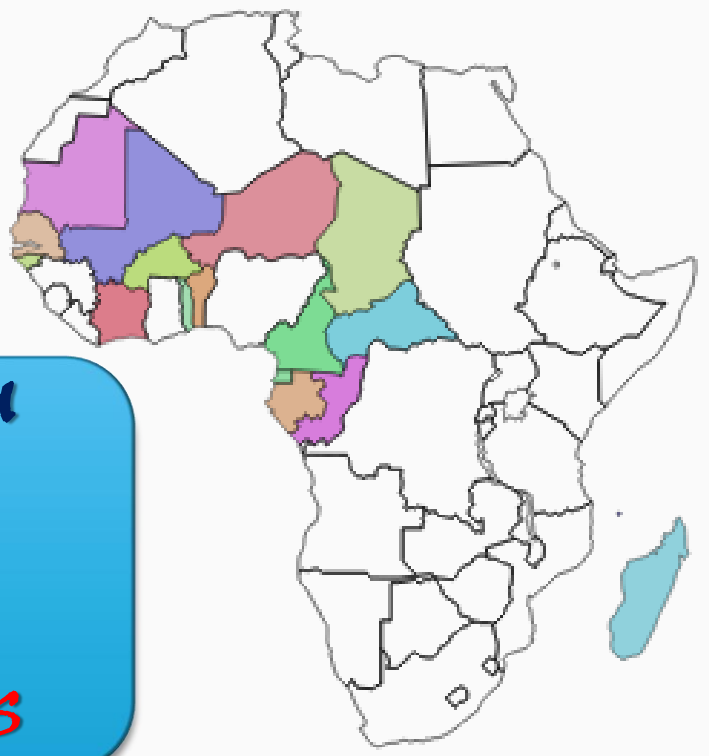
ASECNA

Direction Générale

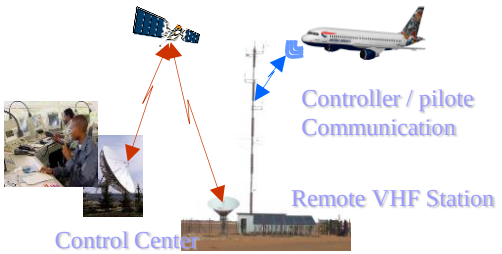
ISO 9001 BUREAU VERITAS Certification

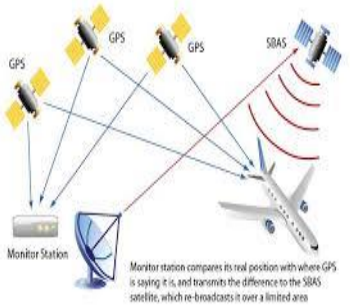
6th AFI Aviation Week
Kampala-Uganda, 2019



