ICAO SAFETY

NO COUNTRY LEFT BEHIND

GLOBAL AVIATION SAFETY PLAN 2020-2022 EDITION AND GLOBAL AIR NAVIGATION PLANNING

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What is the GASP?

- Global strategy for safety improvement
- Framework for regional & national plans
- Promotes harmonization & coordination of efforts

Comprehensive Process

GASP-SG AHWG

SANIS

State Consultation

AN-Conf

ANC

Council

State Consultation

Assembly

GASP-Study Group

AIRPORTS COUNCIL INTERNATIONAL · canso · EUROCONTROL · FLIGHT SAFETY FOUNDATION · IATA · IBAC International Business Aviation Council · IFALPA The Global Voice of Pilots · IFATCA

Basic Principles for 2020-2022 Edition

- Contains vision, mission and values
- Restructured in different parts
- Clearly delineates responsibilities
- Aspirational Goal + Goals, Targets & indicators
- Applies risk-based approach (HRC)
- Roadmap more predominant

GASP Vision

To achieve and maintain the goal of zero fatalities in commercial operations by 2030 and beyond

GASP Mission

To continually enhance international aviation safety performance by providing a collaborative framework for States, regions and industry

GASP Values

GASP values include:

- ✓ promoting positive safety culture
- ✓ promoting sharing & exchange of safety information
- ✓ taking data-driven decisions
- ✓ prioritizing actions through risk-based approach

Our Aspirational **Safety** Goal

GASP Goals, Targets & Indicators

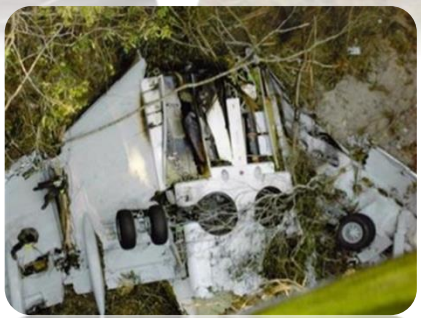
6 Proposed GASP Goals

1. Achieve continuous reduction of ops safety risks
2. Strengthen States' safety oversight capabilities
3. Implement effective State safety programmes
4. Increase collaboration at regional level
5. Expand the use of industry programmes
6. Ensure appropriate infrastructure is available to support safe ops

National, Regional and Global HRC







Next Steps

- ANC Final Review
  - April 2019
- Council Approval
  - May 2019
- Issue WP for A40
  - June 2019
  - With final 2020-2022 GASP
- Feedback, email: GASP@icao.int

Global Air Navigation Planning （GANP）

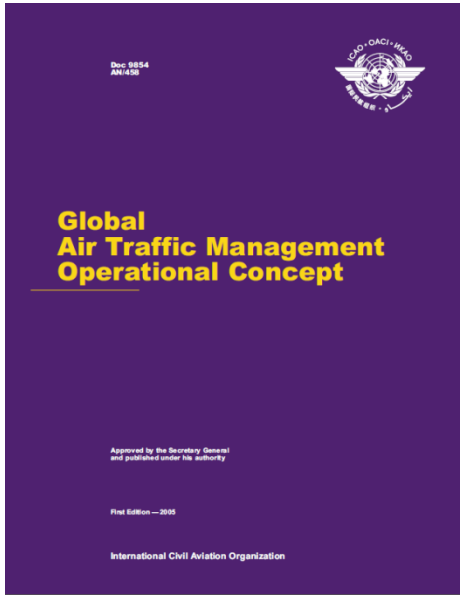
- The vision
- A Plan to realize the vision
- Collaboration
- Let’s take a look to the future
- Opportunity
- Conclusion

Global Air Navigation Planning

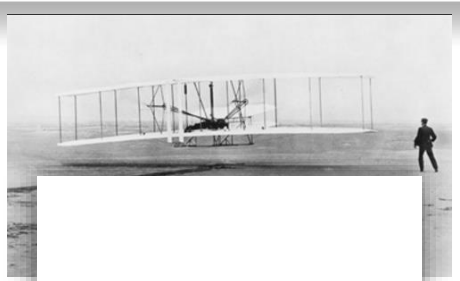
THE VISION

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**



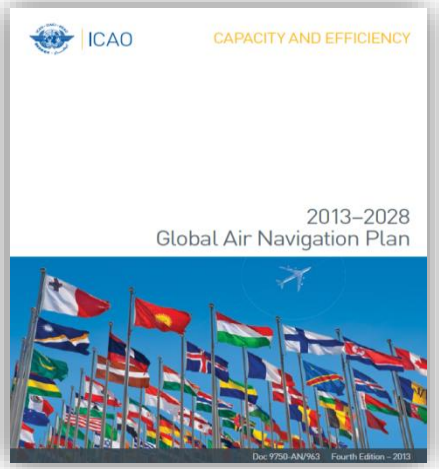
CONVENTION
ON
INTERNATIONAL
CIVIL AVIATION
DONE
AT CHICAGO
ON THE
7TH DAY OF DECEMBER
1944

