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INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

GLOBAL AIR NAVIGATION PLAN (GANP)

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ICAO STRATEGIC OBJECTIVES

Source: ICAO


SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

INTRODUCTION

- Aviation is a socioeconomic engine that must face new challenges, face emerging technologies and support the development of States.
- Developed in collaboration with and for the benefit of stakeholders, the GANP is a key contributor to the achievement of ICAO's Strategic Objectives and has an important role to play in supporting the United Nations 2030 Agenda for sustainable development.
- Build resistant infrastructure, promote inclusive and sustainable industrialization and promote innovation.
- ICAO has developed global plans for the specific areas of aviation safety and security: the Global Aviation Safety Plan (GASP, Doc 10004) and the Global Aviation Security Plan (GASeP, Doc 10118). These three global plans are complementary.

Global Air Navigation Plan

During the 41º Session of the ICAO Assembly held in October 2022, the Global Air Navigation Plan (GANP), Seventh Edition was approved, recognizing the importance of global framework and regional and national plans to support the ICAO strategic objectives.

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

Introduction

The GANP is a planning tool that provides tools to facilitate operations in all flight phases, with the requirements of recommended safety compliance, environmental benefits, optimal economic operations.

The GANP, defines the way to achieve this global vision and, at the same time, serves as an instrument for all aviation stakeholders to collaboratively define air navigation implementation strategies, air navigation implementation strategies based on specific operational requirements to move forward in the capabilities of its navigation system.

The global air navigation system involves complex interactions between many stakeholders with different operational requirements and expectations, and national air navigation systems with different maturity levels resources availability. In addition, the global vision cannot be reached directly, but through intermediate steps that must be established.

GLOBAL AIR NAVIGATION PLAN (GANP)

(DOC 9750)

The GANP is the tool to develop and prioritize the ICAO programme technical and operational work;

It is important that the aviation system uses the GANP to plan and implement activities, establish priorities, targets and indicators consistent with globally harmonized objectives, considering operational needs.

The GANP purpose is to equitably accommodate all airspace user operations in a safe and cost-effective manner, while reducing the environmental impact of aviation. To this end, the GANP provides a number of operational enhancements to increase capacity, efficiency, predictability, and flexibility while ensuring interoperability of systems and harmonization of procedures.

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GANP MULTILAYER STRUCTURE

- *Level 1: Global Strategy*
- *Level 2: Global Technical Requirements*
- *Level 3: Regional Objectives*
- *Level 4: National Objectives*

