

# CANSO AFRICA CONFERENCE 2022

Dakar, Senegal

5 – 9 September 2022

Host:





# SIMULTANEOUS TRANSLATION

- **CANAL 1:**  
**Français**
- **CHANNEL 2:**  
**English**

# OPENING SPEECHES



**Mohamed  
Moussa**

Director General  
ASECNA



**Simon  
Hocquard**

Director General  
CANSO



**Prosper Zo'o  
Minto'o**

Regional Director  
ICAO WACAF



**Alioune Sarr**

Ministre du Tourisme  
et des Transports Aériens

# GUEST SPEAKER



**Mohamed Moussa**

Director General  
ASECNA



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ICAO WAF

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**Alioune Sarr**

Ministre du Tourisme  
et des Transports Aériens



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# BREAK

# THANK YOU

## TO OUR SPONSORS



# THANK YOU

## TO OUR EXHIBITORS





**THANK YOU**  
**TO OUR NETWORKING BREAK**  
**SPONSOR**

# REGIONAL INITIATIVES ON SEAMLESS OPERATIONS – IS THIS A RECOVERY PATH FOR THE REGION AND WHAT ARE THE GLOBAL LESSONS?



# FACILITATOR



**James Danga**

Safety Expert  
AFCAC



## Adefunke Adeyemi

Secretary General  
AFCAC

# GUEST SPEAKER



**Prosper Zo'o Minto'o**

Regional Director  
ICAO WACAF



## CANSO Africa Conference 2022

**Regional Initiatives on Seamless Operations – Is this a Recovery Path for the Region and What are the Global Lessons?**

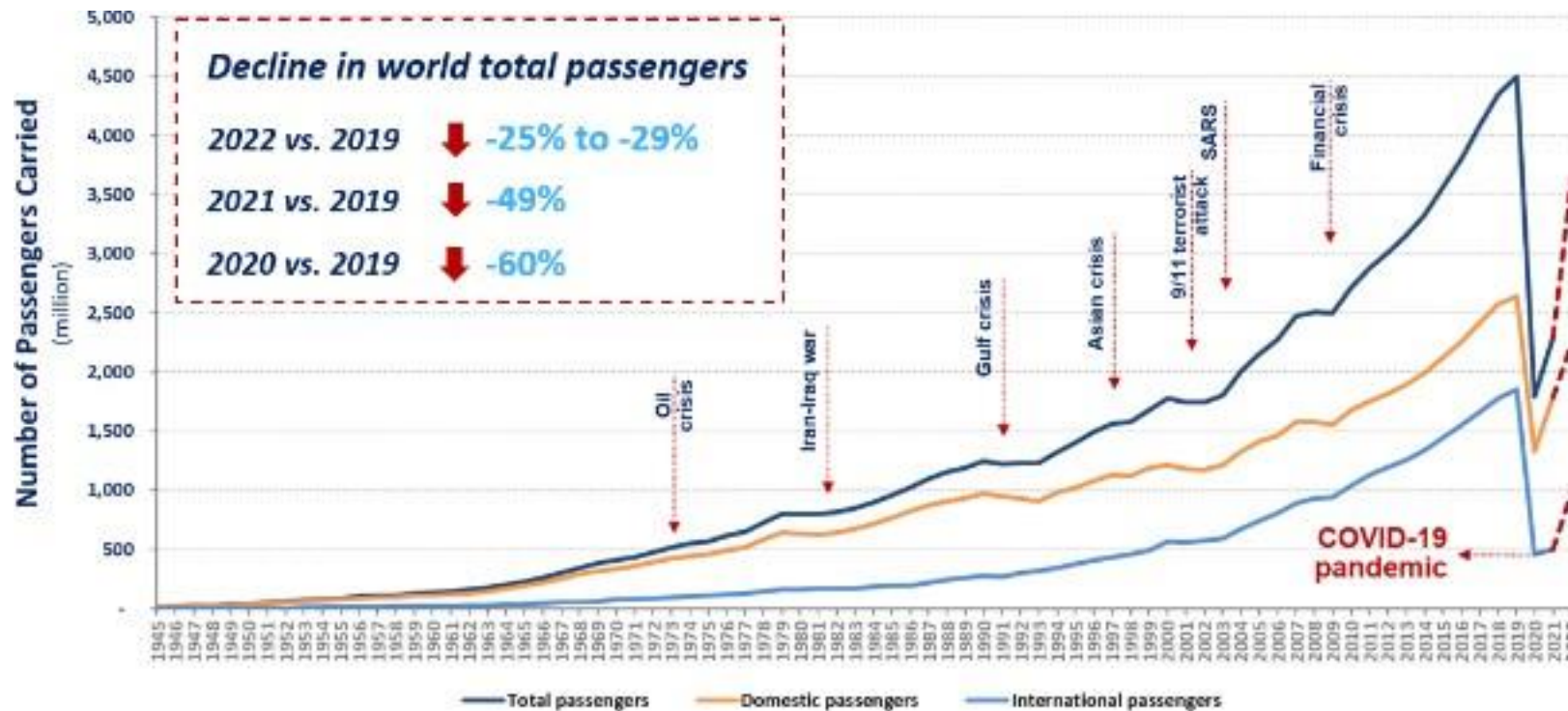
**Presentation by Prosper Zo'o Minto'o  
Regional Director, Western and Central Africa**



## Economic Impact of the COVID-19 on Aviation



## World passenger traffic evolution 1945 – 2022



- Drastic reduction in traffic with substantial impact on industry financials
- Slow recovery in passenger traffic, especially international traffic
- Resilience in freight traffic benefiting from the less impacted consumer consumption and trade

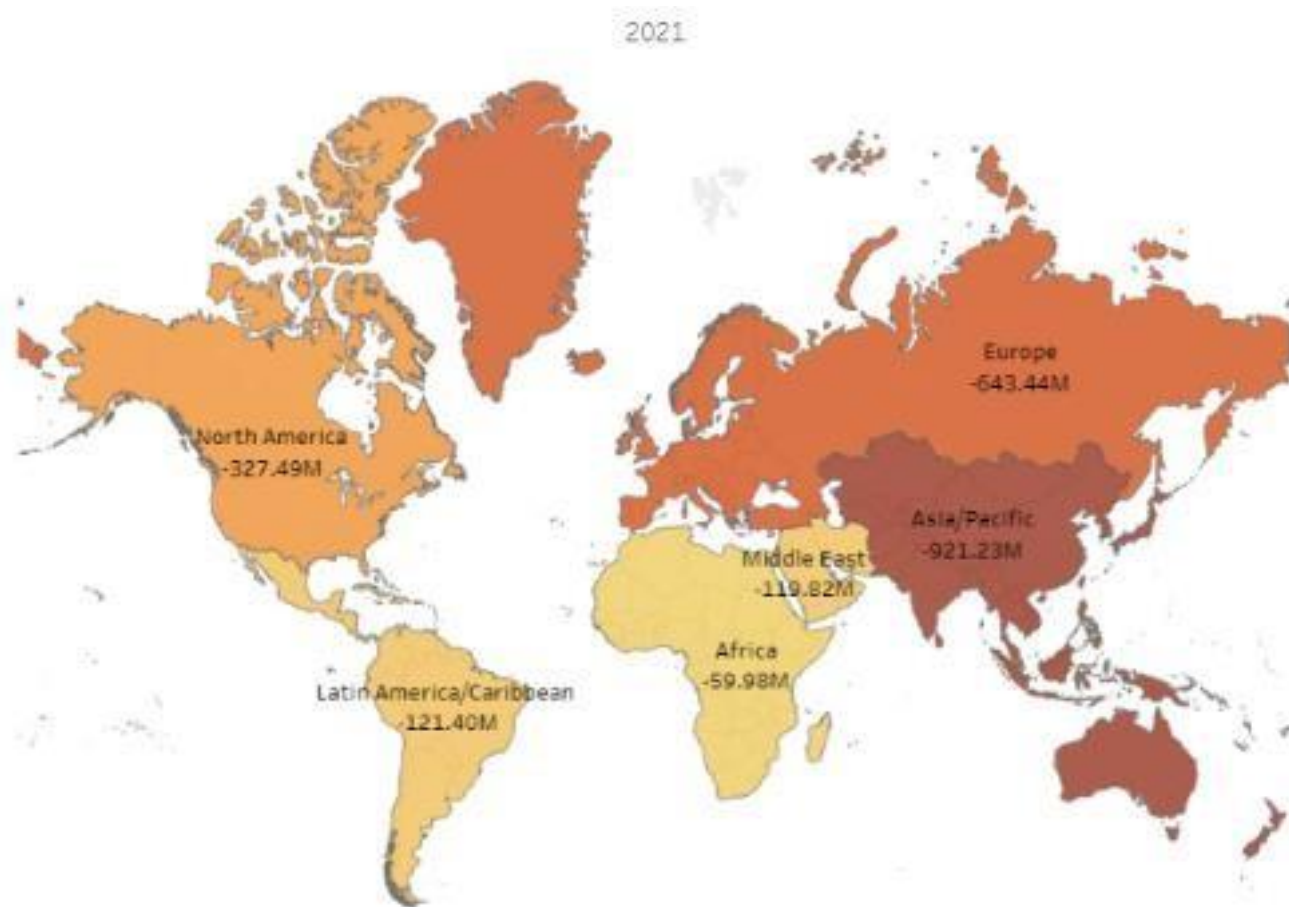
The COVID-19 impact on world scheduled passenger traffic for year 2020 (actual results), compared to 2019 levels:

- Overall reduction of **50% of seats offered by airlines**
- Overall reduction of **2.7 billion passengers (-60%)**
- Approx. **USD 372 billion loss** of gross passenger operating revenues of airlines

The COVID-19 impact on world scheduled passenger traffic for year 2021 (preliminary estimates), compared to 2019 levels:

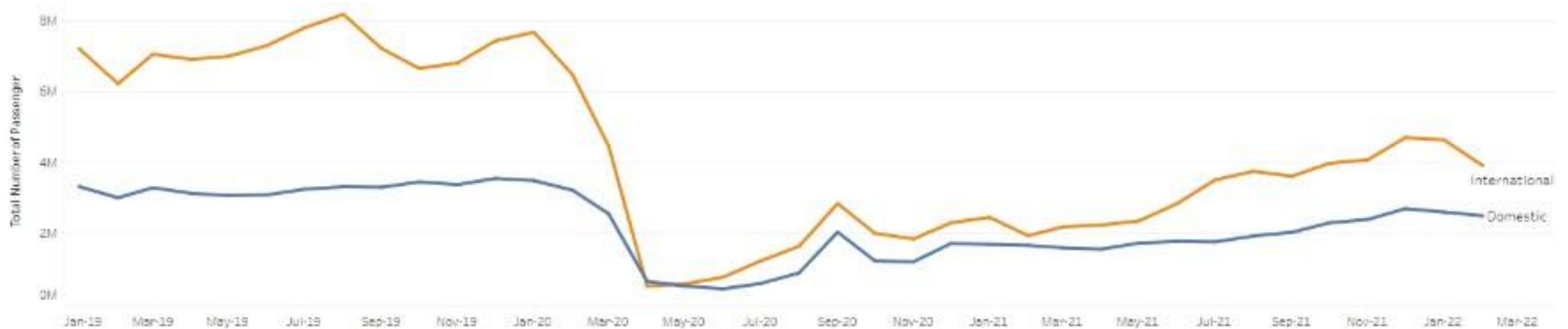
- Overall reduction of **40% of seats offered by airlines**
- Overall reduction of **2.2 billion passengers (-49%)**
- Approx. **USD 324 billion loss** of gross passenger operating revenues of airlines