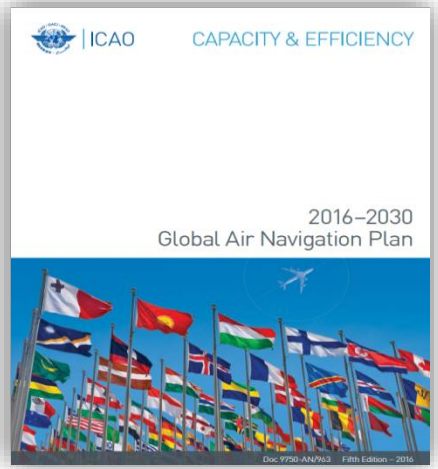
Global Air Navigation Planning

A PLAN TO REALIZE THE VISION

Global Air Navigation Planning

2002 2007 2013 2016





GANP 2013

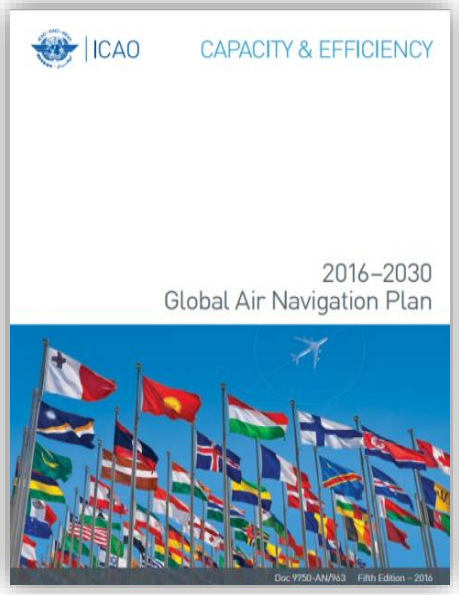
"Increase the capacity and improve the efficiency of the global civil aviation system"

- 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

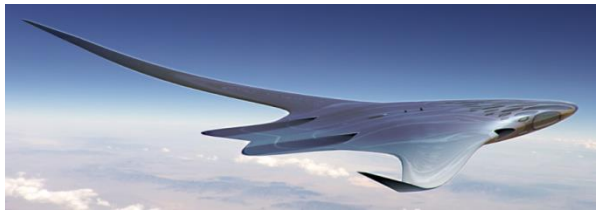
- **Objectives**
  - **International and overarching framework** of a global investment plan: make it more usable towards implementation
  - Keep it **stable** while making the necessary updates/additions
  - Adjust the **periodicity** to the Assembly and ICAO editing cycles

- **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



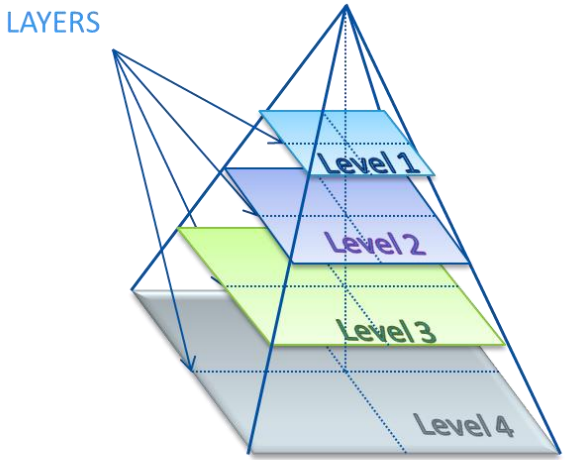

WHAT'S NEXT?


Airbus A380
A380



2019 Update of the GANP

Multilayer Structure



Front door for all stakeholders to ICAO

Document endorsed at highest political level

Written in executive language

Contents derived from underlying

Performance-based decision-making method for defining implementation strategies

Aligned with the template approved by ICAO Council

Global Performance Ambitions

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

Global Air Navigation Planning

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: Agriculture	Energy	Public safety & security	Delivery & e-commerce	Mobility & transport	Other growth sectors included in study: 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

