



# **Module 3**

## **ANS Regional Performance Management Process**

### **BBBs + ASBU**

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ICAO NACC Regional Office*



**CAR Virtual workshop for the preparation of the CAR/SAM/ANP-VOL III**  
**Online from 14 to 18 February 2022**



## Objective

- ✈ Allow participants to recognize the combination of prescriptive and performance elements that guide the regional planning of air navigation services, providing information that assist managing the national planning, implementation and oversight of these services.



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# Basic Building Block (BBB) Framework

APRIL 2019 VERSION



## Topics

- ✈ Introduction to the BBB concept
- ✈ BBB Verification
- ✈ Review the BBB Framework
  - ✈ Meteorological services
  - ✈ Aeronautical information services
  - ✈ Search and rescue services
  - ✈ ATM services
  - ✈ Aerodrome operation services



# What are the BBBs?

- ✈ The Basic Building Block (BBB) framework outlines the foundation of any robust air navigation system. It is nothing new but the identification of the essential services to be provided for international civil aviation in accordance with ICAO Standards **and Regional agreements for minimum levels of ANS services**.
- ✈ These essential services are defined in the areas of aerodromes, air traffic management, search and rescue, meteorology and information management. In addition to essential services, the BBB framework identifies the end users of these services as well as the assets (communications, navigation, and surveillance (CNS) infrastructure) that are necessary to provide them.
- ✈ The BBB is considered an independent framework and not a block of the ASBU framework as they represent a baseline rather than an evolutionary step. This baseline is defined by essential services recognized by ICAO Member States as necessary for international civil aviation to develop in a safe and orderly manner.
- ✈ ***Once these essential services are provided, they constitute the baseline for any operational improvement.***
- ✈ The BBB framework will be updated every two years taking into account amendments to ICAO provisions. Although an initial draft of the BBB framework is presented online in the GANP Portal (<https://www4.icao.int/ganpportal/BBB>), the BBBs will be included in a web-based application in a format similar to the ASBU framework.



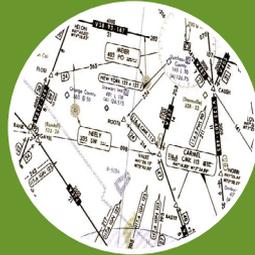
# BBB Verification Process

- ✈ In 2014, the ICAO Council approved a new template for the Regional Air Navigation Plans (ANPs) to better align global and regional planning. This template consists of three volumes.
  - ✈ Volumes I and II list the regional facilities as well as the general and specific regional service requirements, required for international civil aviation operations in accordance with regional air navigation agreements, in the areas of aerodrome operations, communications, navigation and surveillance, air traffic management, meteorology, search and rescue and aeronautical information management.
- ✈ To set a baseline for the system envisioned in the GANP and to ensure a robust foundation for the global air navigation system, an effective process should be established to verify, pursuant to Article 37 of the Chicago Convention, that the essential air navigation services identified in the BBB framework are provided.
- ✈ It is important to highlight that this process should focus on verifying the implementation of the essential air navigation services outlined in the BBB framework as the capability of the States to oversight these services is covered by the ICAO USOAP.
- ✈ To avoid duplications and to align global and regional planning, the process for verifying the implementation of these essential services should be embedded within the methodology for the identification of deficiencies against the regional air navigation plans. If these essential services are not being delivered, ICAO, upon request of a State, provides the necessary technical assistance to address the needs as identified within the process.
- ✈ To ensure the provision of seamless air navigation services based on the deployment of interoperable systems and harmonized procedures, States need to leverage the implementation of the BBBs through their national air navigation plans as a strategic part of their national aviation planning framework. This will also pave the way for the future implementation of air navigation improvements to increase the quality of the services and meet the performance expectations of the aviation community

