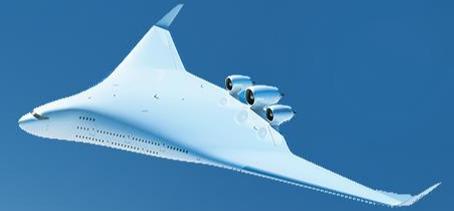




ICAO



# Global Air Navigation Plan

Fifth African ANSPs Meeting, Lome 28 March – 1 April 2022

Presented by ICAO

# Global Air Navigation Planning (GANP)

- The vision
- A Plan to realize the vision
- Aviation System Block Upgrades
- Technology Roadmaps
- Collaboration
- Conclusion

Global Air Navigation Planning

THE VISION





ICAO

SAFETY

NO COUNTRY LEFT BEHIND

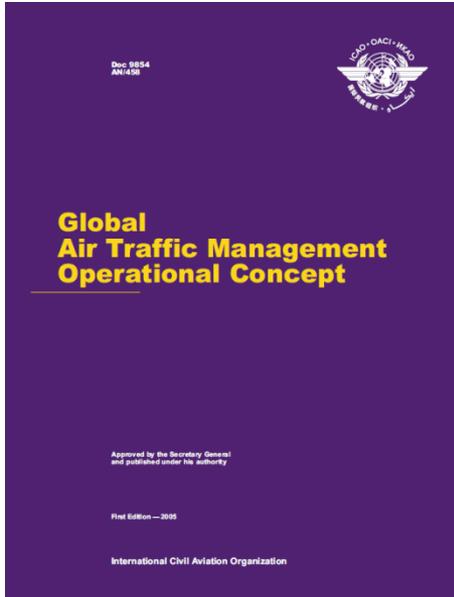


# Do we know where to go?





# Yes!



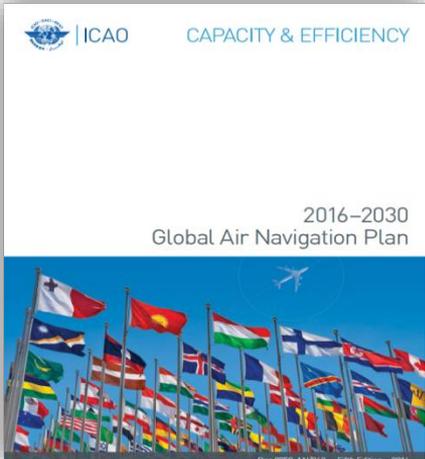
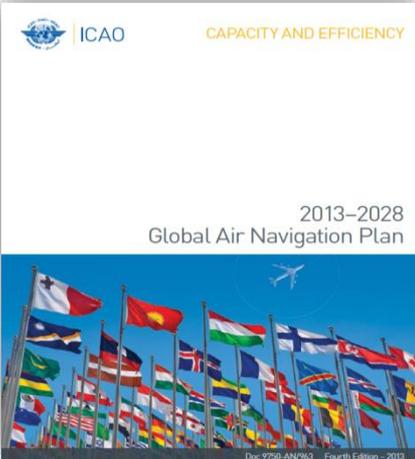
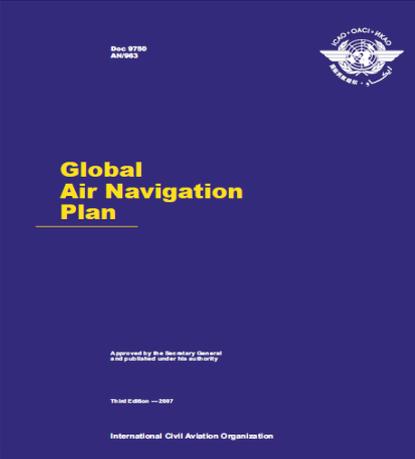
To achieve an **interoperable** global air traffic management system, **for all users during all phases of flight**, that **meets agreed levels of safety**, provides for **optimum economic operations**, is **environmentally sustainable** and **meets national security requirements**

# A Plan to realize the vision

Global Air Navigation Planning



# Global Air Navigation Planning



# Main Goals of the GANP

- **Evolution of the global air navigation system**
  - Promote investment in **innovation** through research and development activities
  - Align Regional **Research and Development Programmes**
- **Support implementation**
  - **ASBU framework**
  - Alignment global, regional and national planning
  - **Performance-based** decision-making method
  - Optimize **allocation and use of resources** for air navigation