ASECNA towards ASBU MODULES IMPLEMENTATION

STRATEGY & CHALLENGES



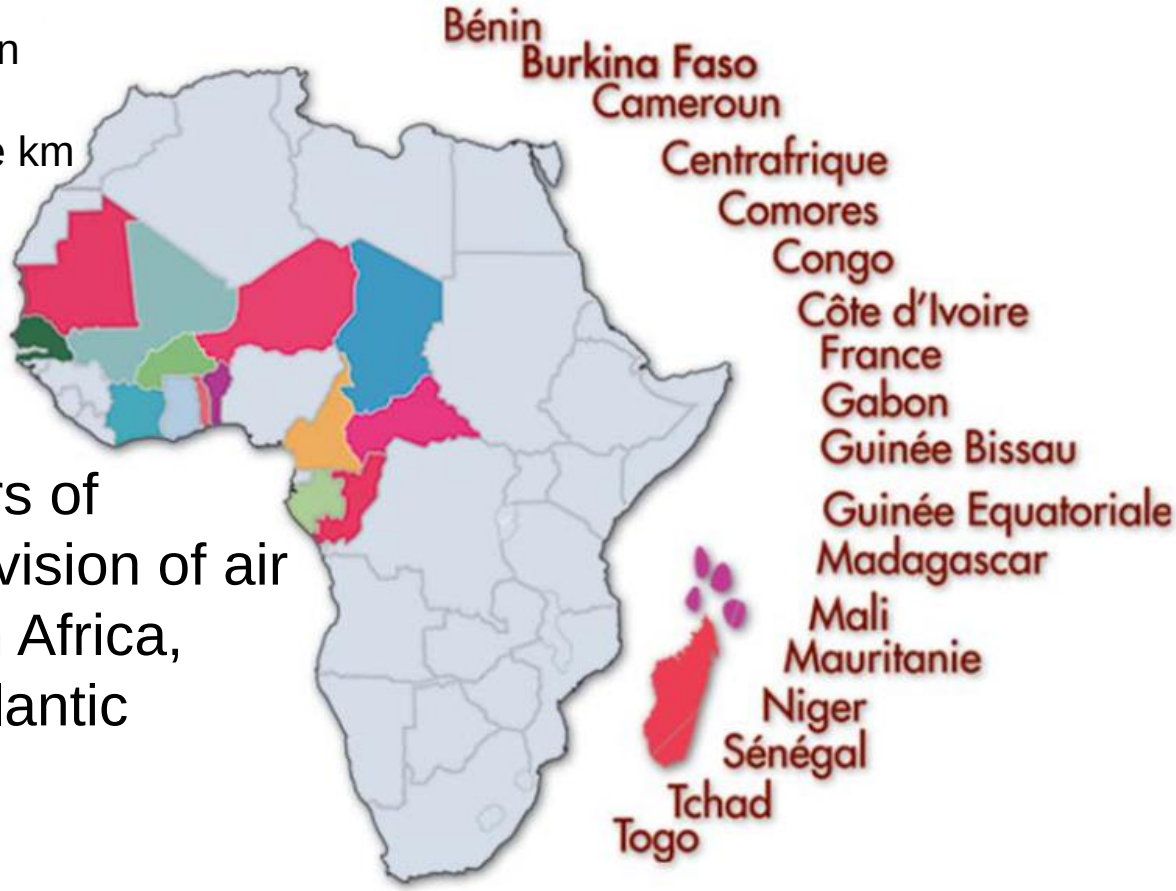


SUMMARY

1. INTRODUCTION
2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION
3. CHALLENGES BEST PRACTICES and SUCCESS STORIES
4. CONCLUSION

Agency for the Safety of Air Navigation in Africa and Madagascar (ASECNA)

- Created December 12, 1959
- Headquarters: Dakar, SENEGAL
- 18 Member States
- Multinational Public Institution
- 6 FIRs
- Airspace; 16.1 million square km



ASECNA has 60 years of experience in the provision of air navigation services in Africa, Indian Ocean and Atlantic Ocean.

1. INTRODUCTION

CONTEXT

- GANP and ASBU methodology,
  - framework for future improvements
  - strategic consultative approach.
- ASBU modules
  - structured in blocks
  - implementation in accordance with the operational requirements
  - ASBU framework and the technology roadmap ensure that all conditions related to the planning of activities at national and regional levels are met.
- 18 modules on Block 0 adopted by AFI Region and classified
  - 9 as priority 1 as they cover most AFI States.
  - remaining modules are priority 2.

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2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION

- Strategic oriented plan adopted in 2017 by members states for 15 years (2018-2032)
- Annual Roadmap fixed by board of Minister to DG.
- Keys performance indicators adopted to be meet annually by headquarter
- Monitoring of ANS provision by a specific commission of verification

Strategic Vision 2018 – 2032 divided in three phases:

- **Phase 1 : 2018-2022 .**
- **Phase 2 : 2023-2027.**
- **Phase 3 : 2028-2032**

Keys performances Indicators

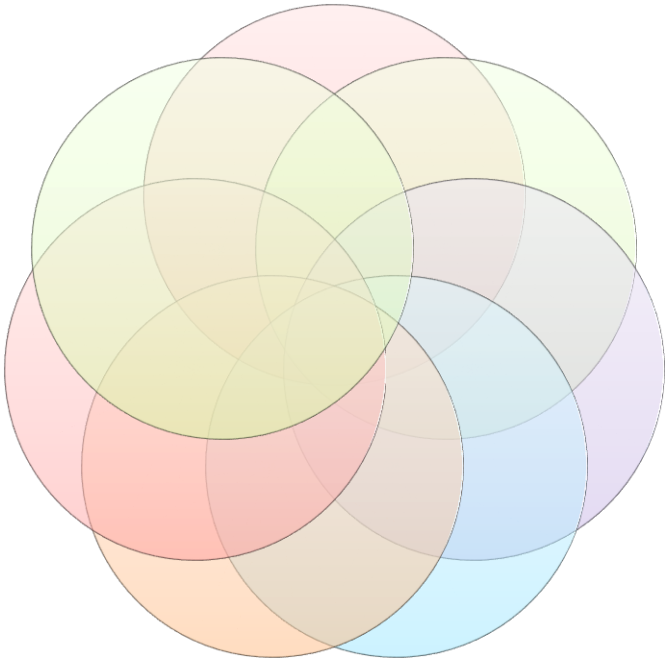
Performance indicator	**Target**	**frequency**	31/12/2018
1.1.NUMBER OF EVENTS LINK TO SAFETY PER 100000 FLIGHT	< 750	Every 4 months	
1.2.IMPLEMENTATION OF CORRECTIVES ACTIONS LINK TO SAFETY	> 70%	Every 4 months	
1.3. AIRPROX DUE TO ASECNA PER 100.000 FLIGHT	< 2	Every 4 munths	
1.4. LOST OF SEPARATION DUE TO GROUND INFRASTRUCTURE DEFICIENCY	50% of previous year <	Every 4 months	
1.5. ACCIDENTS DUE TO ANS	50% of previous year <	Yearly	
1.6. NUMBER OF FLIGHT NOT COORDINATED	50% of previous year <	Every 4 months	

2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION

Provisions of ICAO's global air navigation safety plans, including the GANP and the GASP

Needs of the Member States in satisfaction of their sovereign missions

Provisions of the AFI regional plan integrating the modules of the four blocks of the ASBU



Deficiencies and shortcomings identified by different APIRG meetings

Revised Abuja targets for infrastructure implementation for the continent

User requirement's

service and equipment investment plan to comply with users' expectations

2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION

Planning the implementation of ASBU Block 0 and Block 1 for the ASECNA area up to 2024

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
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
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

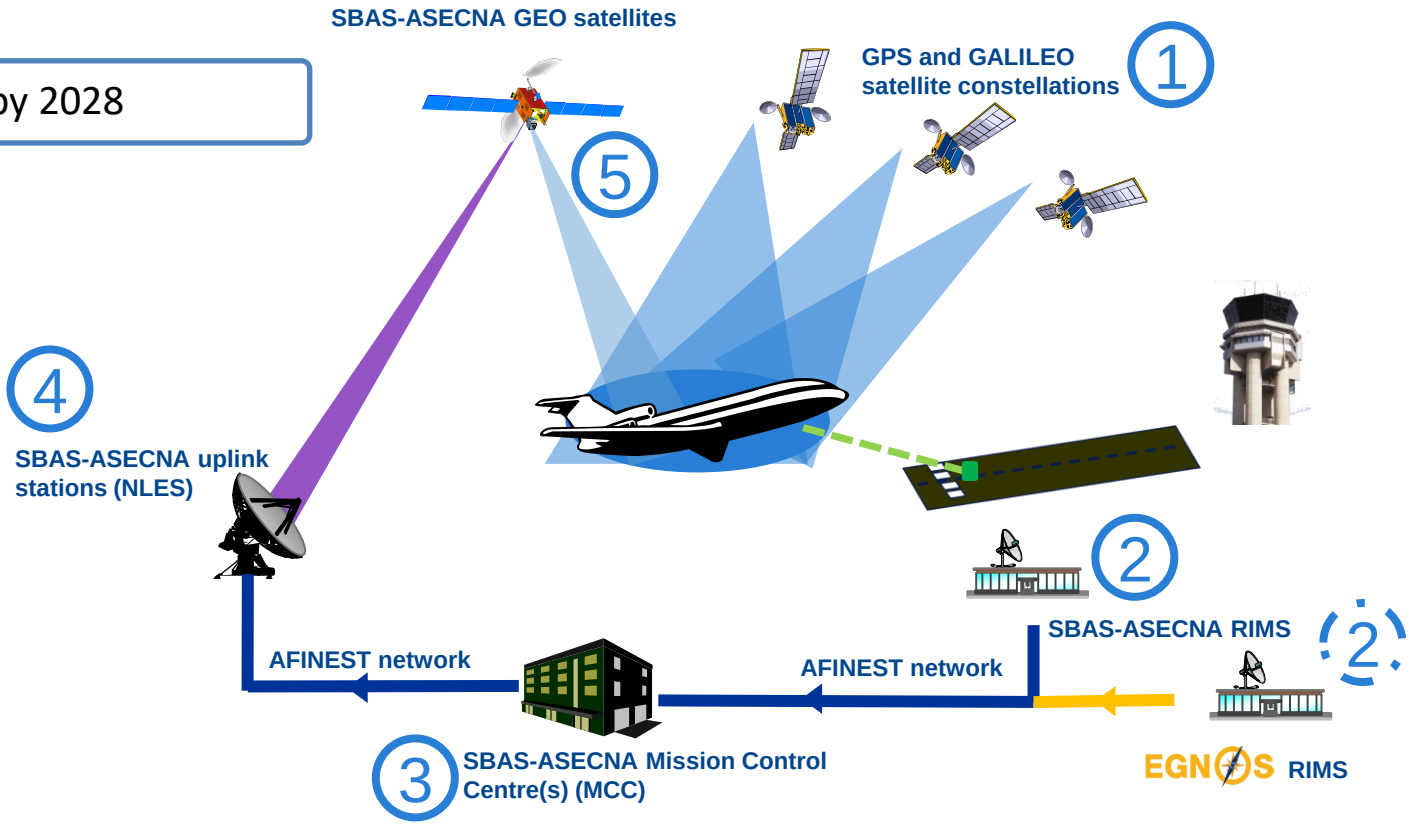
2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION

ASBU Block modules: level of implementation in ASECNA area

Performance Improvement Areas (PIA)	ASBU Block 0 Modules	Title of the Module	Statut of implementation	ASECNA dates
PIA 1: AIRPORT OPERATIONS	B0-APTA	Optimization of approach procedures including vertical guidance	80% of main airports of the Member States of ASECNA have SID / STAR procedures PBN RNP1. All major airports in the Member States of ASECNA have APV procedures (Baro VNAV) SBAS project on going in cooperation with EU.	2018-2022
	B0-SURF	Safety and efficiency of surface operations (A-SMGCS levels 1-2) and enhanced vision systems (EVS)	**SMGCS** A-SMGCS systems in progress at the new airport Dakar-Diass and Nouakchott Oumtounsy	2018-2022

SBAS SERVICES

- Pre-operational trials in the beginning of year 2021 with airlines
- Legacy 1 in 2022
- DFMC by 2028



2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION

ASBU Block modules: level of implementation in ASECNA area

Performance Improvement Areas (PIA)	ASBU Block 0 Modules	Title of the Module	Statut of implementation	ASECNA dates
PIA 2: GLOBALLY INTEROPERABLE	B0-FICE	Increased interoperability, efficiency and capacity through ground-ground integration	**AIDC, OLDI** **AFTN, AMHS** AMHS is already implemented in Dakar, Lomé, Cotonou, Nouakchott, Niamey, Antananarivo, Brazzaville, Bamako, N'Djamena and Ouagadougou. AIDC Operational with all internal ASECNA center AIDC operational with some neighbouring centres Accra Impossible with other on OLDI	2018
	B0-DATM	Service improvement through digital aeronautical information management	**AIS/AIM related projects** Implementation elements include: • AFTN / AMHS, • Migration from AIS to AIM: Operational exploitation of the AIXM 4.5 database and production of eAIP for 2018; • QMS for AIM implemented • WGS-84 campaign conducted periodically;	2019-2022
	B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	Implementation elements include: • WAFS (use of new products: Turbulence, icing, CB). • Tropical cyclone monitoring planned . • Wind shear detection systems planned for 2019. • Thunderstorm and warning systems for 2019.	2019

2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION

ASBU Block modules: level of implementation in ASECNA area

Performance Improvement Areas (PIA)	ASBU Block 0 Modules	Title of the Module	Statut of implementation	ASECNA dates
PIA 3: OPTIMUM CAPACITY AND FLEXIBLE FLIGHTS	B0-FRTO	Improved operations through enhanced en-route trajectories	Implementation elements include: • SSR and ADS -B • Preferential trajectories in the Oceanic FIR Dakar via the implementation of AORRA. • Implementation of flexible routes in parts of Dakar FIR, Niamey FIR, Brazzaville FIR, Ndjamena FIR • Strategic Plan for PBN implementation in coordination with the national PBN plans of the Member States is implemented. • CCO / CDO procedures for the accessibility of airports of Libreville, Ouagadougou done with AFR in 2018.	
	B0-NOPS	Improved flow performance through planning based on a network-wide view	The implementation elements include the reorganization in the provision of navigation services, the determination of ATC capacity of ATS units including ATFM if necessary planned for 2020	2019-2022

