



APIRG/27 and RASG-AFI/10, Joint Sessions

4 – 8 November 2024
Eastern Cape, South Africa

**AFRICAN AVIATION
TRANSFORMED**

2023 AVIATION INFRASTRUCTURE GAP ANALYSIS - UPDATES



Structure of the presentation

- Overview of Air Transport in Africa
- Forecasts
- 2023 Aviation Infrastructure Gap Analysis Project
- Gap Area 1: Aerodrome and Ground Aids
- Gap Area 2: ATM/SAR/AIS/PANSOPS
- Gap Area 3: CNS
- Gap Area 4: Meteorology (MET)
- Gap Area 5: Aircraft Fleet and Equipage Summary
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OVERVIEW OF AIR TRANSPORT IN AFRICA

**+357
Airlines**

Operating in the
continent

**7.7 million
jobs**

(pre-Covid)

**+160
Airports**

**221 million
PAX in 2023**

(scheduled + non-
scheduled)

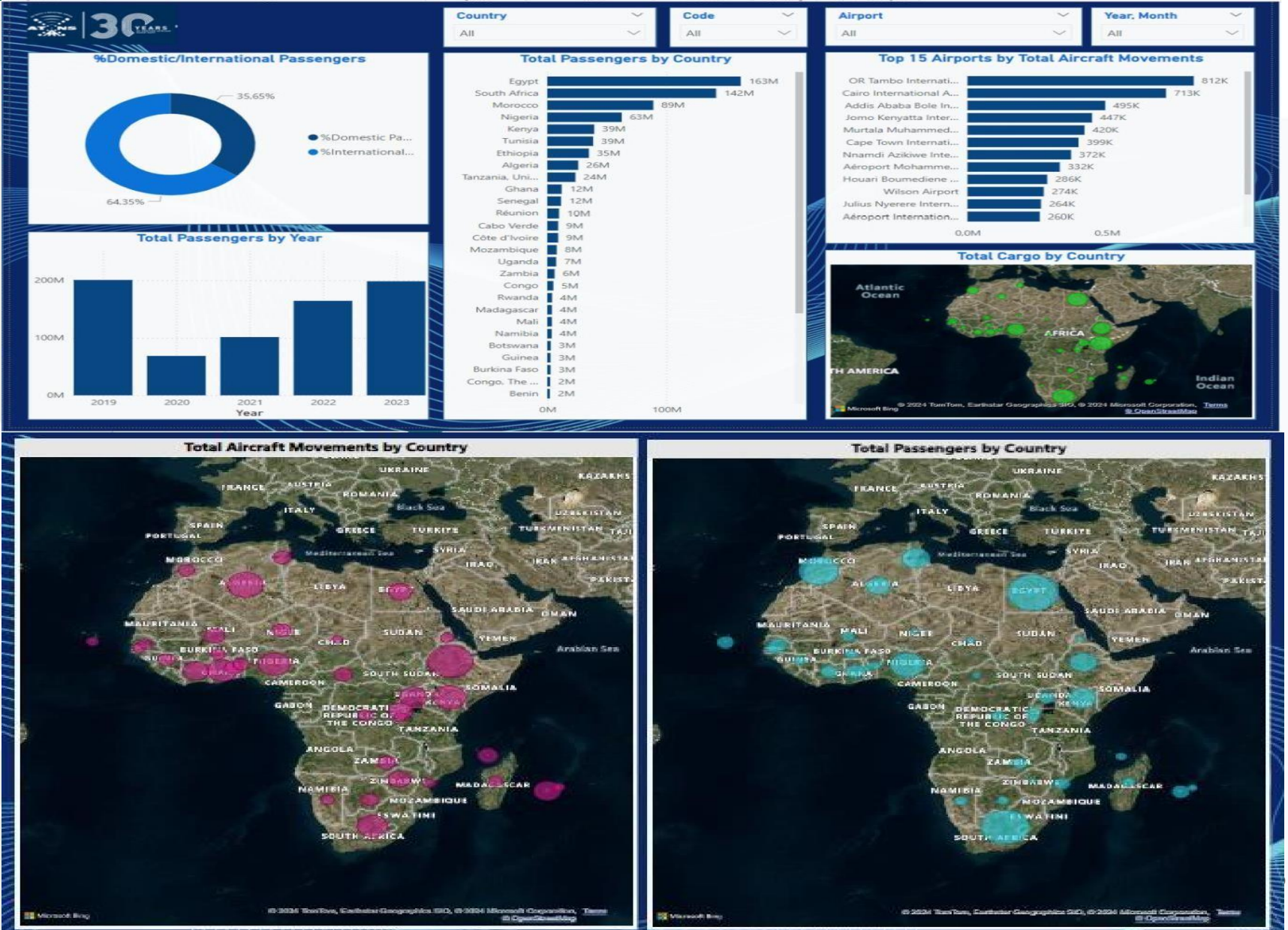
\$US 63 million

Contribution to
GDP pre-Covid

OVERVIEW OF AIR TRANSPORT IN AFRICA

Analysis of the region from 2019 before the pandemic to 2023.

- ❑ OR Tambo International airport leads with air traffic movements.