## BBB Framework



Meteorological Services



Aeronautical Information



Search and Rescue



Air Traffic Management

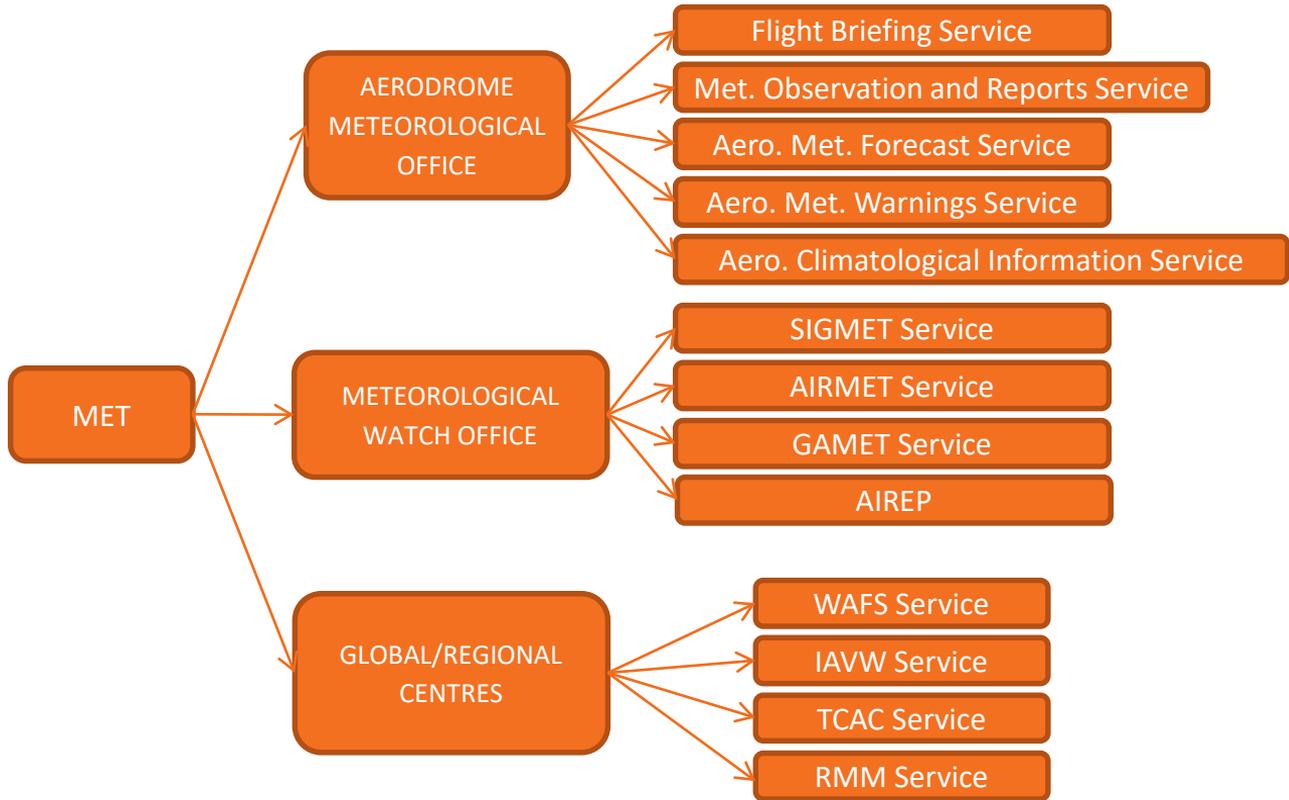


Aerodrome Operations



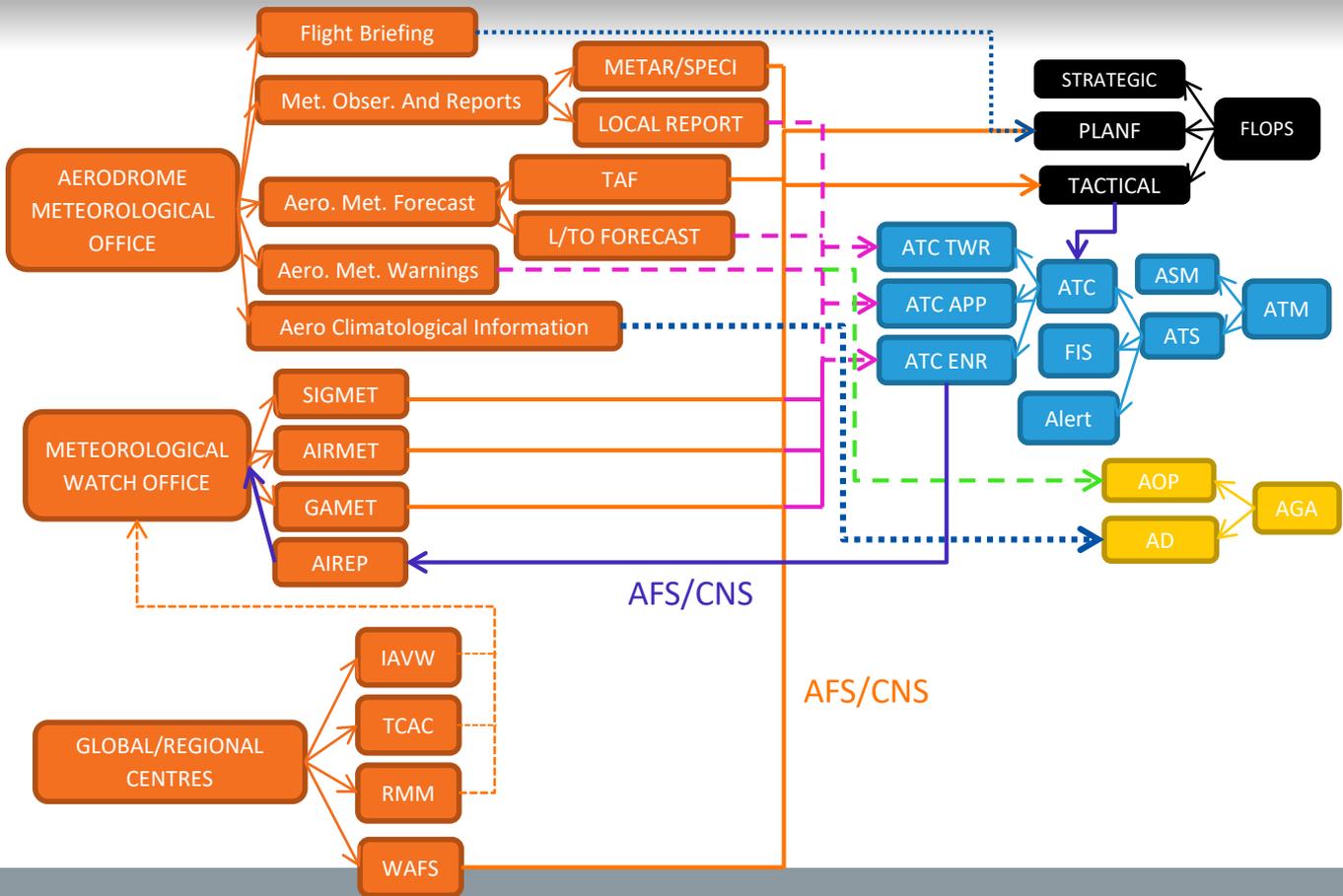


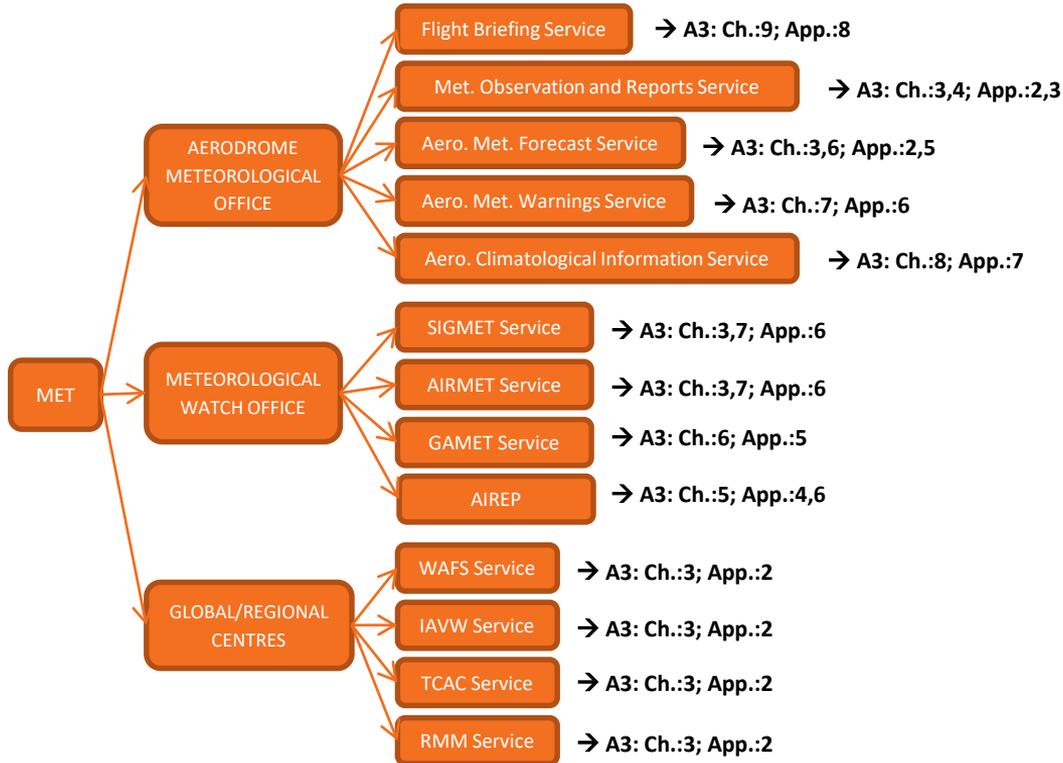
# METEOROLOGICAL SERVICES

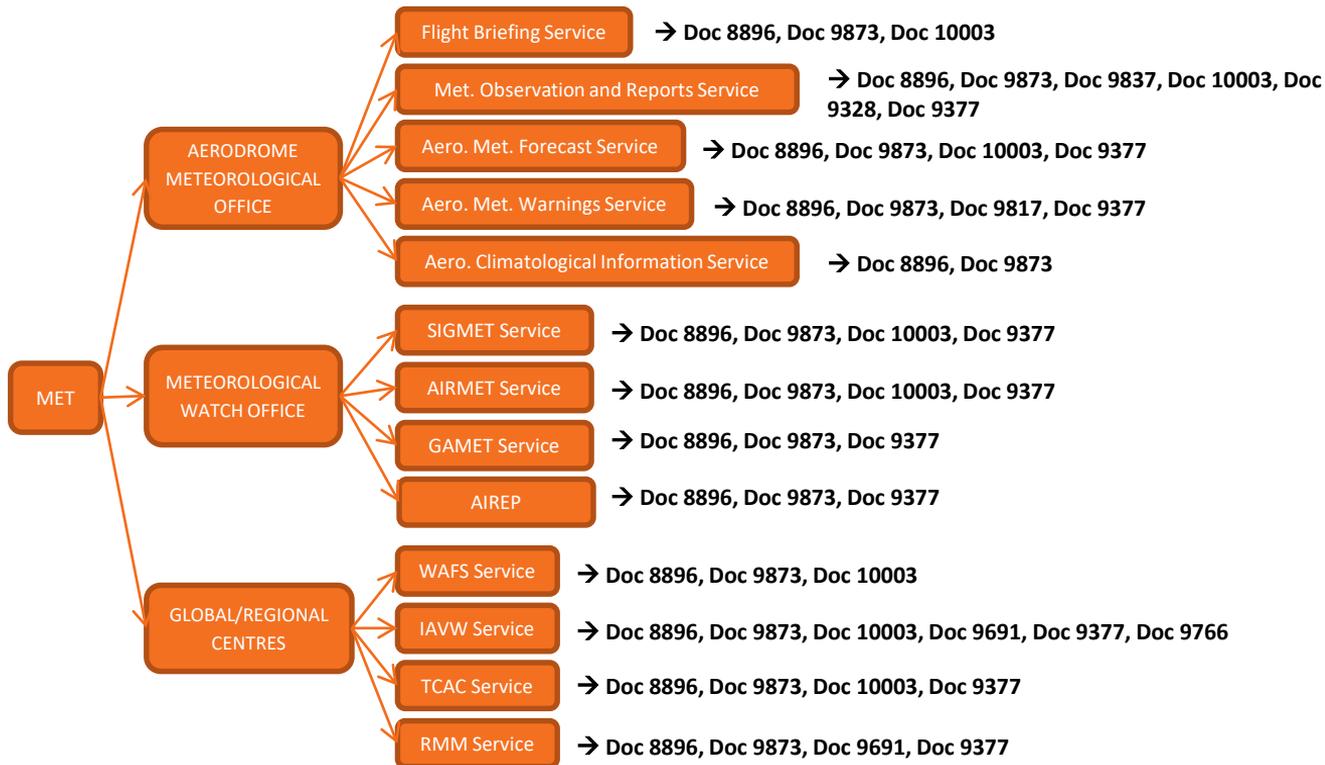




## MET Support and End Users







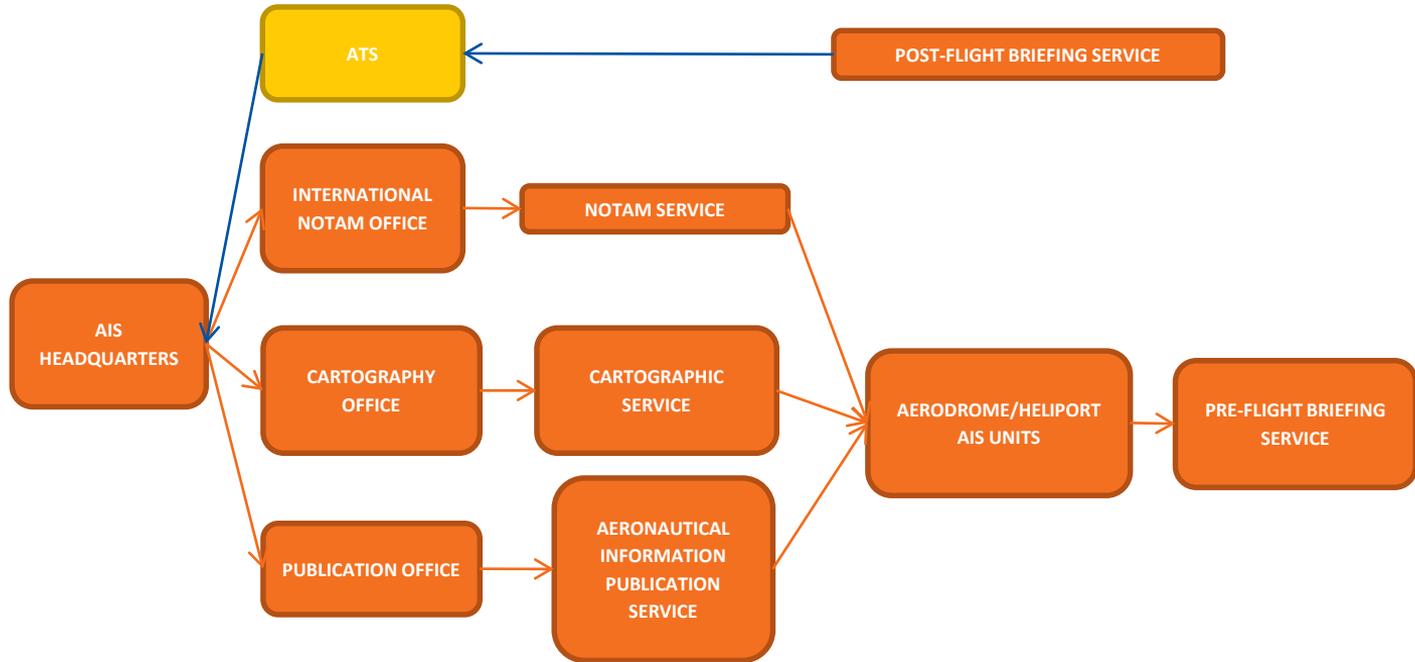


# MET References

- ✈ Annex 3: Meteorological Service for International Air Navigation
- ✈ Doc 8896: Manual of Aeronautical Meteorological Practice
- ✈ Doc 9873: Manual on the Quality Management System for the Provision of Meteorological Service to International Air Navigation
- ✈ Doc 9837: Manual on Automatic Meteorological Observing Systems at Aerodromes
- ✈ Doc 10003: Manual on the Digital Exchange of Aeronautical Meteorological Information
- ✈ Doc 9817: Manual on Low-level Wind Shear
- ✈ Doc 9691: Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds
- ✈ Doc 9328: Manual of Runway Visual Range Observing and Reporting Practices
- ✈ Doc 9377: Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services
- ✈ Doc 9766: Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List

