NAMIBIA CIVIL AVIATION AUTHORITY

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AIR NAVIGATION SERVICES

ICAO AVIATION SYSTEM BLOCK UPGRADE (ASBU) IMPLEMENTATION PLAN AND STATUS FOR NAMIBIA

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Namibia Civil Aviation Authority: Air Navigation Services Division

ICAO Aviation System Block Upgrade (ASBU) Implementation Plan and Status for Namibia

Background

The Global Air Navigation Plan's (GANP) Aviation System Block Upgrades (ASBU) methodology as stated in Doc 9750-AN/963 Fifth Edition – 2016, is a programmatic and flexible global systems engineering approach that allows all Member States to advance their Air Navigation capacities based on their specific operational requirements. The Block Upgrades will enable aviation to realize the global harmonization, increased capacity, and improved environmental efficiency that modern air traffic growth now demands in every region around the world.

The approach of the ANS Division taking account of the GANP is to implement those ASBU elements:

- Required in terms of regional implementation plans; and
- That are relevant and appropriate for Namibia; and
- Which are essential to ensure the interoperability of the Namibian air navigation system with those of adjacent FIRs; and
- Those which are required by the users of air navigation services in Namibia.

In this context it is noted that APIRG/19 adopted, categorised and prioritised 18 ASBU Block 0 Modules for implementation in the AFI region as reflected in Table 1 below. The categories of the 18 adopted Block 0 Modules are as follows:

- Essential (E): These are the ASBU modules that provide substantial contribution towards global interoperability, safety or regularity. The nine (9) Modules for all States of AFI Region are FICE, DATM; ACAS, FRTO, APTA, CDO, CCO, AMET and ACDM.
- Desirable (D): These are the ASBU modules that, because of their strong business and/or safety case, are recommended for implementation almost everywhere. The four (4) Modules for all States of AFI region are NOPS, ASUR, SNET, and TBO.
- Specific (S): These are the ASBU modules that are recommended for implementation to address a particular operational environment in specific countries of AFI region (for example South Africa). The three (3) Modules are OPFL, ASEP and WAKE (elements and targets are to be developed by APIRG).
- Optional (O): These are the ASBU modules that address particular operational requirements in specific countries of AFI region and provide additional benefits that may not be common everywhere. The two (2) Modules are SURF and RSEQ.

PIA	Module Description	Module	Category	Priority
PIA1 Airport Operations	Improve Traffic flow through Runway Sequencing (AMAN/DMAN)	B0-RSEQ	O	RI
	Optimization of Approach Procedures including vertical guidance	B0-APTA	E	II
	Increased Runway Throughput through optimized Wake Turbulence Separation	B0-WAKE	S	RI
	Safety and Efficiency of Surface Operations	B0-SURF	O	RI
	Improved Airport Operations through Airport-CDM	B0-ACDM	E	II
PIA2 Globally Interoperable Systems	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	B0-FICE	E	II
	Service Improvement through Digital Aeronautical Information Management	B0-DATM	E	II
	Meteorological information supporting enhanced operational efficiency and safety	B0-AMET	E	II
PIA3 Optimum Capacity	Improved Operations through Enhanced En-Route Trajectories	B0-FRTO	E	II
	Improved Flow Performance through Planning based on a Network-Wide view	B0-NOPS	D	RI
	Initial capability for ground surveillance	B0-ASUR	D	RI
	Air Traffic Situational Awareness(ATSA)	B0-ASEP	S	RI
	Improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B	B0-OPFL	S	RI
	ACAS Improvements	B0-ACAS	E	II
	Increased Effectiveness of Ground-Based Safety Nets	B0-SNET	D	RI
PIA4 Efficient Flight Path	Improved Flexibility and Efficiency in Descent Profiles (CDO)	B0-CDO	E	II
	Improved Safety and Efficiency through the initial application of Data Link En-Route	B0-TBO	D	RI

PIA	Module Description	Module	Category	Priority
	Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)	B0-CCO	E	1
		Legend		
		Desirable		D
		Essential		E
		Optional		O
		Immediate Implementation		II
		Recommended Implementation		RI

Table 1: ASBU Block 0 Modules Categorised and Prioritised for Implementation in AFI

It is further noted that APIRG/21 requested states to pursue the development of their National ASBU plans based on APIRG's categorisation and prioritisation of the ASBU Block 0 Modules and performance based approach.