- ❑ Egypt leads with passenger traffic followed by South Africa.
- ❑ South Africa and Kenya are leading with cargo followed by Egypt and Ethiopia.
- ❑ Ethiopia leads with air traffic movements followed by Algeria.
- ❑ International passengers represents 64% of total passengers.





OVERVIEW OF AIR TRANSPORT IN AFRICA

5.7%

Annual growth in Africa
Forecasted in 2004 by
Boeing

COVID-19

The pandemic
hits global
aviation,
particularly
Africa

African airlines Traffic (Million PAX)



2006

2.3%

Contribution of
Africa in global
traffic

2020

2023

2.1%

Contribution of
Africa in global
traffic

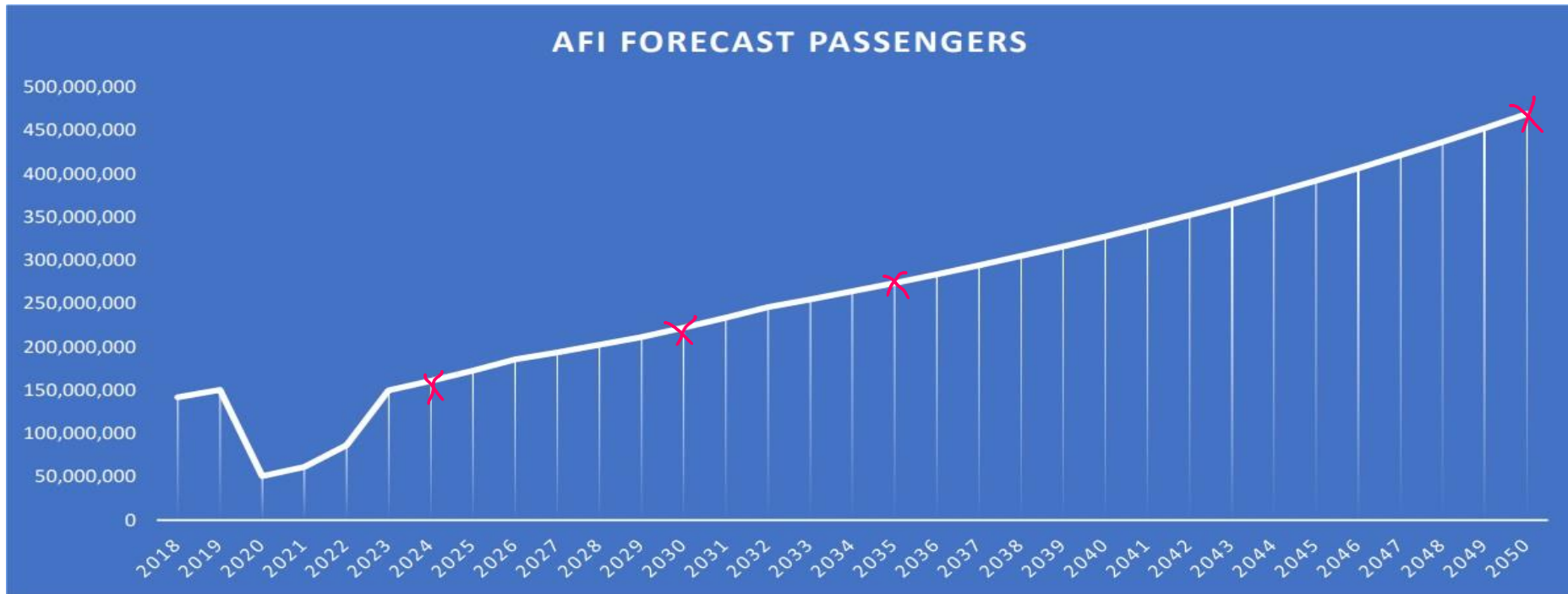


Forecasts

25-Year Traffic Projections

The passenger air traffic to, from and within the region for the period 2024-2050 is expected to increase at an average annual rate of 4.32%

Year	2024	2030	2035	2050
Passengers	160m	222m	273m	469m
Average annual growth rate %	-	5.56%	4.97%	4.21%



25 Year Traffic Projections

Air Traffic movements and average annual growth rate.