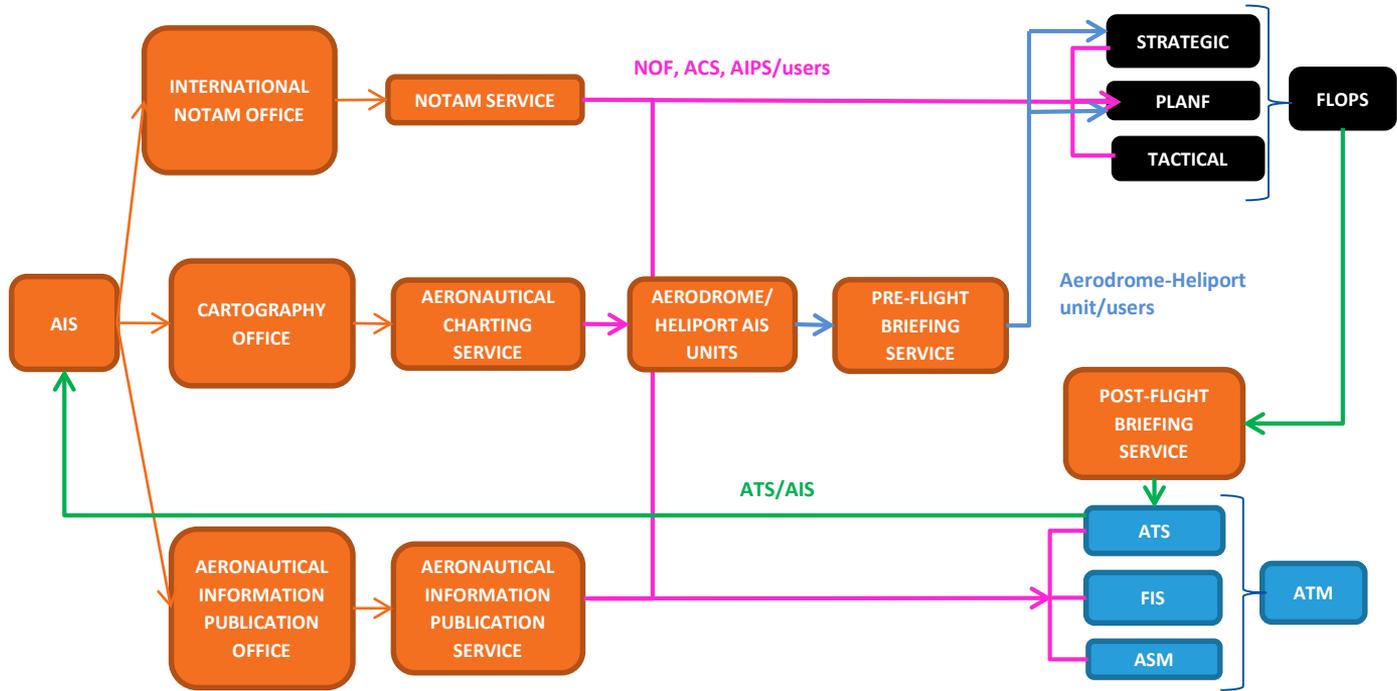


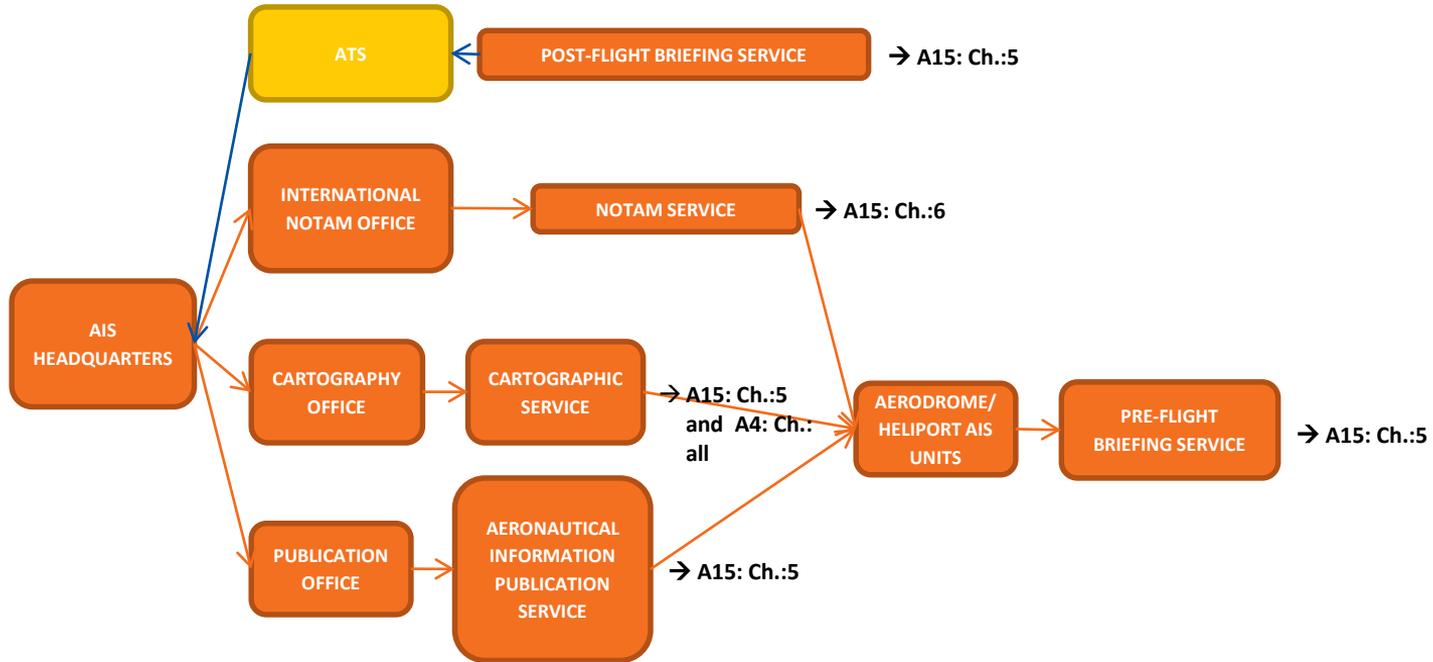
# AERONAUTICAL INFORMATION SERVICES

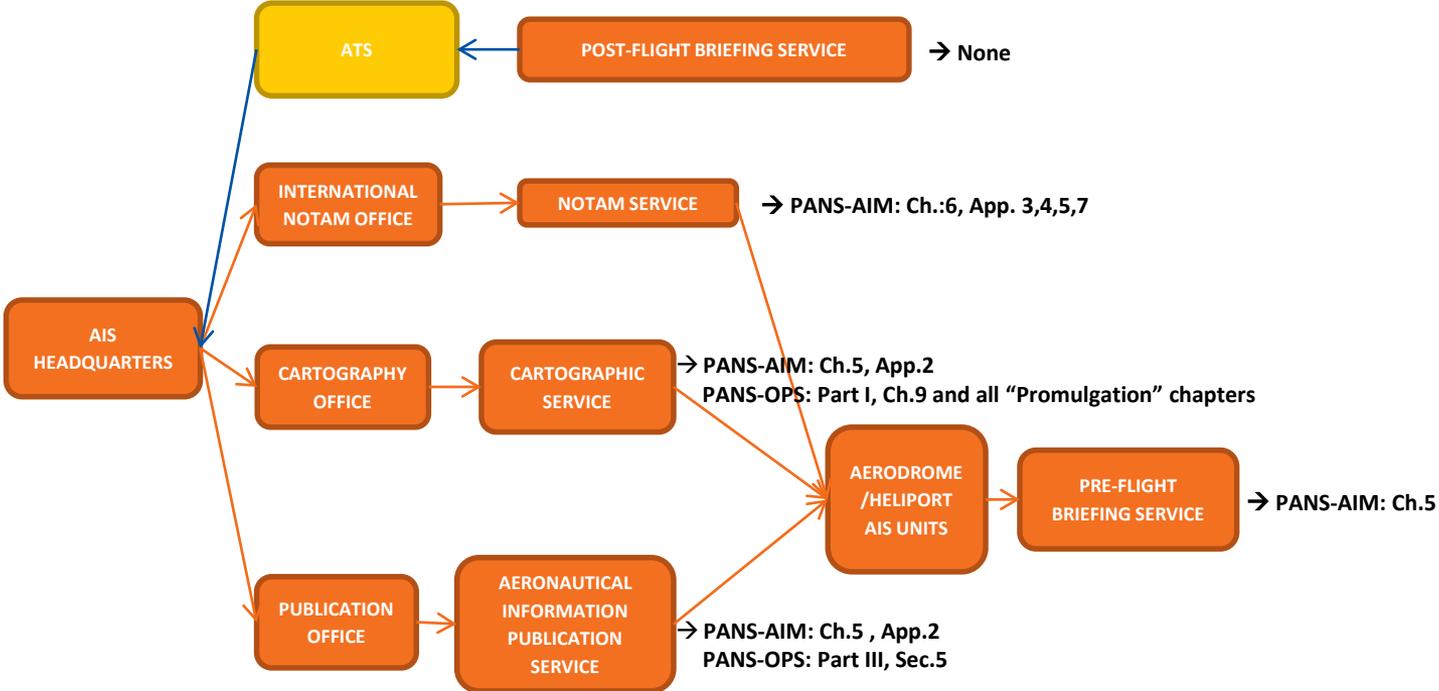


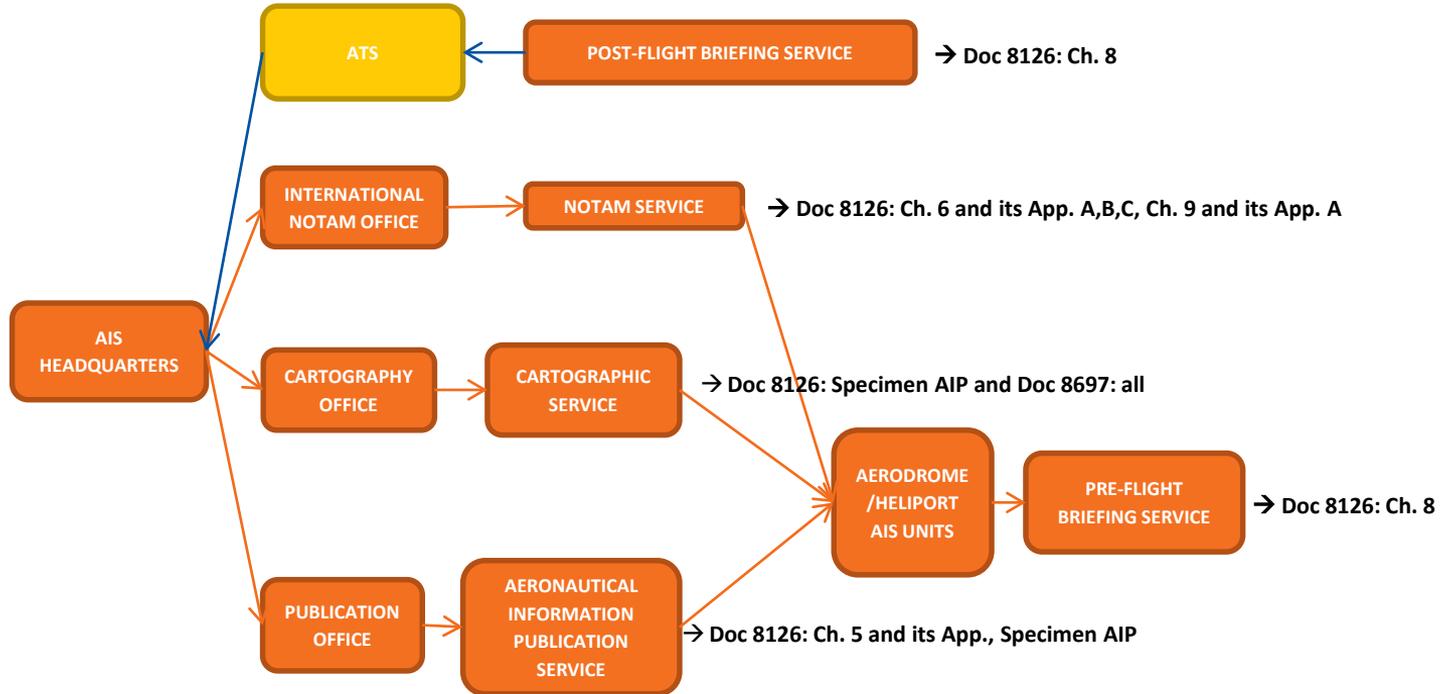


AIS Support and End Users









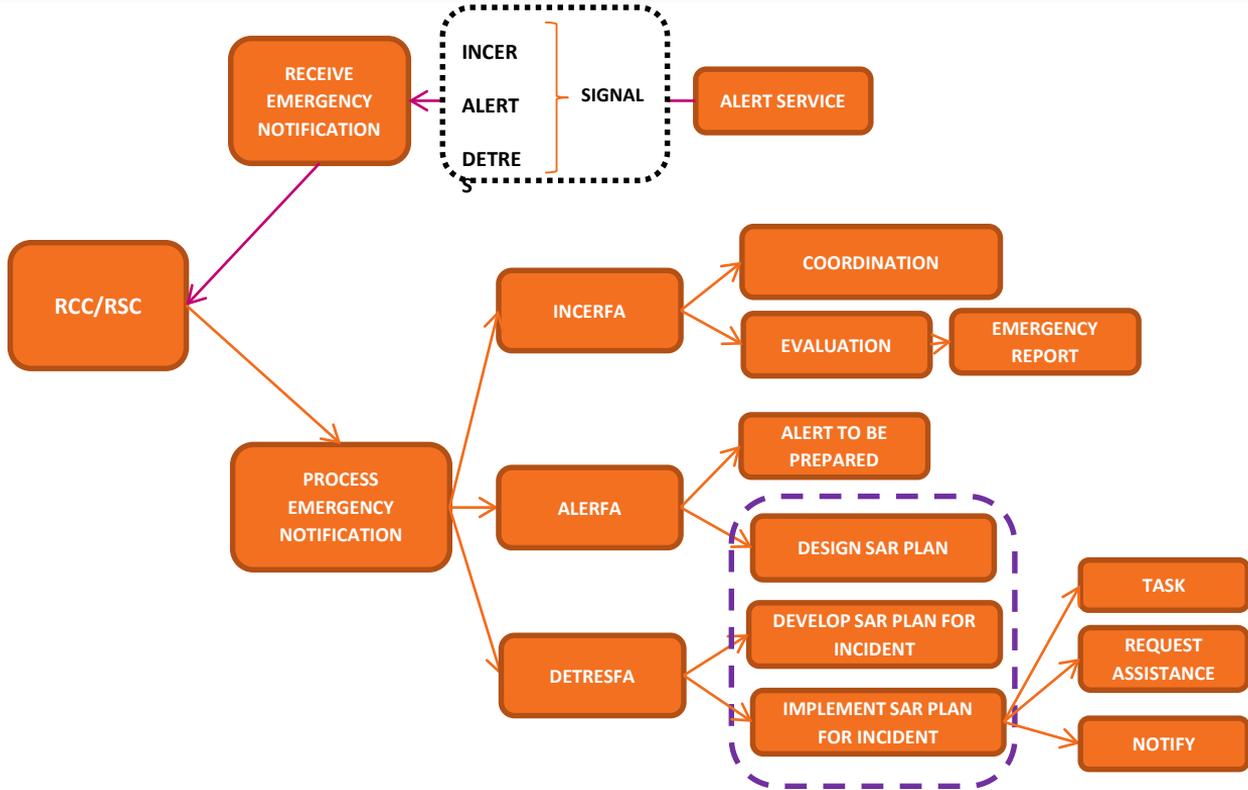


## AIS References

- ✈ Annex 15: Aeronautical Information Services
- ✈ Annex 4: Aeronautical Charts
- ✈ PANS-AIM (Doc 10066): Aeronautical Information Management
- ✈ PANS-OPS (Doc 8168): Aircraft Operations
- ✈ Doc 8126: Aeronautical Information Services Manual