## Passenger traffic decline by region



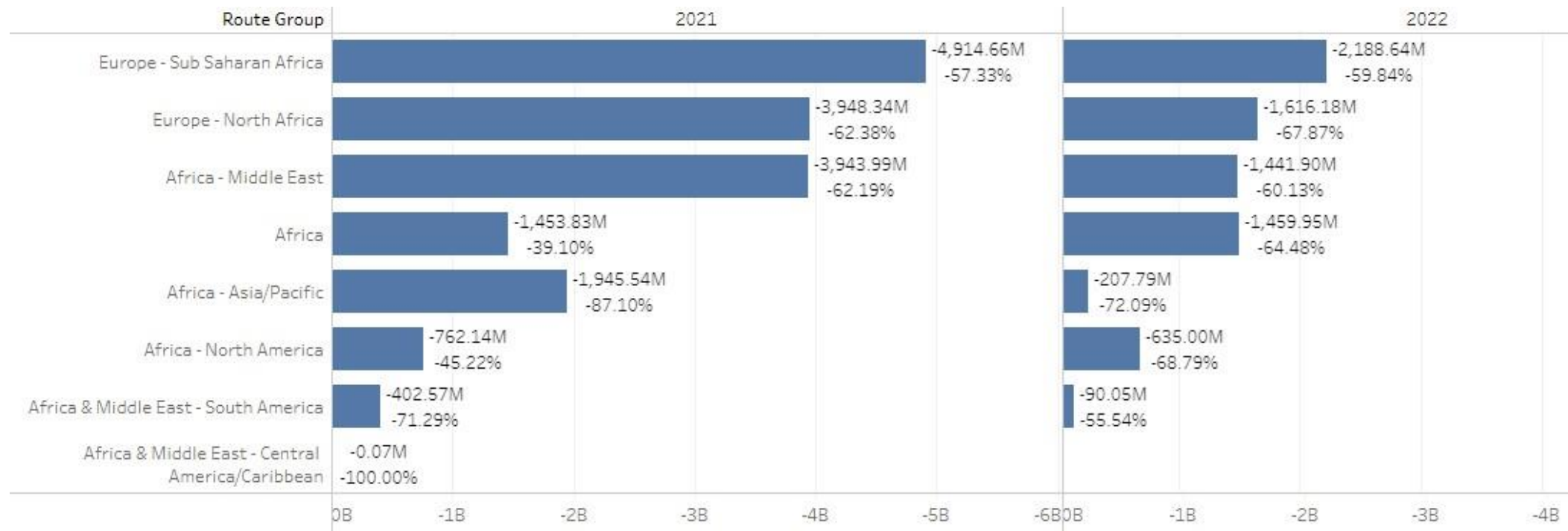
Regions	2021
Africa	-59.98M -52.1%
Asia/Pacific	-921.23M -54.8%
Europe	-643.44M -55.5%
Latin America/Caribbean	-121.40M -35.3%
Middle East	-119.82M -64.1%
North America	-327.49M -32.7%
Grand Total	-2,193.36M -48.9%

## Passenger traffic evolution - Africa





## Airline financial impact - Africa





## Leading up to the ICAO HLCC

- Council Aviation Recovery Task Force (CART)
- CART Report Phase I – call for a high-level meeting on COVID-19

RECONNECTING  
THE WORLD

**CART**  
COUNCIL AVIATION RECOVERY TASK FORCE  
**REPORT**



# RECONNECTING THE WORLD

## ICAO'S HIGH-LEVEL CONFERENCE ON COVID-19



- 12 to 22 October 2021
- Fully virtual
- 1,786 representatives
- 129 States
- 38 International Organizations



**Participation of  
the Conference**

## Structure of the Conference

### Ministerial Plenary

- 3 sessions

### Safety Stream

- Agenda 1-5

### Facilitation Stream

- Agenda 6-10

# RECONNECTING THE WORLD

## ICAO'S HIGH-LEVEL CONFERENCE ON COVID-19



### Main Outcomes of the ICAO HLCC



- international review of pandemic priorities
- new commitments to open borders through updated risk management and vaccination approaches
- build back better to address future pandemic resilience



## One Vision for Aviation Recovery, Resilience and Sustainability beyond the Global Pandemic

### Ministerial Declaration



#### Key commitments:

- Support a multilayer risk management strategy for international civil aviation, which is adaptable, proportionate, non-discriminatory and guided by scientific evidence
- Facilitate air transportation of vaccines, essential medical supplies and personnel
- Provide support for the aviation sector, including economic and financial support
- Ensure operational readiness of aviation personnel as well as airworthiness of aircraft
- Ensure the interoperability and mutual recognition of, and accessibility to, digital applications



# 147

## Recommendations

### SAFETY STREAM



Safety and operational measures related to the COVID-19 pandemic



Strategy and policy



Standardization



Implementation and support



Other issues considered by the Safety Stream

## Safety and operational measures related to the COVID-19 pandemic

### Recommendations – 25 for States & 23 for ICAO

- ❖ Rapid response to global aviation disruption events
- ❖ Additional measures to ensure effective oversight and training
- ❖ Additional measures to support the return to normal operations
- ❖ The impact of COVID-19 on operational fitness

## Strategy and policy

### Recommendations – 17 for States & 14 for ICAO

- ❖ Draft 2023-2025 Edition of the Global Aviation Safety Plan
- ❖ Development and implementation of national aviation safety plans
- ❖ Regulatory capacity enhancement, new training approaches and improvement of current processes and tools to embrace changes in aviation
- ❖ Other issues related to safety oversight



## Standardization

Recommendations – 18 for States & 23 for ICAO

- ❖ Oversight and new approaches
- ❖ Furthering the regulatory framework for UAS
- ❖ Improving the effectiveness of aviation safety risk management
- ❖ Oversight of ground handling

## Implementation and support

Recommendations – 8 for States & 6 for ICAO

- ❖ Enhancing safety by advancing and strengthening regional cooperation
- ❖ Increasing participation in the contributory bodies of planning and implementation regional groups (PIRGs) and regional aviation safety groups (RASGs)



## Other issues considered by the Safety Stream

### Recommendations – 6 for States & 7 for ICAO

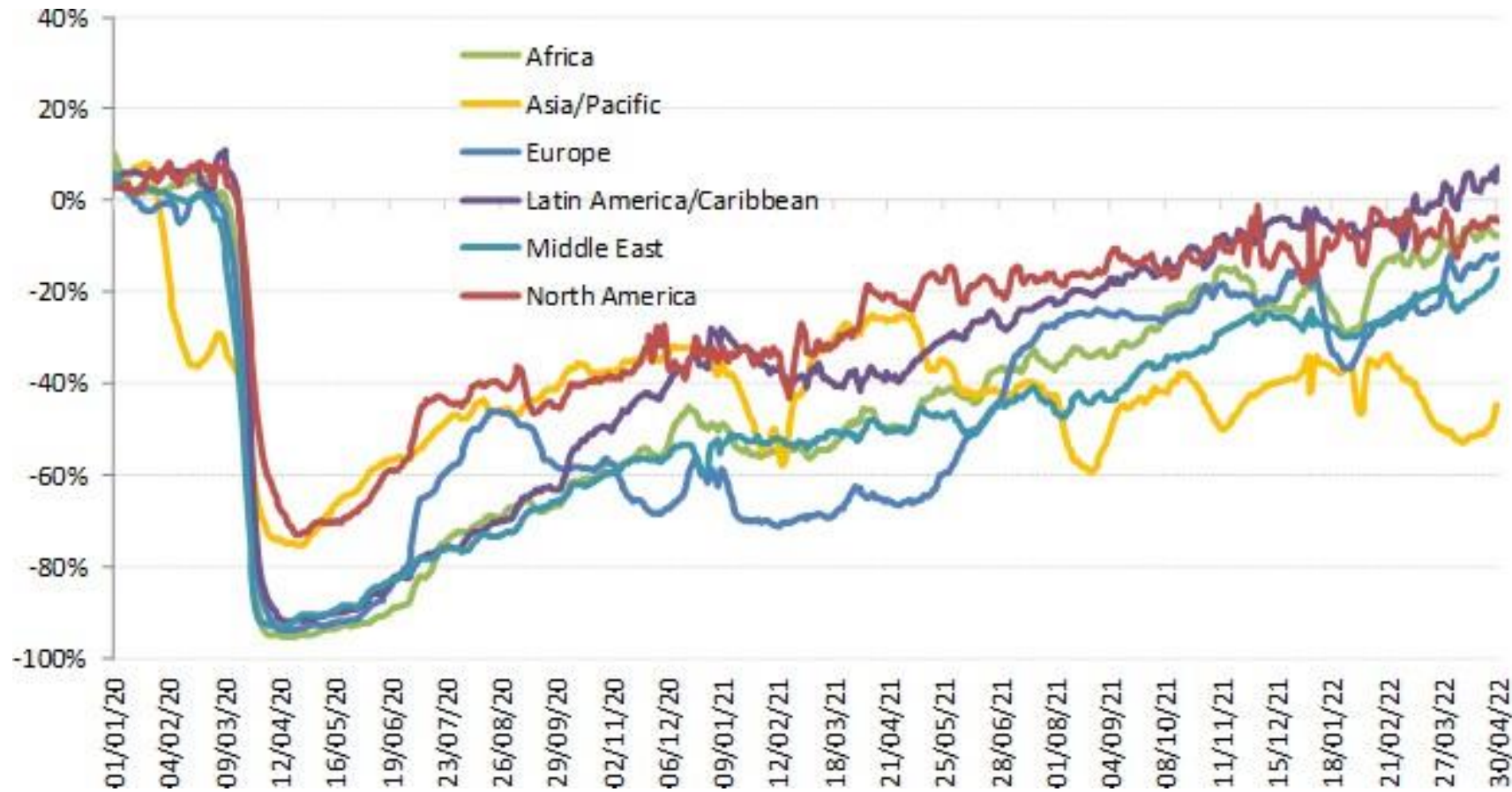
- ❖ Accident and incident investigations
- ❖ Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA)
- ❖ COVID-19 impact on the Global Air Navigation Plan
- ❖ Global aeronautical distress and safety system (GADSS)
- ❖ Mitigating the risk of 5G implementation to safety-critical radio altimeter functions





## Trend of Air Travel Recovery by Region (compared to 2019 levels)

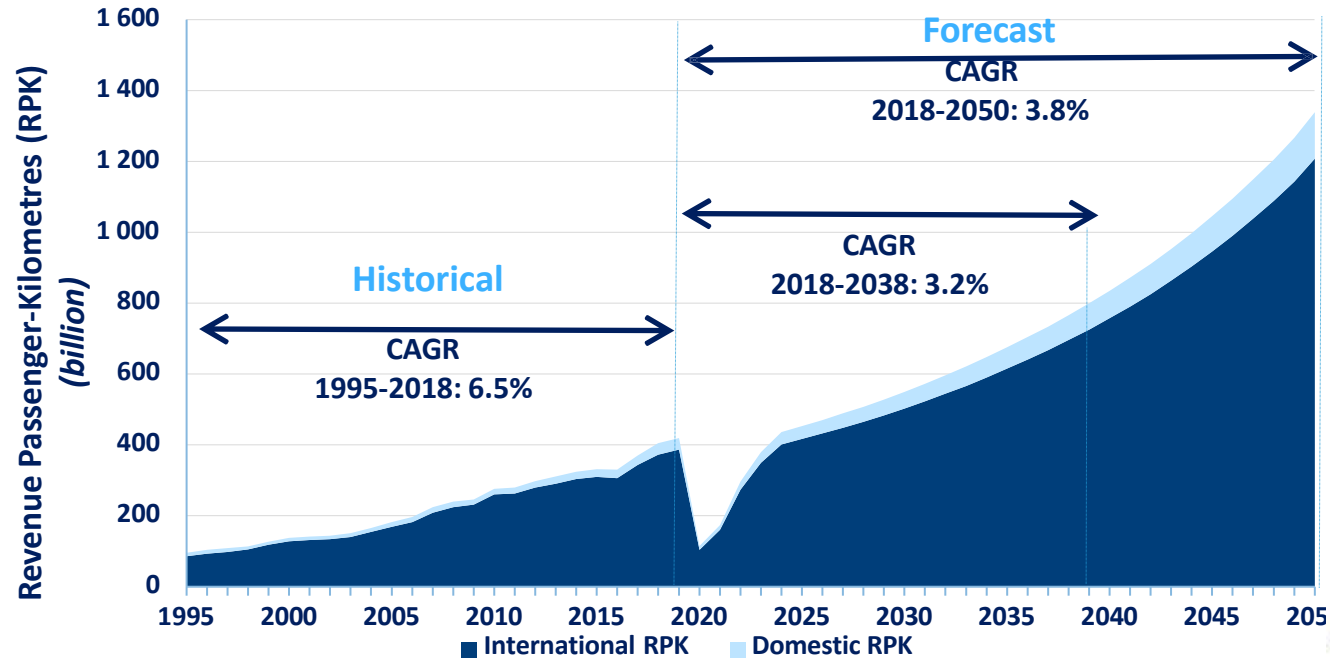
Post COVID-19 Air Traffic  
Recovery







## ICAO long term passenger traffic forecasts\* (Africa)



- Africa traffic is forecasted to grow by 3.8% CAGR for the period 2018-2050. International and domestic traffic are forecasted to grow by 3.7% and 4.5% respectively
- Africa-Middle East, intra Africa and Africa-Asia/Pacific are fastest growing international route groups in the region with 4.6%, 4.5% and 4.3% forecast CAGR respectively

## Follow-up Actions to the Outcomes of the HLCC

### ICAO's priorities and actions



- Increase the uptake of the HLCC Ministerial Declaration to restore and revitalize aviation sector.
- Provide support and guidance for States to develop multilayer risk management strategies for international civil aviation.
- Promote the interoperability and mutual recognition of digital solutions to restore and strengthen the confidence in air travel by the public, governments and international community
- Strengthen the international framework and arrangements for a coordinated and streamlined response to future crises
- Work with States, financial institutions, international partners and the private sector to support the financial viability of the aviation sector
- Invite A41 to review the progress and determine further actions that may be needed



### PREAMBLE

WHEREAS the future development of international civil aviation can greatly help to create and preserve friendship and understanding among the nations and peoples of the world, yet its abuse can become a threat to the general security; and

WHEREAS it is desirable to avoid friction and to promote that cooperation between nations and peoples upon which the peace of the world depends;

THEREFORE, the undersigned governments having agreed on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically;

Have accordingly concluded this Convention to that end.

