



GLOBAL AIR NAVIGATION PLAN

ICAO Workshop on the new version of the Global Air Navigation Plan (GANP)
(Mexico City, Mexico, from 17 to 21 February 2020)



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Flight Plan

- The vision
- A Plan to realize the vision
- Collaboration
- Let's take a look to the future
- Opportunity
- Conclusion



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Global Air Navigation Planning

THE VISION





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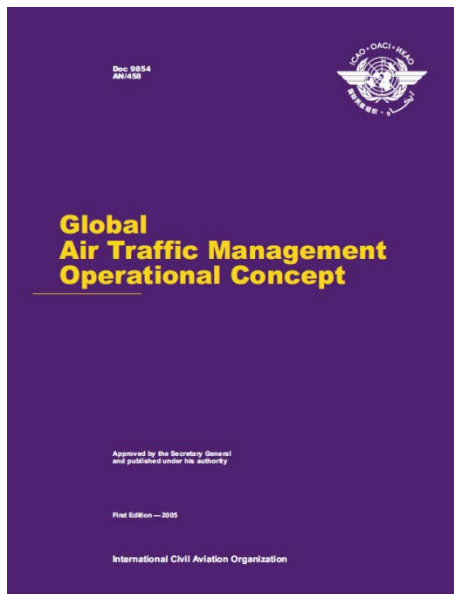
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Do we know where to go?





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**



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A PLAN TO REALIZE THE VISION





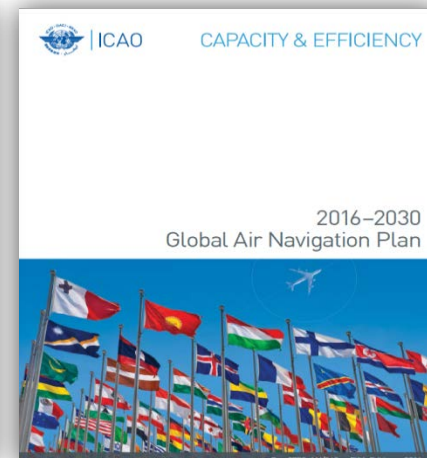
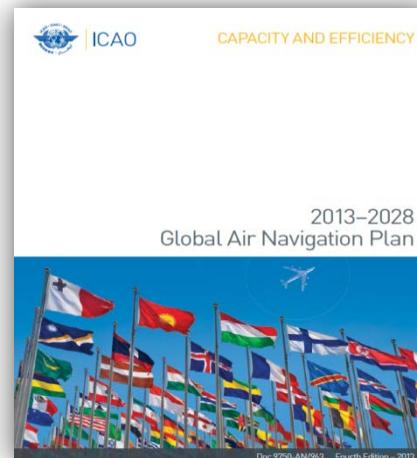
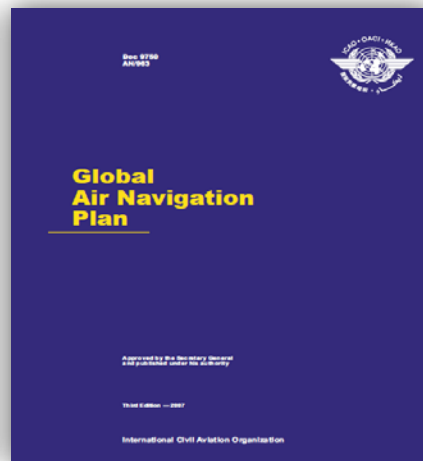
Global Air Navigation Planning

2002

2007

2013

2016





GANP 2013

“Increase the capacity and improve the efficiency of the global civil aviation system”

The image shows the cover of the ICAO 2013-2028 Global Air Navigation Plan (GANP) and a detailed chart of Performance Improvement Areas (PIAs) across four blocks.