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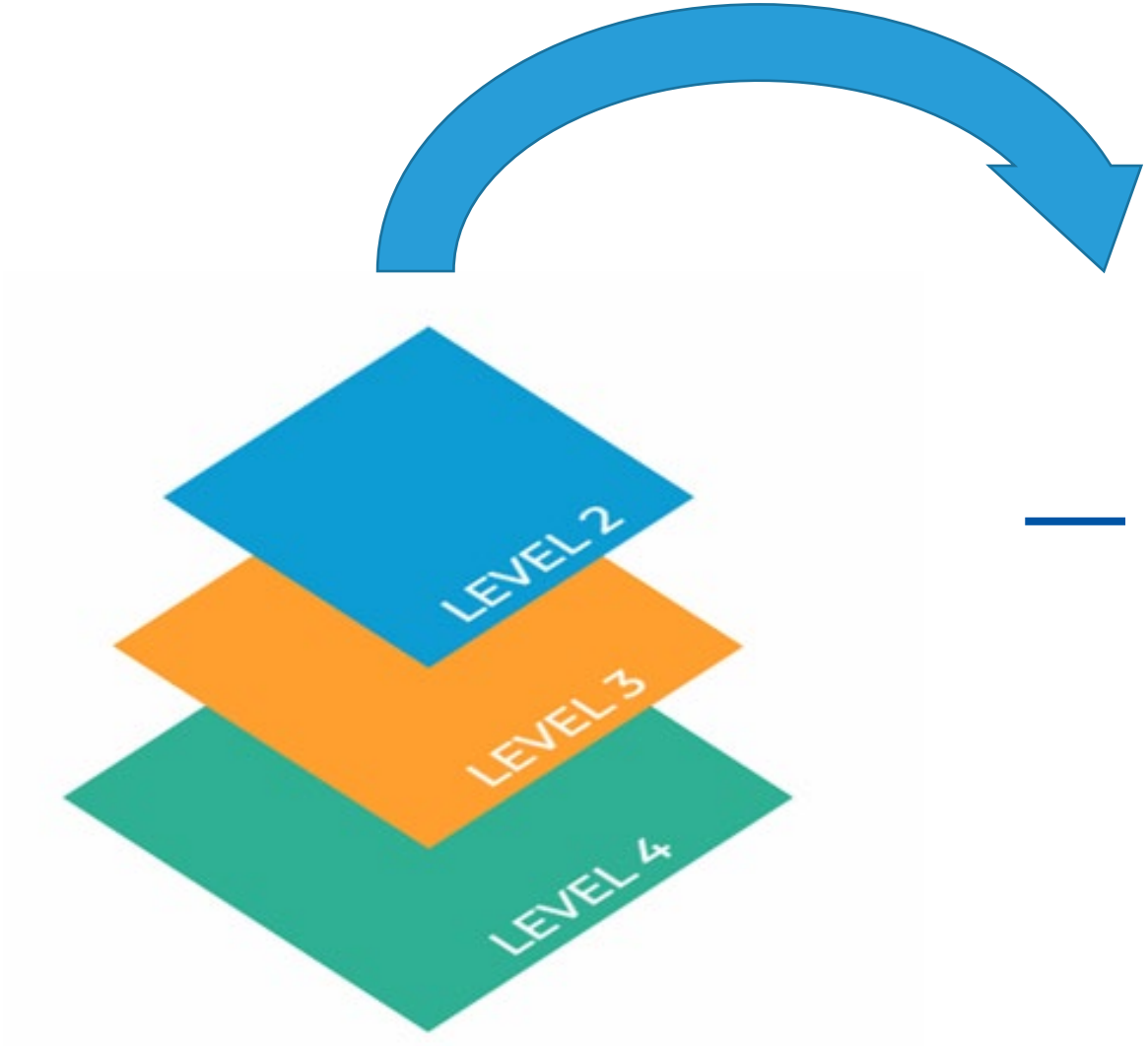
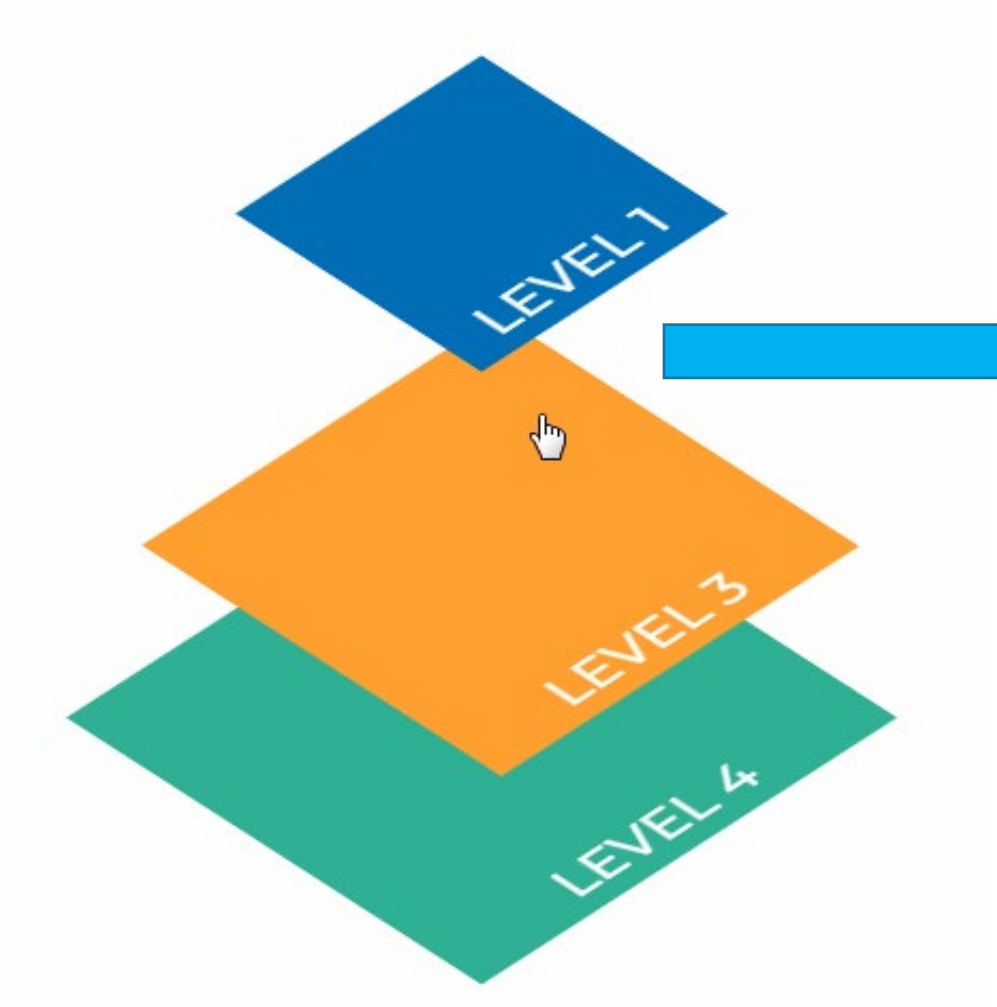