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ROAD MAP FOR ADS B SPACE BASE IMPLEMENTATION

2018 | 2019 | 2020

March: Conclusion of the negociation

November: Reception of data in the HQ

February: finalisation of telco line to duplicate reception of data

March: Dispatch of data via AFISNET

June: Monitoring of data

July: Safety assessment

Nov. : décision making for terrestrial

January: beginning of use of ADS B space base data in parallel with other means of surveillance

2020: continue Monitoring of data

2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION

ASBU Block modules: level of implementation in ASECNA area

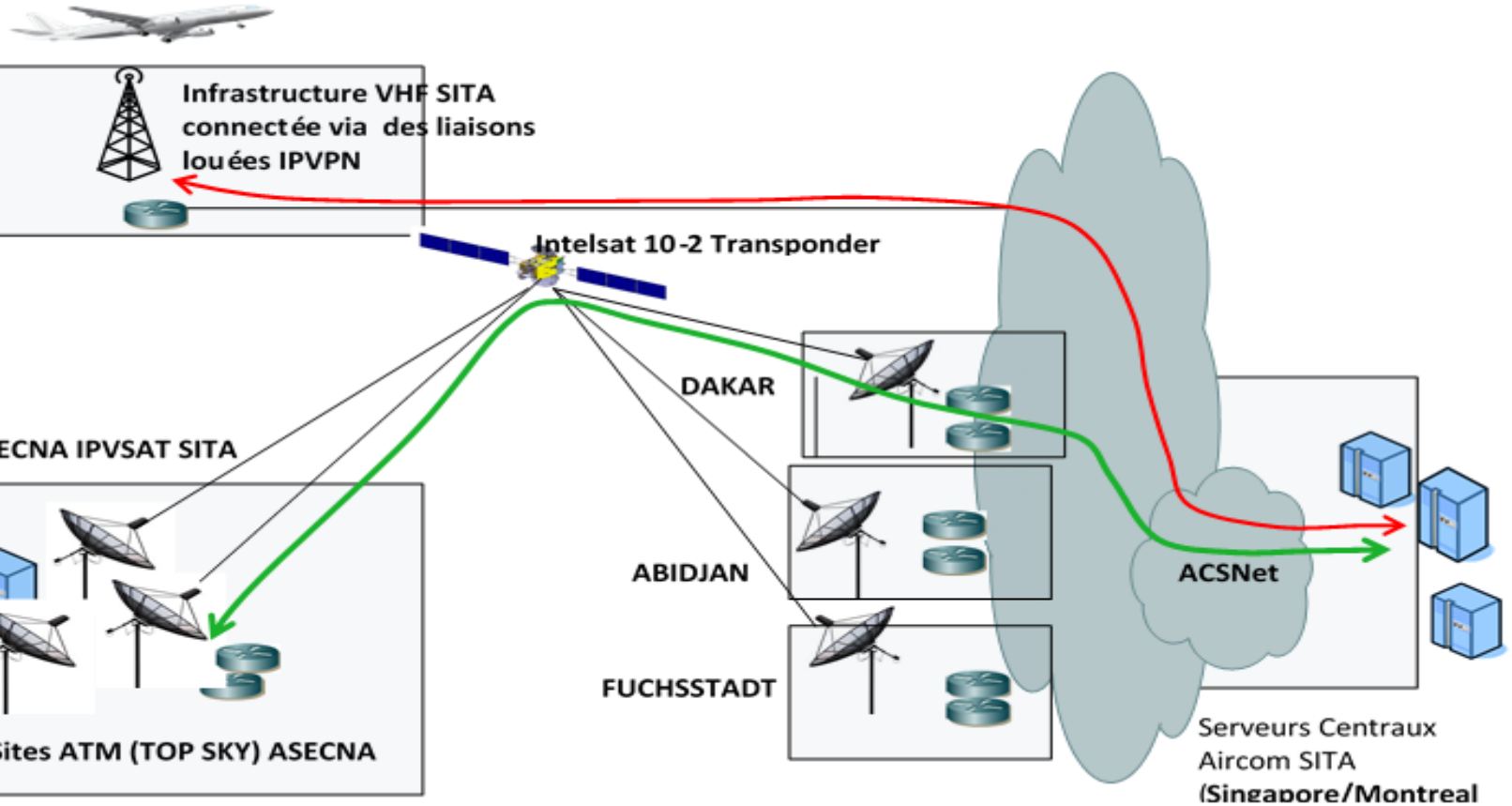
Performance Improvement Areas (PIA)	ASBU Block 0 Modules	Title of the Module	Statut of implementation	ASECNA dates
PIA 3: OPTIMUM CAPACITY AND FLEXIBLE FLIGHTS	B0-ASUR	Initial capability for ground surveillance	- Coverage of airspace with ADB-B space based on going - Satellite based ADS-B surveillance means to be implemented by January 2020 in terrestrial airspace - Use of ADS B space based standards by 2021 in oceanic airspace	2017-2020
	B0-SNET	Increased effectiveness of ground-based safety nets	- Automated safety nets on ground ATM systems are implemented based on short-term conflicts alerts and minimum safe altitude proximity warnings - Implementation of visual radar - all centres equipped with automatic ATM systems (TOPSKY) with ADS-C / CPDLC, FDPS, FPASD, RDP, SDP Functions, by the end of 2018	2017