Year	2024	2030	2035	2050
Average annual GR % (Pax ATM)	-	3.68%	3.14%	2.50%
Average annual GR % (Cargo ATM)	-	5.34%	4.73%	3.93%
Average annual GR % (Total ATM)	-	3.89%	3.35%	2.71%

Air Traffic Movement Projections for Africa



2023 Aviation Infrastructure Gap Analysis Project



- ❑ **January 2018:**– successful launch of the Single African Air Transport Market (SAATM) initiative;
- ❑ **One of the key objectives of SAATM:**– Development of a seamless African Airspace Architecture;
- ❑ Each ANSP and RECs were expected to assess the infrastructure capacity and needs, a kind of snapshot of their context. The value of the assessment of the current situation was meant to allow each party to properly measure what was required, in terms of systems and infrastructure to achieve the seamless sky objective concerning the aviation system block upgrades (ASBU) of the Global Air Navigation Plan (GANP).

The Infrastructure Gap Analysis project was launched by AUC, AFCAC, ICAO, RECS, ASECNA, CANSO, AFRAA, IATA, ATNS and other key stakeholders in June 2023 in Casablanca, Morocco to establish infrastructure gaps for airlines, airports and Air Navigation Service Providers in Africa including the 25-year traffic projections.

Key Objectives:

- ❑ to develop bankable infrastructure projects based on identified gaps;
- ❑ to establish seamless airspace and Air Navigation Systems Architecture to cope with the expected increase in traffic once the SAATM is fully operationalized

The Infrastructure Gap Analysis covered the entire African continent of 54 African member States. The scope of work included gathering specific data from Member States through questionnaires.

Questionnaires	State Feedback
International aerodromes Air navigation services (ATM, CNS, Meteorology, Search & Rescue, AIM) Airlines (aircraft fleet and equipage) Traffic forecasts up to 25 years	41 States responded 40 States responded 70 airlines responded Available information augmented by data from ATNS, IATA, ACI and ICAO