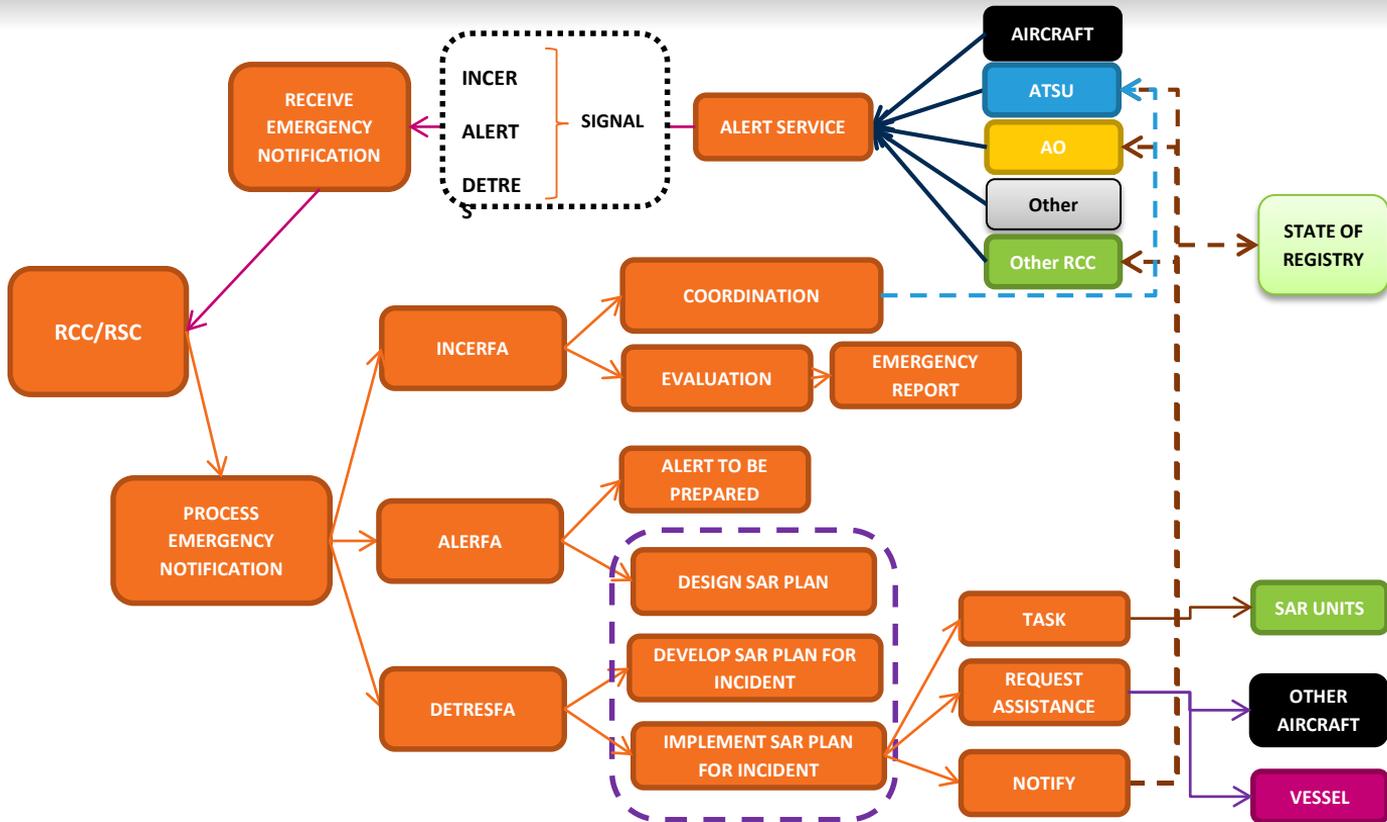


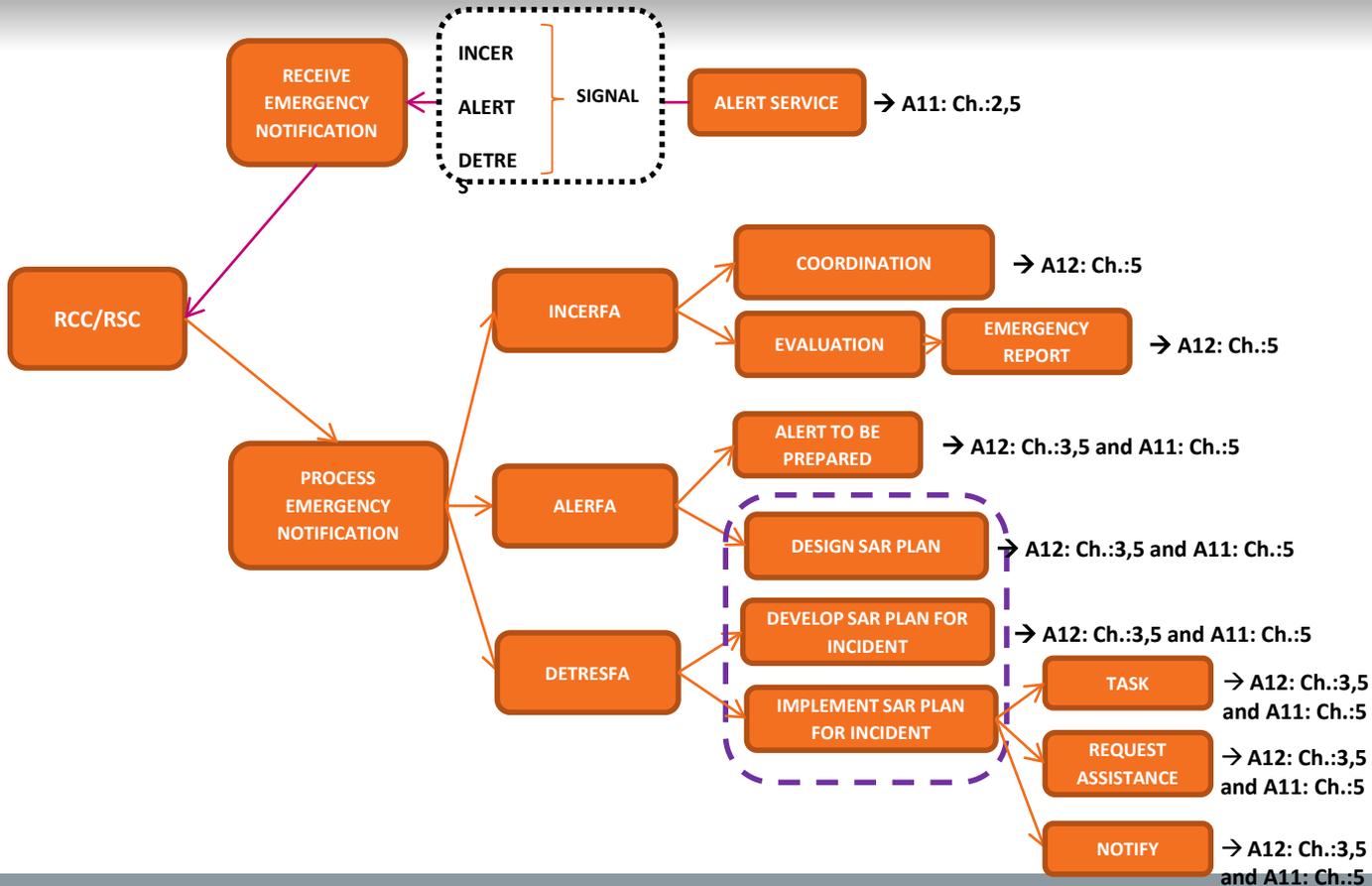
# SEARCH AND RESCUE SERVICES

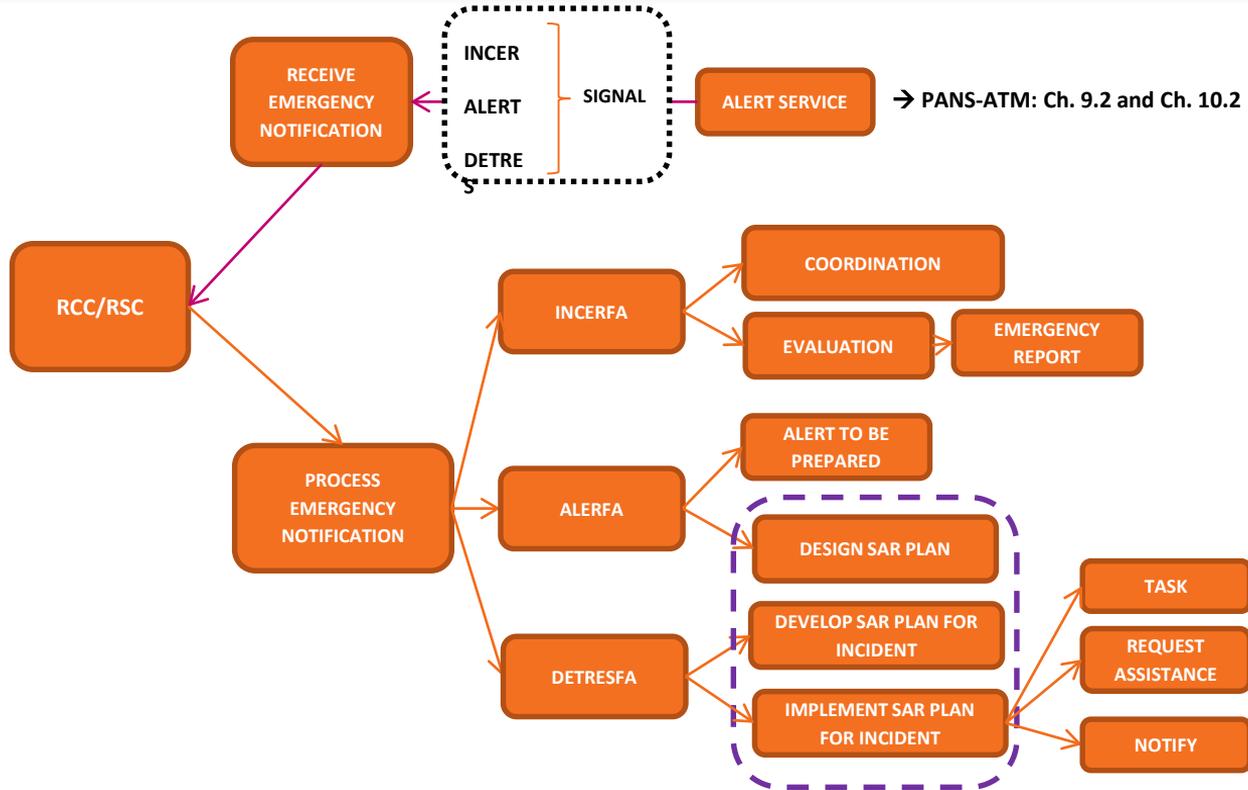


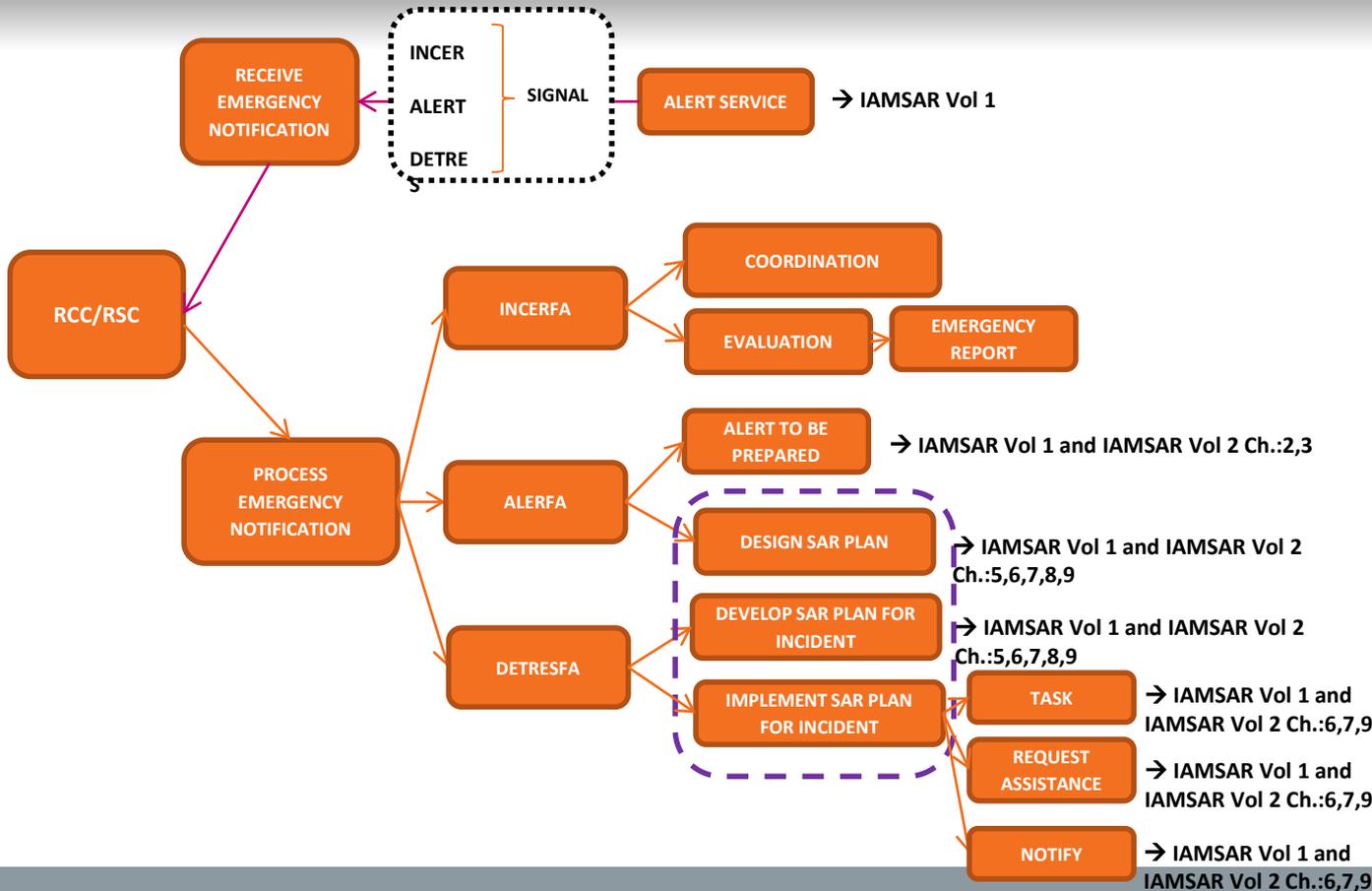


## SAR Support and End Users











## SAR References

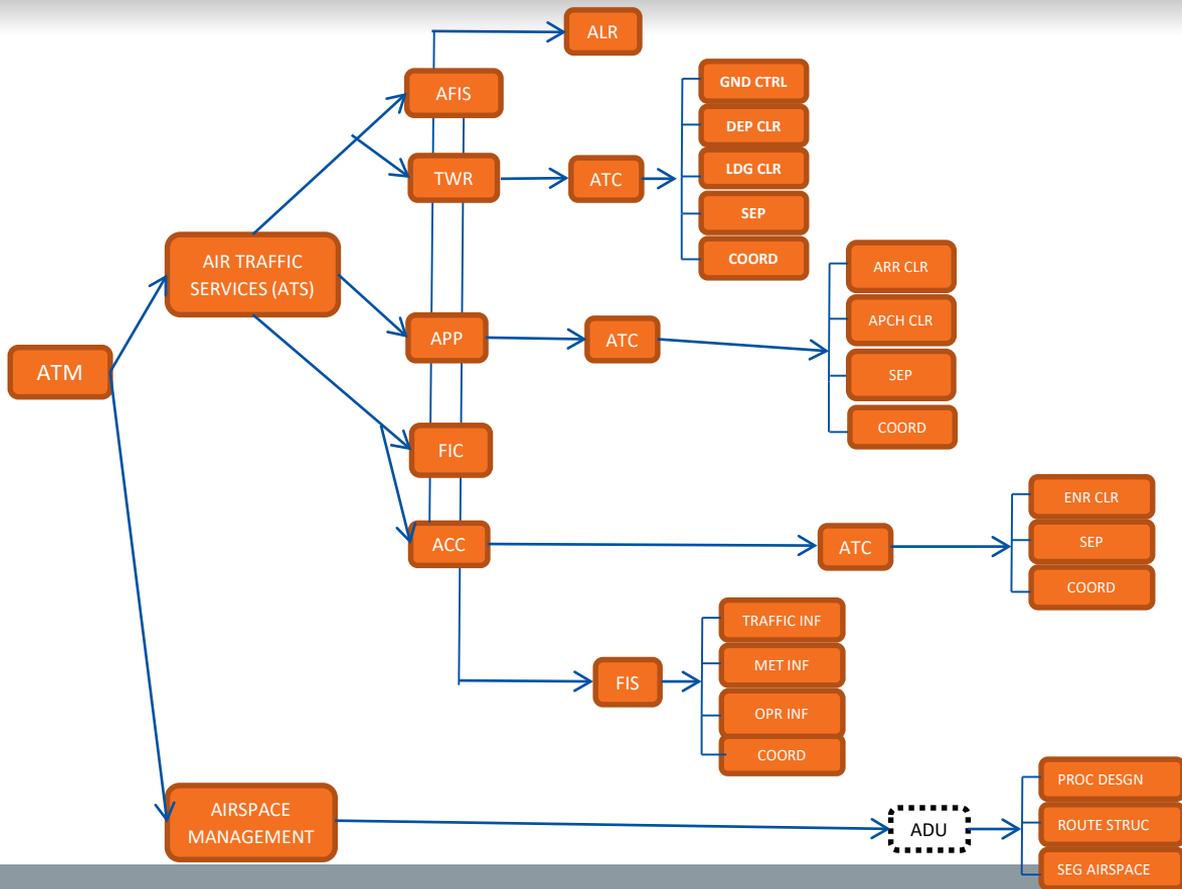
- ✈ Annex 11: Air Traffic Services
- ✈ Annex 12: Search and Rescue
- ✈ PANS-ATM (Doc 4444): Air Traffic Management
- ✈ Doc 9731: IAMSAR Manual - International Aeronautical and Maritime Search and Rescue Manual