# Main Purpose

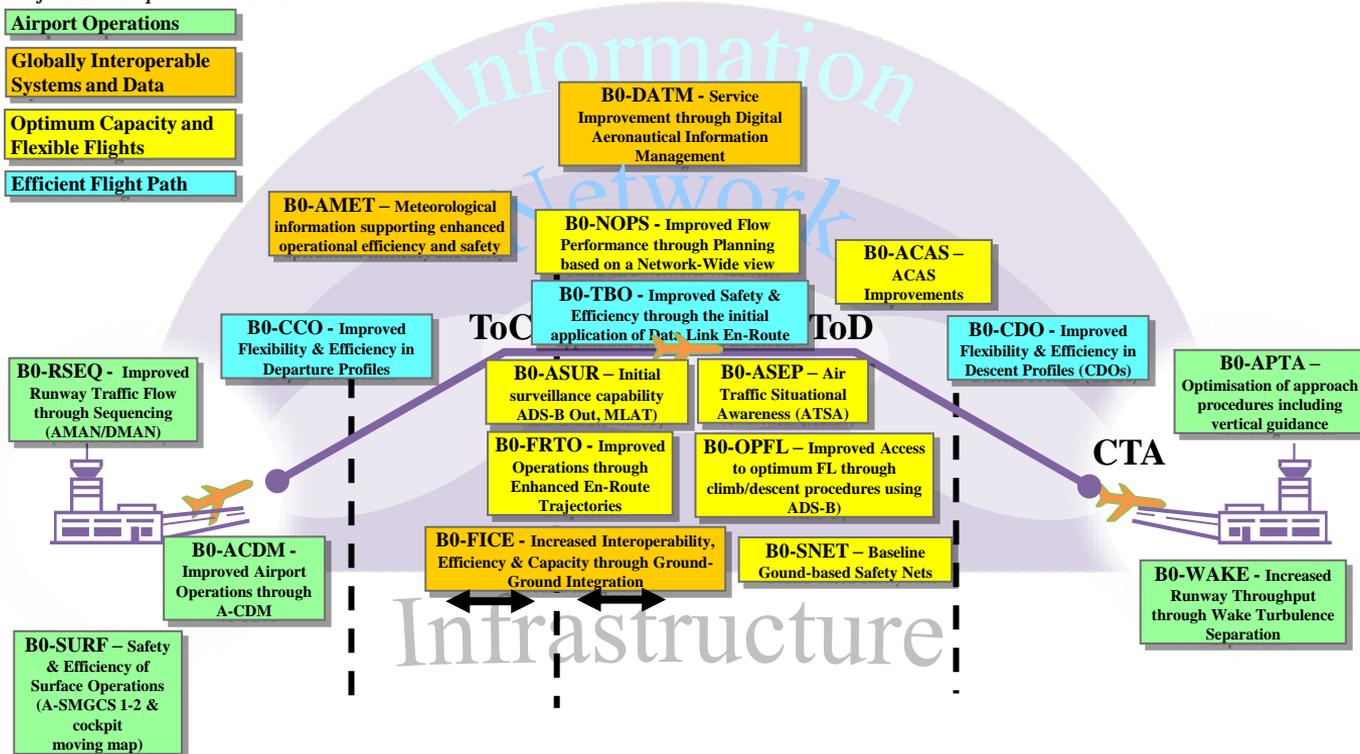
- ENHANCE THE PERFORMANCE OF THE AIR NAVIGATION SYSTEM
  - High social visibility
    - Safety
    - Security
    - Environment
  - Medium social visibility: Operational
    - Capacity
    - Efficiency
    - Predictability
    - Flexibility
    - Cost- Effectiveness
  - Low social visibility: basis
    - Access and equity
    - Interoperability
- Participation by the ATM community