ASBU Applicability Assessment for Namibia

The NCAA ANS Division has assessed the APIRG categorised and prioritised ASBU Block 0 Modules and identified those applicable to air navigation service provision in Namibia. The ASBU applicability assessment is guided by the Air Navigation Services (ANS) Operating Environment (Doc ANS/AN/14/01 –ANS Operating Environment – 15 December 2017) in Namibia and its anticipated future evolution driven largely by air traffic movement growth, International and Domestic user needs and State requirements. The NCAA ANS division has identified twelve of the eighteen APIRG prioritised ASBU Block 0 Modules for implementation using the criteria identified in the background paragraph above. The NCAA ANS division will lead the implementation of ten of the ASBU Block 0 Modules while the NCAA Safety Oversight Department will lead one module implementation and airport owners/operators will lead one module implementation based on their individual operational requirements.

The NCAA ANS Division will continue to monitor developments in the GANP, Regional Plans, Operating Environment and user needs and assess whether and when it is appropriate to implement additional Block 0 and/or Block 1 ASBU Modules.

The ASBU Block 0 Modules identified for implementation in Namibia are shown in Table 2 below.

PIA	Module Description	Module	Category	Priority
PIA1 Airport Operations	Optimization of Approach Procedures including vertical guidance	B0-APTA	E	PI
	Improved Airport Operations through Airport-CDM	B0-ACDM	E	AP
PIA2 Globally Interoperable Systems	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	B0-FICE	E	FI
	Service Improvement through Digital Aeronautical Information Management	B0-DATM	E	PI
	Meteorological information supporting enhanced operational efficiency and safety	B0-AMET	E	PI
PIA3 Optimum Capacity	Improved Operations through Enhanced En-Route Trajectories	B0-FRTO	E	PI
	Initial capability for ground surveillance	B0-ASUR	D	I
	ACAS Improvements	B0-ACAS	E	AP
	Increased Effectiveness of Ground-Based Safety Nets	B0-SNET	D	I
PIA4 Efficient Flight Path	Improved Flexibility and Efficiency in Descent Profiles – Continuous Descent Operations (CDO)	B0-CDO	E	PI
	Improved Safety and Efficiency through the initial application of Data Link En-Route	B0-TBO	D	FI
	Improved Flexibility and Efficiency in Departure Profiles - Continuous Climb Operations (CCO)	B0-CCO	E	PI

Legend	
Desirable	D
Essential	E
Implementation by Another Party	AP
Partially Implemented	PI
Implemented	II
Future Implementation	FI
Led by ANS	
Led by Another Party	

Table 2: ASBU Block 0 Modules Selected for Implementation in Namibia

ASBU Implementation Status in Namibia

The implementation status of the ASBU Modules in Namibia is articulated in the tables below.

PIA1 Airport Operations	**Optimization of Approach Procedures including vertical guidance**	**B0-APTA**
	The Namibian Performance Based Navigation Implementation strategy and plan provides for the introduction of PBN based flight procedures at airports throughout Namibia based on safety improvement and operational needs. The procedures implemented and being implemented are RNP APCH with Baro-VNAV. • Hosea Kutako International, Eros, Oranjemund, and Ondangwa airports implemented • Lüderitz, Walvis Bay and Katima Mulilo designs are being finalised for publication and are planned to be completed in 2018/19	Partially Implemented
	Improved Airport Operations through Airport-CDM	**B0-ACDM**
	The requirement for the implementation of Airport – Collaborative Decision Making will be led by the various airport owners and operators in Namibia with the ANS being a participant in A-CDM when operationally required.	Future Implementation