# AIR TRAFFIC MANAGEMENT SERVICES

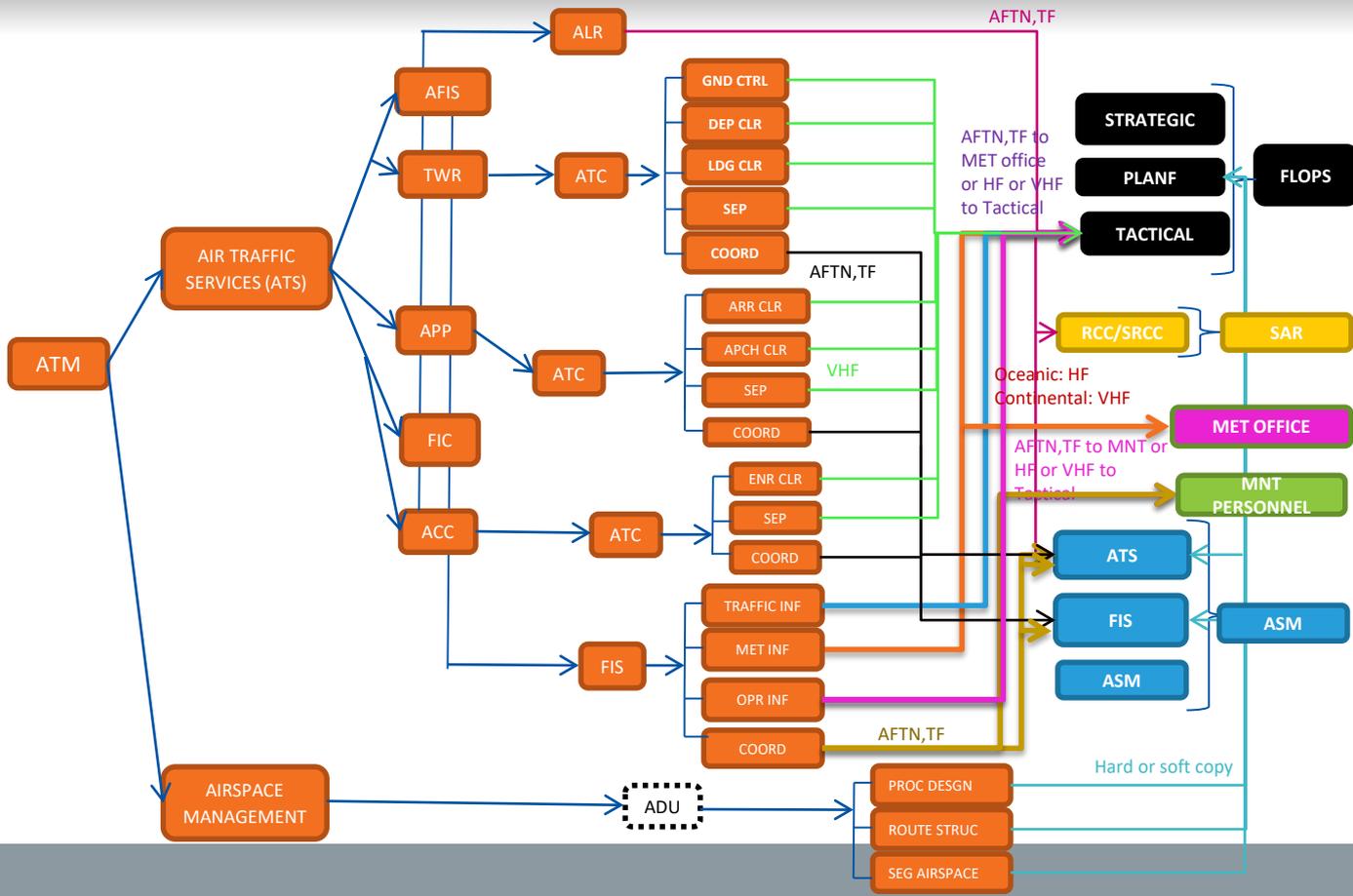


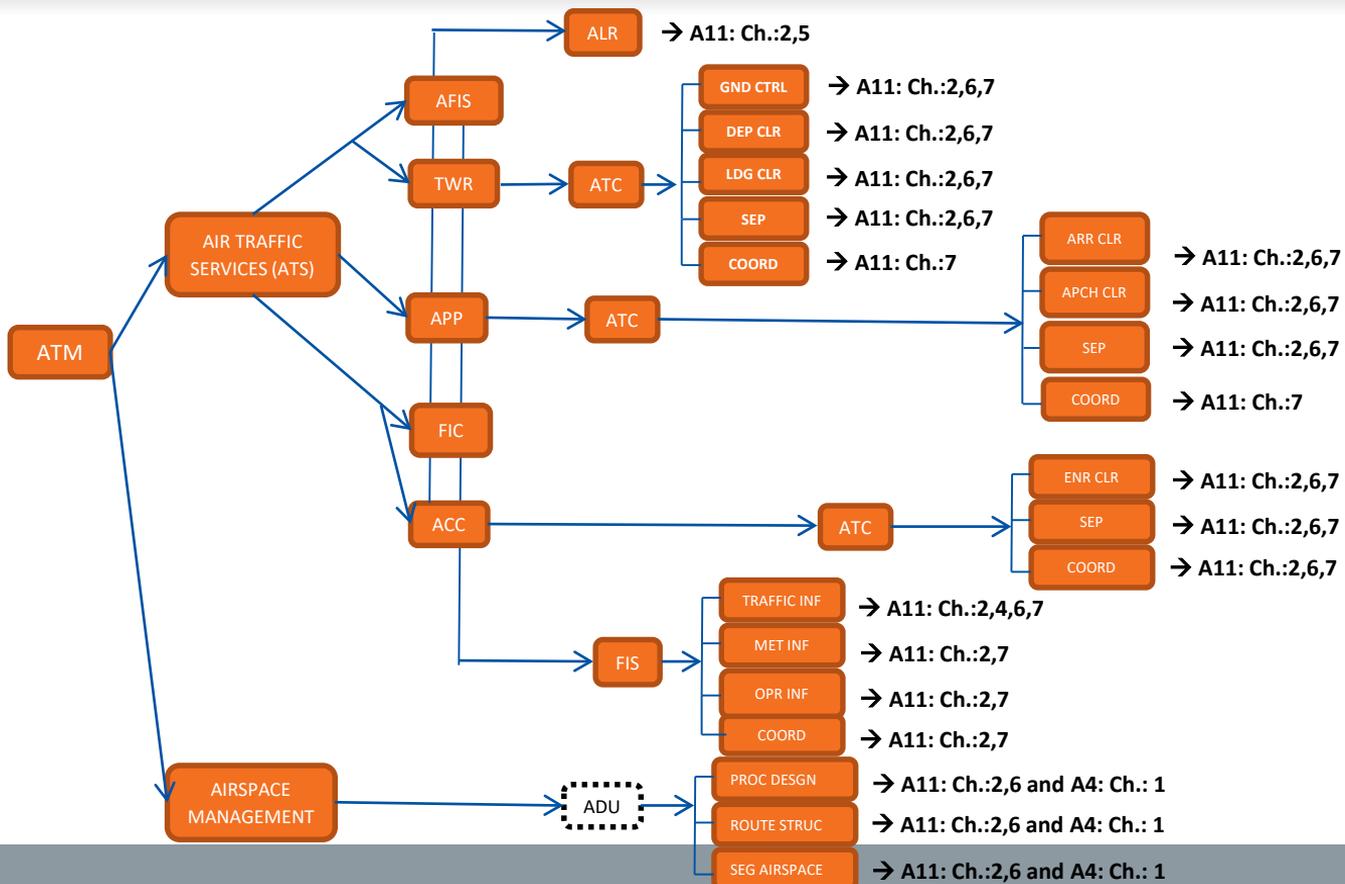
ATM Basic Modules and Elements

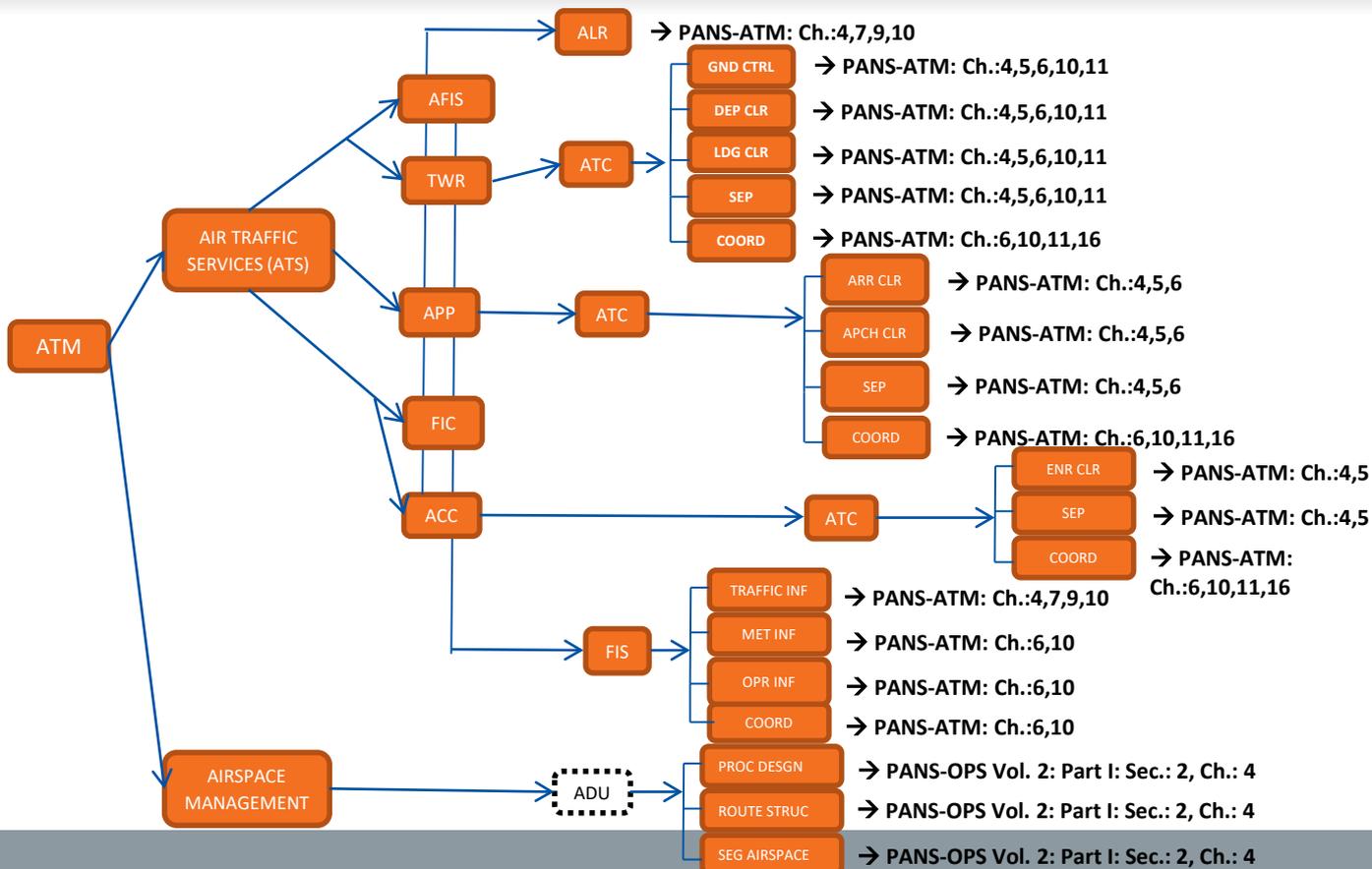




## ATM Support and End Users









## ATM References

- ✈ Annex 11: Air Traffic Services
- ✈ Annex 4: Aeronautical Charts
- ✈ PANS-ATM (Doc 4444): Air Traffic Management
- ✈ PANS-OPS (Doc 8168): Aircraft Operations



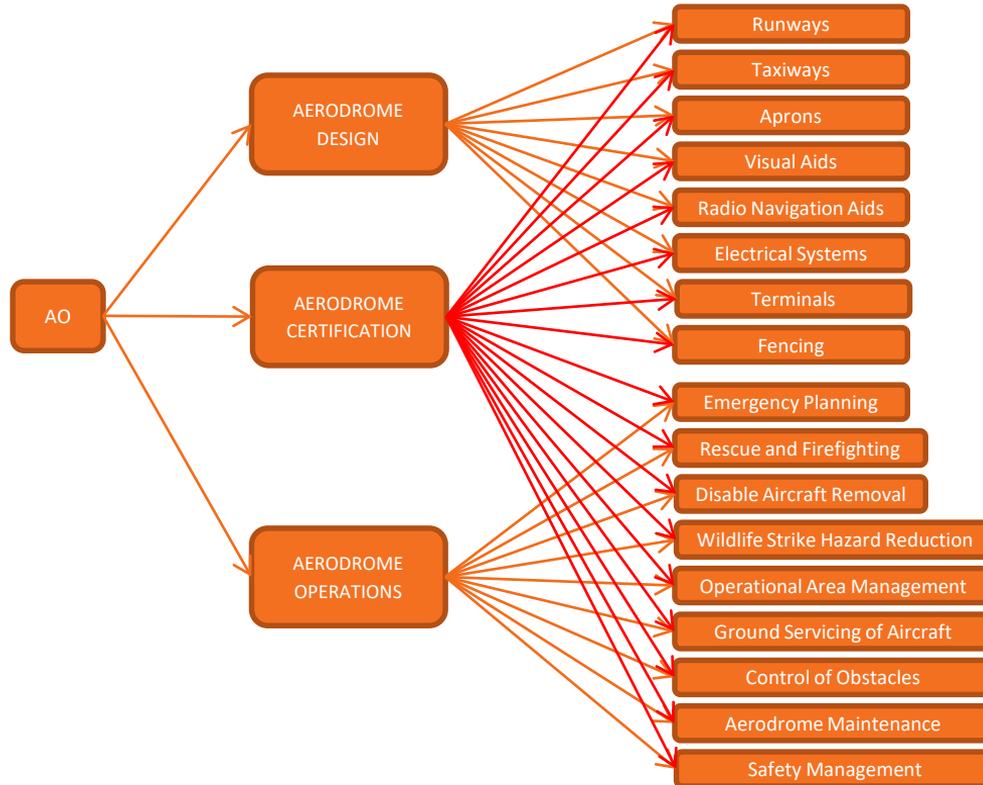
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# AERODROMES/ AERODROMES OPERATIONS SERVICES