Key Outcomes

❑ Aerodromes – 11 Types of Infrastructures Gaps

❑ Airlines – 9 Types of Infrastructure Gaps

❑ ATM– 12 Types of Infrastructure Gaps

❑ CNS – 25 Types of Infrastructure Gaps

❑ MET – 3 Types of Infrastructure Gaps

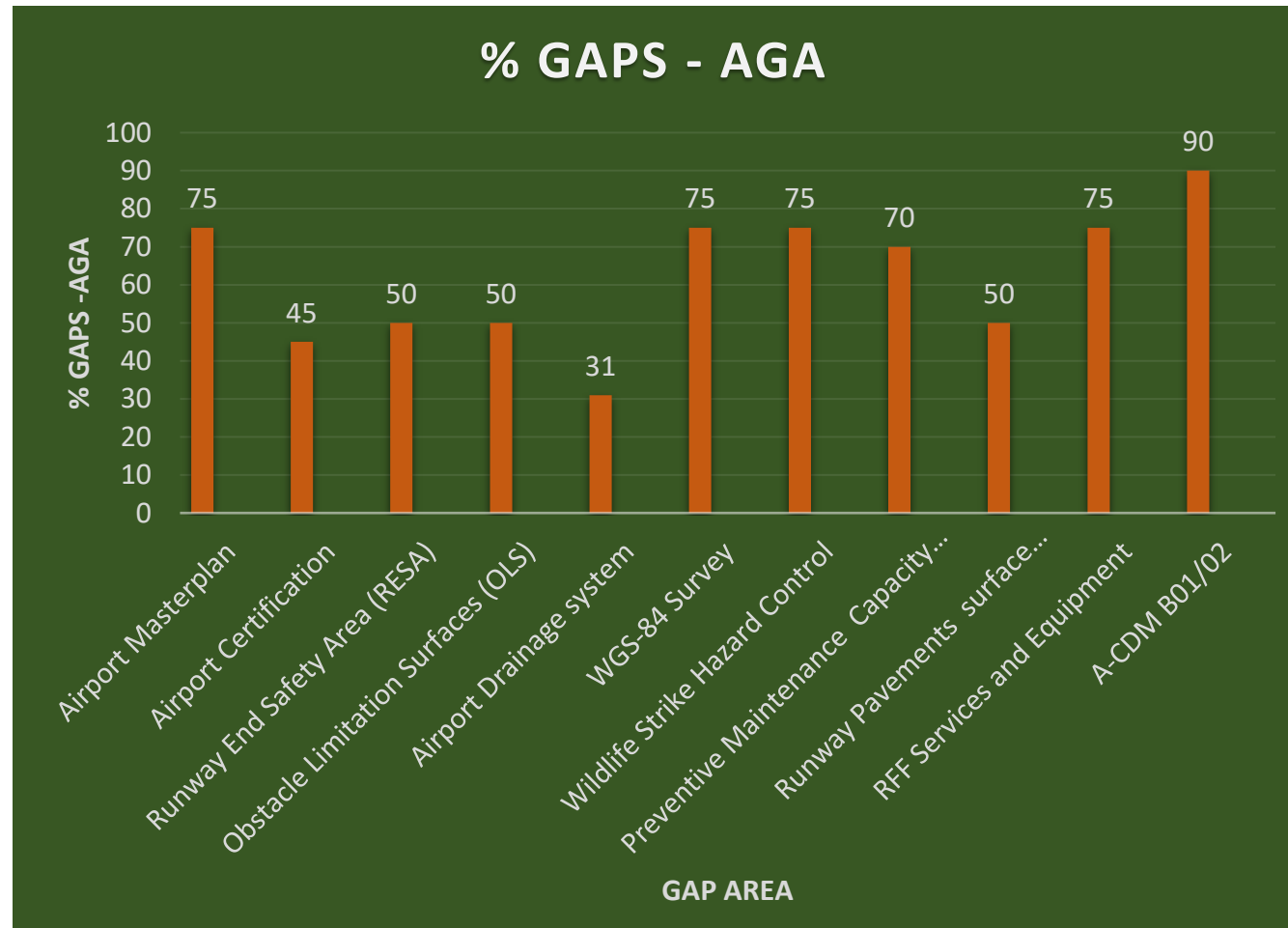
* Forecasts revealed that passengers are expected to **triple by 2050** and Air traffic numbers are also expected to double by 2050.