### Article 28

#### *Air navigation facilities and standard systems*

Each contracting State undertakes, so far as it may find practicable, to:

a) Provide, in its territory, airports, radio services, meteorological services and other air navigation facilities to facilitate international air navigation, in accordance with the standards and practices recommended or established from time to time, pursuant to this Convention;

b) Adopt and put into operation the appropriate standard systems of communications procedure, codes, markings, signals, lighting and other operational practices and rules which may be recommended or established from time to time, pursuant to this Convention;

c) Collaborate in international measures to secure the publication of aeronautical maps and charts in accordance with standards which may be recommended or established from time to time, pursuant to this Convention.

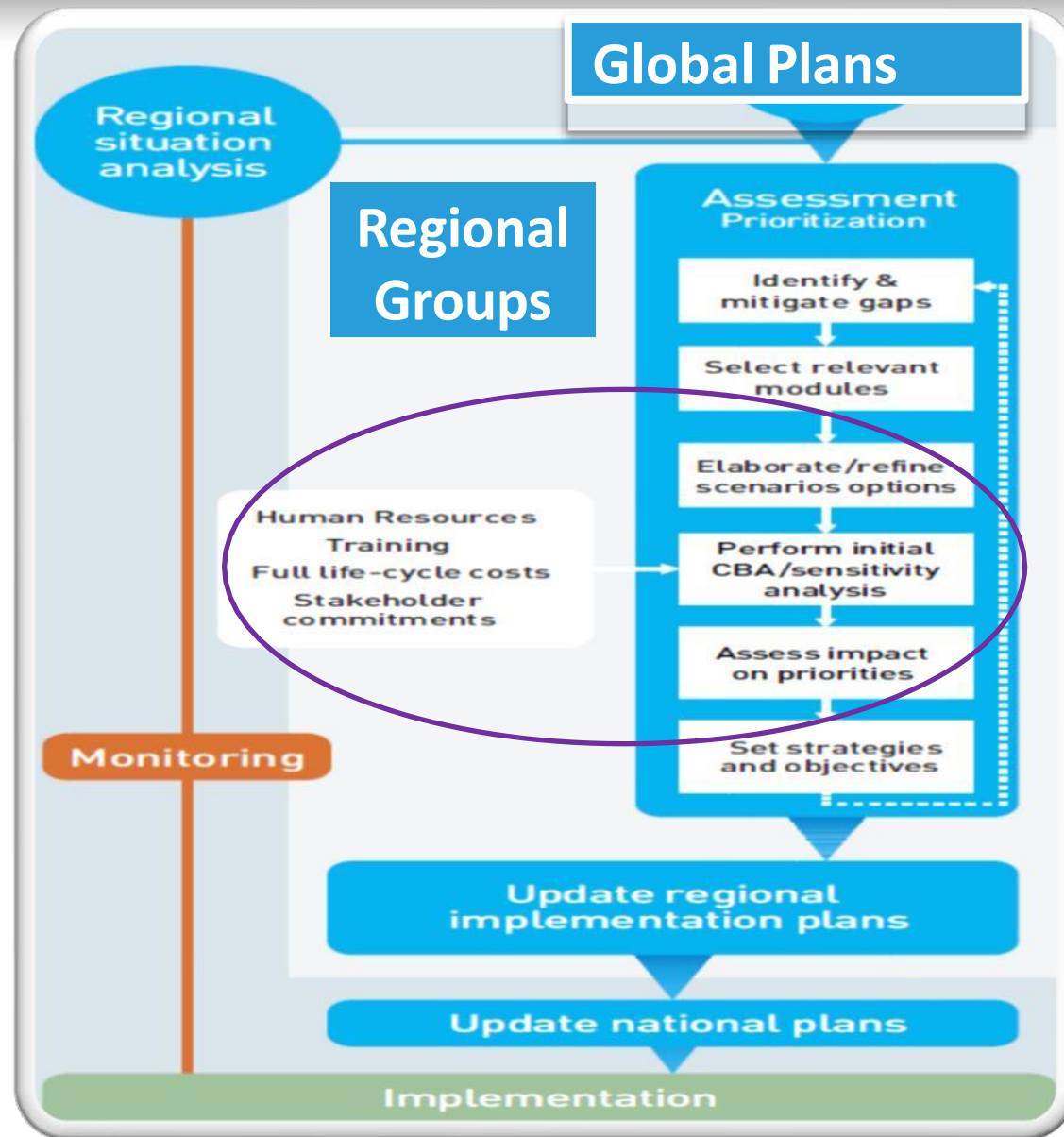
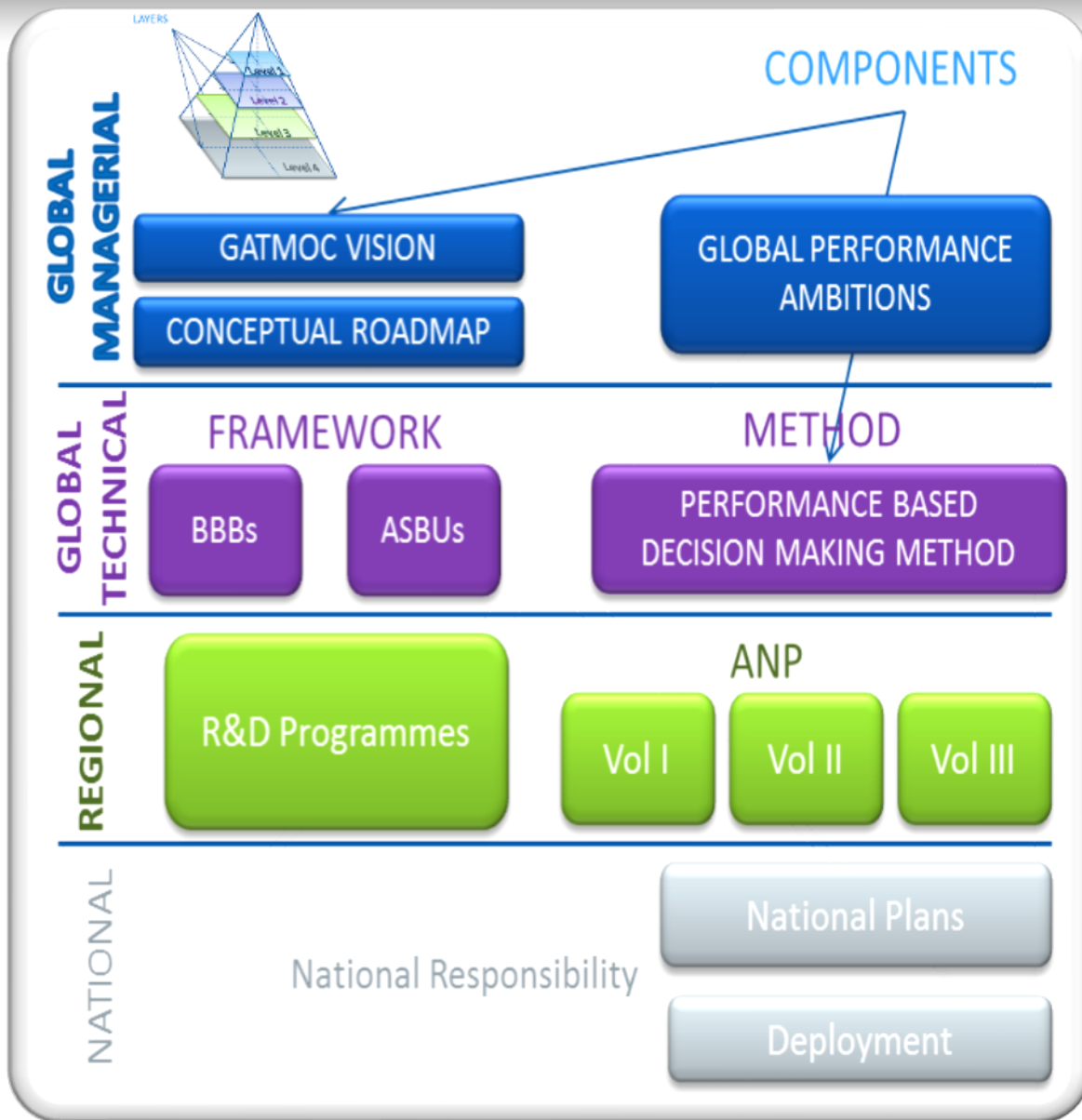




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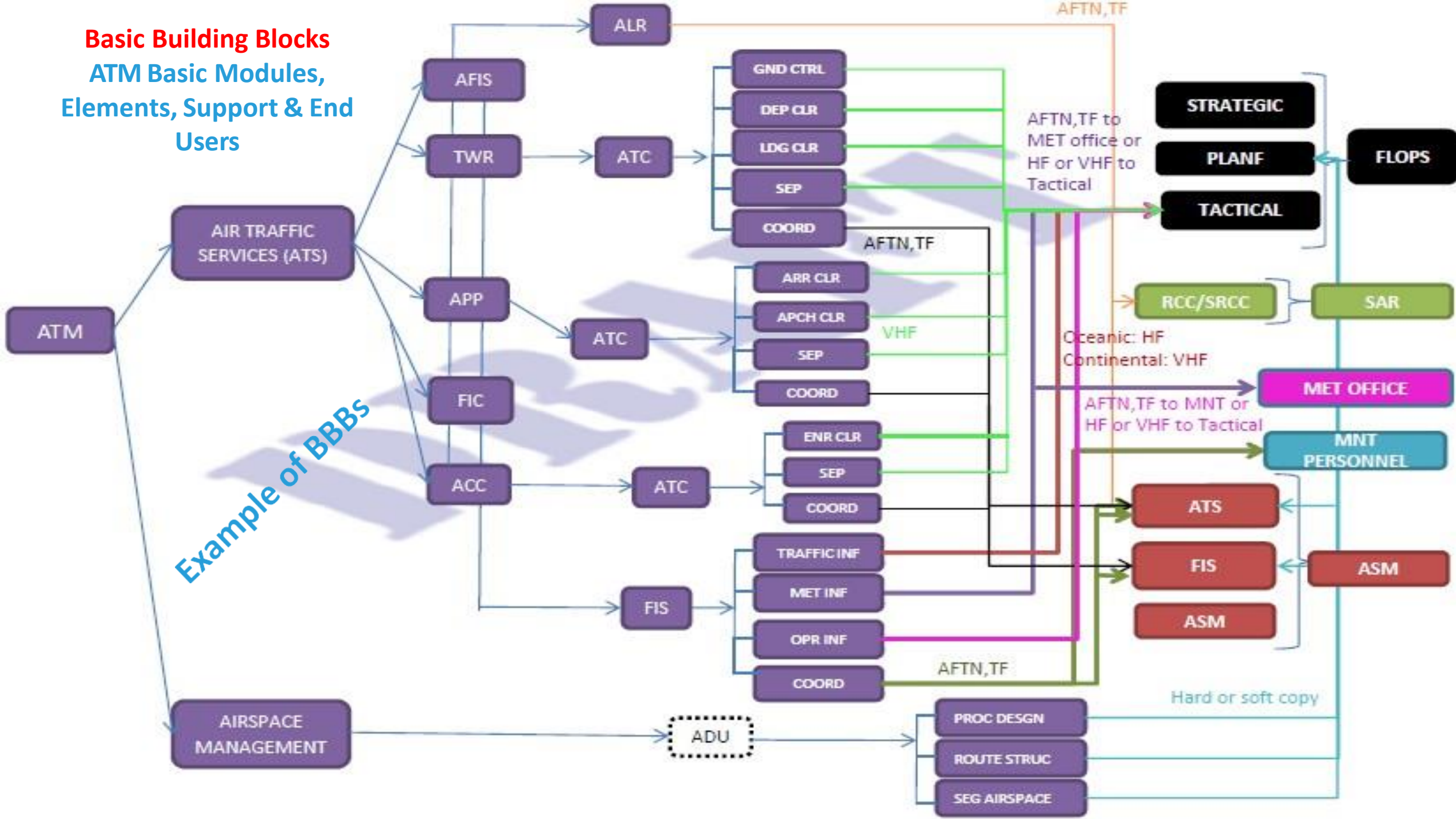
# RECONNECTING THE WORLD

