Morocco ASBU Implementation

Air Traffic policy

- Liberalization of air traffic sector;
- Integration of Morocco in the European single sky (agreement in 2006);

Effects of air traffic Liberalization

- Significant increase of air traffic flow due to new foreign companies operating to/from Morocco;
- Increased air traffic capacity and need for optimization of airspace;
- Configuration of the airspace must meet the operational needs of airspace users;
- Integration of new technologies and new ATM concepts to deal with the performance of new generation aircraft;
- Interoperability between adjacent FIRs for better coordination and interface of ATM systems.

Why ASBU in Morocco?

- ICAO guidelines (*Doc 9854 , Doc 9750 …)*

- ASBU offers a clear roadmap of GANP for new technologies/techniques/procedures implementation, with a high confidence that the interoperability with airspace users and with regional partners is maintained.

Morocco ASBU progress status

Airspace Management

Morocco ASBU progress status

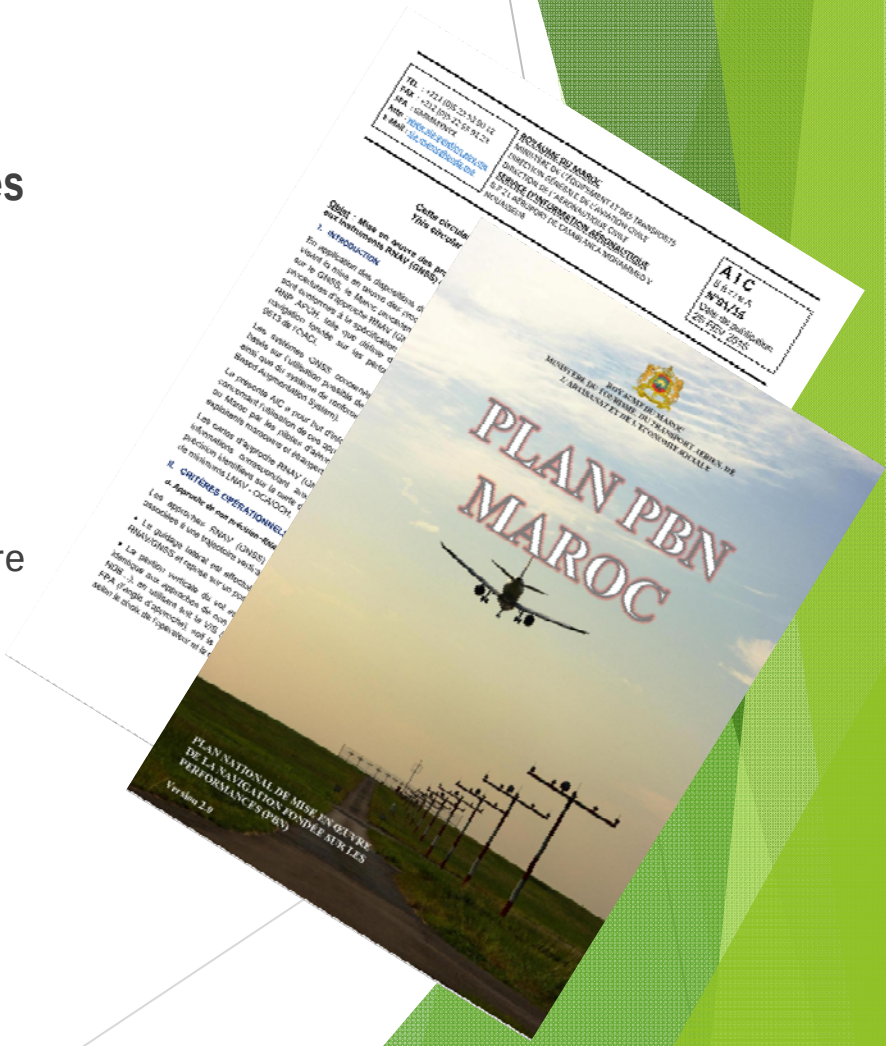
Airspace Management

- Terminal Domain : B0-APTA **Optimization of approach procedures including vertical guidance**
- Enroute Domain : B0-FRTO **Improved operations through enhanced en-route trajectories**