Infrastructure Gaps

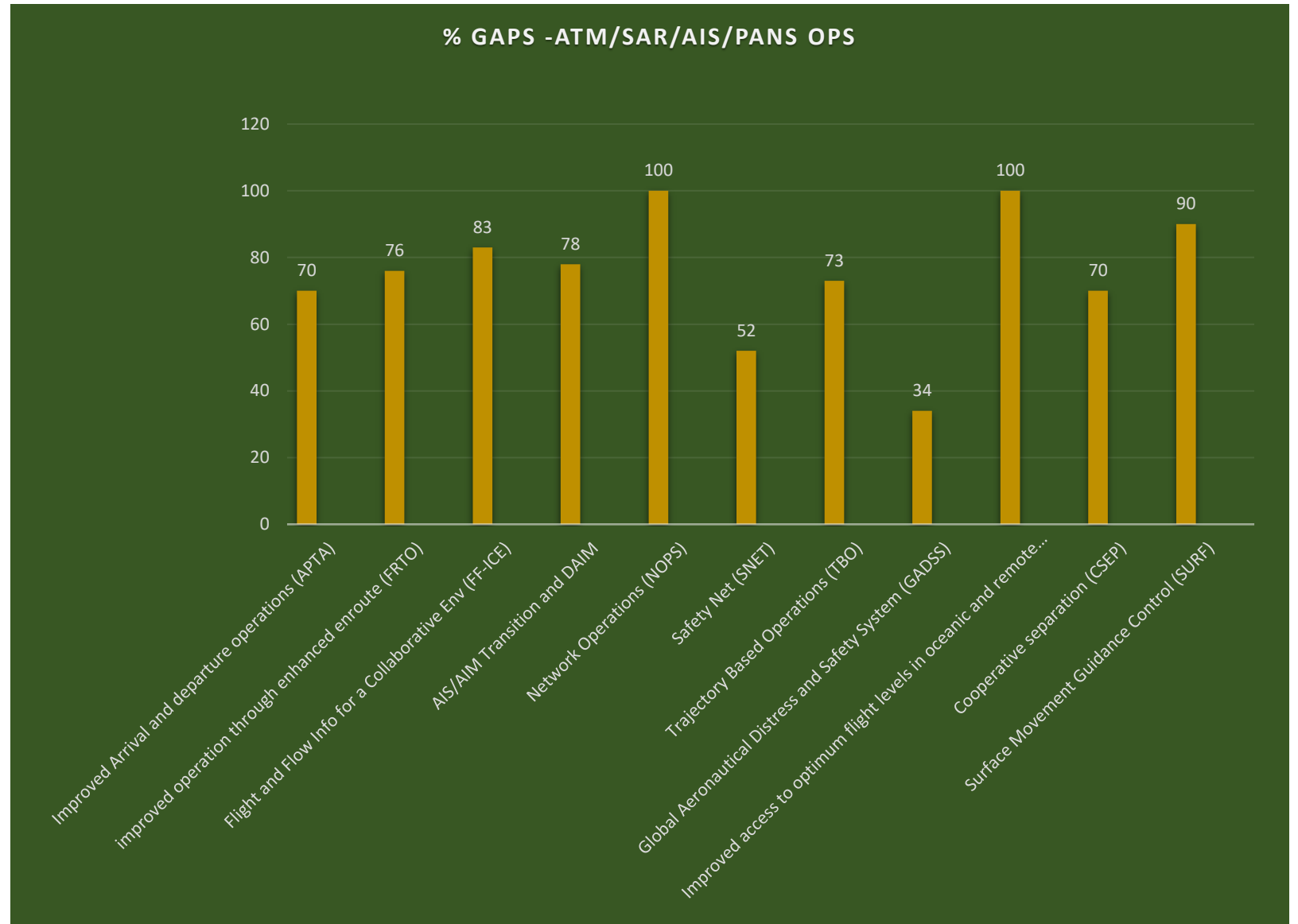
Gap Area 1: Aerodrome and Ground Aids

There is need to close the 11 Gaps to improve on the Airports Infrastructure to further accommodate future airport capacity development and expansion.