GLOBAL STRATEGY

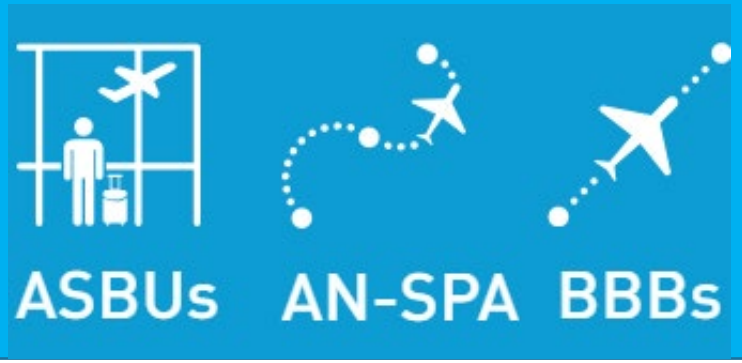
It provides high-level strategic directions for decision makers to drive the evolution of the global air navigation system towards an agreed common vision.

Doc 9750
Global Air Navigation Plan



GLOBAL TECHNICAL

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



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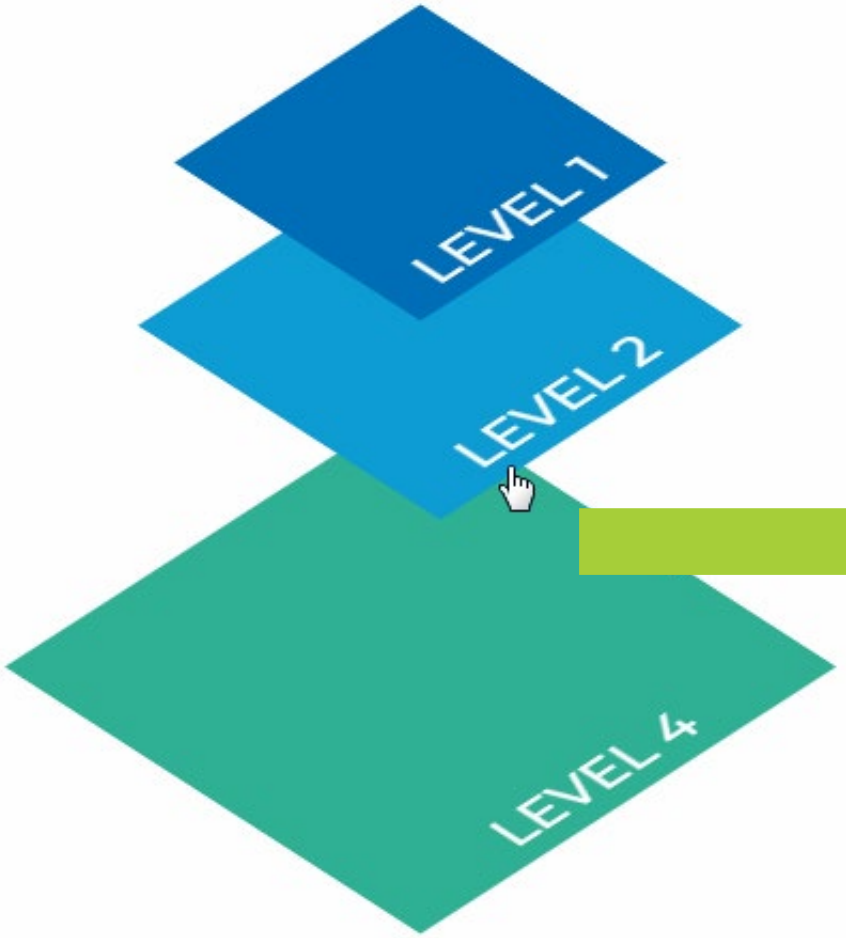
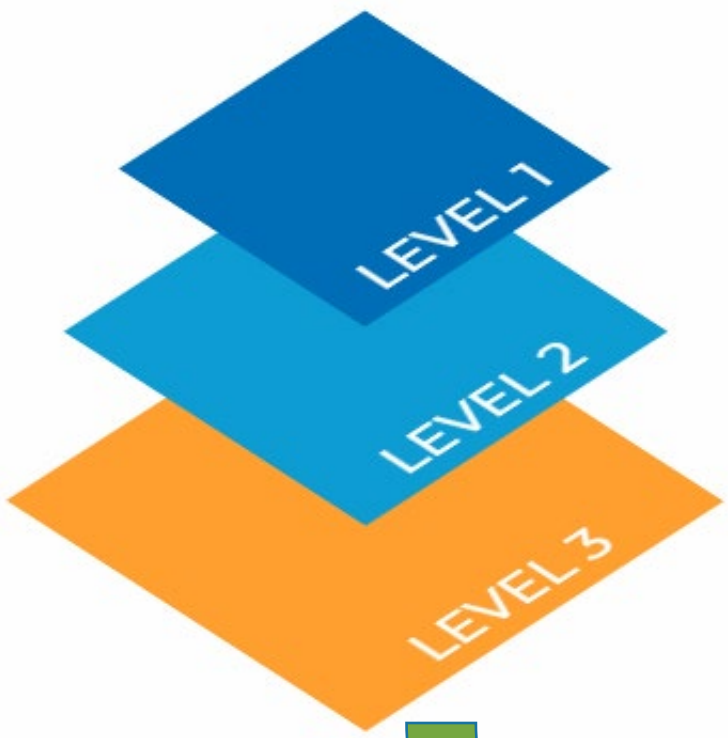


REGIONAL

Addresses regional and sub-regional needs aligned with global targets.

- AFI ANP
- APAC ANP
- EUR ANP
- MID ANP
- NAM ANP
- NAT ANP
- **CAR/SAM ANP**



NATIONAL

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

NANP TEMPLATE

CBA CHECKLIST

- *The fourth level, under the responsibility of the States, focuses on national planning. The development by States, in coordination with relevant stakeholders, of air navigation plans as a strategic part of their national development plans and aligned with regional and global plans is crucial to achieve the common vision that is being developed in the GANP.*

- *Air navigation plans should serve as reference documents for national investment in air navigation infrastructure.*