## Global Planning & Implementation Framework



## Basic Building Blocks

ATM Basic Modules,  
Elements, Support & End  
Users



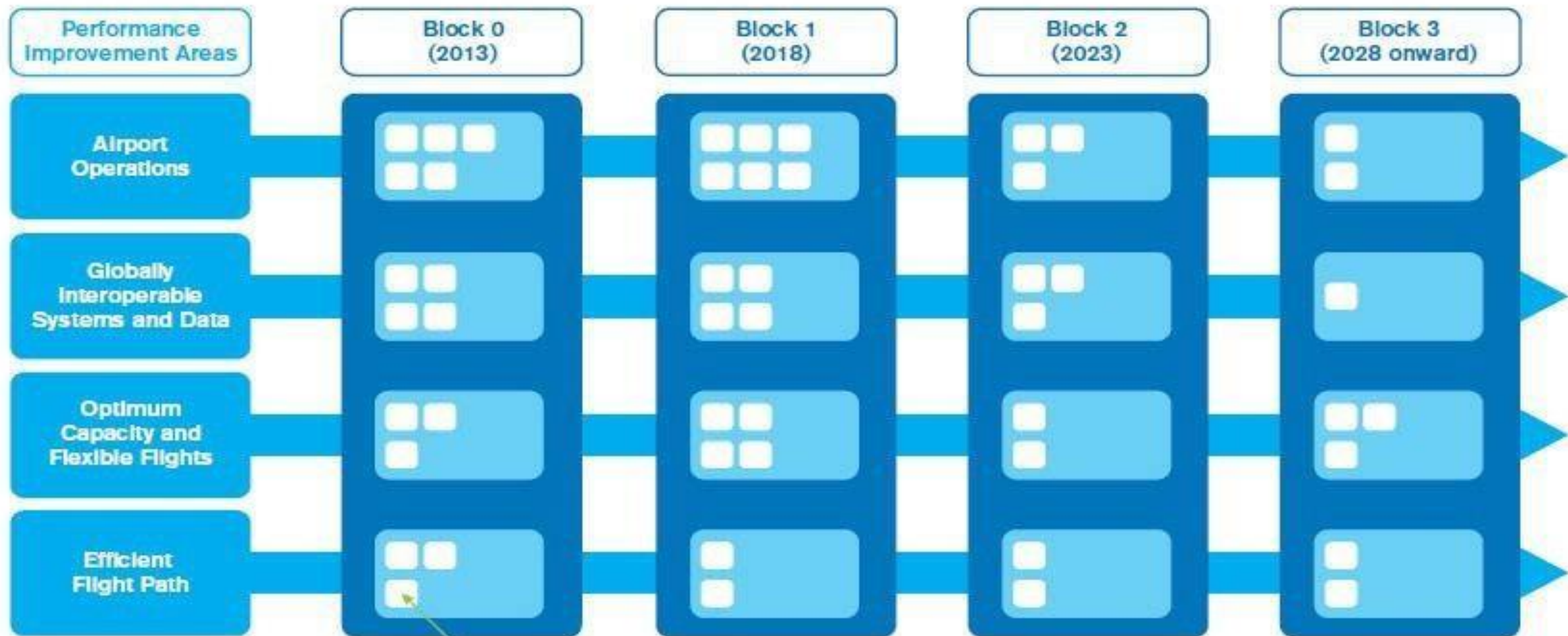




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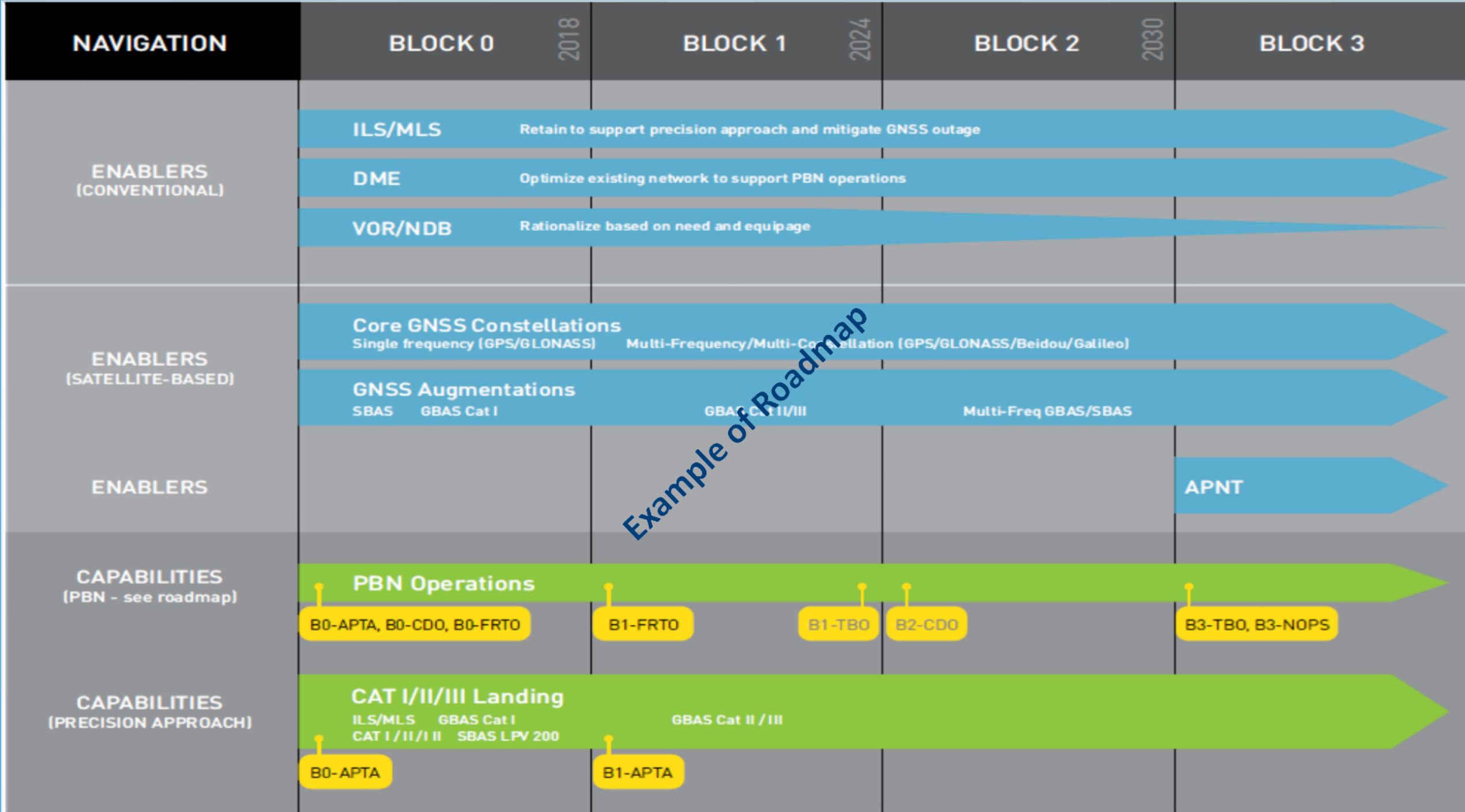
# RECONNECTING THE WORLD

## Summary of ASBU Blocks mapped to PIAs



Modules (actual number of modules per Block/Performance Area may vary)







## A high-performing Air Navigation System

<b>Global interoperability</b>	Ensure global interoperability
<b>Access and equity</b>	Access and equity to all airspace users
<b>Capacity</b>	Capacity to accommodate forecast demand
<b>Efficiency</b>	Increase efficiency of air operations
<b>Flexibility and predictability</b>	Enable flexibility to meet arrival times
<b>Sustainability</b>	Secure air navigation system sustainability
<b>Resilience</b>	Resilience to cope with system disruptions



## SOCIAL WELLBEING ALL PEOPLES OF THE WORLD

- More quiet
- Cleaner
- Safer
- More resilient
- More profitable





# **CANSO Africa Conference 2022**

## **Dakar, Senegal, 6-9 September 2022**



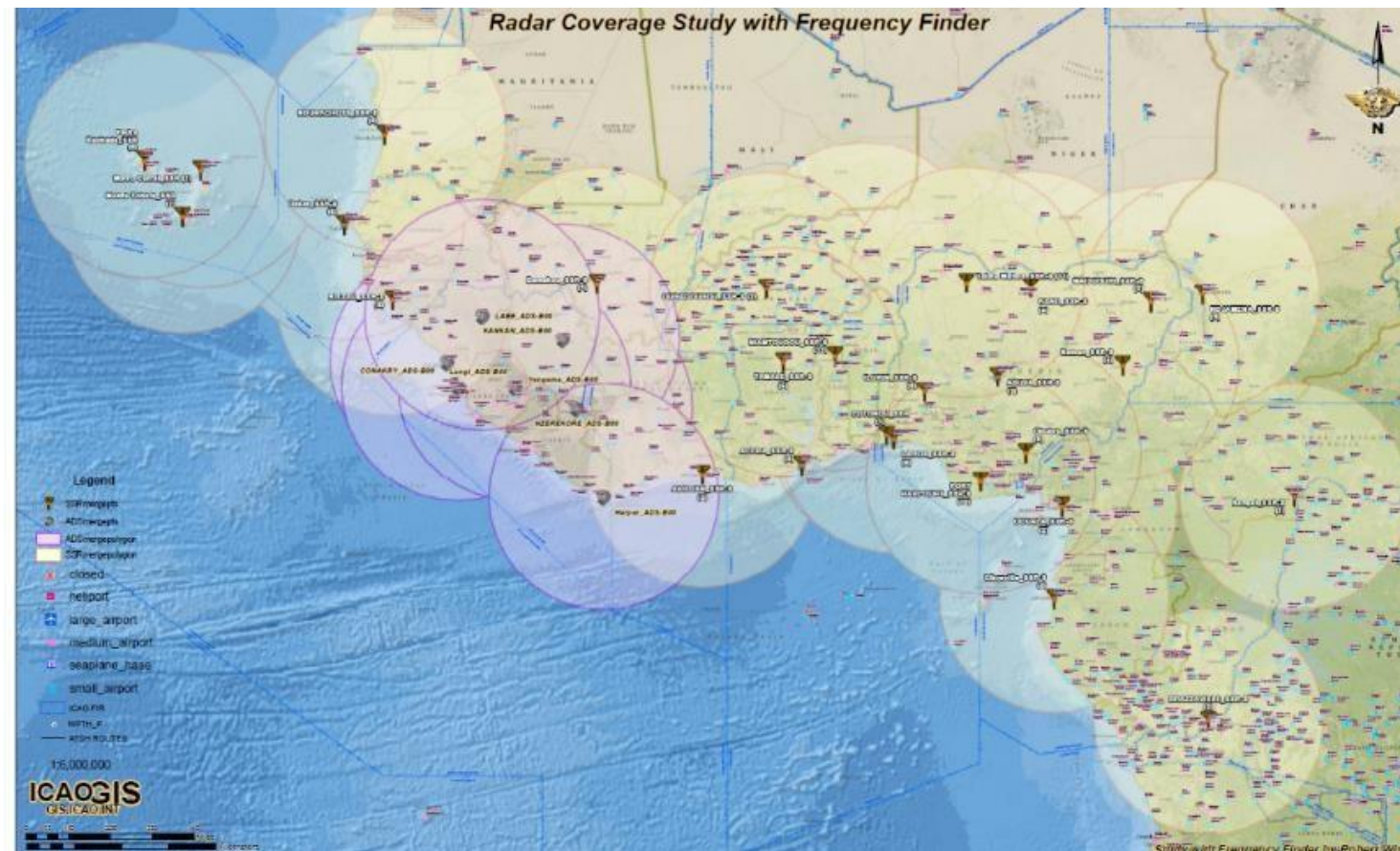
**Regional Initiatives on Seamless Operations**