Gap Area 2: ATM/SAR/AIS/PANSOPS

12 Gaps were identified gaps in ATM/SAR/AIS/PANSOPS based on the Aviation System Block Upgrade (ASBU).



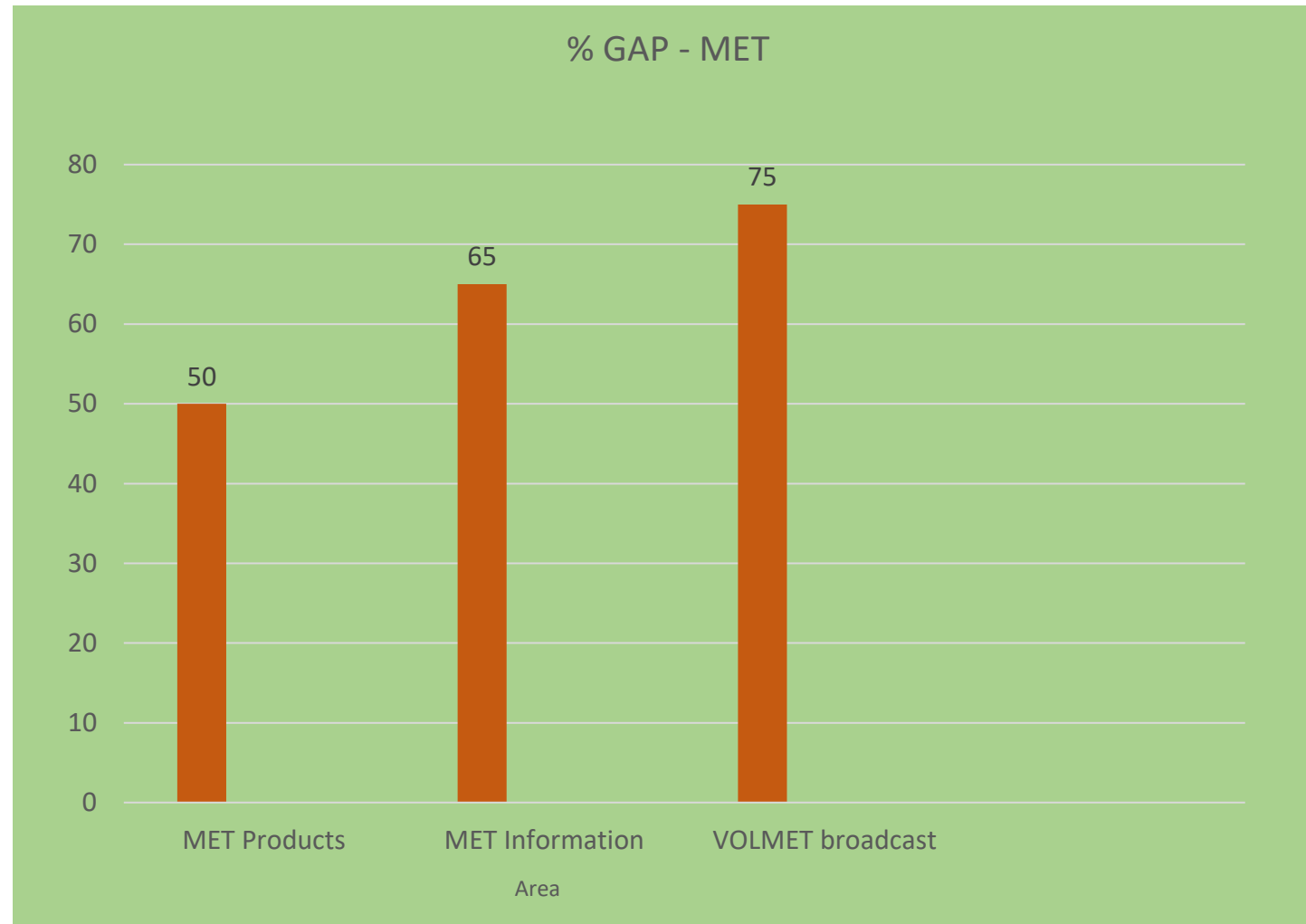
Gap Area 3: CNS

25 Gaps were identified gaps in CNS based on the Aviation System Block Upgrade (ASBU).

CNS Gaps – (ASBU Elements)		
Description	Area	% Gap
ADS-B	Surveillance	77%
MLAT	Surveillance	94%
ASUR-B0/3 -Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	Surveillance	74%
COMI-B0/1-Aircraft Communication Addressing and Reporting System(ACARS)	Communications	87%
COMI-B0/2 -Aeronautical Telecommunication Network/ Open System Interconnection on (ATN/OSI)	Communications	83%
COMI-B0/3 -VHF Data Link (VDL) Mode 0/A	Communications	94%
COMI-B0/4 - VHF Data Link (VDL) Mode 2 Basic	Communications	94%
COMI-B0/5 - Satellite communications (SATCOM) Class C Data	Communications	90%
COMI-B0/6 - High FrequencyData Link (HFDL)	Communications	90%
COMI-B0/7 - ATS Message Handling System (AMHS)	Communications	64%
COMI-B1/2 - VHF Data Link (VDL) Mode 2 Multi- Frequency	Communications	97%
COMI-B1/3 -SATCOM Class B Voice and Data	Communications	98%
COMI-B1/4 - Aeronautical Mobile Airport Communication System (AeroMACS) Ground- Ground	Communications	95%

Gap Area 4: Meteorology (MET)

