at Lagos and Abuja to enhance safety and reduce terminal delays and prevent runway incursions. The implementation of surface movement radar and ground control system is expected to be completed by 2021.
11. **Optimization of Approach Procedures including vertical guidance (APTA):** Nigeria is currently developing approaches with vertical guidance using BARO VNAV for Lagos, Abuja, Kano and Port Harcourt. These procedures are scheduled for implementation by December 2020. In addition, Nigeria has implemented RNAV SIDs and STARs at Lagos, Abuja, Kano and Port Harcourt, as well as RNAV 1 Approaches (LNAV) at 30 aerodromes.
12. **ACAS Improvements (ACAS):** Nigeria is yet to implement TCAS 7.1 as recommended in ASBU Block 0. However, the Advisory Circular has been developed by the Nigerian Civil Aviation Authority and implementation by operators is expected in 2021.
13. **Improved Flow Performance through Planning based on a Network-Wide view (ATFM):** Nigeria is developing protocols and Standard Operating Procedures for the implementation of Air Traffic Flow Management (ATFM) in line with the Mombasa Declaration on ATFM.
14. **Improve Traffic flow through Runway Sequencing (AMAN/DMAN):** Nigeria is currently implementing Arrival Manager and Departure Manager at Lagos and Abuja scheduled for completion by 2021 in partnership with SITA.
15. **Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration (FICE):** Nigeria is currently deploying a new ground – ground network for connectivity with 24 VSATs at 24 airports. This project is the Automation of the Nigerian Aeronautical Information Management System under MOCOM and AVITEC. The project will provide a backbone for Flight Information and Collaborative Environment (FICE), and is expected to be completed by 2021. Nigeria currently has OLDI but planning to implement AIDC for interoperability with adjacent States.
16. **Service Improvement through Digital Aeronautical Information Management (DATM):** Nigeria is implementing e-flight plan, e-NOTAM, e-AIP and e-Charts under the Aeronautical Information Management System project scheduled for completion in 24 airports in 2021.
17. **Increased Runway Throughput through optimized Wake Turbulence Separation (WAKE):** Nigeria is yet to implement the ICAO Wake Turbulence re-categorization. However, in view of the expected benefits, the Module is planned for implementation in 2022.
18. **Air Traffic Situational Awareness (ATSA):** This Module has not been implemented in Nigeria, but it is planned for implementation in 2022, to provide flight crew with enhanced traffic situation awareness.

2.0 Challenges in the implementation of ASBU Block 0 Modules:

The main challenges encountered by Nigeria in the implementation of 18 ASBU Block 0 Modules are as follows:

- i) Inadequate funding for implementation of the Air Navigation Plan and the ASBU Plan.
- ii) Lack of integration of National Air Navigation Plan and National ASBU Plans into National Economic Development Plan.
- iii) Inadequate training and sensitization of stakeholders on the GANP and ASBU concepts.

- iv) Lack of Collaborative Decision Making and Collaborative Planning amongst aviation agencies, and between adjacent States.

3.0 Recommended Action:

- i) APIRG to take note of the level of implementation of ASBU Block 0 in Nigeria.
- ii) APIRG to note the major challenges militating against effective implementation of ASBU Block 0 Modules.
- iii) APIRG to facilitate Collaborative Air Navigation Planning and Implementation between neighbouring States.
- iv) APIRG to facilitate further training and sensitization for effective implementation of GANP and ASBU in the Region.
- v) APIRG through AFCAC and African Union to facilitate the integration of National Air Navigation Plans and National ASBU Plans into State National Economic Development Plans.

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