Morocco ASBU progress status

Airspace Management

- B0-APTA
  Optimization of approach procedures including vertical guidance
  - Accomplishments (1/2) :
    - Publication of the second version of Morocco PBN Plan in 2017;
    - Publication of AIC promulgating RNAV(GNSS) usage as primary procedure IN 2016;



Morocco ASBU progress status

Airspace Management

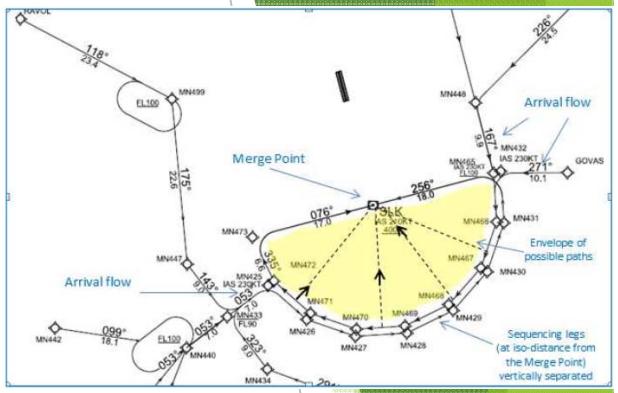
- B0-APTA
  Optimization of approach procedures including vertical guidance
  - Accomplishments (2/2):
    - Implementing RNAV(GNSS) in 10 airports :

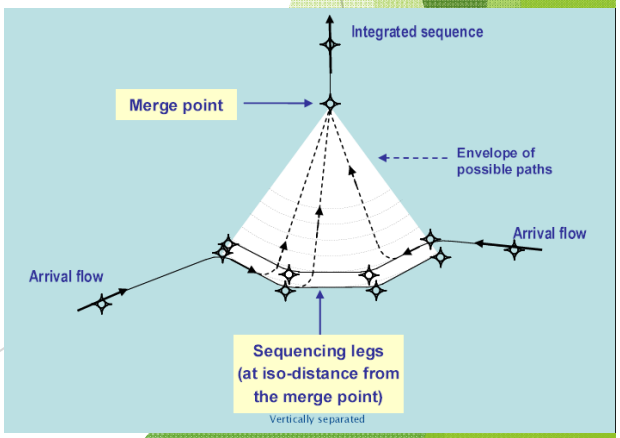
    GMMW, GMMZ, GMMH, GMML, GMMD, GMTN, GMAT, GMMI, GMMX and GMFO.

Morocco ASBU progress status

Airspace Management

- B0-APTA
  Optimization of approach procedures including vertical guidance
  - Next Steps
    - Implementing RNAV(GNSS) in all Moroccan airports by 2019;
    - Implementing PBN procedures with vertical guidance by 2019.
    - Generalizing CDO and CCO in major airports;
    - Implementing Point Merge Systems in major Airports;
    - Implementing RNP-AR-APCH approaches for complex airports.