Table 3: PIA1 – Airport Operations

PIA2 Globally Interoperable Systems	**Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration**	**B0-FICE**
	The air traffic management system deployed at the Windhoek Area Control Centre is AIDC capable and the functionality has been tested with the Johannesburg ACC. AIDC is planned to be introduced in a phased approach initially with Johannesburg and thereafter with Gaborone and Luanda. Pre-implementation steps include the technical implementation, Letters of Agreement and ANS staff training. Due to the current organisational transition to the NCAA it is anticipated that this will be completed in 2019/20	Future Implementation
	Service Improvement through Digital Aeronautical Information Management	**B0-DATM**
	The AIS to AIM transition in Namibia is in progress with the phased implementation of the AFI-Centralised Aeronautical Database (A-CAD) using the AIXM database standard, having commenced in November 2017. The Namibian CAD is integrated with that of South Africa and currently supports Flight Planning, Briefing and NOTAM functionality. It is planned to introduce the Internet Briefing Service in January 2018 that will provide access to the A-CAD for registered users allowing users to file flight plans and obtain briefings via the internet. It is further planned to introduce the Namibian e-AIP in 2018/19 followed by Charting and Mapping capability.	Partially Implemented
	Meteorological information supporting enhanced operational efficiency and safety	**B0-AMET**
	The ANS air traffic management system in the Windhoek ACC makes use of meteorological data provided by the Namibia Meteorological Service (NMS) which is sourced from the world area forecast centres. The NMS also makes other required meteorological information available through established channels.	Implemented

Table 4: PIA2 – Globally Interoperable Systems

PIA3 Optimum Capacity	**Improved Operations through Enhanced En-Route Trajectories**	**B0-FRTO**
	The Namibian Performance Based Navigation Implementation strategy and plan included the review and redesign of the Namibian airspace and route structure in accordance with PBN requirements (RNP/RNAV5) which has been completed and implemented.	Implemented
	Initial capability for ground surveillance	**B0-ASUR**
	The ANS surveillance system comprises a national Wide Area Multilateration (WAM) and Automatic Dependent Surveillance –Broadcast (ADS-B) system providing coverage of Class A airspace from FL145 up. This is complemented with WAM/ADS-B terminal surveillance systems for Hosea Kutako (including Eros) and Walvis Bay terminal areas together with a primary/secondary approach radar for Hosea Kutako airport. This surveillance system will be maintained into the future which includes replacement at the end of the current system's useful life.	Implemented
	ACAS Improvements	**B0-ACAS**
	Requirements for ACAS Improvements (Version 7.1) have still to be published by the NCAA Safety Oversight Department.	Future Implementation
	Increased Effectiveness of Ground-Based Safety Nets	**B0-SNET**
	The ANS ATM system is provide with a full suite of ground based safety nets including short term conflict alert (STCA), minimum safe altitude warning (MSAW) and others	Implemented

Table 5: PIA3 - Optimum Capacity

PIA4 Efficient Flight Path	**Improved Flexibility and Efficiency in Descent Profiles – Continuous Descent Operations (CDO)**	**B0-CDO**
	The volume and density of air traffic movements in Namibia is such that notwithstanding that performance based arrivals are not published as yet the majority of operators are afforded the opportunity to fly their optimum aircraft profile.	Partially Implemented
	Improved Safety and Efficiency through the initial application of Data Link En-Route	**B0-TBO**
	The ANS ATM system is datalink capable however the functionality has not been implemented as yet. Implementation will take place once air traffic service staff has been trained and the necessary operating procedures for datalink use developed for implementation.	Future Implementation
	Improved Flexibility and Efficiency in Departure Profiles - Continuous Climb Operations (CCO)	**B0-CCO**
	The volume and density of air traffic movements in Namibia is that notwithstanding that performance based departures are not published as yet the majority of operators are afforded the opportunity to fly their optimum aircraft profile.	Partially Implemented

Table 6: PIA4 – Efficient Flight Path

END