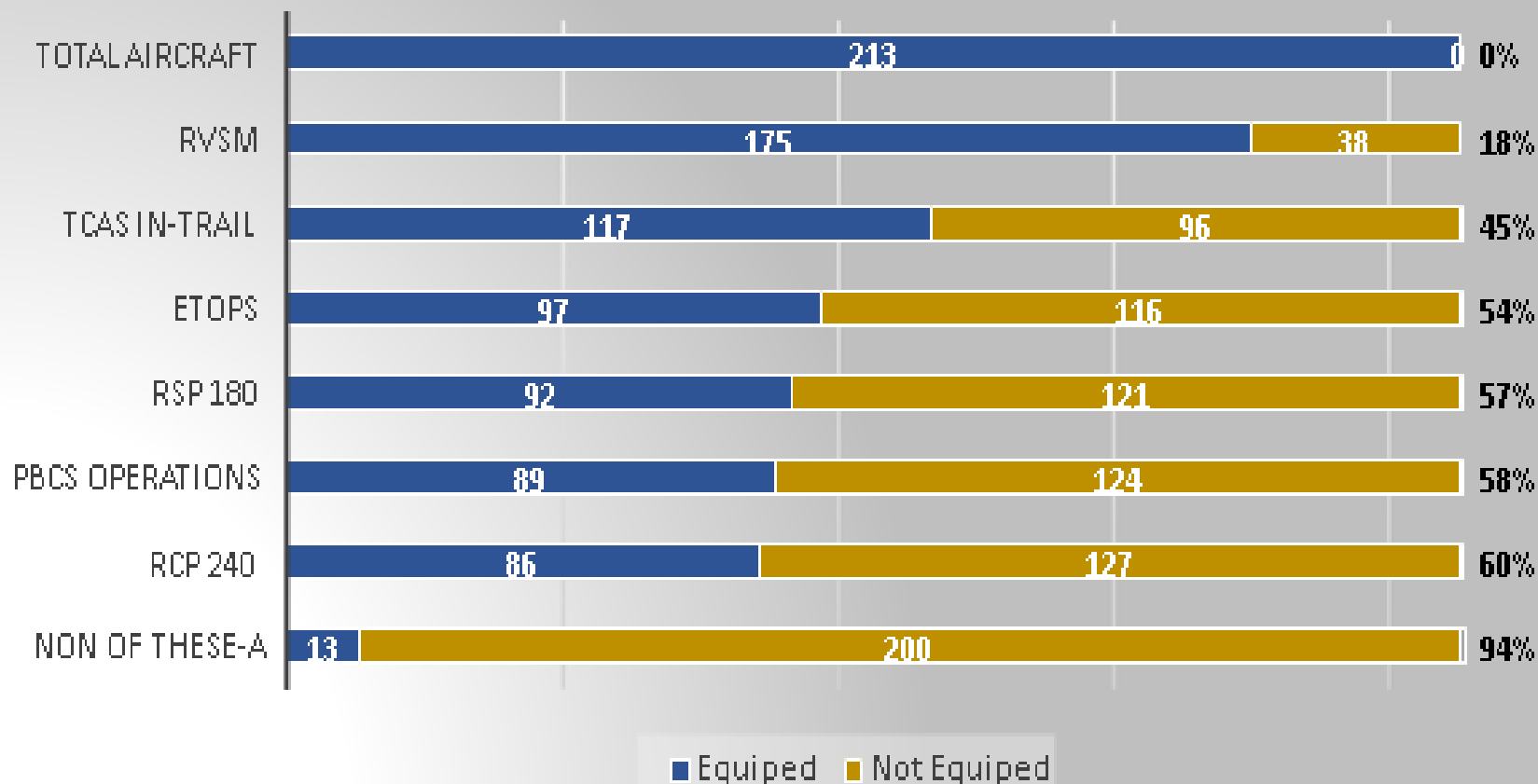
3 Gaps were identified after assessing current state of weather services and equipment used in aviation covering MET Products MET Information and VOLMET broadcast.



Gap Area 5: Aircraft Fleet and Equipage Summary

Aircraft Fleet
and Equipage
Main Gaps

Prioritized Project Areas





NEXT STEPS

The final report of the Aviation Infrastructure Gap Analysis to be shared with States to prepare for the Stakeholder Validation Workshop.

2nd Week of
October 2024

Finalise procurement of a consultant to facilitate the elaboration of bankable projects

4th Quarter 2024

Convene 3rd TWG Physical meeting to discuss the bankable projects, including capacity building on elaboration of bankable projects

1st Quarter 2025
(March)

Convene the Stakeholder Validation workshop regarding the Aviation Infrastructure Gap Analysis.

1st Quarter of 2025

ICAO to consider and develop an interactive dashboard on the gap analysis profile for each State.

Continuous

CONCLUSION

Key outcomes of the Aviation Infrastructure Gap analysis and the identified gaps will be used to develop bankable projects to close the gaps in support of the seamless airspace and ANS architecture for Africa and SAATM.

Following the outcome of the development of bankable projects, AFCAC will engage the OEM and ANSPs to consider and develop national and regional plans for implementation of the ANS Master Strategy in the short term, medium term, and long term.

There is need to align and integrate national and/or regional aviation infrastructure programs and plans with an appropriately balanced development of transport modes, including multi-modal and urban planning initiatives, and also link them with national and/or regional development plans and budgets.



African Aviation Transformed

Thank You

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 Dakar, Senegal