GANP Structure

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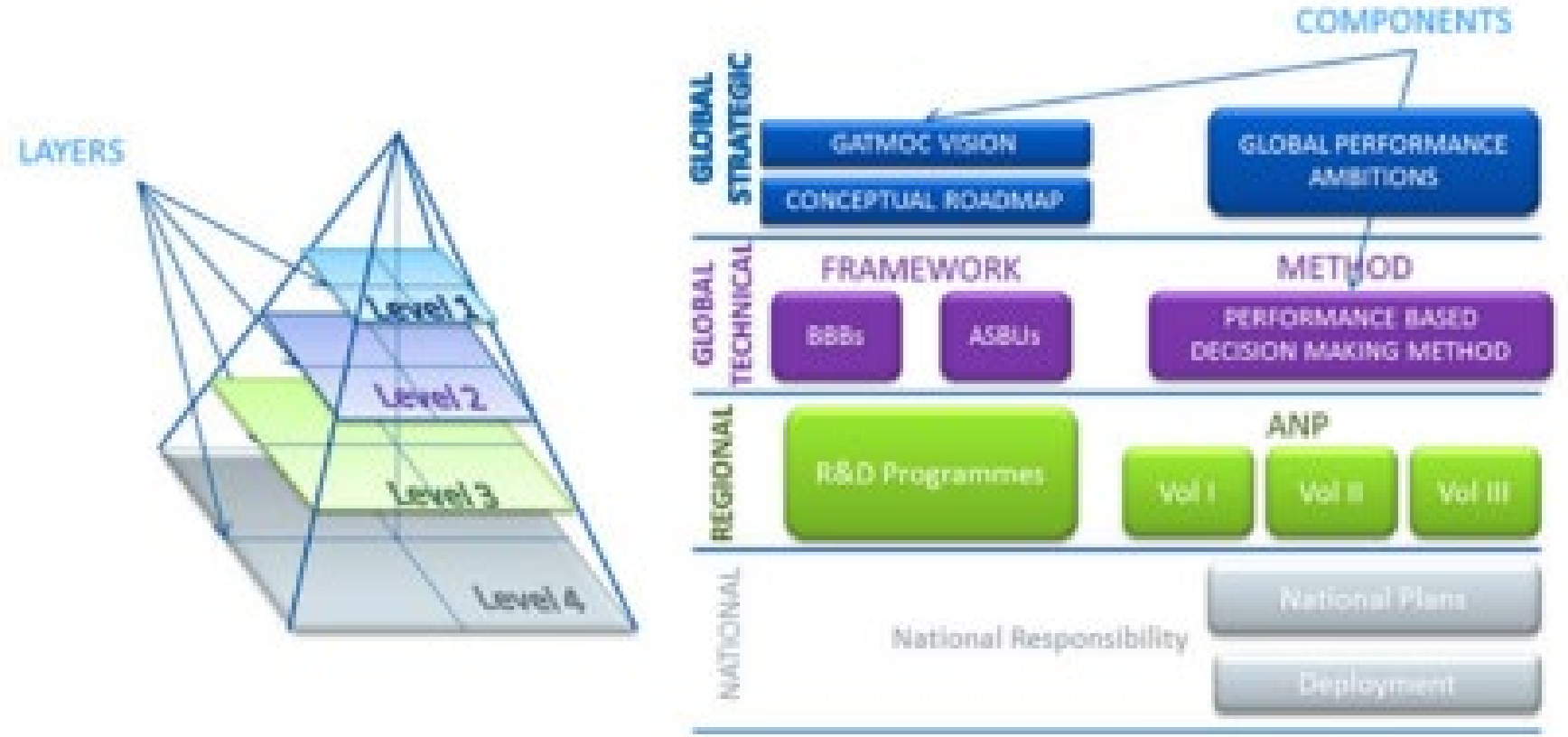

Points to consider:

- *The implementation of the ASBU modules must be based on:*
  - *real needs of the States;*
  - *data that supports it;*
  - *feasibility analysis and recovery of investment; and*
  - *based on the satisfaction of an operational need.*

ROLES AND RESPONSIBILITIES

Global Air Navigation Plan (GANP)

STATES

- They contribute to the development of the GANP by providing their experience in local and regional affairs and their insight into the operational considerations necessary to comply with ICAO provisions.

ICAO AND OTHER ORGANIZATIONS

- The evolution of the air navigation system requires a joint application of all participating stakeholders. ICAO serves as a global forum that brings together the aviation community so that it can define a common strategy for the evolution of the global air navigation system at the global strategic level of the GANP.

PLANNING AND IMPLEMENTATION REGIONAL GROUPS (PIRGs)

- The PIRGs are responsible for the regional level of the GANP. Based on regional performance and operational needs, differences, constraints, and opportunities, PIRGs are responsible for defining regional planning and implementation priorities, consistent with the GANP, through Volumes I, II, and III of the plans. air navigation.