**Presented by Francois Xavier Salambanga, Regional  
Officer Communications, Navigation & Surveillance**





## Opportunities of implementation of ASBU Technology Roadmaps





## Building One sky to provide a seamless ANS

### Context

- Air Transport : key stakeholder in a huge continent
- Air Transport in Africa: **3-5%** of the Global Market
- For next two decades
  - Annual Growth estimated trend: **5,9%** Vs **4%** for Global growth
  - **125** Millions PAXs to **377** Millions PAXs
- Air Transport based on Safety of life

### Challenges

- 
- Need for Efficient utilization of airspace
  - Weakness of interconnectivity
  - Various national policies
  - Threat of emerging Aviation system (CNS)



Areas of routing (AR)	Traffic Flows	Areas involved	Type of area covered	Remarks
Africa-Indian Ocean (AFI) Region				
AR1	Europe — South America (EUR/SAM) (oceanic)	Atlantico <sup>1</sup> , Canarias, Casablanca, <b>Dakar Oceanic</b> , Recife, <b>Sal Oceanic</b>	Oceanic en route low density in southern part and oceanic high density in northern part	Major traffic flow EUR/SAM
AR2	Atlantic Ocean interface between the AFI, NAT and SAM Regions	Accra, <b>Dakar</b> , Johannesburg, Luanda, Sal	Oceanic en route low density	Homogeneous ATM area AFI/NAT/SAM
AR3	Europe — Eastern Africa routes including the area of the Indian Ocean	Addis Ababa, Antananarivo, Asmara, Cairo, Dar es-Salaam, Entebbe, Khartoum, Mauritius, Mogadishu, Nairobi, Seychelles, Tripoli	Continental en route/ oceanic low density	Major traffic flow AFI/EUR
AR4	Europe to Southern Africa	Algiers, Beira, Brazzaville, Cape Town, Gaborone, Harare, Johannesburg, Kano, Kinshasa, Lilongwe, Luanda, Lusaka, <b>Ndjamena</b> , Niamey, Tripoli, Tunis, Windhoek	Continental en route low density	Major traffic flow AFI/EUR
AR5	Continental Western Africa including coastal areas	Accra, Addis Ababa, Brazzaville, Dakar, Dar-es-Salaam, Entebbe, Kano, Khartoum, Kinshasa, Europe to Southern Africa, Europe to Southern Africa, Nairobi, Ndjamena, Niamey, Roberts	Continental/oceanic low density	Homogeneous area AFI (this is a growing traffic, developing into major traffic flow)
AR6	Trans-Indian	Antananarivo, Bombay <sup>1</sup> , <b>Johannesburg</b> Male <sup>1</sup> , Mauritius, Melbourne <sup>1</sup> , Seychelles	Oceanic high density	Homogeneous ATM area AFI/ASIA

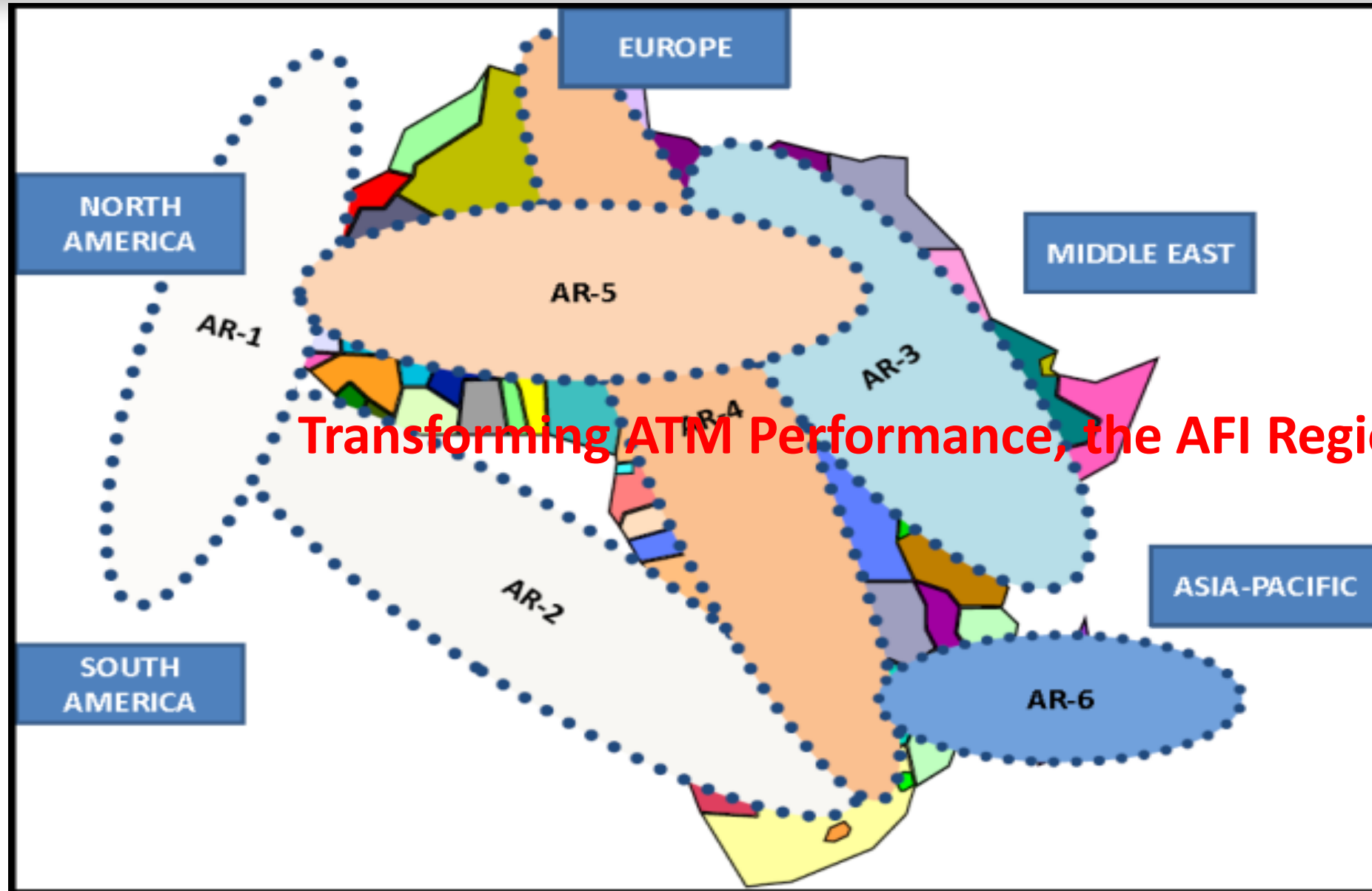


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# RECONNECTING THE WORLD



FLOWS IN TH





**Building One sky to provide a seamless ANS**

**Currently: On going implementation of CNS/ATM Infrastructure**

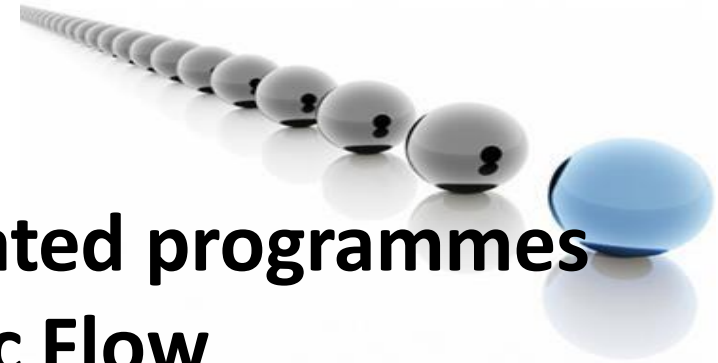
- ✈ **Need for harmonization of implementation plans and projects,**
- ✈ **Need for interconnectivity and data sharing**
- ✈ **Challenge: How to insure seamless ATM functions along A-R?**
- ✈ **Requirements from ATM: Separation minima criteria along A-Rs**





## APIRG Project Approach Mechanisms

- **APIRG Conclusion 16/31: Collective approach for the Management of CNS/ATM system elements**
- **APIRG Conclusion 19/39: Development of integrated programmes based on major ATM Routing Areas and Air Traffic Flow**
- **Taking benefit on Regional IIM/ATM mature Projects and current services and facilities (AFI VSAT Communication, infrastructure, SSRs and ADS-C/CPDLC, ADS-B, AMHS, RVSM, PBN/GNASS programmes, PBCS)**





## Expected Benefits





## Safety

- Detection and mitigation of risk of conflict
- Easier coordination between ATCs
- Contingency capability

## Capacity

- Reduction of minima of separation
- Flexible tracking (CCO, CDO, PBN)
  - ✓ *Adequate planning*
  - ✓ *Increased capacity of ATCs*





## Efficiency

- Regularity
- ATFM
- Preferred users routes (FLS/Trajectories)
- Regular/continuous and flexible routing capability



## Environment

- Reduced fuel consumption & CO2 Emission
- Reduction of noise



## Economic impact/Cost effectiveness

- Reduced additional investment
- Reduced operations costs for stakeholders
- Reduced Maintenance costs
- Reduced Fuel quantity and cost
- Increase income for ANSPs





## Institutional

- Sub Regional Integration
- Sharing of Best Practices
- Enabling and empowering Capacities





# THANK YOU!





# GUEST SPEAKER



**Papa Atoumane Fall**

Advisor to the Director General / Director of Safety  
ANACIM-Senegal / AFCAC (formerly)

# **CANSO Africa**

## **2022 Conference**

**Recalibrating for Resilient and Sustainable  
Operations – A Path Towards a Seamless African Sky**

**Dakar-Senegal, 5 – 9 September 2022**

**Regional Initiatives on Seamless Operations – Is this a Recovery  
Path for the Region and what are the Global Lessons?**

**Presented by:**  
**AFCAC**

# Content

**Background and challenges**

## **AFCAC REGIONAL INITIATIVES**

- ❖ **Cooperative Platform of African ANSPs**
- ❖ **Seamless air operations in Africa**
- ❖ **Development of ATM Master Plan in line with the GANP Vision and Principles**
- ❖ **Air Navigation Systems Architecture for a Single Sky in Africa**
- ❖ **SAATM Joint Prioritized Action Plan (JPAP)**

**Recommendations and Way Forward**



## BACKGROUND AND CHALLENGES

- ☐ *AUC and AFCAC are instructed to work on a framework of establishing the single African sky architecture by 2023 that will strengthen aviation safety, security as well as ensure efficient and harmonized seamless air navigational and communication systems*
- ☐ There is no continental Master Plan for air navigation systems in AFI Region
- ☐ African ANSPs are fully aware of the situation and are putting in place framework for cooperation and collaboration, such as African ANSPs meetings, roadmaps, peer review mechanism, etc.
- ☐ There is a need for modernization of air navigation infrastructure
- ☐ Air traffic expected to grow in AFI Region, as the SAATM is being operationalized

## BACKGROUND AND CHALLENGES

- ❑ The ICAO Infrastructure Gap Analysis of 2019 concluded that African States and African Regional Economic Communities (RECs) should take specific actions, in cooperation and coordination with the AUC, NPCA, AfDB, UNECA, AFCAC, the African Airlines Association (AFRAA) and international partners to develop aviation infrastructure programmes and plans at national/regional levels based on a robust business case analysis, commensurate with the level of predicted traffic growth, and consistent with the ICAO Global Plans
- ❑ Modernizing and building necessary infrastructure within the air navigation system to optimize current services is essential to accommodating growing demand and meeting the requirements of a new era in aviation.
- ❑ This requires both significant political will and investment