GANP Cover:

- ICAO logo and text: CAPACITY AND EFFICIENCY
- 2013-2028 Global Air Navigation Plan

Performance Improvement Areas Chart:

Performance Improvement Area	Block 0 (2013)	Block 1 (2016)	Block 2 (2020)	Block 3 (2024 onward)
Airport Operations	4	4	4	4
Globally Interconnected Systems and Data	2	2	2	2
Optimum Capacity and Flexible Rights	2	2	2	2
Efficient Flight Paths	2	2	2	2

- 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



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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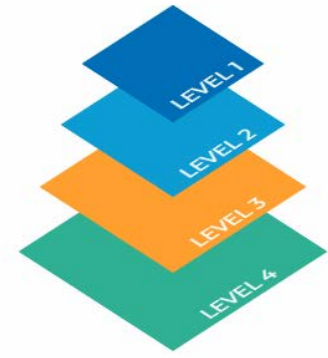
2019 Update of the GANP



MULTILAYER STRUCTURE OF THE GANP

Click a level to navigate

- GLOBAL STRATEGIC
- GLOBAL TECHNICAL
- REGIONAL
- NATIONAL



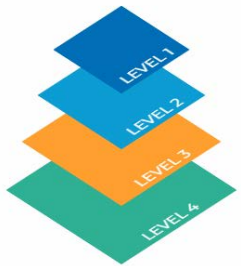


2019 Update of the GANP

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Front door for all stakeholders to ICAO
 Document endorsed at political level
 Written in executive language
 Contents derived from underlying

Performance-based design
 Approved by ICAO Council
 Method for defining National Implementation Strategies

Approved by ICAO Council
 Method for defining National Implementation Strategies
 KPIs Catalogue



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



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



Global Air Navigation Planning

COLLABORATION





Collaboration is key to succeed

- **“No State or stakeholder left behind”**
 - Regulators, air navigation service providers, aerodrome operators, airspace users
- **Advantages**
 - Achievement expected results
 - Maximize benefits
 - Optimum use and allocation of resources





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LET'S TAKE A LOOK TO THE FUTURE



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



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

Types of applications

Mission types	Sectors profiled in-depth					Other growth sectors included in study			
	Agriculture	Energy	Public safety & security	Delivery & e-commerce	Mobility & transport	Mining & construction	Telecom	Insurance	Others
Localized Surveying (primarily VLOS)		✓ Infrastructure sites	✓ Police & fire, in-vehicle units			✓ Bridge, crane & buildings	✓ Cell tower inspection	✓ Roof & site inspections	✓ Real estate, private security, media, indoor
Long range Surveying (primarily BVLOS)	✓ Crop & livestock monitoring	✓ Pipeline & power lines	✓ Police & fire, disasters, wildlife		✓ Railway inspection	✓ Site surveying	✓ Cell tower inspection	✓ Disaster impact	✓ University & research; especially wildlife
Light load movement (primarily BVLOS)	✓ Crop spraying / pellet application				✓ Parcel, medical supply, delivery	✓ Transport light critical material			✓ Ports, indoor light goods movement
Long endurance Surveying (primarily ≥ 150m)	✓ Large land monitoring	✓ Pipeline & power lines	✓ Border control, maritime, environment surveillance						✓ University & research; especially wildlife
Unmanned aviation					✓ Cargo planes, air freight				✓ Passenger planes & rotorcraft
Others		✓ Tethered wind energy prod.						✓ Connectivity provision	

Public safety also includes prison surveillance and examples for environment include poaching prevention; University and research examples include animal breeding monitoring, geological studies

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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OPPORTUNITY





Central America -Caribbean

- **Aviation essential for further development**
- **Many small economies in the Caribbean, particularly the tourism-dependent economies, have been growing faster in the last three years. GDP growth rates in 2017 averaged 1.7 percent in service-oriented economies. The Dominican Republic did even better, growing by an estimated 4.6 percent. Others did not fare so well. Belize, Suriname, and Trinidad and Tobago continue to face the aftershocks of the 2014 drop in world prices for oil and other commodities.**
- **Agriculture, travel and tourism**
- **Climate change and natural disasters**
- **Reduce operation costs**



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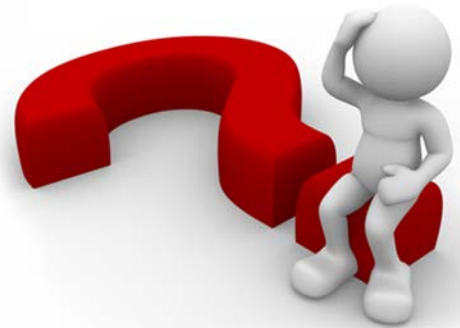
CONCLUSION





How?

- Economic resources
- Potential demand: a challenge but also an opportunity!
- GANP
- ICAO's support!





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THANK YOU!