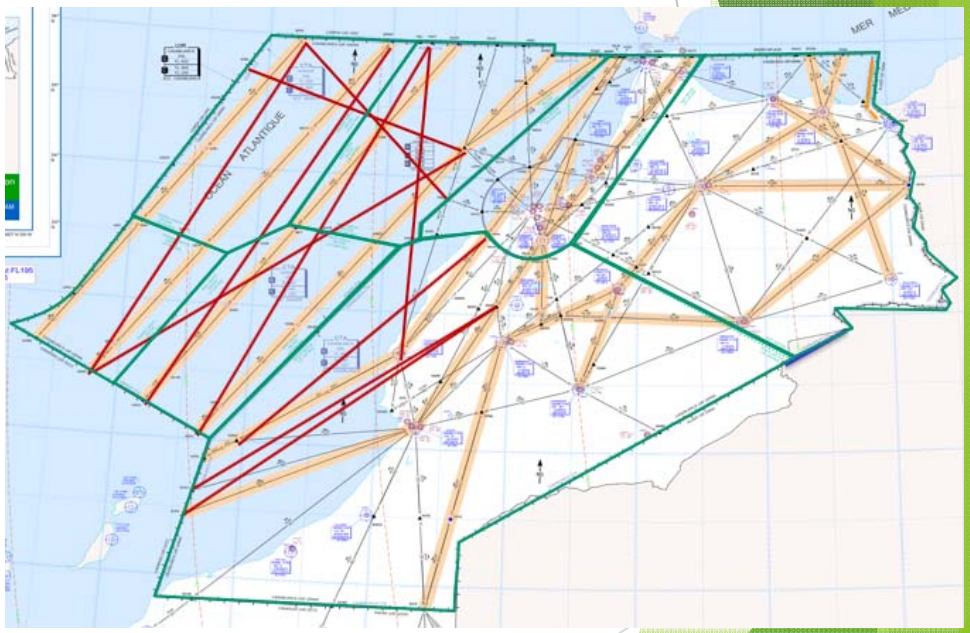




Morocco ASBU progress status

Airspace Management

- B0-FRTO
  Improved operations through enhanced en-route trajectories



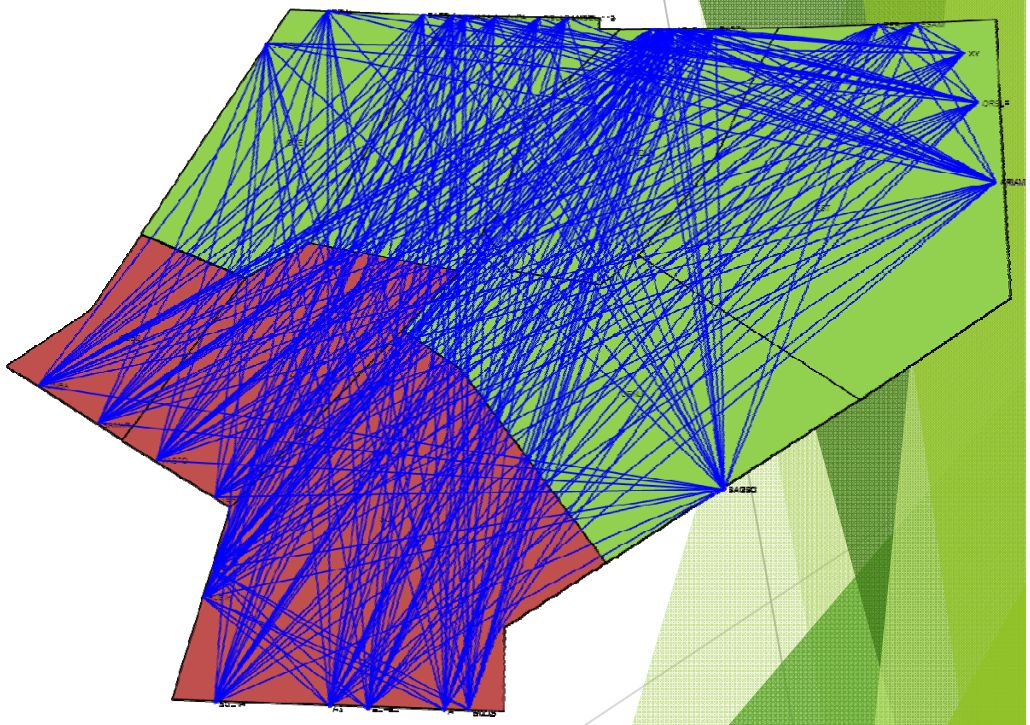
Accomplishments:

- Implementing Direct routes (DCT) and conditional routes (CDR) since 2012.
- Implementing ‘’C’’ Classification of upper Airspace for better air traffic operations since 2013;
- Final draft for night Free-Route in West and Oceanic Sectors to be implemented in October 2019;

Morocco ASBU progress status

Airspace Management

- B0-FRTO
  Improved operations through enhanced en-route trajectories



Next Steps :

- Implementing 24H free route in west and Oceanic Sectors in 2020;
- Implementing night Free-Route in continental sectors in 2021;
- Scheduling the implementation of 24H Free-route in Casablanca FIR/UIR 2023.

Morocco ASBU progress status

Airspace Management

Phase 1 – FRA within the AoR of Agadir ACC

Implementation - 10 OCT 2019

- Time availability: **Night FRA (2200/0600 UTC)**;
- Vertical limits: **From FL195 to FL660**;
- ATS route network remains available.