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ROLES AND RESPONSIBILITIES

GANP

AIRPORT OPERATORS

- Airport operators must work closely with international and national regulators so that airports are fully integrated into the air navigation system.

NAVIGATION AND AIR INFORMATION SERVICE PROVIDERS

- ANSPs are responsible for effectively planning, organizing and managing the air navigation system so that it achieves its optimum performance.

AIRSPACE USERS

- Airspace users are organizations or individuals that conduct flights with aircraft or other vehicles in the airspace. This includes ICAO compliant manned flight operations, non-ICAO compliant manned flight operations, as well as unmanned aircraft systems (UAS) flight operations.

ROLES AND RESPONSIBILITIES

GLOBAL AIR NAVIGATION PLAN (GANP)

STATE AVIATION

The main stakeholder within the group of state air operators is the military. In many cases, the military acts not only as aircraft operators, but also as regulators, ANSPs, and airport operators for their operations.

MANUFACTURING INDUSTRY

The manufacturing industry contributes to the evolution of the technical content of the GANPs by providing up-to-date industry standards, technical knowledge and experience in all technological areas relevant to air transport. Having access to this experience is key to developing effective and profitable arrangements.

RESEARCH AND DEVELOPMENT ORGANIZATIONS

The GANP provides a common strategy for joint efforts to drive research and development activities in the same direction. Research and development organizations manage innovation activities by contributing in-depth ideas and solutions related to performance needs for GANP and ASBU evolution and air navigation system efficiency.

INTERNATIONAL ORGANIZATIONS, INCLUDING PROFESSIONAL ORGANIZATIONS

International organizations, including those of airspace users, airports and air navigation service providers, support ICAO in the development and application of GANPs by sharing information with organization members and raising awareness of compliance requirements through training and audit activities.

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CHALLENGES AND OPPORTUNITIES

- CONTINUED SUPPORT OF SOCIAL WELL-BEING AROUND THE WORLD
- ACCOMMODATION OF THE GROWING DEMAND AND NEW TYPE OF DEMAND
- USE OF ADVANCED TECHNOLOGIES
- HUMAN CAPACITY AND SKILLS
- NEW EMERGING AND ADAPTED BUSINESS MODELS.

GANP VISION

- The GANP vision reflects the ultimate goals of the air navigation system, as well as new challenges and opportunities arising from aviation and technology trends. Evolution driven by this vision will result in a high-performance global air navigation system that meets the ever-increasing expectations of society.

PERFORMANCE AMBITIONS

In addition to the fundamental aviation principles of safety, security, and economic and environmental sustainability, there are several consequential performance requirements that the air navigation system must meet in order to meet the ever-increasing expectations of society in general and, in particular, of the aviation community.

SAFETY

ACCESS AND EQUITY

PARTICIPATION OF THE ATM COMMUNITY

COST EFFECTIVENESS

CAPACITY AND RESILIENCE

PREDICTABILITY

GLOBAL INTEROPERABILITY

AVIATION SECURITY

FLEXIBILITY

EFFICIENCY

ENVIRONMENT

THE GANP CONCEPTUAL ROADMAP

The global air navigation system is becoming more complex as it meets new demands. To manage this complexity, meet global performance ambitions, and realize the GANP vision, the air navigation system must transform and build on the use of emerging technologies, information, and operations concepts, many of which are not purpose-built. for aviation purposes.

EVOLUTIONARY STEP 1: FLIGHT OPERATIONS IN AN ENRICHED DIGITAL ENVIRONMENT.

EVOLUTIONARY STEP 2: TIME-BASED OPERATIONS THANKS TO THE INFORMATION REVOLUTION.