# Block 0 in Perspective

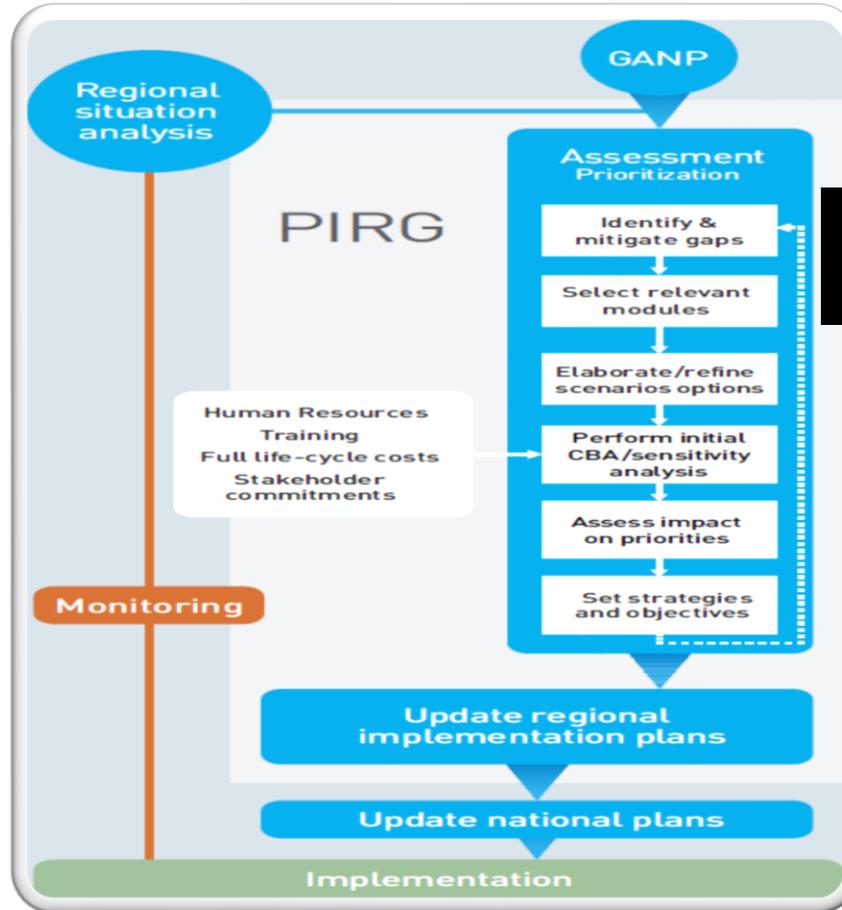
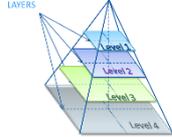


## Performance Improvement Areas

- Airport Operations**
- Globally Interoperable Systems and Data**
- Optimum Capacity and Flexible Flights**
- Efficient Flight Path**



