Technology Implementation and ASBU alignment

ATM/CM-SAF Agenda Item

CHB Gersbach

Introduction

ASBU provides a structured plan and associated timelines for implementing current and future technologies to achieve an integrated, harmonized and globally interoperable ATM system envisaged by the Global Air Traffic Management Operation Concept Document (Doc 9854).

This will improve aviation globally in terms of enhanced global aviation safety, increased performance, enhancing capacity and ensuring predictability across the ATM community.

This paper provides an overview of South Africa's technical and technological response to align itself to the implementation targets defined by the ASBU.

Introduction

ATNS

- South Africa to implement all ICAO ASBU Block 0 and Block 1 modules where operational requirements necessitate it.

- The ASBU requirements forms part of a National Airspace Master Plan (NAMP) and National Roadmaps (Air Traffic Management, PBN, AIS to AIM Roadmap, etc) ensuring South Africa is aligned with ASBU implementation

Discussion

The following block upgrades of ASBU implementation from a South African perspective is:

B0-65 APTA: Optimization of Approach Procedures including vertical guidance:

- Baro VNAV with radius to fix turns implemented at FALA.
- PBN approaches implemented FAOR, FACT, FALE, FAGG, FAPM, FALA, FASZ.
- ILS installed at FACT, FAOR, FALE, FAGG, FAPE, FAEL, FALA, FAGG, FAKN.

B0-15 RSEQ: Improved Runway Traffic Flow through Sequencing (AMAN/DMAN):

- AMAN implemented at FAOR and FACT, with FALE by 2018.
- DMAN implemented at FAOR, FACT and FALE by 2018.

B0-75 SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2):

- A-SMGCS implemented at FACT and FAOR.

B0-80 ACDM: Improved Airport Operations through Airport-CDM.

- A-CDM implemented for 21 ATNS serviced airports.
- Airport Management Centre's established at FAOR, FACT and FALE

Discussion

Block 0-25 FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

- Implementation of FICE module (AIDC) prior to 2018.

B0-30 DAIM: Service Improvement through Digital Aeronautical Information Management

- Electronic briefing service provided by ATNS for Pilots (web-based File2Fly)
- Centralised Aeronautical Database implemented by ATNS for South Africa.
- Services for creation of IAIP transferred from SACAA to ATNS in November 2014.

B0-10 FRTO: Improved Operations through Enhanced En-Route Trajectories

- Flexible use of airspace implemented within all FIR's (FACA, FAJA and FAJO).
- Flex routes (non-fixed implemented within FAJO FIR).
- User Preferred Routings implemented within FAJO FIR to reduce emissions.

Discussion

B0-35 NOPS: Improved Flow Performance through Planning based on a Network-Wide view

- Runway/airspace slot management implemented for 3 coordinated airports (FAOR, FACT and FALE).
- Strategic traffic flow management implemented for 21 ATNS serviced Airports through slot allocation.

Block 0-84 ASUR: ADS-B Ground-Based and Satellite-Based Surveillance and MLAT

- ADS-B currently being tested within FIR.
- ADS-B planned for FAJA Area Sector by 2018.
- MLAT currently being tested within Lowveld and FAJA Aarea West airspace.

B0-05 CDO: Improved Flexibility and Efficiency in Descent Profiles (CDOs)

- Tactical application of CDO at FAOR.
- 6 Airports planned for CDO by 2018 (FAOR, FACT, FALE, FAPE, FABL and FAGG)
- PBN STARs implemented at FAOR, FACT, FALE, FAGG, FAPM, FALA, FASZ.

Discussion

B0-40 TBO: Improved Safety and Efficiency through the initial application of Data Link En-Route

- CPDLC implemented with FAJO FIR and FAJA Area West Sector.
- Implementation of reduced horizontal separation using data link communications by 2018.

B0-20 CCO: Improved Flexibility and Efficiency in Departure Profiles

- Tactical application of CDO at FAOR.
- 6 Airports planned for CDO by 2018 (FAOR, FACT, FALE, FAPE, FABL and FAGG)
- PBN STARs implemented at FAOR, FACT, FALE, FAGG, FAPM, FALA, FASZ.

Discussion

ATNS acknowledges the current drive within the AFI Region to prioritise and categorise the ASBU modules.

ATNS planning processes continuously being **aligned** to the ICAO ATM Operational Concept Document.

The ATNS long term planning addresses what is needed to **increase user flexibility and maximize operating efficiencies** in order to increase system capacity and improve safety levels in the future ATNS ATM/cns system until the year 2025.

This is fully aligned with the ASBU. The planning process identifies specific technology and/or technological solutions, to support the infrastructural backbone for ATNS ATM service delivery.

The objective in all initiatives remain the achievement of an **interoperable national air traffic management system** for all users during all phases of flight that meets agreed to levels of safety, providing for optimum economic operations, that are environmentally sustainable, and meets national security requirements.

The future technical environment will still be guided by the ATNS Operational and Business Requirements and based on sound infrastructure foundations

Action by the Meeting

Consider:

- Progress made to date in implementing ASBU initiatives in line with operational requirements and associated business processes.
- Engage ATNS on ASBU implementation and collaboration within the region.
- Review the Regional Air Navigation System Implementation Plan aligned with the 18 Block 0 Modules of the ICAO Aviation System Block Upgrade (ASBU).

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Thank you