2. ASECNA STRATEGY FOR ASBU MODULES IMPLEMENTATION

ASBU Block modules: level of implementation in ASECNA area

Performance Improvement Areas (PIA)	ASBU Block 0 Modules	Title of the Module	Statut of implementation	ASECNA dates
PIA 4: EFFICIENT FLIGHT PATHS	B0-CDO	Improved flexibility and efficiency in descent profiles using continuous descent operations (CDOs)	Done for Libreville and Ouagadougou airport under a MOU between ICAO / ASECNA Niamey Brazzaville, Dakar Abidjan Bamako to be realized in 2019.	2022
	B0-TBO	Improved safety and efficiency through the initial application of data link and SATVOICE en-route	ADS-C / CPDLC implemented. Preferred trajectories implemented both in continental and oceanic airspace. D-ATIS and D-VOLMET implementation process is ongoing in Brazzaville and Antananarivo FIR.	2018
	B0-CCO	Improved flexibility and efficiency departure profiles – continuous climb operations (CCO)	Done for Libreville and Ouagadougou airport under a MOU between ICAO / ASECNA Niamey Brazzaville, Dakar Abidjan Bamako to be realized in 2019.	2022

Sous-Réseau ADS-C/CPDLC : Passerelles IP-SITA



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EXPERIENCES AND BEST PRACTICES

- Model of cooperation and solidarity between Member States
- Harmonized regional Regulation and Safety Oversight System (MoU with ATNS- MoU with NAMA GCAA and Roberts Fir for surveillance data exchange…)
- Cooperation between ANSPs through peers revue mechanism

Challenges Vision for 2032

- **Build a single sky for Africa based on**:
  - Harmonise airspace from FL245 to FL600
  - Use of standards ATS provisions in that corridor
    - Communication with airline based on ADS-C/CPDLC
    - Navigation based on GNSS with SBAS augmentation mono frequency in 2022 and DFMC Dual multi frequency by year 2028
    - Surveillance with radar or ADS B technology by 2022 in all ASECNA airspace
  - Full implementation of AIDC and AMHS and SWIM
  - Interconnection of all network and systematic exchange of data
  - PBN – CCO/CDO

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CONCLUSIONS cont…

- The AFI region faces many challenges to enhance safety, increase airspace capacity and improve flight efficiency
  - ☞ Cooperation between states and ANSPs appears to be a vital necessity.
  - ☞ The DG ASECNA unanimous mandate from the eighteen States members to work in that purpose.


ASECNA
1959


Thank you
for your kind attention
Les routes du ciel, notre métier
Bénin Burkina Faso Cameroun
Centrafrique Comores Congo
Côte d'Ivoire France Gabon
Guinée Bissau Guinée Equatoriale
Madagascar Mali Mauritanie
Niger Sénégal Tchad Togo
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