# Global Planning & Regional Planning



**Global Plans**

**Regional Groups**

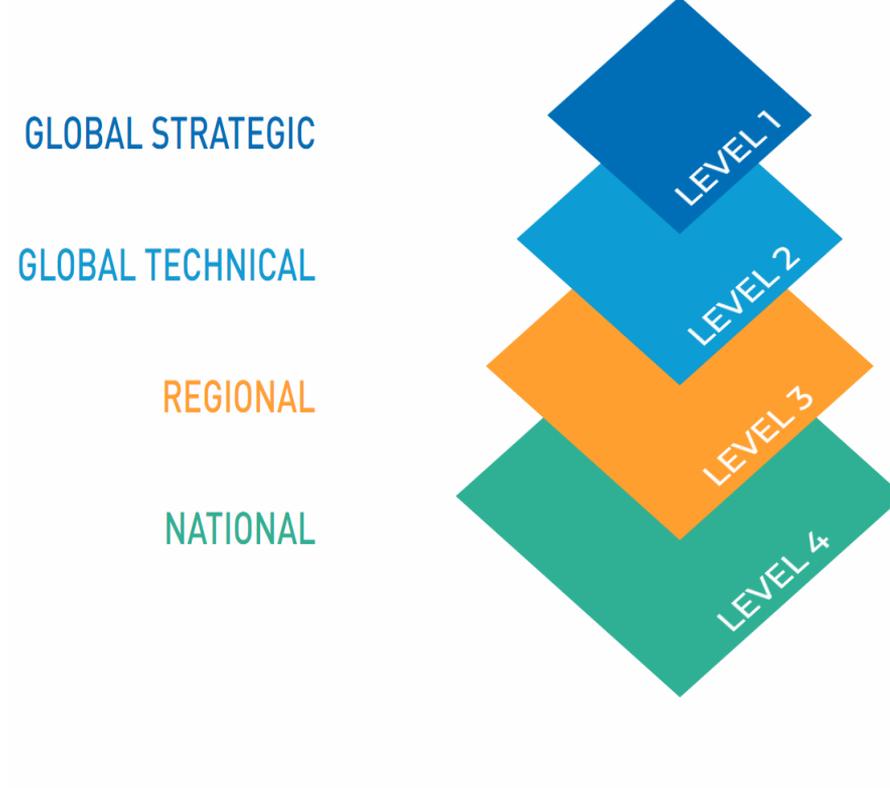
# Technology Roadmaps

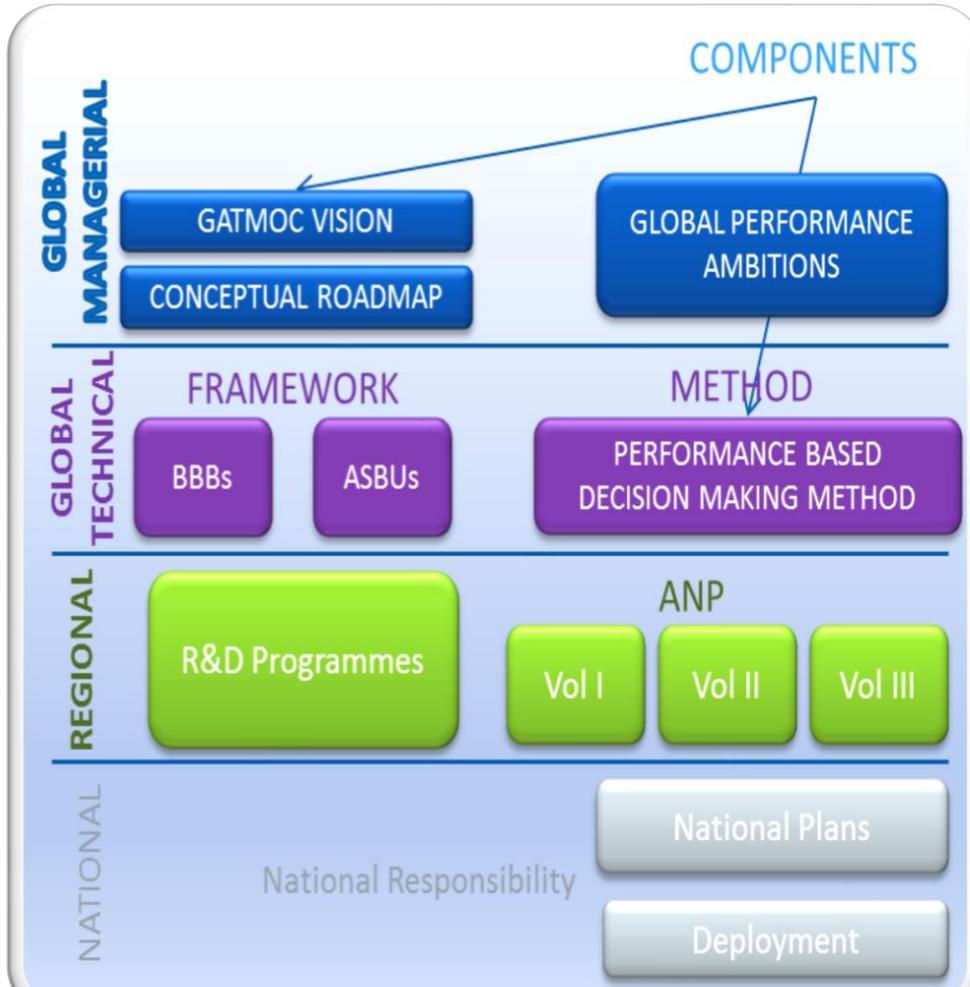
- The ASBUs are supplemented by Technology Roadmaps for:
  - Communications
  - **Navigation**
  - Surveillance
  - Avionics
  - Information Management
- The ASBUs and associated Technology Roadmaps are an integral part of the GANP.

# Evolution of the GANP

- 40th Session of the ICAO Assembly endorsed (Res. A40-1: ICAO global planning for safety and air navigation) the 6th Edition of the GANP (Doc9750-<https://www4.icao.int/ganpportal/>), which introduces a number of changes such as:
  - ✓ Introduction of the Basic Building Block (BBB) Framework,
  - ✓ Revision of Threads;
  - ✓ Replacement of Performance Improvement Areas (PIA) with 3 new Groups;
  - ✓ New, amended and re-structured modules

# 6<sup>th</sup> Edition of the GANP





# Evolution of the GANP (cntnd)

- **BBB framework describes the basis of any robust air navigation system;**
- **It identifies essential services required to be provided by States for international civil aviation in accordance with ICAO SARP in the areas of AGA, ATM, SAR, MET and AIM;**
- **BBB framework also identifies;**
  - ✓ **Services end users of these services;**
  - ✓ **Communications, Navigation and Surveillance (CNS) infrastructure necessary to provide the services;**
  - ✓ **Baseline representation for service provision and operational improvement**

**SUMMARY OF THE GANP PERFORMANCE AMBITIONS****"A high performing system by 2040 and beyond"**

<b>KPA</b>	<b>Ambition</b>
<b>ACCESS AND EQUITY</b>	No aviation community member excluded or treated unfairly.
<b>CAPACITY</b>	Nominal capacity easily scalable with demand.
	Disruptive events do not interrupt service provision and do not significantly affect the performance of the system.
<b>COST-EFFECTIVENESS</b>	No increase of total direct ANS cost while maintaining the safety and quality of service.
	Significant increase of ANS productivity, irrespective of demand.
<b>EFFICIENCY</b>	Reduction of the gap between the flight efficiency achieved and the desired optimum trajectory of airspace users.
<b>ENVIRONMENT</b>	ANS-induced inefficiencies to be progressively removed to contribute to the global ICAO aspirational goals for CO <sub>2</sub> emissions.
	To benefit from achieved flight efficiency gains.
<b>FLEXIBILITY</b>	To absorb required changes to individual business and operational trajectories.
<b>INTEROPERABILITY</b>	Essential at an operational and technical level.
<b>PARTICIPATION BY THE ATM COMMUNITY</b>	Pre-agreed level of participation to make the maximum shared use of the air navigation resources.
<b>PREDICTABILITY</b>	No increase in ANS delivery variability including asset availability.
<b>SAFETY</b>	Zero ANS-related accidents and a significant (50%) reduction of ANS-related serious incidents.
<b>SECURITY</b>	Zero significant disruptions due to cyber incidents