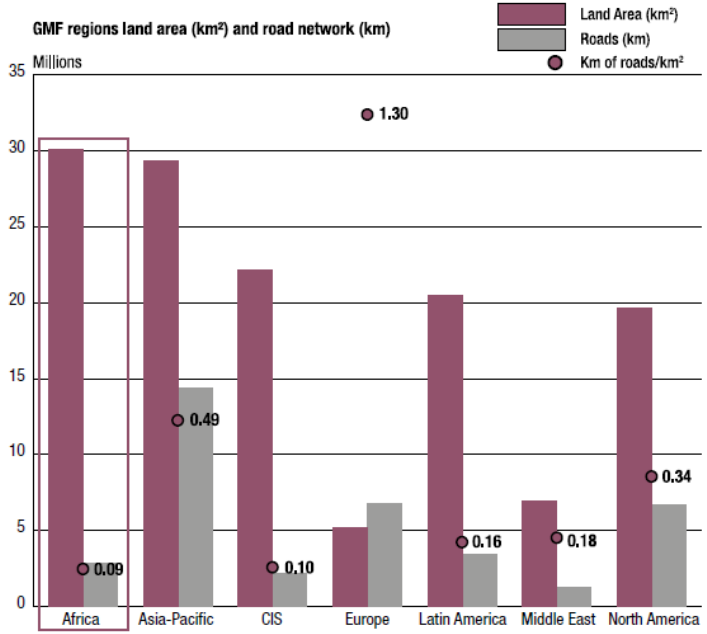
Global Air Navigation Planning

OPPORTUNITY

Africa

- **Aviation essential for further development**

- **Challenges**
  - Nature: desserts, forest, ocean,…
  - Slow liberalization
  - Limited resources
  - Security



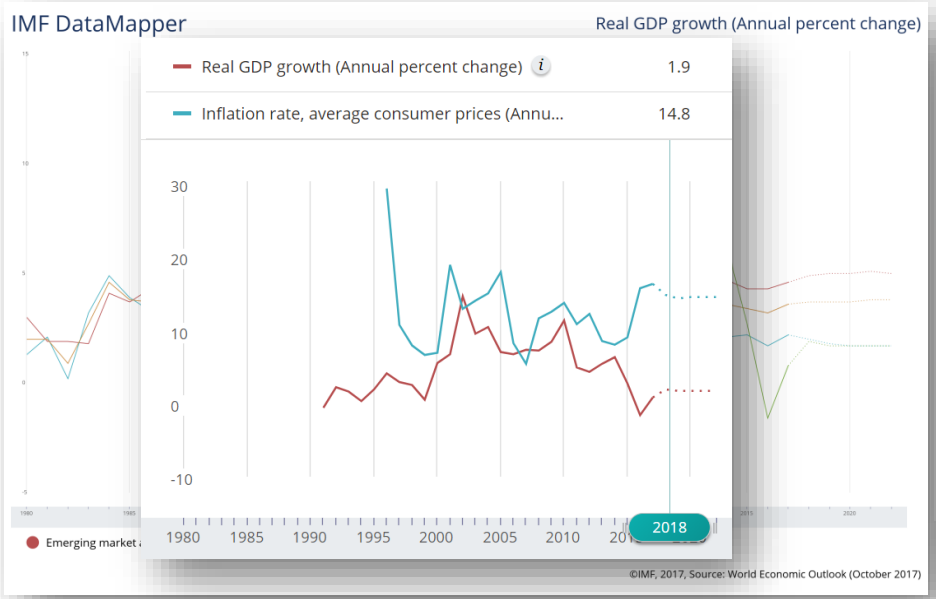
Source: IRF, The World Bank, Airbus GMF 2017

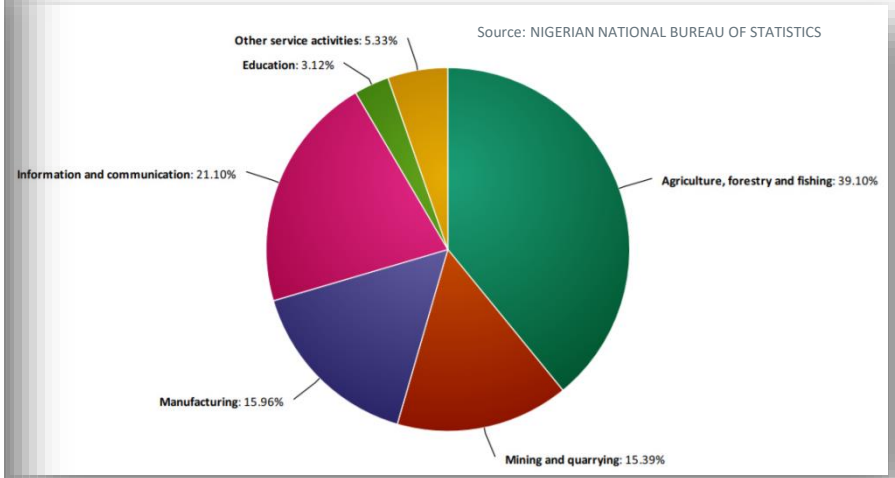
Africa

- **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


IMF DataMapper
Real GDP growth (Annual percent change)
Real GDP growth (Annual percent change)
1.9
Inflation rate, average consumer prices (Annu...
14.8
30
20
10
0
-10
1980
1985
1990
1995
2000
2005
2010
2018
Emerging market
©IMF, 2017, Source: World Economic Outlook (October 2017)


Source: NIGERIAN NATIONAL BUREAU OF STATISTICS
Other service activities: 5.33%
Education: 3.12%
Information and communication: 21.10%
Agriculture, forestry and fishing: 39.10%
Manufacturing: 15.96%
Mining and quarrying: 15.39%

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?