### Why a Cooperative Platform of African ANSPs?

- ☐ A Cooperative Platform of African ANSPs should be established in line with the Decision of the Assembly of Heads of State and Government of AU on the establishment of the Single African Air Transport Market (SAATM)
- ☐ A Cooperative Platform of African ANSPs should be established to bring all key stakeholders together to develop a seamless sky in Africa
- ☐ All African ANSPs should contribute to the realization of a relevant continental ANSP Master Plan for a Single African Sky Architecture by 2023

## AFCAC REGIONAL INITIATIVES

### Why a Cooperative Platform of African ANSPs?

Activities of the African ANSP Cooperative Platform should be:

- ☐ Establishment of a framework for a continental air navigation systems Master Plan aimed at ensuring seamless air operations in Africa
- ☐ Promotion of uniform and effective implementation of ICAO GANP and GASP through harmonized regional programs
- ☐ Establishment of a mechanism to develop, maintain, monitor and update the implementation plan of seamless airspace and harmonized regulations in Africa
- ☐ Promotion of appropriate and harmonized regional initiatives (such as the Abuja Safety Targets and the African ANSPs Peer Review Mechanism) in order to increase the Effective Implementation of Safety by African ANSPs including the level of compliance to ICAO SARPs and other Regional Plans

### Why a Cooperative Platform of African ANSPs?

Such Cooperative Platform of African ANSPs should be a consultative forum established in line with the following provisions of the African Civil Aviation Policy (AFCAP):

- ✓ AUC and AFCAC should make concerted efforts towards the establishment of a single African Airspace in collaboration with ICAO and other stakeholders
- ✓ AFCAC shall facilitate collaboration among African Air Navigation Service Providers to expedite the establishment of a single/seamless airspace
- ✓ African ANSPs are encouraged to come together preferably under one Pan African umbrella organisation/association to coordinate their views and interests and foster harmonized implementation of the AFCAP

## AFCAC REGIONAL INITIATIVES

### Why a Cooperative Platform of African ANSPs?

The Objectives of the Cooperative African ANSPs Platform should be:

- a) Enable and facilitate a forum for ANSPs discussions and coordination, to promote efficiency on air navigation services and a uniform level of safety for air navigation service providers in Africa
- b) Benchmark some regional experiences such as the Single European Sky ATM Research (SESAR) conducted by EUROCONTROL
- c) Recommend a framework for establishment of a continental Air Navigation Architecture for a seamless airspace in Africa in accordance with the relevant AFCAP provisions and AU Assembly Decision in line with the GANP



## AFCAC REGIONAL INITIATIVES

### Why seamless air operations in Africa?

- ☐ A seamless airspace for Africa would minimize the current fragmentation of African airspace and air traffic management system through measures based on several parameters, including institutional, regulatory, operational, technological and structural factors
- ☐ A seamless airspace will allow, in a context of continuous traffic growth, the safe and efficient use of the airspace concerned, and will provide all users with efficient routes
- ☐ A seamless airspace will assist all stakeholders to address the issues of safety, efficiency, competitiveness, performance, and environmental protection which are challenges for the future of civil aviation
- ☐ A seamless airspace will allow substantial fuel savings and CO2 emissions reduction



### Why seamless air operations in Africa?

- ❑ While African States are implementing various ICAO ASBU modules to develop CNS/ATM systems, there is an urgent need to collaborate at the continental level to ensure commonality of systems and interoperability through an established continental ATM Master Plan for Air Navigation Systems Architecture in Africa
- ❑ There are regional mechanisms/entities such as ASECNA and Roberts FIR to provide air navigation services and infrastructure above the territories of their member States applying common rules and procedures for air traffic services
- ❑ There are also projects and initiatives conducted by RECs such as SADC, COMESA and EAC for the creation of common upper airspaces managed by common Area Control Centers covering the territories of their member States

## DEVELOPMENT OF AN ATM MASTER PLAN ALIGNED WITH THE GANP

- ❑ The vision outlined in the GANP is a proactive move towards:
  - a globally interoperable air navigation system
  - an integrated and common approach to emerging challenges and opportunities
  - an open sector to technological trends.
- ❑ The evolution of the global air navigation system, driven by this vision and reflected in the GANP conceptual roadmap, will result in a high-performing system that meets the ever-growing expectations of society and reduces global disparities.

## DEVELOPMENT OF AN ATM MASTER PLAN ALIGNED WITH THE GANP

### GANP Vision and Principles

- The GANP provides a path to the safe, orderly and efficient evolution through the BBB and ASBU frameworks.
- Obligations in terms of the provision of essential air navigation services have been reflected in the BBB framework to ensure a robust baseline for the evolution.
- The evolutionary transformation reflected in the different steps of the conceptual roadmap is also reflected in the ASBU framework to ensure the interoperability of systems, harmonization of procedures and a harmonized approach to the modernization of the global air navigation system.

## DEVELOPMENT OF AN ATM MASTER PLAN ALIGNED WITH THE GANP

The objective is to provide a clear and comprehensive planning and implementation strategy for the future development of the entire civil aviation sector in terms of :

- policies,
- legislation,
- objectives,
- facilities,
- equipment,
- organization, and
- capacity-building.

## DEVELOPMENT OF AN ATM MASTER PLAN ALIGNED WITH THE GANP

### GANP Vision and Principles

The performance management process is based on three principles:

- ❑ strong focus on desired or required results
- ❑ reliance on facts and data
- ❑ Collaborative and justified decision-making

The successful implementation of this process requires:

- commitment from all members of the aviation community;
- agreement on goals and consensus on the desired outcome of performance management in terms of performance results to be achieved;
- accountability and organization among members of the aviation community in terms of roles and responsibilities;
- human resources and knowledge/expertise;
- data collection, processing, storage and reporting;
- collaboration and coordination; and
- investment.



## AFCAC PROPOSED TERMS OF REFERENCE

### Air Navigation Systems Architecture for a Single Sky in Africa

- ❑ The establishment of a relevant continental ATM Master Plan as a result of assessments on gap analysis and needs analysis of the airspace to determine how best to address existing infrastructure deficiencies and cope up with forecasted traffic growth
- ❑ *The institutional, legal and regulatory framework*: How to have common regulations, civil and military coordination in the flexible management of airspace, including dealing with exceptional situations;
- ❑ *Infrastructure interoperability*: the compatibility of equipment, protocols, software and data exchanges;
- ❑ *Operational aspects*: classification of airspace and routes, airspace separation, balance between demand and capacity, performance-based navigation, aeronautical and meteorological information management

## AFCAC PROPOSED TERMS OF REFERENCE

### Air Navigation Systems Architecture for a Single Sky in Africa

- ❑ **Technical aspects:** communications (Networks, AMHS, SWIM, AIDC, Air/Ground, Ground/Ground, CPDLC), Navigation (conventional method, or satellite navigation), surveillance (Radar, MLAT, ABS-B, ADS-C)
- ❑ **Structural and transcendent means:** cyber resilience, security supervision, cost-benefit analysis, human resources
- ❑ **Level of aircraft on-board equipment:** All COM, NAV and SUR capabilities - aircraft and crew navigation specifications

## SAATM Joint Prioritized Action Plan (JPAP)

- ❑ The Assembly/AU/Dec.665(XXX) of the 30th Ordinary Session of the Assembly, 28-29 January 2018 adopted the creation of the Single African Air Transport Market in line with the full implementation of the Yamoussoukro Decision on the Liberalization of Access to Air Transport Markets in Africa
- ❑ SAATM opened to African Airlines within the framework of Agenda 2063 on 29<sup>th</sup>, will bring enhanced connectivity across the continent leading to sustainable development of the aviation and tourism industry with immense contribution to economic growth, job creation, prosperity and integration of Africa
- ❑ Realization of SAATM is vital to the achievement of the long-term vision of an integrated, prosperous and peaceful Africa under the AU Agenda 2063. To this end, AUC, AFCAC and relevant Stakeholders including African ANSPs and financial Institutions have developed the SAATM JPAP whose 4<sup>th</sup> Pillar is the Air Navigation

## SAATM Joint Prioritized Action Plan (JPAP)

- ❑ 1st Pillar : Advocacy for enrolling more states to join SAATM
- ❑ 2nd Pillar : SAATM Regulatory Framework
- ❑ 3rd Pillar : Operationalization of the SAATM
- ❑ 4th Pillar : Aviation Infrastructure
- ❑ 5th Pillar : Enhancing Safety, Security and Environmental Protection
- ❑ 6th Pillar: Aviation Financing



## Recommendations and Way Forward

- ☐ Identification of priority areas for technical assistance, agree and harmonize necessary interventions
- ☐ Advocate best practice in efficient ANSP services delivery to minimise user's costs
- ☐ Discuss emerging issues that affect aviation safety & security and develop harmonized approach for Africa
- ☐ Advocacy for planning of regional human resources capacity building and training
- ☐ Collection and analysis of data aimed at assessing the needs of all airspace users and stakeholders



## Recommendations and Way forward

- ❑ African States and ANSP are encouraged to support AFCAC in the establishment of the Air Navigation Systems Architecture for a Single Sky in Africa
- ❑ African ANSPs are invited to nominate Experts for the African Cooperative ANSPs Platform towards its inaugural meeting scheduled to take place in second quarter 2022
- ❑ African States and ANSPs are encouraged to support the AFI ATM Master Plan Project Management Team (AAMP PMT) established by APIRG/23
- ❑ African States and ANSPs are encouraged to determine the funding required to bridge the long term infrastructure gaps and identify appropriate financing mechanisms to equip and modernize air navigation systems in Africa

## Recommendations and Way Forward

- ❑ **Important steps for the Development of a Single African Sky Architecture**
  - **Establishment of a cooperative platform for all RECs and African ANSPs**
  - **Consider ongoing initiatives in the development of a Seamless Airspace architecture**
  - **Elaboration of the TOR of the Continental Aviation Infrastructure Master Plan and its development (Gap analysis realized by ICAO)**
  - **ASECNA, Roberts FIR, COCESNA, EUROCONTROL**
  - **Alignment with the GANP which contains solutions that should be implemented as needed, in line with specific operational requirements and performance needs.**

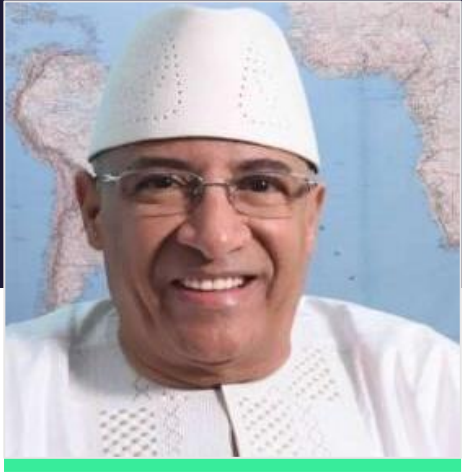


**AFCAC**  
African Civil Aviation  
Commission



**Thank you**

# PANELLISTS



**Mohamed  
Moussa**

Director General  
ASECNA



**Matthew Pwajok**

Acting Managing  
Director  
NAMA



**Nozipho Mdawe**

Chief Executive Officer  
ATNS



**Charity Muthoni**

Representative of Kenya  
to ICAO

# REGIONAL INITIATIVES ON SEAMLESS OPERATIONS – IS THIS A RECOVERY PATH FOR THE REGION AND WHAT ARE THE GLOBAL LESSONS?

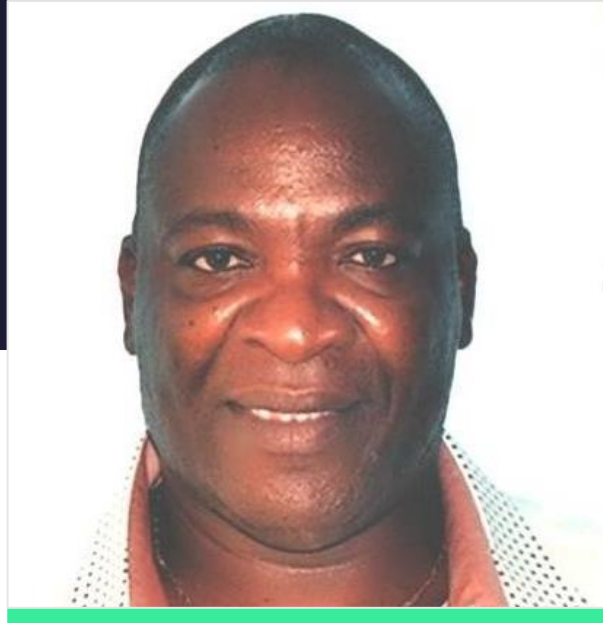




# THANK YOU

# RPAS – HARMONISING THE REGULATIONS AND FUELLING GROWTH FOR AFRICA

# FACILITATOR



**Kofi Kpodji**

ATM/Airspace Planning Manager  
Ghana Civil Aviation Authority

# GUEST SPEAKER



**Melissa Rusanganwa**

Regulatory Lead  
ZIPLINE

# Zipline Airspace Integration



**Zipline International Inc**

Delivered By Melissa Rusanganwa





# Transforming health access

Zipline believes that more efficient, effective and data-driven global health supply chains are a critical component on the path to universal health coverage.