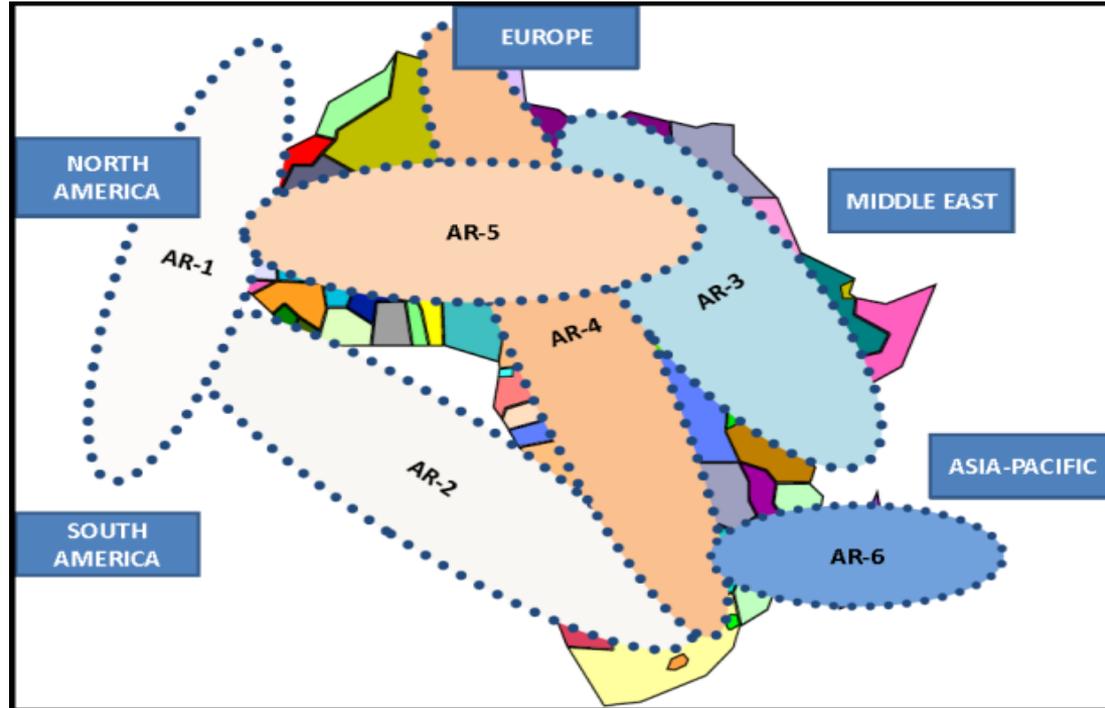
Achieving the above ambitions and realizing the GANP vision will require a series of transformational changes.

# **Regional Planning**

# HOMOGENEOUS AREAS AND MAJOR TRAFFIC FLOWS IN THE AFI REGION



## Transforming ATM Performance in the AFI Region







## Performance Based Planning Framework

- ICAO Special Regional Air Navigation Meeting (November 2008) supported the need to adopt a performance-based approach to regional and national air navigation planning in the AFI Region, aligned with the Global Air Navigation Plan (Doc 9750, GANP)
  - GANP developed to assist States and regional planning groups (PIRGs) in identifying the most appropriate operational improvements based on current and foreseen aircraft capabilities and ATM infrastructure
- Global Air Traffic Management Operational Concept (GATMOC-Doc 9854) provides the overall vision of a performance based ATM system.



