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INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

DEVELOPMENT OF THE NATIONAL AIR NAVIGATION PLAN

MCAAP 08/2022
ACTION UPDATE

MAYDA ÁVILA

ICAO NACC REGIONAL OFFICE

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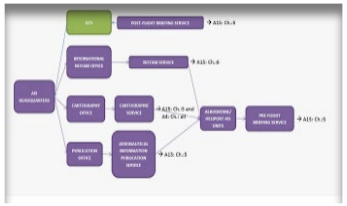
DEVELOPMENT OF THE NATIONAL AIR NAVIGATION PLAN

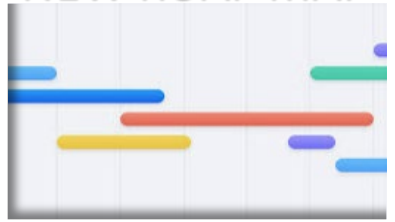
INTRODUCTION

BASIC BUILDING BLOCKS (BBB)

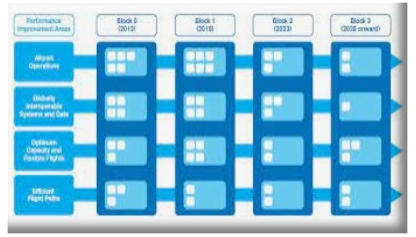


PROJECT UPDATE

NEW ROAP MAP



ASBU EVALUATION



CONCLUSION

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INTRODUCTION

The project of “Development of the National Air Navigation Plan” was approved by the MCAAP committee in 2022.

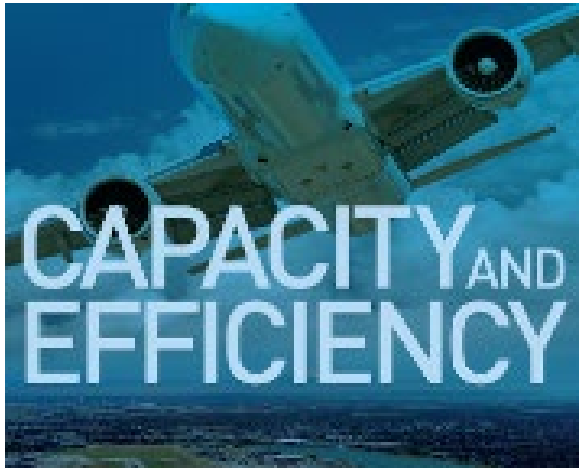
The objective of the project was to contract an expert to provide support to ten different States on the development of their NANP, 10 days every State.

After ICAO NACC evaluation and with the new version of the Global Air Navigation Plan that approach will not work.

The development of the NANP for each State is a huge process that need a new approach because the NANP is a complex process.

NEW ROAD MAP

It is need to create a base line of the actual status of every State.



1. Basic Building Block assessment
2. Aviation system block upgrade (ASBU) Implementation status
3. Provide the basic line of States level of ANS implementation.

It is necessary to analyze the State data available to create the measure process.

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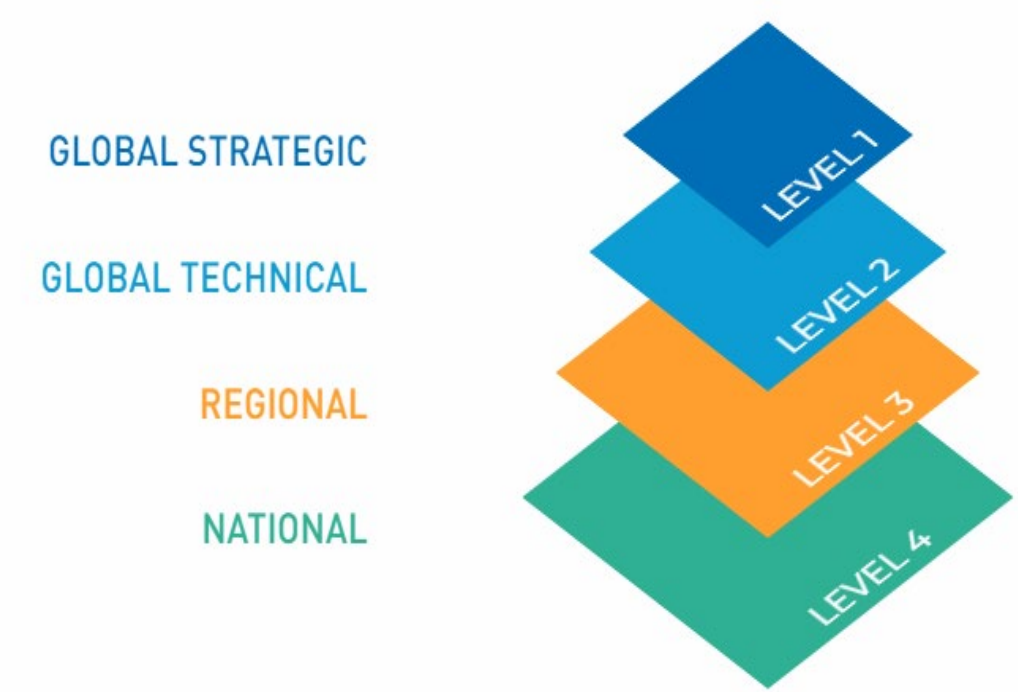
GLOBAL AIR NAVIGATION PLAN (GANP)



Welcome to the Global Air Navigation Plan (GANP) Strategy.
https://www4.icao.int/ganpportal/GanpDocument#/

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 STRATEGY

GLOBAL TECHNICAL

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

ASBUs & PF | AN-SPA | BBBs

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

BASIC BUILDING BLOCK (BBB)

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. 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.

https://www4.icao.int/ganpportal/BBB

Aviation system block upgrade (ASBU)

The ICAO GANP ASBU methodology is a programmatic and flexible global approach that allows all Member States to advance their Air Navigation capacities based on their specific operational requirements.