Moreover…

NATIONAL STRATEGY BASED ON RESULTS

- Are we doing all right???
- Is there room for improvement???
- Is there an opportunity to become the regional leader???
- And an international one???

Global Air Navigation Planning

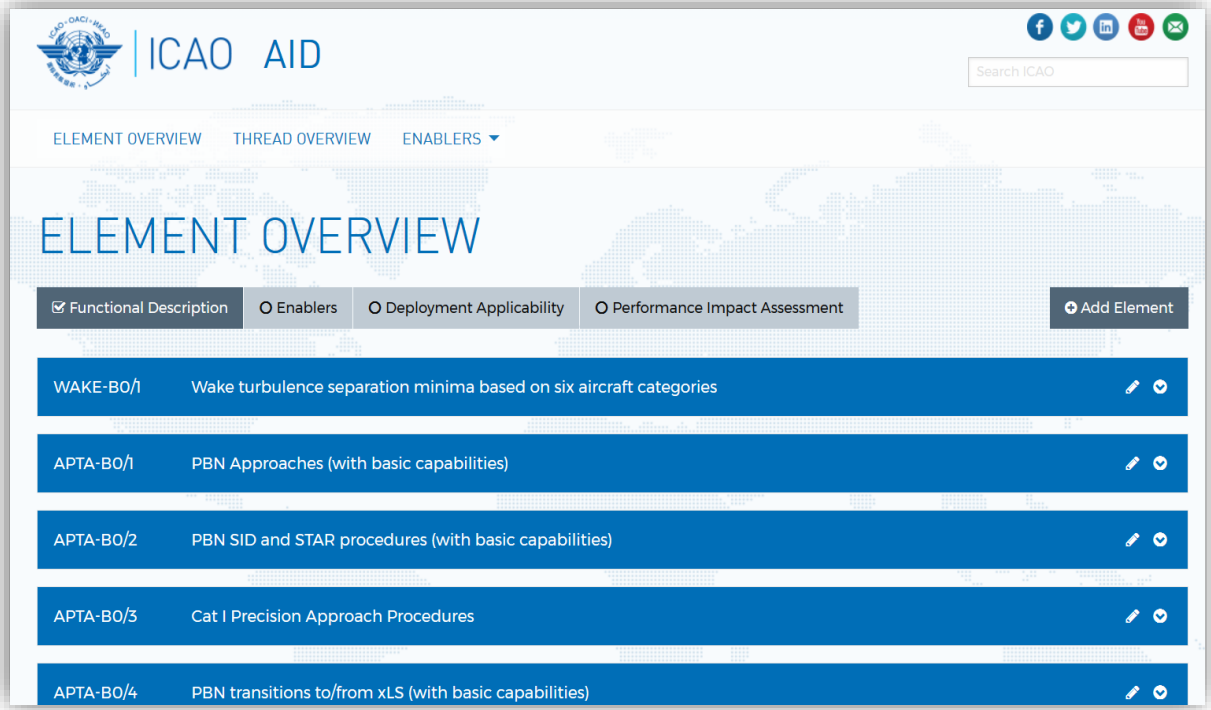
CONCLUSION

Leapfrog the more advanced ANS and become international leaders in innovation!

How?

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

AID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ELEMENT OVERVIEW
Functional Description
Enablers
Deployment Applicability
Performance Impact Assessment
Add Element
WAKE-B0/1 Wake turbulence separation minima based on six aircraft categories
APTA-B0/1 PBN Approaches (with basic capabilities)
APTA-B0/2 PBN SID and STAR procedures (with basic capabilities)
APTA-B0/3 Cat I Precision Approach Procedures
APTA-B0/4 PBN transitions to/from xLS (with basic capabilities)

Global Aviation Safety & Air Navigation Updates

UPCOMING EVENTS

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Global Aviation Safety & Air Navigation Updates

GANIS/SANIS – GLOBAL PLANNING FOR THE 40TH ASSEMBLY

ICAO UNITING AVIATION

NO COUNTRY LEFT BEHIND

THANK YOU!