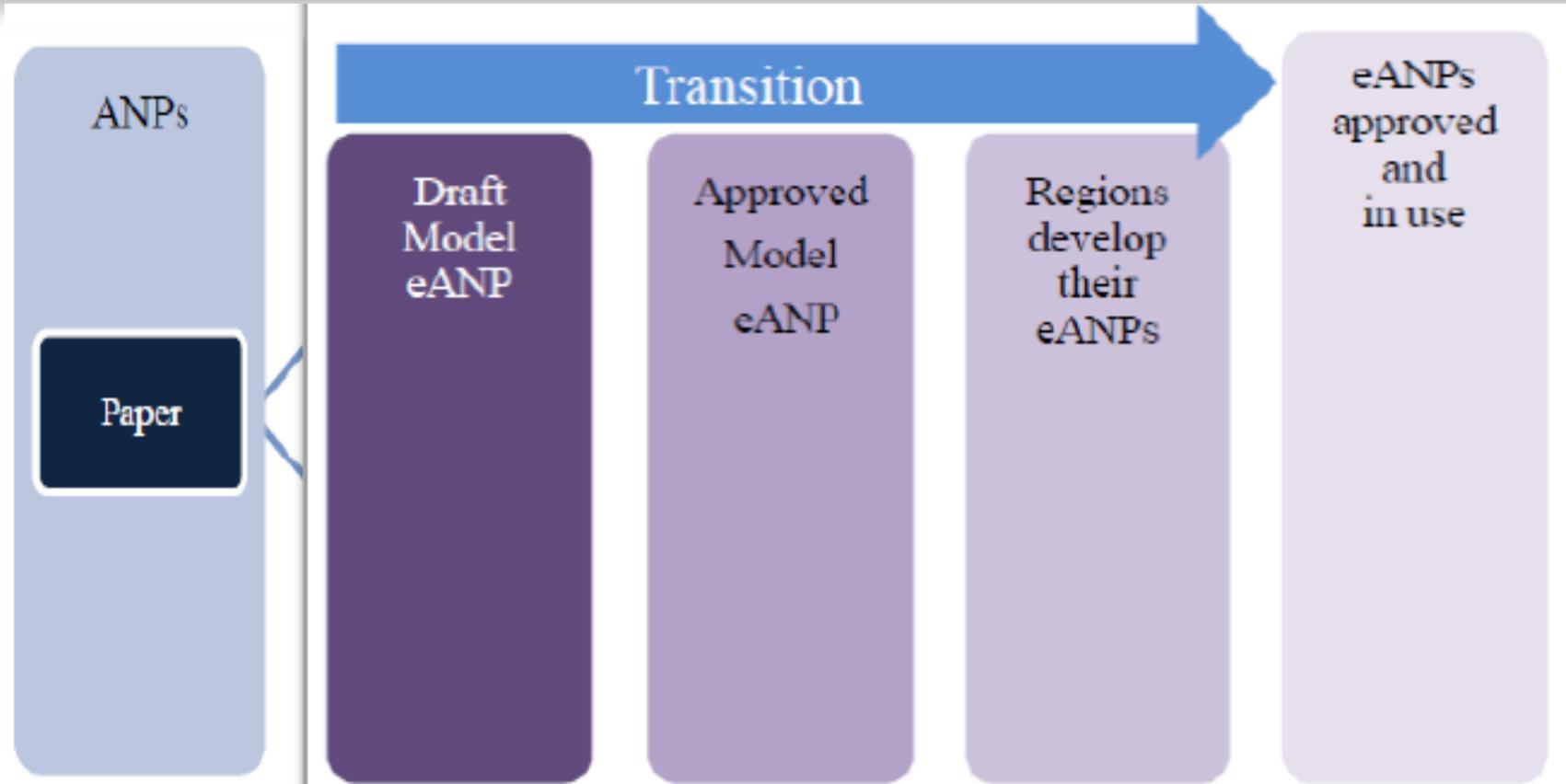
# AFI Regional Performance Objectives

- APIRG uses the performance framework forms (PFFs)
  - developed by the ICAO Special AFI RAN of 2008 as
  - amended from time to time through the regional planning process,
  - to identify individual parties responsible for achieving the performance objectives as well as to establish timeframes for implementation.
- AFI States
  - to develop national plans,
  - using the PFFs, harmonized and aligned with the regional PFFs, and
  - associated tasks to include the necessary detailed actions to successfully achieve national performance objectives.