EVOLUTIONARY STEP 3: PATH-BASED OPERATIONS ENABLED BY FULL CONNECTIVITY OVER THE AVIATION INTERNET

EVOLUTIONARY STEP 4: THE TOTAL PERFORMANCE MANAGEMENT SYSTEM FOCUSES ON THE NEEDS OF THE BUSINESS/MISSION

FROM THE CONCEPT TO THE OPERATIONS

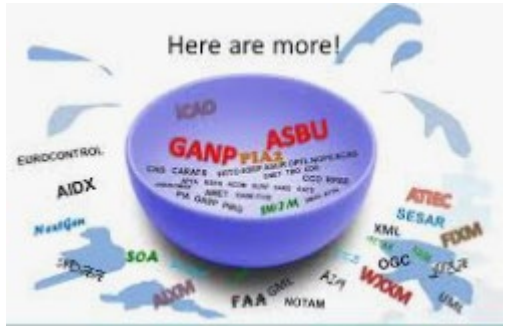
- In the past, the modernization of air navigation systems was guided by technological innovations applied at the level of each State. As States applied these innovations, global provisions were developed in response to initiatives by individual States to harmonize procedures and support the interoperability of technologies for the safety of flight operations. This approach created a gap between mature and maturing aviation ecosystems, leading to global disparities.

- The vision outlined in the GANP is a proactive move towards a globally interoperable air navigation system and constitutes an integrated and common approach to new challenges and opportunities arising from aviation and technology trends. The evolution of the global air navigation system, driven by this vision and reflected in the conceptual roadmap, will result in a high-performance system that meets the increasing expectations of society and reduces global disparities. Realizing the GANP vision requires the commitment and investment of the aviation community.

- A STRUCTURED APPROACH BASED ON RESULTS
- GLOBAL, REGIONAL AND NATIONAL IMPLEMENTATION PLANNING

BASIC BUILDING BLOCKS (BBBs)

The BBBs are considered a stand-alone framework and not a block of the ASBU framework, as they represent a baseline and not an evolutionary step. This baseline is defined by the essential services recognized by ICAO Member States as necessary for international civil aviation to develop safely and orderly. Once these essential services are delivered, they form the baseline for any operational improvements.



Assesment of the Basic Building Blocks (BBBs)

Establish a baseline for the system envisaged in the GANP and ensure a solid foundation for the global air navigation system.

It is a process that should focus on verifying the application of essential air navigation services.

The evaluation of these services should be integrated into the methodology for identifying deficiencies in the regional air navigation plans.

AVIATION SYSTEM BLOCK UPGRADE (ASBU)

- The ICAO GANP ASBU methodology is a programmatic and flexible global approach that allows all Member States to enhance their air navigation capabilities based on their specific operational requirements.

AVIATION SYSTEM BLOCK UPGRADE (ASBU)

- ***The ASBU works according to the following structure:***
  - *ASBU common thread: three different categories, operational, information, and technology.*
  - *ASBU Module: It is the set of elements of a common thread that, according to the enablers' roadmap, will be available for implementation within the defined period established by the ASBU Block.*
  - *ASBU block: This implies that the element and all the enablers associated with it must be available for implementation in the year of the ASBU block.*
  - *ASBU Element: This module is the set of elements of a common thread that, according to the enablers' roadmap, will be available for implementation within the defined time frame established by the ASBU Block.*

ASBU CONDUCTIVE THREAD

INFORMATION

- *AMET: Meteorological information*
- *DAIM: Digital management of aeronautical information.*
- *FICE: Flight and flow - information for a collaborative environment (FF-ICE).*
- *SWIM: System-Wide Information Management*

TECHNOLOGY

- *ASUR: Surveillance systems*
- *COMI: Communication infrastructure*
- *COMS: ATS communication service*
- *NAVS: Navigation systems*

OPERATIONAL

- *ACAS: Airborne Collision Avoidance System (ACAS)*
- *ACDM: Airport Collaborative Decision Making*
- *APTA: Improve arrival and departure operations*
- *CSEP: Cooperative Separation*
- *DATS: Digital Aerodrome Air Traffic Services*
- *FRTO: Improved operations through improved en-route trajectories*
- *GADS: Global Aviation Distress and Safety System (GADSS)*
- *NOPS: Network Operations*
- *OPFL: Improving access to optimal flight levels in oceanic and remote airspace*
- *RSEQ: Traffic flow improvement through track sequencing*
- *SNET: Ground-Based Safety Nets*
- *SURF: surface operations*
- *TBO: Trajectory-Based Operations*
- *WAKE: Wake Turbulence Separation*

Thank You!

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