# Patient's story

## Emergency order

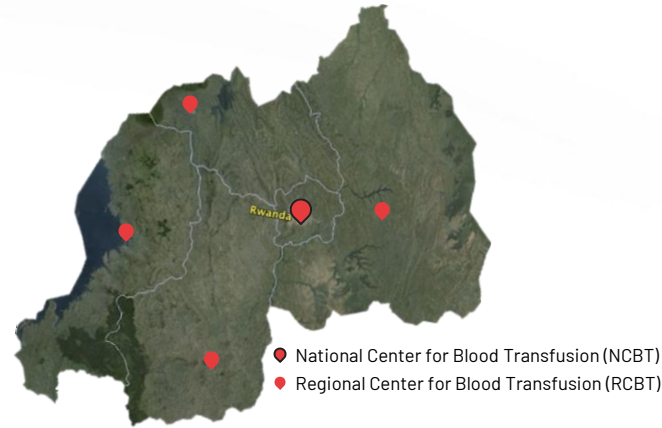
Saturday, around 7:52 AM, our team got an emergency order from a hospital requesting for 4 units of RBC 0 + adult. For a mother in maternity ward who was potentially likely to fall in hemorrhagic shock within 20 minutes if there was no blood to be transfused. Fortunately, all requested products were available at our distribution center and our team managed

# Transforming Rwanda's blood supply chain

**75%+ of blood distributed outside Kigali delivered on-demand through Zipline, decreasing expiries by 67% while increasing throughput**

## Before Zipline

Decentralized operations



Decentralized at regional hubs

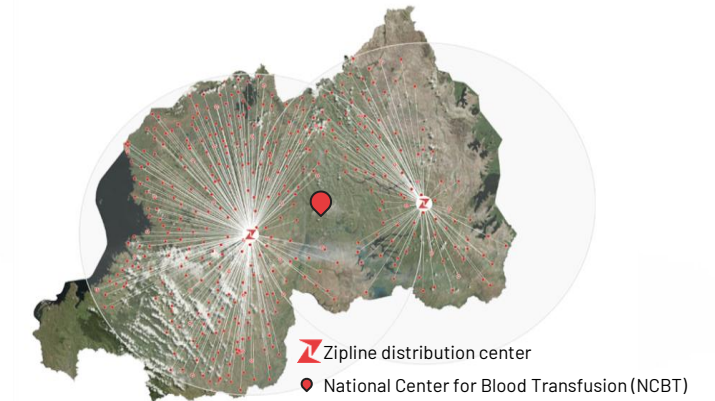
Hospitals sent personnel to retrieve blood from regional hubs

Rare blood products only transfused at teaching and referral hospitals

70% order fill rate

## With Zipline (2016–today)

Centralized processing and distribution



**Blood Processing**

Centralized at central hub in Kigali

**Distribution**

Blood stored at two Zipline hubs, delivered on-demand to hospitals

**Transfusion sites**

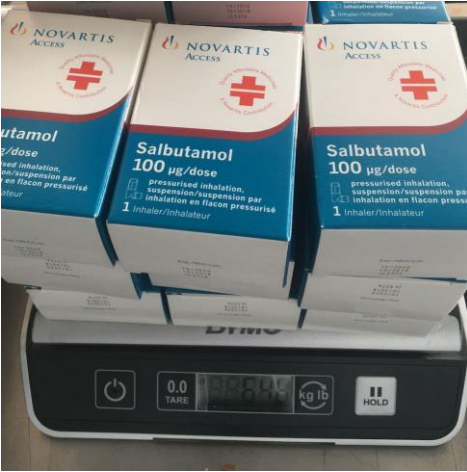
All blood products transfused at all hospitals

**Demand met**

95% order fill rate

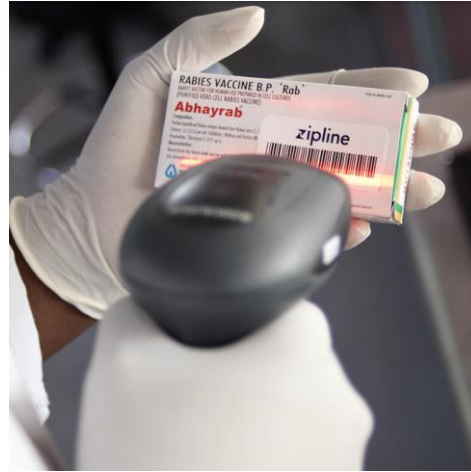


# Transforming Rwanda's blood supply Chain



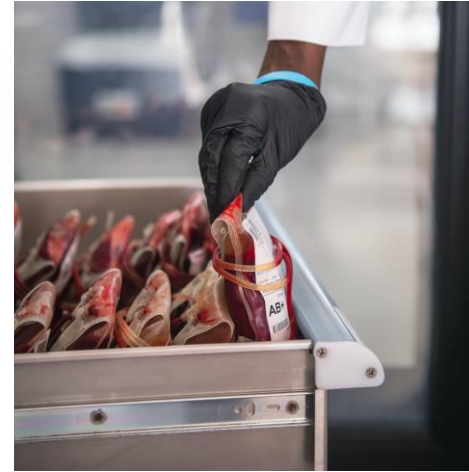
## Instant access to medical supplies

Deliveries precisely where and when they are needed irrespective of time and weather/road conditions: **unrivalled reliability and speed**



## Cost savings to the health system

Fast, autonomous, cold-chain enabled JIT logistics **eliminate overstocking, stockouts, unnecessary referrals and wastage**



## Stronger emergency and disaster response

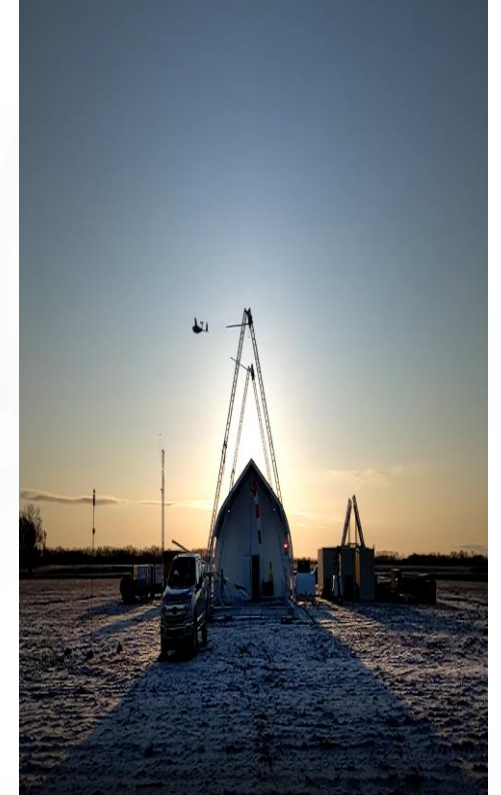
**Centralize, pre-position and rapidly deliver** crucial commodities, even in dangerous or challenging conditions such as the current pandemic



## Improved health outcomes

**Better medical product availability equals better health.** We help reduce avoidable deaths, increase vaccination rates and adherence to treatments

