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GLOBAL AIR NAVIGATION PLANNING

International Civil Aviation Organization (ICAO)

Agenda Item 5 - P/16

Eighth Meeting of the North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/08)
Ottawa, Canada, 31 July to 2 August 2018

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OUTLINE

- The vision
- A Plan to realize the vision
- Let's take a look to the future
- GANP 2019

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Global Air Navigation Planning

THE VISION

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Do we know where to go?

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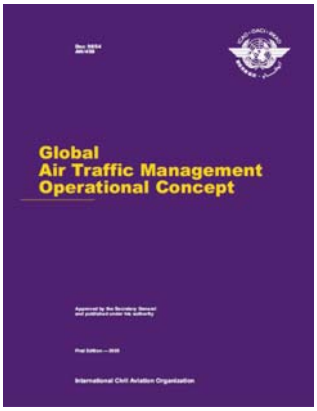
Yes!



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**

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GAP

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Global Air Navigation Plan

A PLAN TO REALIZE THE VISION

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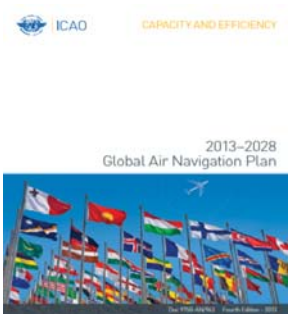
Global Air Navigation Planning

2002 2007 2013 2016



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GANP 2013

"Increase the capacity and improve the efficiency of the global civil aviation system"

- Through the **GANP**, offer a long-term vision to assist all aviation stakeholders, and ensure continuity and harmonization among modernization programmes
- Through the **Aviation System Block Upgrades (ASBU),** provide a consensus-driven modernization framework for integrated planning based on performance

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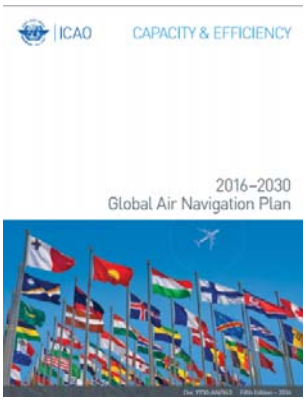
GANP 2016

- **Objectives**
  - **International and overarching framework** of a global investment plan: make it more usable towards implementation
  - Keep it **stable** while making the necessary updates/additions
  - Adjust the **periodicity** to the Assembly and ICAO editing cycles

- **A Planning Document for Implementation**
  - GANP should serve as a comprehensive planning tool to **support the development and implementation** of a harmonized global air navigation system



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Global Air Navigation Planning

LET'S TAKE A LOOK TO THE FUTURE

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An exciting future full of opportunities

- **Upper atmosphere**
  - Balloons, RPAS, space activities
  - Single homogenous region
- **Low density areas**
  - Different type of aircraft
  - Different missions
- **High density areas**
  - Traffic will continue to increase
  - Same or enhanced level of performance expected

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Manned vs. unmanned traffic

- + 362,000 aircraft
- 23,000 airliners
- Growth of 750 /year

- + 4,000,000 drones
- Expected 400k commercial
- Growth of 150,000 /year

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A NEW ERA IN AVIATION

- Technology and information
  - Autonomous systems
  - Artificial intelligence

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A NEW ERA IN AVIATION

- Technology and information
  - Full connectivity

"ANYTHING THAT CAN BE CONNECTED, WILL BE CONNECTED"

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A NEW ERA IN AVIATION

- Humans

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A NEW ERA IN AVIATION

- Business Models

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Global Air Navigation Planning

GANP 2019

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Main Goals of the 2019 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

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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

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In a time of change…

- Transformational change is needed
  - Information Management
    - Digital data MET, AI, FICE,…
    - Information exchange over IP
  - Management by trajectory
    - Time based management
    - Synchronization
    - Automation

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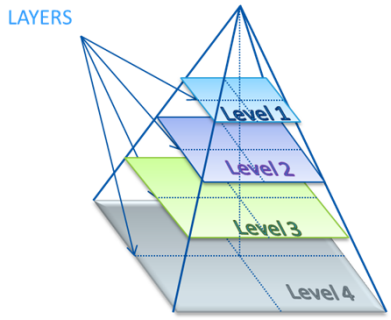
2019 Update of the GANP

Multilayer Structure



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ANConf13 Papers on Air Navigation Planning

- **WP11:** IMPROVING THE PERFORMANCE OF THE AIR NAVIGATION SYSTEM THROUGH THE ASBU
- **WP18:** PROPOSED MULTILAYER STRUCTURE FOR THE SIXTH EDITION OF THE GLOBAL AIR NAVIGATION PLAN (GANP) AND ITS GLOBAL STRATEGIC LEVEL
- **WP19:** THE PROPOSED GLOBAL TECHNICAL LEVEL FOR THE SIXTH EDITION OF THE GANP
- **WP22:** COST-BENEFIT ANALYSIS AS PART OF A BUSINESS CASE IN SUPPORT OF ASSETS DEPLOYMENT
- **WP25:** IMPLEMENTING MINIMUM AIR NAVIGATION SERVICES FOR INTERNATIONAL CIVIL AVIATION THROUGH THE BASIC BUILDING BLOCKS (BBB) FRAMEWORK
- **WP26:** AIR NAVIGATION ROADMAPS

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(ASIA-PACIFIC)
NAIROBI
(EASTERN AFRICA)
LIMA
(SOUTH AMERICA)
THANK YOU!