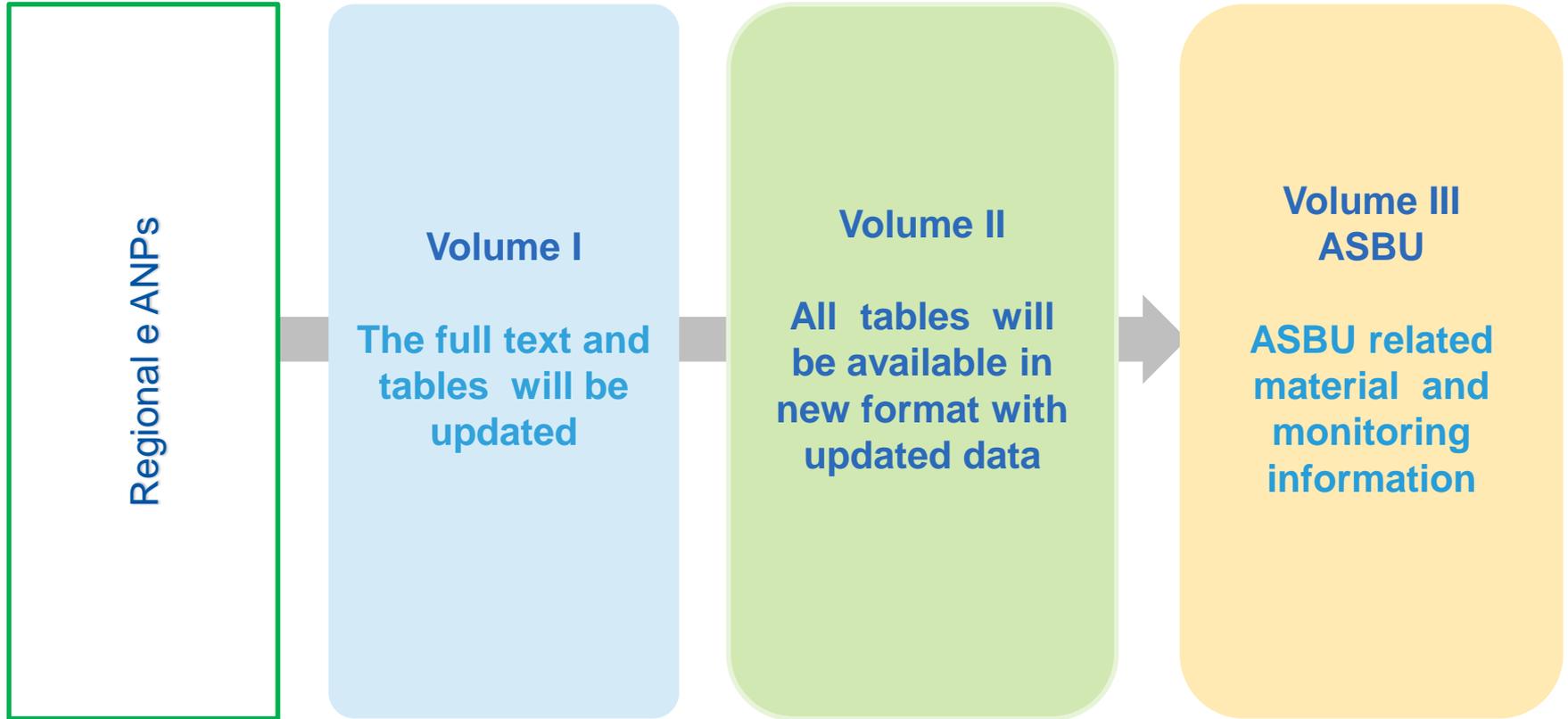
# AFI Regional Performance Priorities

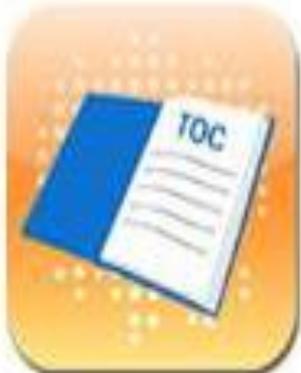
- **RVSM Implementation (PFF ATM/01)**
- **PBN Implementation (en-route, terminal and approach) (PFFs ATM/02, ATM/03 and ATM/04)**
- **Enhancement of CNS Infrastructure (PFF CNS/01)**
- **Search and Rescue (PFF SAR/01)**
- **Transition from AIS to AIM (PFFs AIM/01 and AIM/02)**
- **Improvement of the provision of Meteorological Services (PFFs MET/01, MET/02)**
- **Improvement of Aerodrome Operations (PFF AGA/01)**





# eANP features





PART I - TOC, INTRO



PART II - GEN



PART III - AOP



PART IV - CNS



PART V - ATM



PART VI - MET



PART VII - SAR



PART VIII - AIS/MAP



SUMMARY



International Civil Aviation Organization

A detailed illustration of a satellite in space. The satellite has a central body with various instruments and a large parabolic dish antenna pointing towards the viewer. Two large rectangular solar panel arrays are extended from the sides of the satellite. The background is a dark, starry space.

**Improving AFI ATM Performance  
Through *Priorities Targets and Reporting***



ICAO

UNITING AVIATION

# Uniform Methodology For The Identification, Assessment and Reporting of Air Navigation Deficiencies

*(Approved by the Council on 30 November 2001)*

## Need for improvements in the following areas:

- 1) **Collection of information;**
- 2) **Safety assessment of reported problems;**
- 3) **Identification of suitable short-term and long-term corrective actions (technical/operational/financial/organizational); and**
- 4) **Method of reporting in the reports of ICAO planning and implementation regional groups (PIRGs).**



ICAO

UNITING AVIATION

# Uniform Methodology For The Identification, Assessment and Reporting of Air Navigation Deficiencies

*(Approved by the Council on 30 November 2001)*

- The uniform methodology was approved by the ICAO Council for the efficient identification, assessment and clear reporting of Air Navigation deficiencies.
- For the purpose of this methodology, the definition of deficiency is as follows:

*A deficiency is a situation where a facility, service or procedure does not comply with a regional Air Navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.*



- **As a routine function, the Regional Offices should maintain a list of specific deficiencies, if any, in their regions. To ensure that this list is as clear and as complete as possible, it is understood that the regional offices take the following steps:**
- **compare the status of implementation of the Air Navigation facilities and services with the regional Air Navigation plan documents and identify facilities, services and procedures not implemented;**



- **Before each PIRG meeting, the Regional Office concerned will provide advance documentation concerning the latest status of deficiencies.**
- The Regional Offices should **document serious cases of deficiencies to the Air Navigation Commission (through ICAO Headquarters) as a matter of priority**, rather than waiting to report the matter to the next PIRG meeting, and that the Air Navigation Commission will report to the Council.



## Model Reporting Table For Use in the Reports of PIRGs

### REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE ...FIELD IN THE ... REGION

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action *
Requirement of Part ... paragraph (table) .. of the Air Navigation plan	Terra X Terra Y	Speech circuits not implemented Villa X - Villa Y	12 Dec. 2..X	Coordination meeting between Terra X and Terra Y on 16 July 2..X to finalize arrangements to implementat ion circuit via satellite	Implementat ion of direct speech circuit via satellite	Terra X	20 Aug. 2..X	A



# Reporting deficiencies – Min reporting areas

**AFI - ANDD**

REPORTING DEFICIENCIES

- Min reporting areas
- Report deficiency

MONITORING DEFICIENCIES

- Dashboard
- Generate report
- Active deficiencies 1

Focal Point Name  
State focal point

BURKINA FASO

## Minimum Reporting Areas

Report

[AIM - Aeronautical Information Management](#)

[AOP - Aerodrome operations](#)

Area	Reference ↑↓	Description ↑↓	Remarks ↑↓
AOP	Annex 14 - Vol 1, Chapter 1 PANS-Aerodromes, Part 1, 2	Aerodrome Master Plan	The lack of airports master plans affect their short to medium term capacity enhancement projects; restricting their ability to fulfil capacity needs.
AOP	Annex 14 - Vol 1, Chapter 2, 3 PANS-Aerodromes, Part 1, 2 AFI ANP, Vol II	Runways	Deficiencies in the provision of adequate runways may adverse safe take-off and landing of aeroplanes they are intended to serve. In view of the vital function of runways in providing for safe and efficient aircraft landings and take-offs, it is

[AIM - Aeronautical Information Management](#)

[AOP - Aerodrome operations](#)

[ATM/SAR - Air Traffic Management, Search and Rescue](#)

[CNS - Communication Navigation Surveillance](#)

[MET - Aeronautical meteorology](#)



### ■ ICAO Assembly Resolutions & APIRG Conclusions

- *Assembly Res. A40-1: ICAO global planning for safety and air navigation*
- *APIRG/22 Conc.22/30: Harmonization of the implementation of ASBU elements in the AFI Region.*
- *APIRG/23 Conc.: Establishment of mechanism for air navigation reports*
- *A38-12: Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation*

### ■ Updating and Implementing AFI ANP

- Focussing on ICAO SARPs and guidances through ASBU concept
- Alignment of AFI ANP and AFI CNS/ATM strategies with the new GANP (APIRG Sub Groups)
- Delivering transitional benefits while continuing evolution

## Way and Steps Forward

- **Bilateral initiatives to be conducted based on space organization and coordination requirements;**
- **Regional initiative through Regional bodies (APIRG Sub- Groups and Task Forces)**
  - **Seek for the key enablers driving towards the seamless system in the framework of single sky;**
  - **Coordinating with Sub-Regional economic institutions of integration (EAC, COMESA, SADC, ECOWAS, UEMOA...),**
- **Partnerships with industry (CANSO, IATA....)**
- **Initiative through the AFI ANPs coordinating meetings (ANSPS Meetings **Declaration**)**

## Conclusions

- **Framework of the GANP (based on the Global operational concept) ASBU Methodology**
- **Alignment of the AFI ANP to the GANP by Categorizing / Prioritizing the Modules;**
- **Implementation within and along Areas of Routing of major traffic flows**
- **Reporting through agreed tools**
- **Strategizing with stakeholders;**



# ICAO DAKAR UNITING AVIATION



## ICAO

North American  
Central American  
and Caribbean  
(NACC) Office  
Mexico City

South American  
(SAM) Office  
Lima

ICAO  
Headquarters  
Montréal

Western and  
Central African  
(WACAF) Office  
Dakar

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Sub-office  
Beijing

Asia and Pacific  
(APAC) Office  
Bangkok



THANK YOU