ASBU works according to the following structure:

https://www4.icao.int/ganpportal/ASBU

- **ASBU Thread: three different categories, operational, information and technology**
- **ASBU Module is the group of elements from a thread that, according to the enablers' roadmap, will be available for implementation within the defined deadline established by the ASBU Block**
- **ASBU Block: this implies, that the element and all the enablers associated to it, need to be available for implementation by the ASBU block year.**
- **ASBU Element: this module is the group of elements from a thread that, according to the enablers' roadmap, will be available for implementation within the defined deadline established by the ASBU Block.**

The ASBU Elements have different levels of maturity:

1. Ready for implementation: this maturity level focuses on the end of system development and the initial operational capacity at the global level.
2. Standardization: this maturity level focuses on the definition of the provision necessary for the interoperability of system and the harmonization of the procedures.
3. Validation: this maturity level focuses on industrial research and validation and includes the proof-of-concept validation, standalone prototype implementation and test, testing and prototyping in representative environment, and the full engineering feasibility demonstration in actual system application.
4. Concept: this maturity level focuses on exploratory research and include scientific research, investigation of basic principles observed and reported and definition of the concept.

ASBU ELEMENTS	
Ready for implementation:	
Standarization:	
Validation:	
Concept:	
No define:	

ACAS (Airborne Collision Avoidance System)

B0	B1	B2	B3	B4
	ACAS-B1/1 ACAS Improvements Operational	ACAS-B2/1 New collision avoidance system Operational		
		ACAS-B2/2 New collision avoidance capability as part of an overall detect and avoid system for RPAS Operational		

ACDM (Airport Collaborative Decision Making)

B0	B1	B2	B3	B4
ACDM-B0/1 Airport CDM Information Sharing (ACIS) Operational		ACDM-B2/1 Airport Operations Plan (AOP) Operational	ACDM-B3/1 Full integration of ACDM and TAM in TBO Operational	
ACDM-B0/2 Integration with ATM Network function Operational		ACDM-B2/2 Airport Operations Centre (APOC) Operational		
		ACDM-B2/3 Total Airport Management (TAM) Operational		

AMET (Advanced Meteorological Information)

B0	B1	B2	B3	B4
AMET-B0/1 Meteorological observations products Information	AMET-B1/1 Meteorological observations information Information	AMET-B2/1 Meteorological observations information Information	AMET-B3/1 Meteorological observations information Information	AMET-B4/1 Meteorological observations Information Information

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PROJECT UPDATE

NEW PROJECT APPROACH

Evaluation of the Basic Building Blocks (BBB)

Evaluation of the ASBU Elements in their maturity states "Ready to implement".

Expected results:

1. Update on the status of regional ANS implementation.
2. Updating of the data of the Electronic Air Navigation Plan documents in its volumes I and II.
3. Identification of regional deficiencies.
4. Identification of regional projects to be carried out in the short term.

Evaluation of Key Performance Indicators (KPIs)

Expected results:

1. Identify available regional data.
2. Identify KPIs that can be started to be measured.
3. Define regional KPIs.
4. Establish the minimum requirements for each KPI to be measured.

Data collection involves asking the following questions:

- **What type of data is it?**
- **What is the source of the data?**
- **What is the precision of the data?**
- **What is the periodicity with which the data is obtained?**
- **What are the formatting characteristics of the data?**
- **What is the data validation process?**
- **Who are the suppliers of the data?**
- **What is the metadata of the data (type of data, date, time, system that obtained it, who obtained it, etc.)? A clear and precise definition of the data.**

ASBU ELEMENTS
ELEMENTS READY FOR IMPLEMENTATION
KPIs

No	KPI	Data Requirement	Data Feed Providers
1	KPI02: Taxi-out additional time	For each departing scheduled flight: Scheduled time of departure (STD) or Scheduled off-block time (SOBT) Actual off-block time (AOBT)	Schedule database(s), airports, airlines and/or ANSPs
2	KPI04: Filed flight plan en-route extension	For each flight plan: Departure airport (Point A) Destination airport (Point B) Entry point in the 'Reference area' (Point O) Exit point from the 'Reference area' (Point D) Entry points in the 'Measured areas' (Points N) Exit points from the 'Measured areas' (Points X) Planned distance for each NX portion of the flight	ANSPs
3	KPI05: Actual en-route extension	For each actual flight trajectory: Departure airport (Point A) Destination airport (Point B) Entry point in the 'Reference Area' (Point O) Exit point from the 'Reference Area' (Point D) Entry points in the 'Measured Areas' (Points N) Exit points from the 'Measured Areas' (Point X) Distance flown for each NX portion of the actual flight trajectory, derived from surveillance data (radar, ADS-B...).	ANSPs, ADS-B data providers
4	KPI06: En-route airspace capacity	The various capacities are determined by the ANSP, and are dependent on traffic pattern, sector configuration, ATCO and system capability, etc.	ANSPs

CONCLUSIONS

- **The development of the National Air Navigation Plan is a complex process that involve:**
  - *Creation of Air Navigation Team in every State that work in the project.*
  - *It is necessary to have a base line before to development the NANP, the base line will obtain through to the BBB and ASBU assessment.*
  - *The States goals for their NANP must have to be support by data, key performance indicator and stablish how to measure them.*
  - *It is a long process base in the operation and objectives of every State.*

Thank You!

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