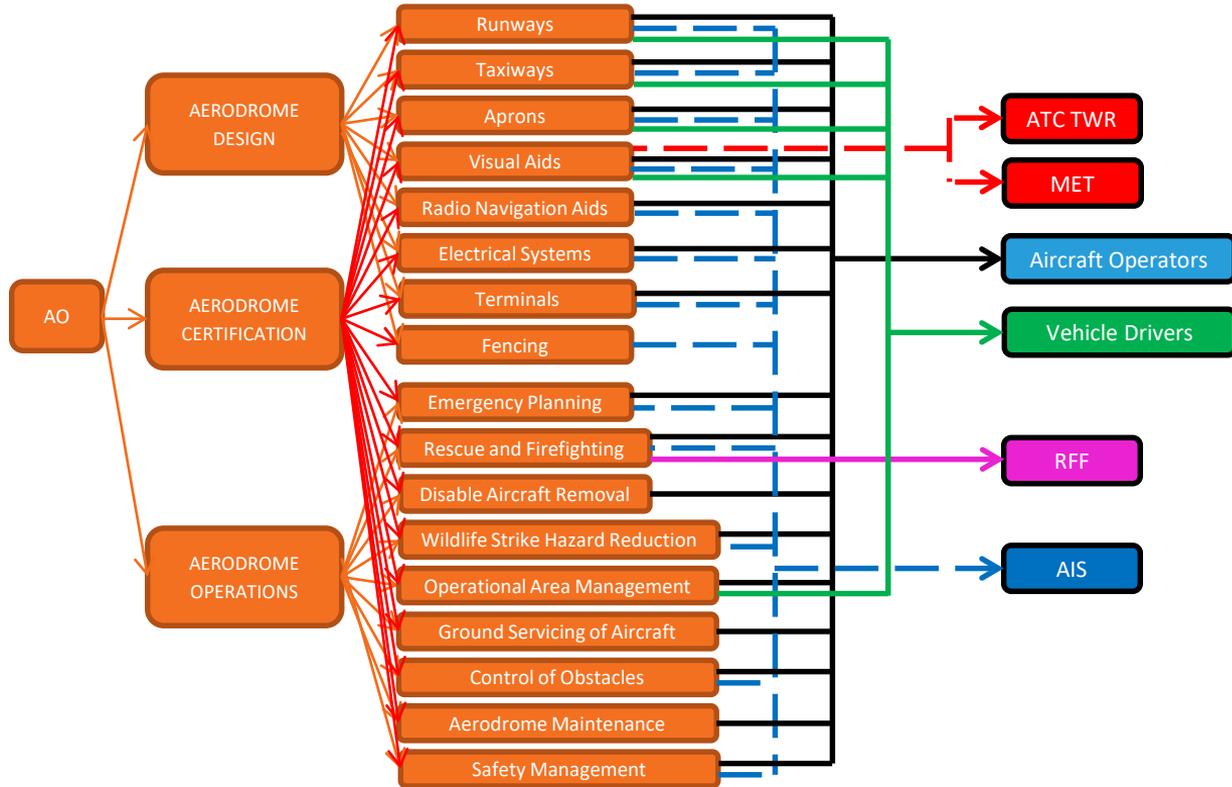


*Airport Operations Basic Modules and Elements*

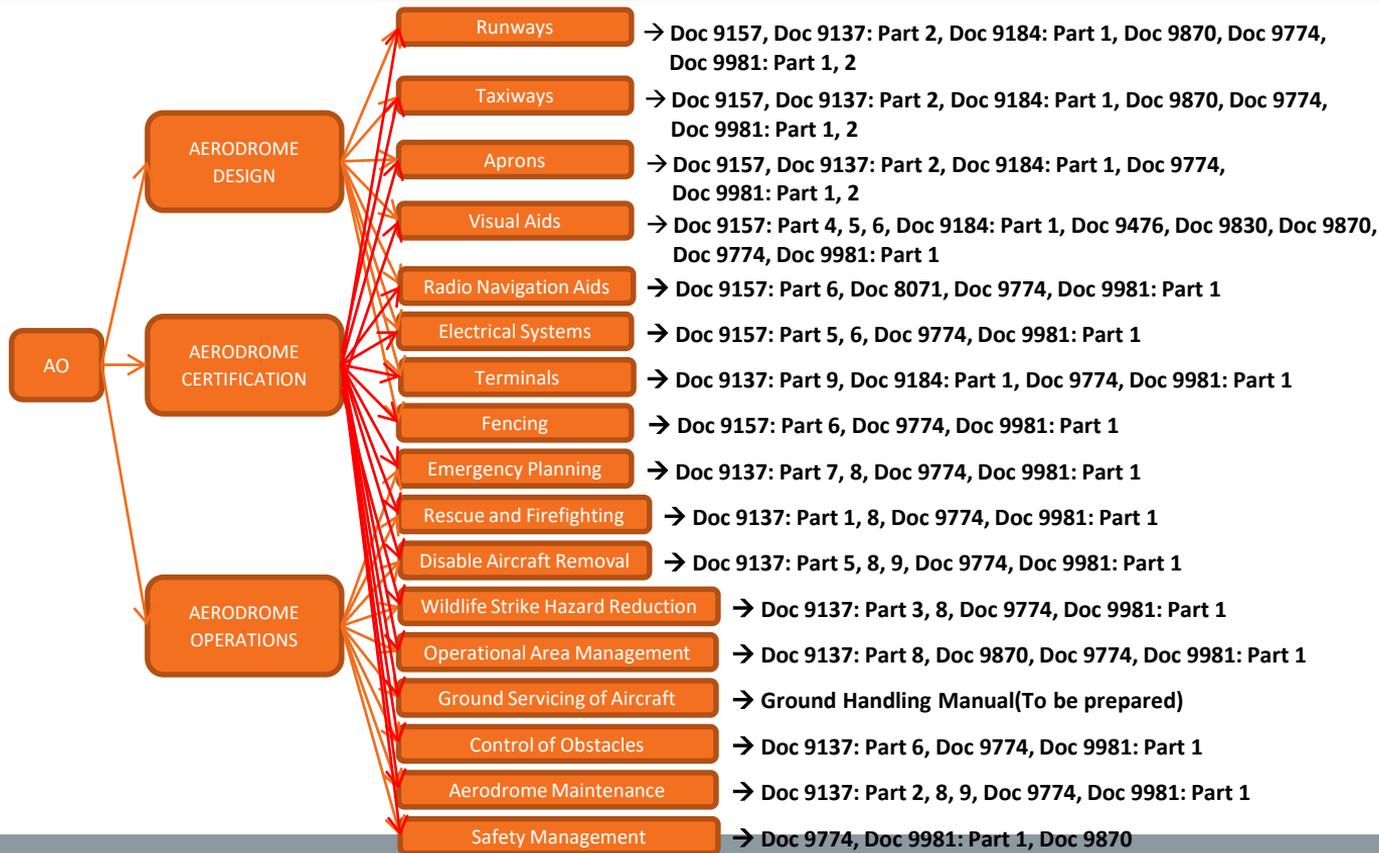




*Airport Operations Support and End Users*









## AO References

- ✈ Annex 14: Aerodromes Volume I — Aerodrome Design and Operations
- ✈ Annex 10: Aeronautical Telecommunications Volume I — Radio Navigation Aids
- ✈ Doc 9157: Aerodromes Design Manual
- ✈ Doc 9184: Airport Planning Manual
- ✈ Doc 9137: Airport Services Manual
- ✈ Doc 9476: Manual of Surface Movement Guidance and Control Systems (SMGCS)
- ✈ Doc 9830: Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual
- ✈ Doc 9870: Manual on the Prevention of Runway Incursions
- ✈ Doc 8071: Manual on Testing of Radio Navigation Aids
- ✈ Doc 9774: Manual on Certification of Aerodromes
- ✈ PANS-Aerodromes(Doc 9981): Aerodromes



**END OF PART I**



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# GANP

## *Sixth Version*



## Topics

- ✈ Sixth Edition of the GANP
- ✈ Performance Management Process



# Sixth Edition of the GANP- 2019



Search ICAO

## WELCOME TO THE GLOBAL AIR NAVIGATION PLAN PORTAL

The GANP Portal is a web portal where all aviation stakeholders will be able to find the most relevant information related to the GANP



## MULTILAYER STRUCTURE OF THE GANP

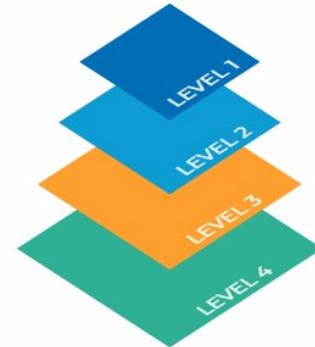
Click a level to navigate

GLOBAL STRATEGIC

GLOBAL TECHNICAL

REGIONAL

NATIONAL





- **6<sup>th</sup> Edition of the GANP**

- Multilayer structure
- GANP Portal

<https://www4.icao.int/ganpportal/>

- **Included improvements:**

- Communication: Tailored to different audiences
- Accessibility: Publically available
- Global, Regional and national air navigation planning alignment
- Digital:
  - Consistent
  - Relevant
  - Tool development



## MULTILAYER STRUCTURE OF THE GANP

Click a level to navigate

GLOBAL STRATEGIC

GLOBAL TECHNICAL

REGIONAL

NATIONAL





## GLOBAL STRATEGIC

Provides high-level strategic directions for decision makers to drive the evolution of the global air navigation system towards a common agreed vision.



### GANP DOCUMENT

- **Global Strategic Level**

[https://www4.icao.int/ganportal/GanpDocument#/?\\_k=cjyevq](https://www4.icao.int/ganportal/GanpDocument#/?_k=cjyevq)

- High-level decision makers
- Umbrella the other three layers
- Challenges and opportunities
  - Continued support of social well-being worldwide
  - Accommodation of increasing demand and new types of demand
  - Use of advanced technologies
  - Human capability and capacity
  - Emerging, new and adapted business models
- Vision
  - URGENT TRANSFORMATION: TURNING CHALLENGES INTO OPPORTUNITIES



- **Global Strategic Level**
  - A Performance-driven strategy: Performance Ambitions

<b>SUMMARY OF THE GANP PERFORMANCE AMBITIONS</b> “A high performing system by 2040 and beyond”	
<b>KPA</b>	<b>Ambition</b>
ACCESS AND EQUITY	No aviation community member excluded or treated unfairly.
CAPACITY	Nominal capacity easily scalable with demand.
	Disruptive events do not interrupt service provision and do not significantly affect the performance of the system.
COST-EFFECTIVENESS	No increase of total direct ANS cost while maintaining the safety and quality of service.
	Significant increase of ANS productivity, irrespective of demand.
EFFICIENCY	Reduction of the gap between the flight efficiency achieved and the desired optimum trajectory of airspace users.
ENVIRONMENT	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.
FLEXIBILITY	To absorb required changes to individual business and operational trajectories.
INTEROPERABILITY	Essential at an operational and technical level.
PARTICIPATION BY THE ATM COMMUNITY	Pre-agreed level of participation to make the maximum shared use of the air navigation resources.
PREDICTABILITY	No increase in ANS delivery variability including asset availability.
SAFETY	Zero ANS-related accidents and a significant (50%) reduction of ANS-related serious incidents.
SECURITY	Zero significant disruptions due to cyber incidents



- **Global Strategic Level**

- Working on common solutions: Conceptual Roadmap

Four evolutionary steps:

- EVOLUTIONARY STEP 1: FLIGHT OPERATIONS IN A DIGITAL RICH ENVIRONMENT
- EVOLUTIONARY STEP 2: TIME-BASED OPERATIONS ENABLED BY AN INFORMATION REVOLUTION
- EVOLUTIONARY STEP 3: TRAJECTORY-BASED OPERATIONS ENABLED BY FULL CONNECTIVITY THROUGH THE INTERNET OF AVIATION
- EVOLUTIONARY STEP 4: TOTAL PERFORMANCE MANAGEMENT SYSTEM FOCUS ON BUSINESS/MISSION NEEDS

- Scalable transformation for the evolution of the air navigation system

- Increase cooperation and support
- Forefront of innovation
- Modernization of the global air navigation system

## GLOBAL TECHNICAL ×

Supports technical managers in planning the implementation of basic air navigation services and new operational improvements in a cost-effective manner.



ASBUs AN-SPA BBBs

- **Global Technical Level**

- Technical managers
- Global technical frameworks
  - Basic Building Block (BBB)  
<https://www4.icao.int/ganportal/BBB>
  - Aviation System Block Upgrade (ASBU)  
<https://www4.icao.int/ganportal/ASBU>
- Performance Framework  
<https://www4.icao.int/ganportal/ASBU>
  - Performance Objectives
  - List of KPIs

More info: tutorial: <https://www4.icao.int/ganportal/Tutorial>



## REGIONAL ×

Addresses regional and sub-regional needs aligned with the global objectives.

AFI ANP	APAC ANP
EUR ANP	MID ANP
NAM ANP	NAT ANP
CARSAM ANP	

## NATIONAL ×

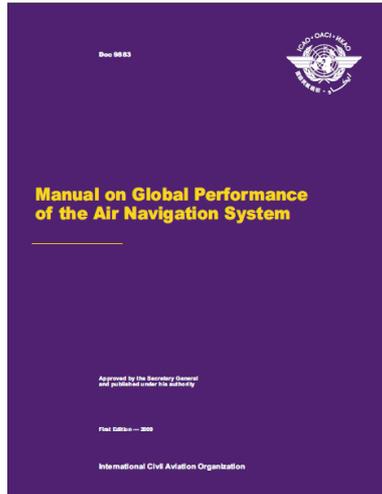
Development by States, in coordination with relevant stakeholders, of air navigation plans aligned with regional and global plans.

NANP TEMPLATE	CBA CHECKLIST
------------------	------------------

- **Regional Level**
  - ICAO Regional Air Navigation Plans (ANPs)
- **National Level**
  - National Air Navigation Plans



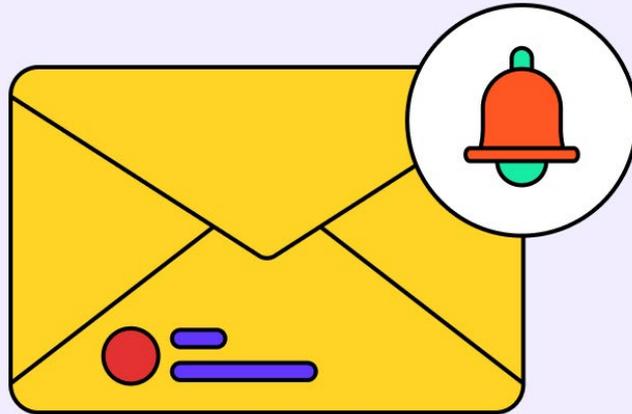
# PERFORMANCE MANAGEMENT PROCESS



## Principles:

- Strong focus on desired/required results
- Reliance on facts and data for decision making
- Collaborative justified decision-making

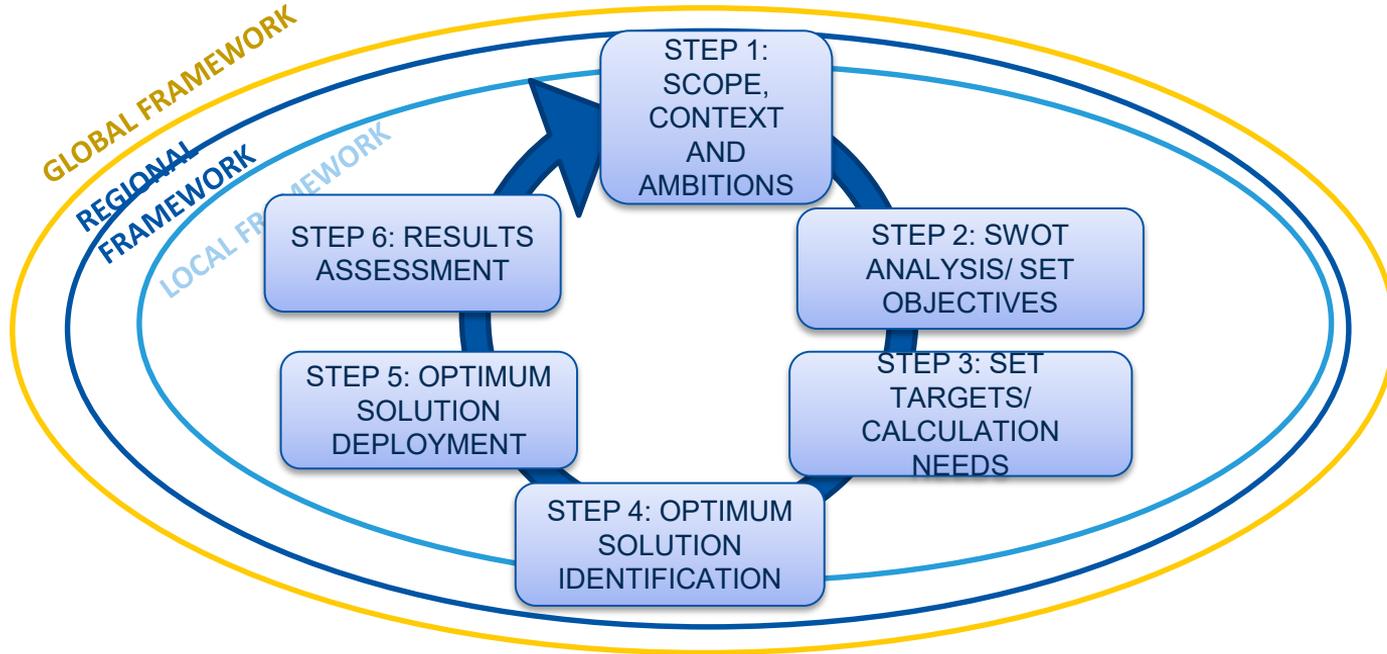
*“Fall in love with the **problem**, not with the solution”*





## Six steps Method

- ✈ STEP 1: Scope, Context & General Ambitions and expectations
- ✈ STEP 2: SWOT Analysis/ set objectives
- ✈ STEP 3: Set of targets/ Calculation of needs
- ✈ STEP 4: Optimum solution identification
- ✈ STEP 5: Optimum solution deployment
- ✈ STEP 6: Results assessment





## STEP 1: SCOPE, CONTEXT & AMBITIONS

### ✈ Context

#### ✈ 2019 Global Air Navigation Plan

##### ✈ Global Strategic Level: Performance Ambitions

- ✈ Objective

- ✈ ICAO KPAs

- ✈ Design criteria

##### ✈ Global Technical Level: Performance Objectives

#### ✈ Regional Air Navigation Plan

- ✈ ANP Vol III

- ✈ Specific Performance Objectives based on regional requirements



## STEP 1: SCOPE, CONTEXT & AMBITIONS

### ✈ Scope

#### ✈ National Air Navigation Plan

- ✈ Performance Targets: who, when and where

- ✈ Make clear assumptions on what is “surrounding” it

#### ✈ National Development Plan



## STEP 2: SWOT Analysis/ set objectives

### ✈ Operational analysis (baseline performance)

- ✈ Data collection, process and analyze

- ✈ Monitor current operations

  - ✈ KPIs (GANP 2016)