# How it Works: Delivery



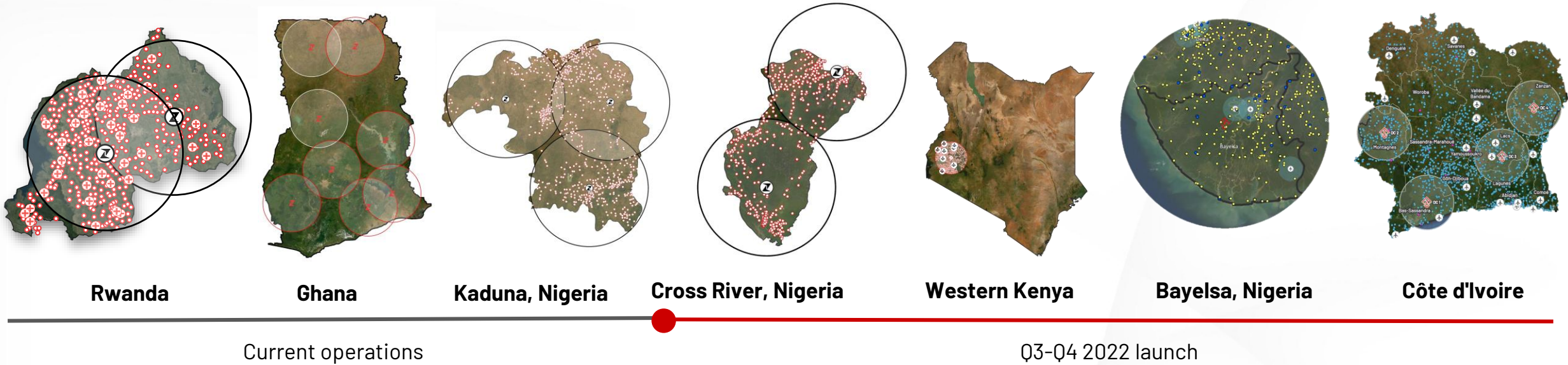


# COVID-19 Response: Responsive and agile supply chains can flex to support emergencies

## Efforts in Rwanda and Ghana

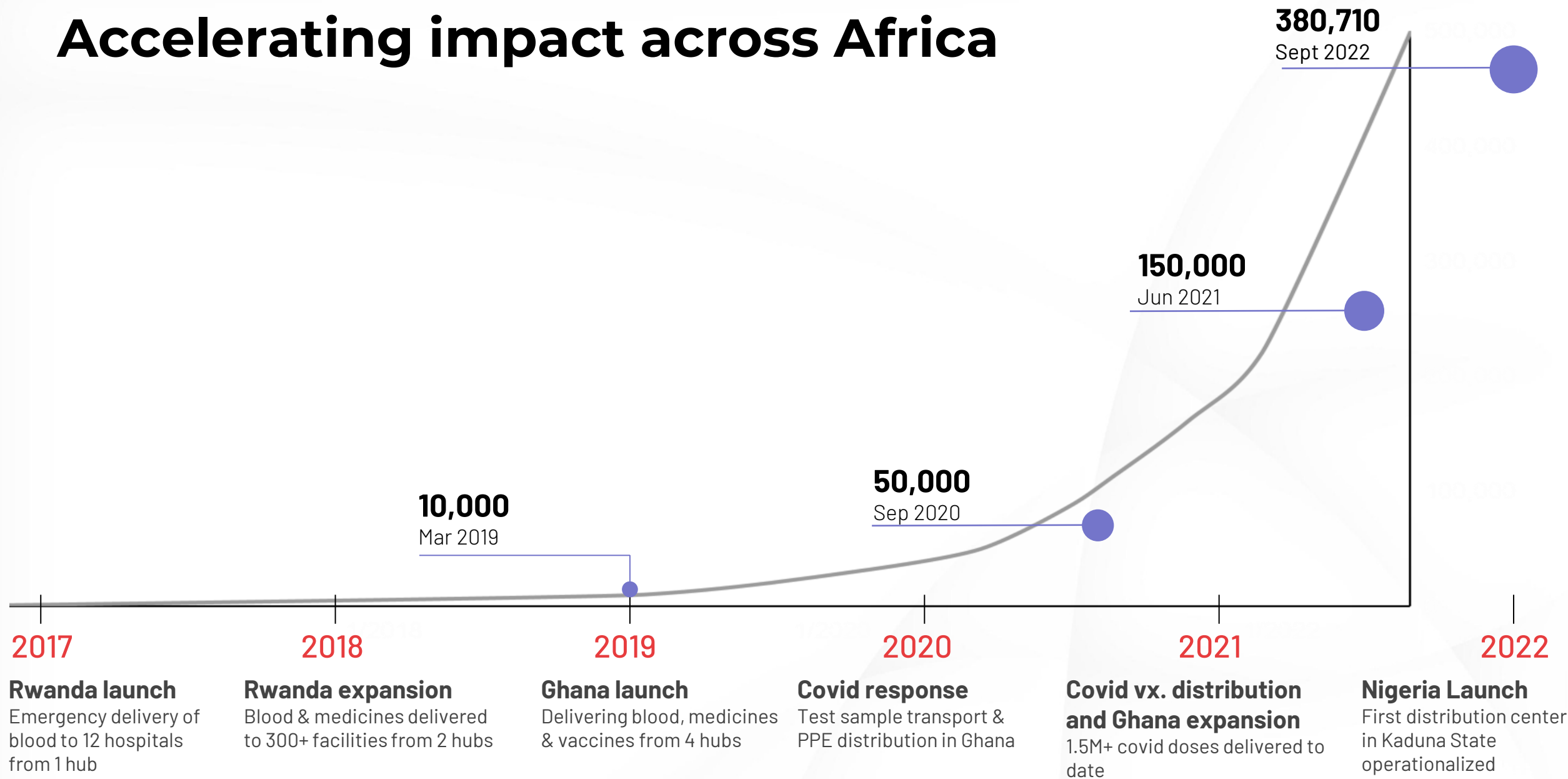
- **Delivery of COVID test samples in urban areas:** Zipline is flying COVID-19 test samples collected from more than 1,000 health facilities in rural areas to laboratories in Accra and Kumasi. This cuts the delivery time from days to minutes.
- **Serving patients close to home:** Zipline deliveries ensure continuity of the supply chain for routine treatments and reduces referrals to larger hospitals. As Ghana began its lockdown, Zipline delivered 4x the number of vaccines as in the previous week - ensuring routine immunizations continue.
- **Delivery of speciality pharmaceutical products with Partners in Health:** Zipline is excited to support Partners in Health in Rwanda by delivering cancer drugs to health facilities in close proximity to their patient population.
- **Centralized distribution of critical response supplies:** In Ghana, Zipline centrally holds each region's emergency stock of PPE, gloves, hand sanitizer, and other supplies at our distribution centers.
- **Delivery of COVID Vaccines in Africa:** *The new partnership with Zipline and UPS Foundation will see 2.5 million doses delivered in Ghana*

# Zipline will serve 45 million people across 5 countries by Q4 2022



- 9 operational GDP-compliant distribution centers, launching deliveries from 8 more hubs across Africa in next 3-6 months
- Direct partnership and contracts with state and national governments
- Locally registered and led operations in each country or state
- 100% local talent and operations

# Accelerating impact across Africa



# A busy day at Zipline ...



**855 deliveries**

**124 Max number of Zips flying simultaneously**

**125 km average flight distance**

**107,300 km total flight distance**



# Zipline's fixed-wing autonomous UA: the "Zip"



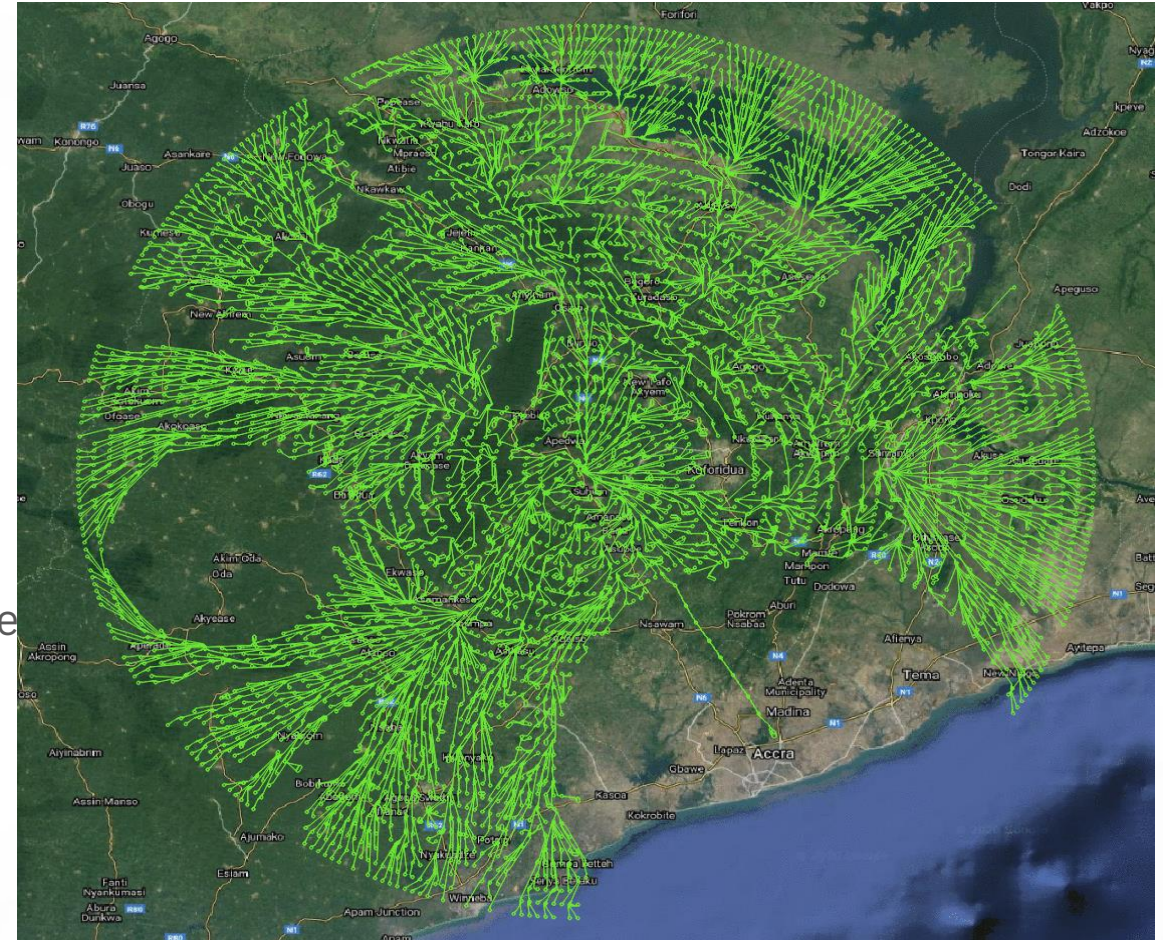
Deliveries with over 3,780,000 products

- **160 km service radius** (80 km one-way)
- **1.8 kg** max payload (**25 kg** MTOW)
- **Flies below 400 ft AGL** (by regulation) and away from restricted/densely populated areas
- **Hundreds of deliveries/day/hub** along **pre-programmed routes**
- Reliable in **hurricane force winds, heavy rain, and extreme temperatures**
- **Zero-emission transportation** powered by renewable energy
- **Equipped with ADS-B(In)** to detect and avoid cooperative aircraft
- **Best-in-class safety standard** rooted in design, protocols, and flight experience
- **Acoustic sensors** as part of our future DAA technology



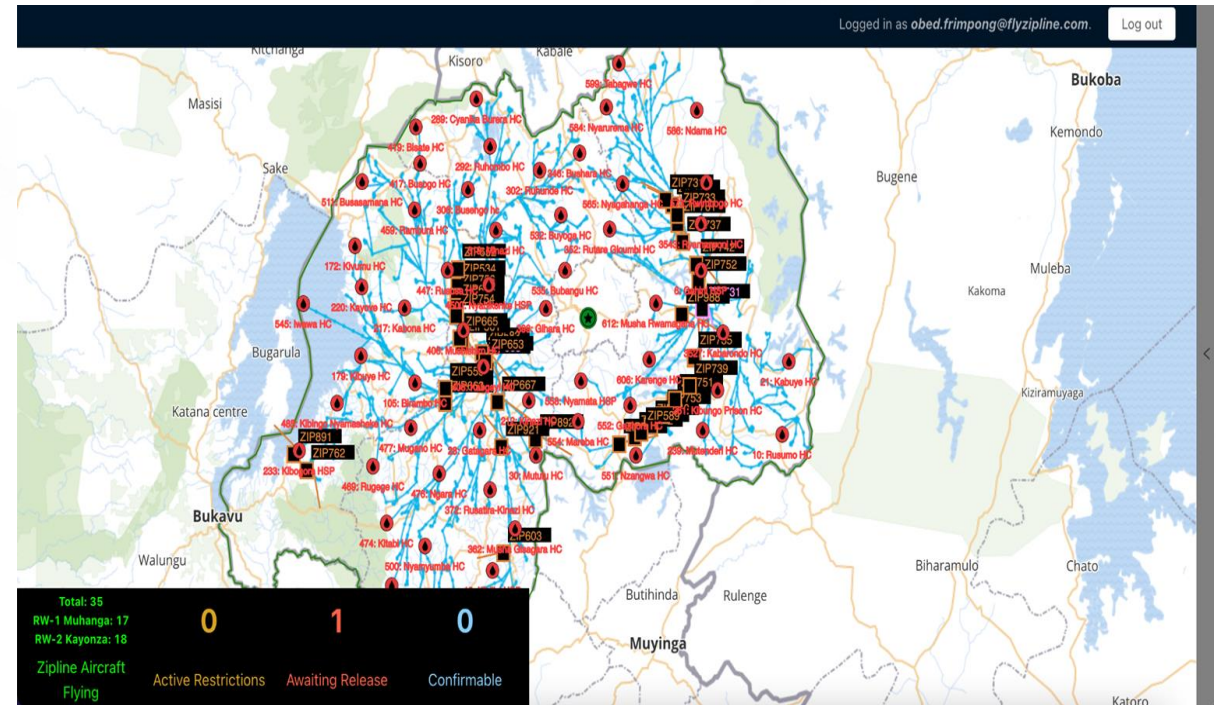
# Airspace Segregation

- Separation of all air traffic (manned or unmanned) is necessary for safe and efficient management of the airspace
- Zipline therefore takes a multi-layered approach to strategic airspace design that vertically segregates manned and unmanned air traffic
- This method is minimally disruptive to the airspace since it incorporates restrictions that our regulators have already defined



## Coordination with ATC

- Zipline provides ATC with access to the “Birdwatch” User Interface (“UI”) – Zipline’s unified traffic management system for real time flight monitoring, flight restriction issuing and auditing
- ATC can use this UI to check flight plans and status and monitor flight data in real-time
- ATC can communicate in real-time with the Zipline Controller over the telephone via pre-programmed switchboard call button that calls Zipline Control directly, toll-free
- A Zipline Controller can issue commands that override a Zip’s pre-programmed flight plan, as conditions require, and can command the Zip to RTH, Hold, or deploy its parachute and land.
- temporary flight restriction





# THANK YOU



# PANELLISTS



**Senam  
Atadja**

Senior Safety Inspector  
Ghana Civil Aviation  
Authority



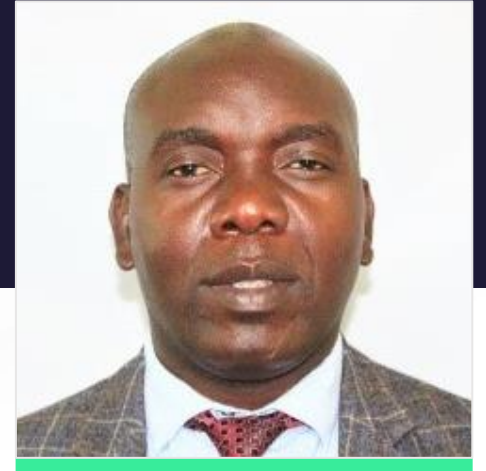
**Mamadou  
Mbodji**

ATS Senior Officer  
ASECNA



**Matthew  
Pwajok**

Acting Managing  
Director  
NAMA



**Zephania  
Sholobela**

Manager Air Traffic  
Services,  
Zambia Airports  
Corporation Ltd

# RPAS – HARMONISING THE REGULATIONS AND FUELLING GROWTH FOR AFRICA





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