Morocco ASBU progress status

Airspace Management

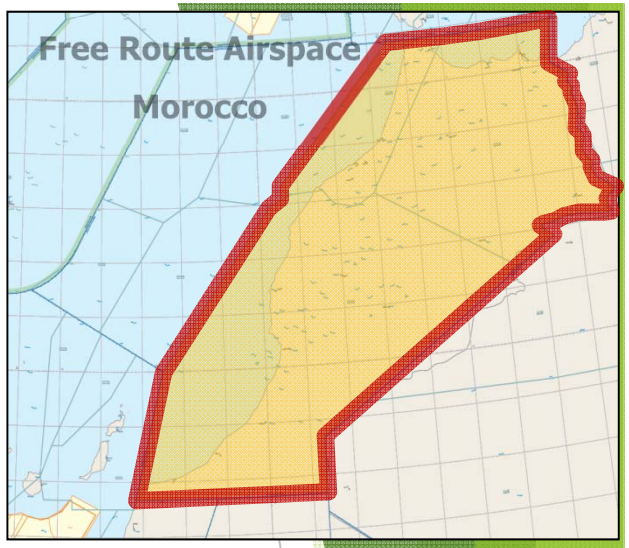
Phase 2 – FRA within the AoR of Agadir ACC

Implementation - Spring 2020

- Time availability: **Change from Night to H24**;
- Vertical limits: **From FL195 to FL660**;
- ATS route network planned to be removed.

Morocco ASBU progress status

Airspace Management



Phase 3 – FRA within the AoR of Casablanca ACC

Implementation – Spring 2021

- Time availability: **Night FRA**;
- Vertical limits: **From FL195 to FL660**;
- ATS route network remains available.

Morocco ASBU progress status

CNS

Morocco ASBU progress status

CNS

- **B0-FICE:** Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

	Object	period	Location	End Goal	Partners	Cost	Benifits
Migration to IP infrastructure	• AMHS with Madrid √ • Porto Santo Radar √ • FOIA Radar √ • Spain 1 Radar √ • Spain 2 Radar √ • OLDI/FMTP with LIS √ • OLDI/FMTP with SEV √ • OLDI/FMTP with GCC√ • VoIP	• 2017 • 2017 • 2020 • 2018 • 2018 • 2017 • 2017 • 2017 • 2020	• CNCSA • CCR AGA • Adj FIRs	New Coordination Links for Data and voice.	• ONDA/PNA • ENAIRE • NavPortugal	40,000,000 MAD	• Conformity with ICAO SARPS and with ASBU guidelines • Cost optimization • Systems Interoperability

Achievements and implementation:

- Implementation of the national and international IP network
- ATS OLDI coordination: commissioning of the FMTP links between Casablanca, Agadir Lisbon, Canary Island and Seville centers;
- Aeronautical messaging: AMHS commissioning between the Casablanca ACC and the, Lisbon and MADRID Centers
- Radar Data Sharing: TGR, Porto Santos, Foia, Taborno, Fuerteventura and ADS Madeira
- VoIP: Advanced Antenna Sharing and ATS Coordination between the two CCRs.

Morocco ASBU progress status

CNS

B0-SURF: Safety and efficiency of surface operations (A-SMGCS levels 1-2)

	Object	period	Location	End Goal	Partners	Cost	Benifits
Feasability study	Done by PNA with its providers, Workshop planed in PNA quarters	tree phases: •2020 •2021 •2022	Mohammed V Airport MAK Agadir	Specifications for A-SMGCS	• PNA • Airports • DGAC • Providers • AOs	-	• Conformity with ICAO SARPS and with ASBU guidelines • Client satisfaction
Call of tenders preparation	Definition of technical specs with accordance to regulations	late 2019	Mohammed V Airport	• Specifications document	• PNA	RI	• Cost optimization
Launching of the call of tenders and implementation	• Start with pilot site • Safety case study • training	2020-2021	Mohammed V Airport	•Implementation of A-SMGCS	• PNA • DGAC • providers • AOs	-	• Assure a high level of safety. • Increasing airport fees
	• Implementation of the systems	2021	Mohammed V Airport				

Morocco ASBU progress status

AIM