- ✈ Traffic forecast

### ✈ SWOT Analysis

- ✈ Strengths, Weaknesses, Opportunities and Threats

- Performance objectives



## STEP 2: SWOT Analysis/ set objectives

### ✈ National level

#### ✈ National Performance Framework

- ✈ Performance Objective
- ✈ High level SWOT analysis

### ✈ Local Level

#### ✈ KPIs

- ✈ National Performance Framework
- ✈ Specific

#### ✈ Detailed SWOT analysis



## STEP 3: TARGETS & NEEDS

### ✈ Agree & Prioritize performance objectives

- ✈ Focus area within KPAs

- Performance objectives

- ✈ Prioritization



## STEP 3: TARGETS & NEEDS

### **SMART** Objectives

 **S**pecific

 **M**easurable

 **A**chievable

 **R**elevant

 **T**ime-bounded



## STEP 3: TARGETS & NEEDS

### ✈ SMART Objectives

✈ **Specific**

✈ **Measurable**

✈ Achievable

✈ Relevant

✈ Time-bounded

} PERFORMANCE  
INDICATORS → *ICAO KPIs Catalogue*

## STEP 3: TARGETS & NEEDS

### ✈ SMART Objectives

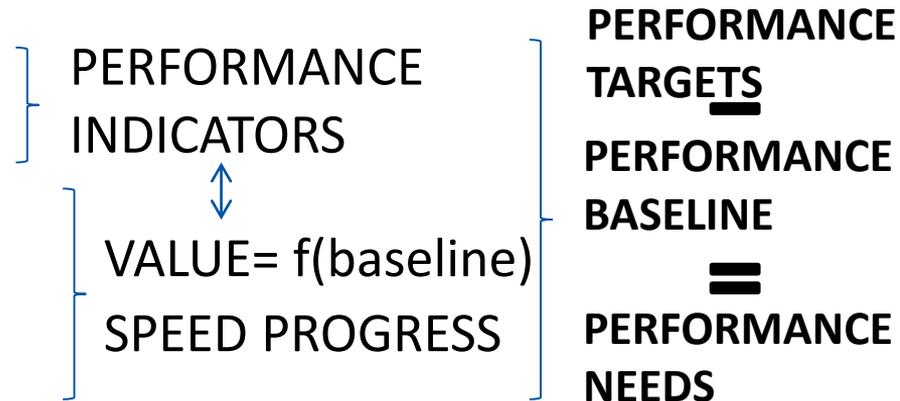
✈ **Specific**

✈ **Measurable**

✈ **Achievable**

✈ **Relevant**

✈ **Time-bounded**

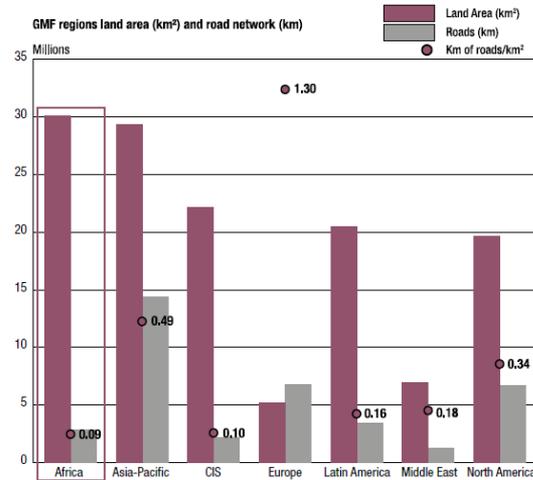


# Africa

✈️ Aviation essential for further development

✈️ Challenges

- ✈️ Nature: deserts, forest, ocean,...
- ✈️ Slow liberalization
- ✈️ Limited resources
- ✈️ Security



Source: IRF, The World Bank, Airbus GMF 2017



# Africa

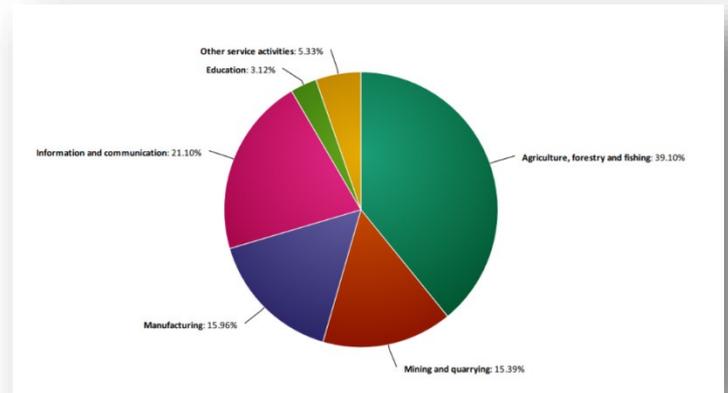
## ✈ Traffic statistics: Average annual growth 2016-2036

Segment	Boeing
Africa -Africa	6.5%
Africa - Europe	4.7%
Africa - Middle East	7.6%
Africa - North America	5.9%
Africa - Southeast Asia	5.7%

# Nigeria



Source: NIGERIAN NATIONAL BUREAU OF STATISTICS



# Nigeria

✈ **FIR: Kano**

✈ Sectors: Kano and Lagos

✈ **Several TMAs**

✈ **30 aerodromes, 9 international aerodromes**



YEAR 2016	Abuja	Calabar	Enugu	Kaduna	Kano	Lagos	Maiduguri	Port Harcourt	Sokoto
Passengers	936,814	199,880	353,972	129,804	413,906	2,984,829	10,0928	1,041,821	96,358
Cargo (kg)	3,313,209	2,587	-	-	6,930	175,740,101	-	5,532,259	-
Operations	12,730	3,129	5,394	2,407	4,666,520	28,307	4,411	19,848	1,966



## Based on this data...

- ✈ How is the system performing?
- ✈ Do we have delays?
- ✈ Are we punctual?
- ✈ Are we accommodating our demand?





# Nigeria

		Abuja	Kano	Lagos	Port Harcourt
KPI01	DEPARTURE PUNCTUALITY (10 MIN)	10%	63%	63%	7%
KPI02	TAXI-OUT ADDITIONAL TIME (MIN)	5 over 7min	3*	3*	6 over 6min
KPI 09	AIRPORT PEAK ARRIVAL CAPACITY (RADAR)	30	30	45	30
KPI 09	AIRPORT PEAK ARRIVAL CAPACITY (NO RADAR)	12	15		15
KPI 10	AIRPORT PEAK ARRIVAL THROUGHPUT	28	28	42	28
KPI 11	AIRPORT ARRIVAL CAPACITY UTILIZATION	75%	75%	67%	75%
KPI 13	TAXI-IN ADDITIONAL TIME (MIN)	3 over 7min	3	5	5 over 5min
KPI 14	ARRIVAL PUNCTUALITY	15%	7%	1%	15%



## So let's me ask again, based on this data...

- ✈ How is the system performing?
- ✈ Do we have delays?
- ✈ Are we punctual?
- ✈ Are we accommodating our demand?





## STEP 4: IDENTIFICATION OPT. SOLUTION

### ✈ Assessment of the SWOT analysis

#### ✈ Dominant factors:

main constraints/opportunities

→ selection and prioritization of opportunities and issues



## STEP 4: IDENTIFICATION OPT. SOLUTION

### ✈ List of options

- ✈ High-level strategy
- ✈ Operational concept
- ✈ Technical enablers
- ✈ Baseline
- ✈ Availability
- ✈ Safety Assessment
- ✈ Human Factors Assessment
- ✈ Assessment of expected performance

**ASBU Framework**



## Digital ASBU framework

Home - ICAO GANP Portal x +  
← → 🔍 https://www4.icao.int/ganpportal

Please note that this website is still under development. Improvements will continuously happen to the content as well as to the interface. Sorry for the inconveniences.

ICAO GANP PORTAL

Global Strategic Global Technical Regional National Login

### WELCOME TO THE GLOBAL AIR NAVIGATION PLAN PORTAL

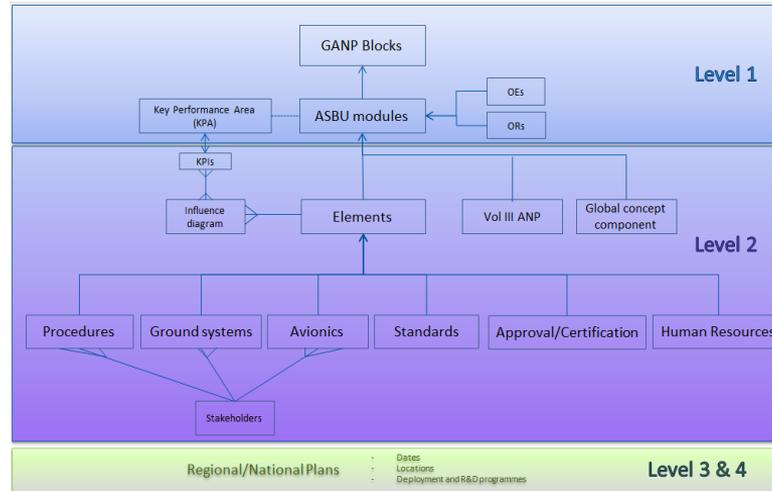
The GANP Portal is a web portal where all aviation stakeholders will be able to find the most relevant information related to the GANP

### THE GLOBAL AIR NAVIGATION PLAN

The Global Air Navigation Plan (Doc 9750) is the ICAO's highest air navigation strategic document and the plan to drive the evolution of the global air navigation system, in line with the Global Air Traffic Management Operational Concept (GATMOC, Doc 9854) and the Manual on Air Traffic Management System Requirements (Doc 9882). It also supports planning for local and regional implementation.

In order to better communicate with technical and high-level managers and to not leave any State or stakeholder behind, a multilayer structure, tailored for the various audiences, is proposed for the sixth edition of the GANP. This multilayer structure of four layers; two global levels, a regional

# STEP 4: IDENTIFICATION OPT. SOLUTION





## STEP 4: IDENTIFICATION OPT. SOLUTION

### ✈ Make decisions

#### ✈ Information available

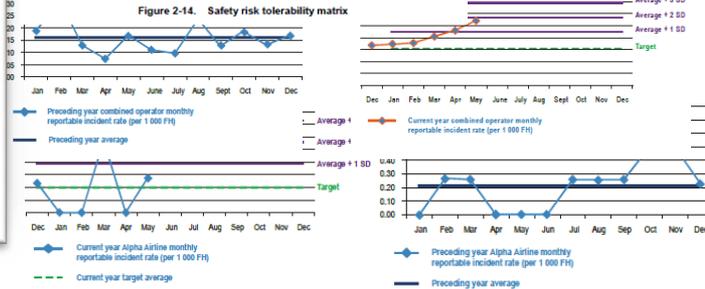
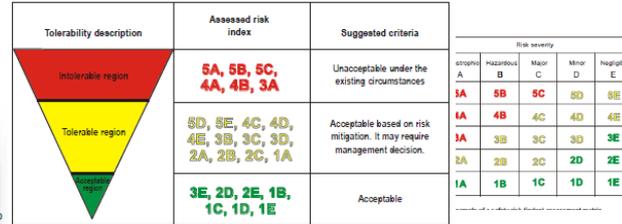
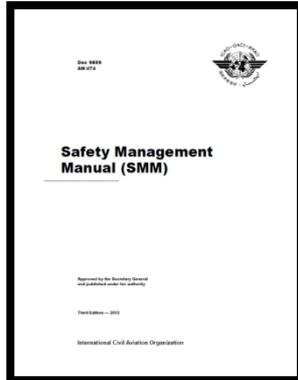
- ✈ Scope
- ✈ Performance objectives and targets
- ✈ Assessment of SWOT analysis
- ✈ List of solutions (ASBUs)



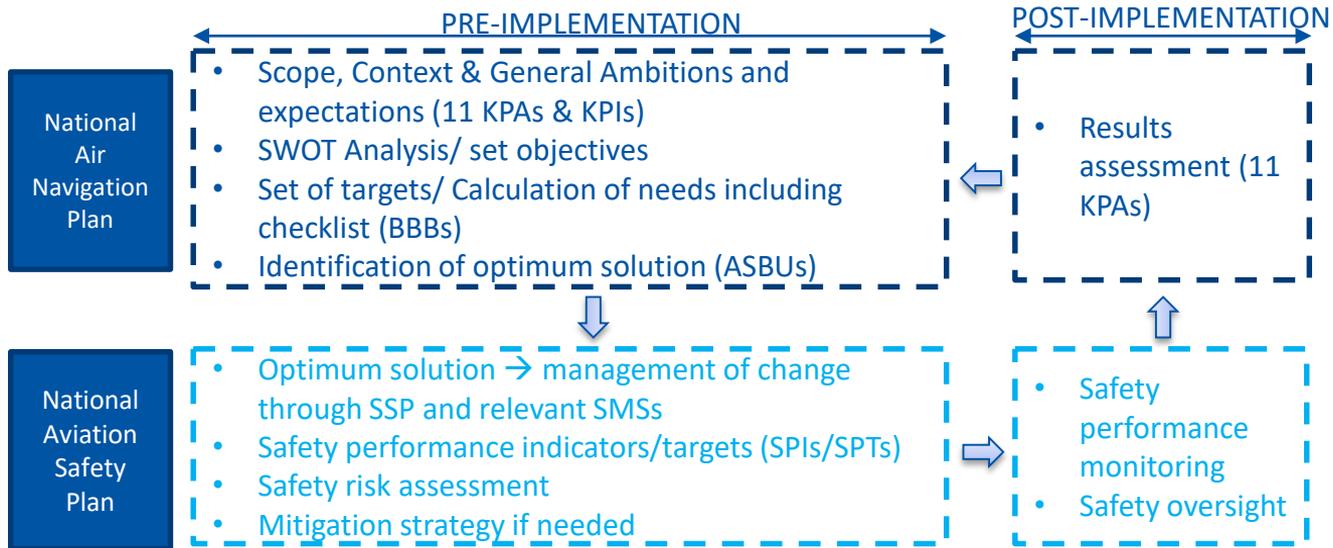
## Plus...

- ✈ Associated Safety Assessment
- ✈ Associated Human Factors Assessment
- ✈ Associated Environmental Impact Assessment
- ✈ Associated Cost-benefits analysis

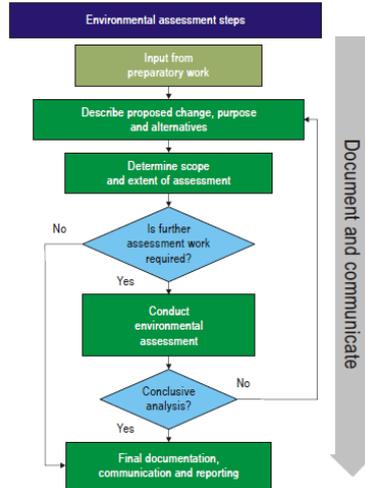
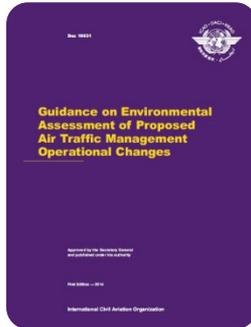
## Safety assessment guidance



# GANP & GASP TECHNICAL ALIGNMENT

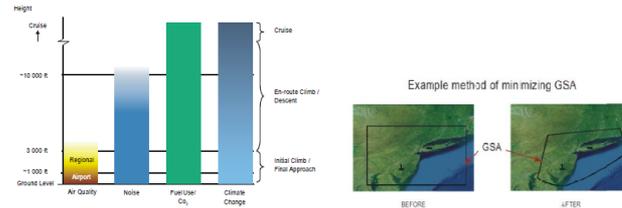


## Environmental impact assessment guidance



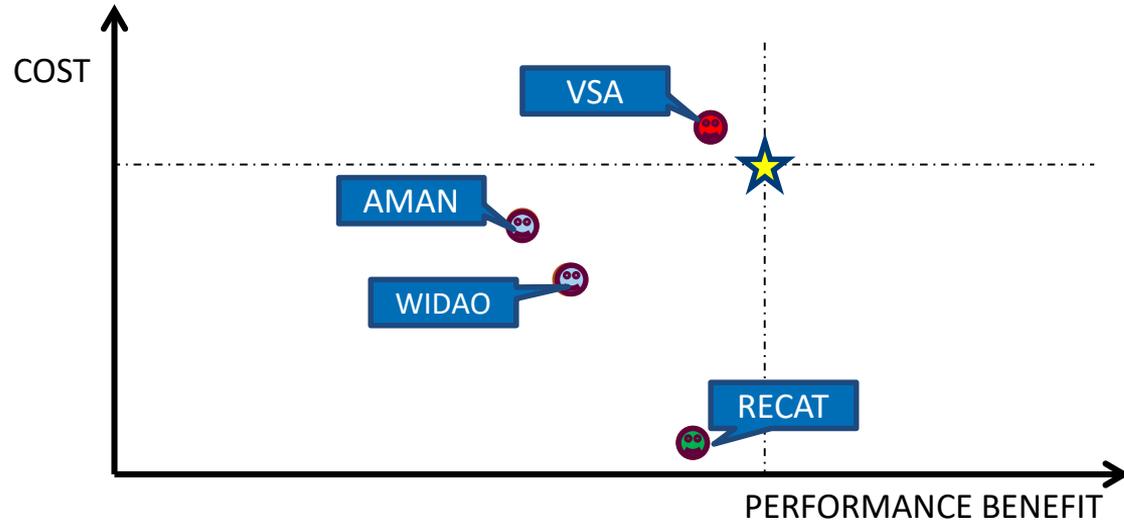
Seminars: International Aviation and Environment and States' Action Plans  
 Mexico | Peru | Cameroon | Kenya | Malaysia | United Arab Emirates | Poland | ICAO HQ

Impact	Height AGL	Below 1 000 ft (300 m)	1 000-3 000 ft (300-900 m)	3 000-10 000 ft (900-3 000 m)	Above 10 000 ft (3 000 m)
Air quality (e.g. NOx, PM, etc.)		Most relevant	Relevant (Note 1)	Less relevant	Less relevant
Noise		Potentially (Note 2)	Relevant	Relevant	Potentially (Note 3)
Fuel use / CO <sub>2</sub>		Relevant	Relevant	Most relevant (Note 4)	Most relevant (Note 4)
Climate change		Relevant	Relevant	Most relevant (Note 5)	Most relevant (Note 5)





# CBA



## Cost-Benefits Analysis guidance

Parameter	Value	Value provided below
A. Average cost per hour of delay, based on local fleet	9000	
B. Percent of flights impacted by weather conditions below current minima <sup>1</sup>	10%	--- applies to all cases (1)
C. Percent of flights impacted by weather conditions below LPV minima <sup>2</sup>	10%	--- applies to GSAS eq.
D. Average track duration of low visibility	1.5	
E. Percent of arriving aircraft equipped with GSAS	25%	
F. Discount rate for economic analysis	7%	

Costs	Year 0	Year 1	Year 2
1. Procedure development (both runway ends)	\$250,000		
2. Procedure maintenance		\$20,000	\$20,000
<b>TOTAL COST</b>	<b>\$250,000</b>	<b>\$20,000</b>	<b>\$20,000</b>
<b>DISCOUNTED COST (PV)</b>	<b>\$364,927</b>		

### Box 1 PPP Definitions

PPPs are aimed at increasing the efficiency of infrastructure projects by means of a long term collaboration between the public sector and private business. A holistic approach which extends over the entire lifecycle is important here.

Source: German PPP Task Force, German Transport, Construction and Housing Ministry (Bundesministerium für Verkehr, Bau und Wirtschaft)

The term public-private partnership ("PPP") is not defined at Community level. In general, the term refers to forms of...

PPPs are long-term partnerships to deliver assets and services underpinning public services and community outcomes. Optimal structuring links private sector profitability to sustained performance over the long-term, yielding robust and attractive cash-flows for investors in return for delivering better value for money to the taxpayer.

Source: John Laing plc

'Public-Private Partnership' is a generic term for the relationships formed between the...

Fig. 1: Typical technology adoption lifecycle and suggested tipping point

Fig. 2 Application of incentives

Source: Everett Rogers, Diffusion of Innovations (5th edition), WG1 analysis

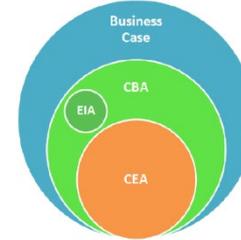


Figure 1 – Relationship between business case, CBA, CEA and EIA



## STEP 4: IDENTIFICATION OPT. SOLUTION

### ✈ Make decisions

#### ✈ Information available

- ✈ Scope
- ✈ Performance objectives and targets
- ✈ Assessment of SWOT analysis
- ✈ List of solutions (ASBUs)
- ✈ Safety Assessment, HP Assessment, CBA and Environment Impact Assessment

#### ✈ Single optimum solution or a roadmap of optimum solutions

## STEP 5: DEPLOYMENT OF THE SOLUTION

### ✈ Execution phase

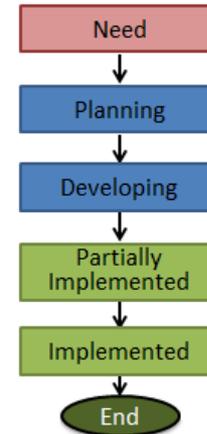
#### ✈ Planning

#### ✈ Implementation

##### ✈ National mechanism

for tracking the implementation  
of the elements

#### ✈ Benefits





## STEP 6: ASSESSMENT OF RESULTS

- ✈ Continuously assess performance
  - ✈ Monitor progress of implementation
  - ✈ Review actually achieved performance
    - ✈ Update performance gaps
- +(Step 1&2)=

**PERFORMANCE MONITORING AND REVIEW**

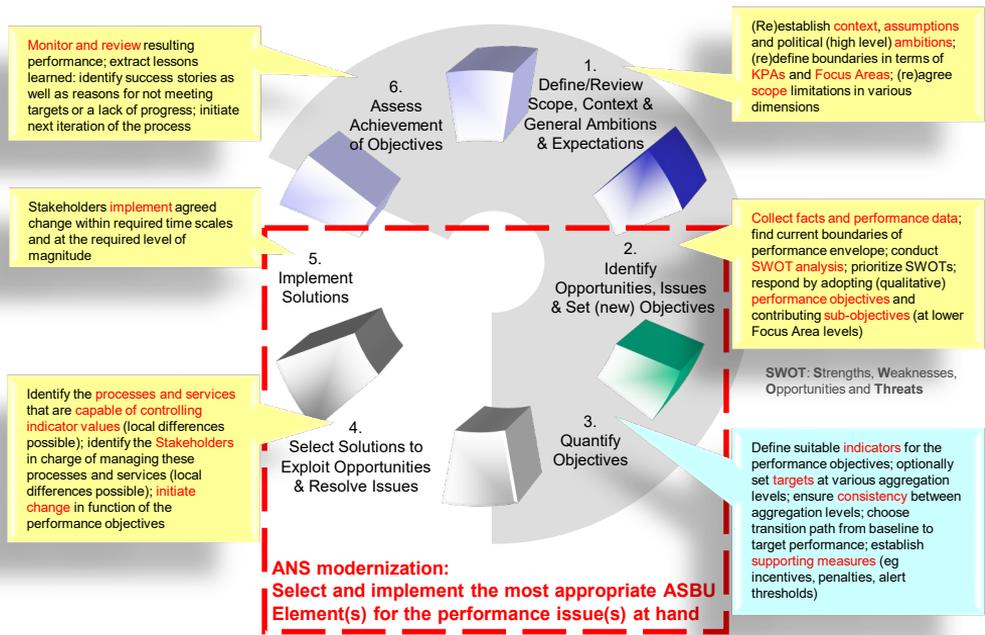


## STEP 6: ASSESSMENT OF RESULTS

### ✈ Tasks in the PMR:

- ✈ Data collection
- ✈ Data publication
- ✈ Data analysis
- ✈ Formulation of conclusions; and
- ✈ Formulation of recommendations.

# Summary



ICAO Doc 9883 Figure I-2-4



# The big picture – 3 performance loops in the GANP context

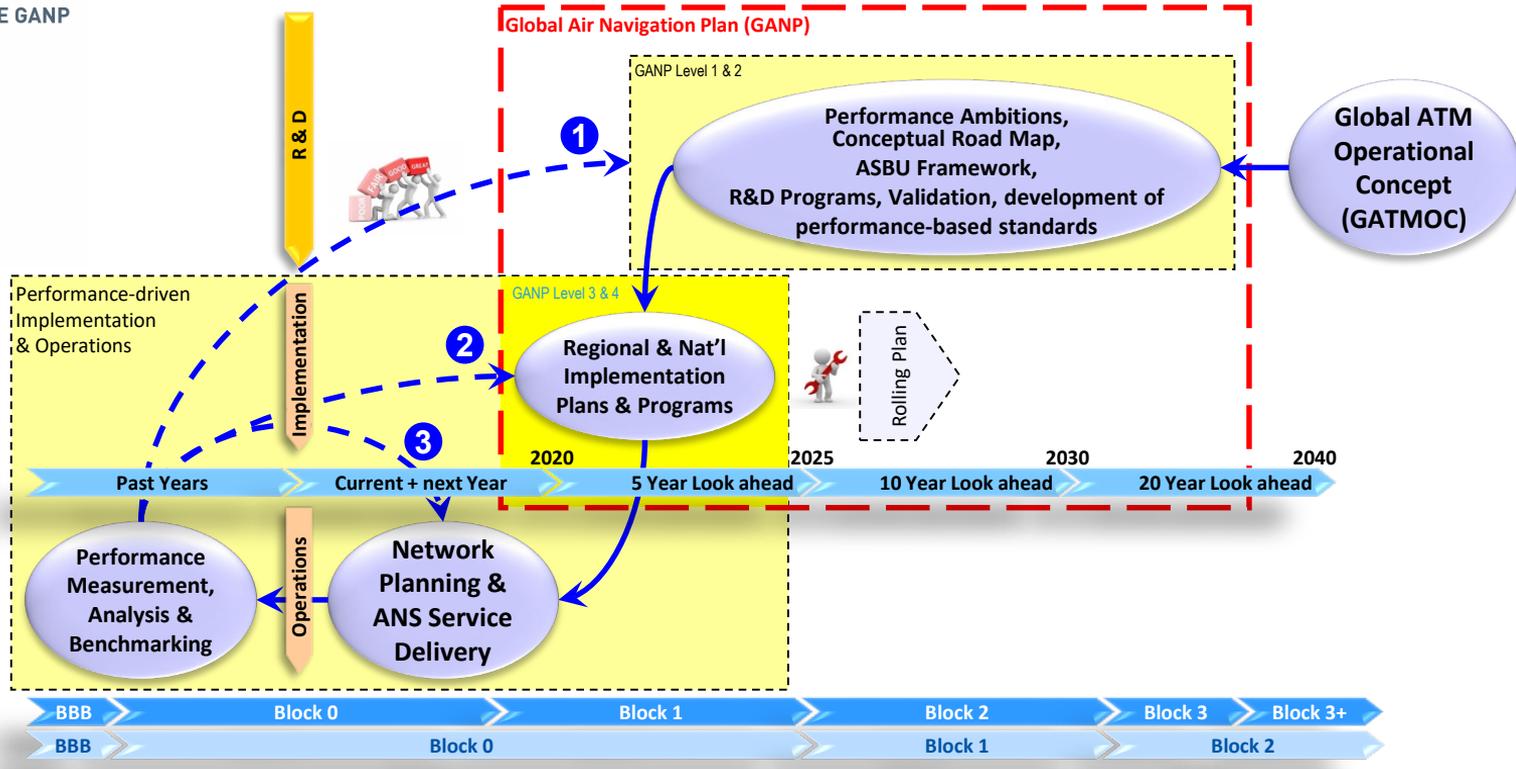
## MULTILAYER STRUCTURE OF THE GANP

Click a level to navigate

- GLOBAL STRATEGIC
- GLOBAL TECHNICAL
- REGIONAL
- NATIONAL



*A holistic approach from research and development to deployment and operations based on stakeholders operational needs and a global network approach to ensure harmonized and synchronized implementation delivering performance benefits*



Early adopters  
Late adopters  
(delayed performance need)





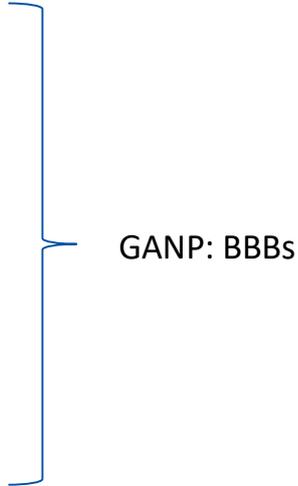
# REGIONAL AIR NAVIGATION PLAN

- ✈ Till 2014 → Basic & FASID
- ✈ Council Approved template with Vol I, Vol II & Vol III → ALIGNEMENT AND FLEXIBILITY
- ✈ Vol I
  - ✈ Former Basic
  - ✈ Stable elements, approved by Council
    - ✈ FIR boundaries (requires Council approval)
- ✈ Vol II
  - ✈ Former FASID
  - ✈ Traditional Service and Facilities, approved based on regional agreement
    - ✈ Navigation aids
- ✈ Vol III
  - ✈ New
  - ✈ Performance-based modernization of the air navigation system, approved by the PIRGs
    - ✈ ASBUs



# REGIONAL AIR NAVIGATION PLAN

- ✈ Structure Vol I & Vol II
  - ✈ Introduction
  - ✈ Generic aspects
    - ✈ Regional traffic flows
  - ✈ Aerodromes
    - ✈ General Regional Requirements
    - ✈ Specific Regional requirements
  - ✈ CNS
    - ✈ General Regional Requirements
    - ✈ Specific Regional requirements
  - ✈ ATM
    - ✈ General Regional Requirements
    - ✈ Specific Regional requirements
  - ✈ MET
    - ✈ General Regional Requirements
    - ✈ Specific Regional requirements
  - ✈ SAR
    - ✈ General Regional Requirements
    - ✈ Specific Regional requirements
  - ✈ AIM
    - ✈ General Regional Requirements
    - ✈ Specific Regional requirements



GANP: BBBs



# REGIONAL AIR NAVIGATION PLAN

## ✈ Structure Vol III

✈ Introduction

✈ Generic aspects

✈ Air Navigation Implementation

GANP: PF and ASBUs

→ Evolution to a performance-based planning



# Summary

- ✈ **Part I: Basic Building Block (BBB) Framework.**
  - ✈ Introduction to the BBB concept
  - ✈ BBB Verification
  - ✈ Review the BBB Framework
- ✈ **Part II: GANP Sixth Version.**
  - ✈ Sixth Edition of the GANP
  - ✈ Performance Management Process
- ✈ **Merging: Regional Air Navigation Plans-PBIP**
  - ✈ Evolution to a Regional performance based planning



Questions?



Answers





# ICAO CAPACITY & EFFICIENCY



**THANK YOU!**