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Meeting for the Establishment of the AFI Information & Infrastructure management (AFI IIM/SG)

Dakar, Senegal, 28-30 November 2016

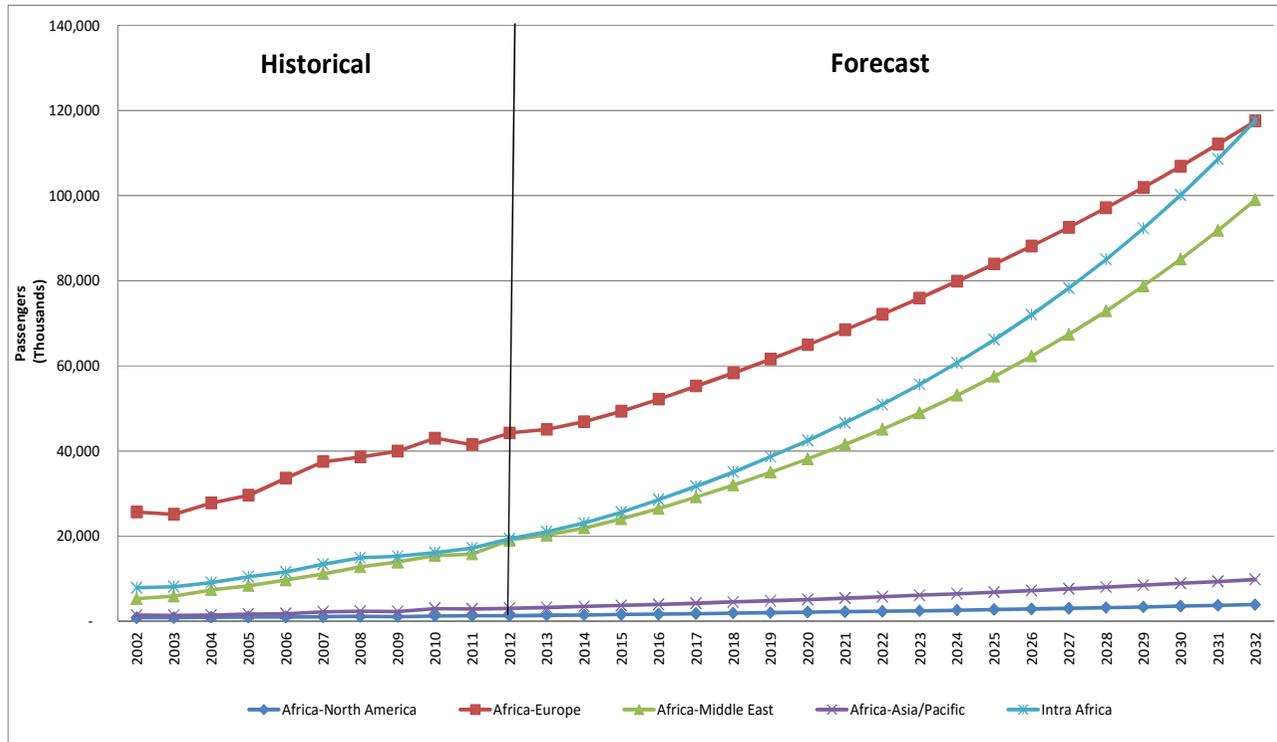
AFI REGIONAL PERFORMANCE OBJECTIVES

Alignment with ASBU

François-Xavier SALAMBANGA

Regional Officer Communication Navigation & Surveillance, ICAO WACAF





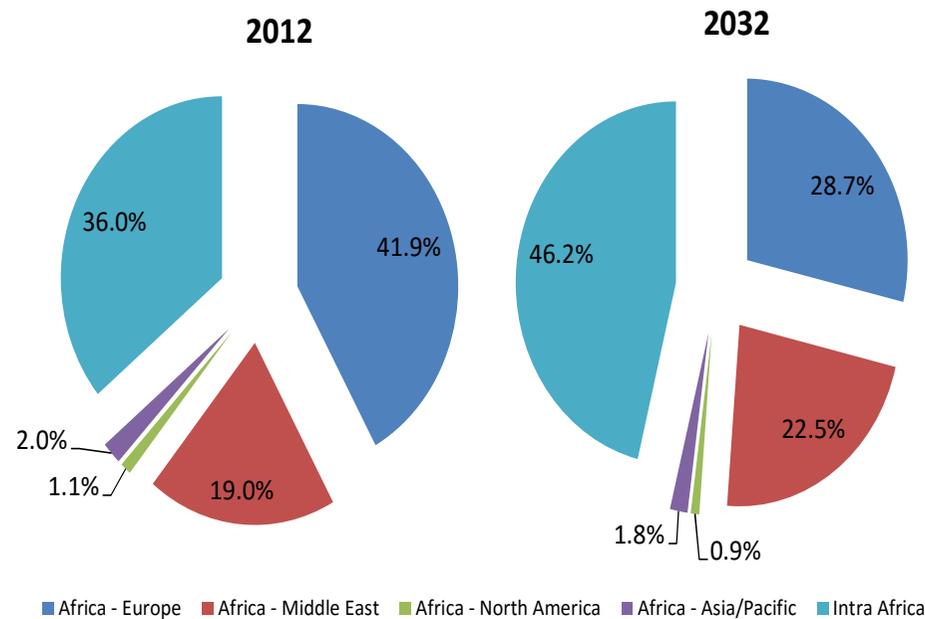


AFI Traffic Forecasts 2012-2032 (2/23)

| Route group | 2012 (1) | Forecast | | Average Annual Growth (%) | | |
|------------------------|----------------|----------------|------------------|---------------------------|------------|------------|
| | | 2017 | 2032 | 2012-2017 | 2017-2032 | 2012-2032 |
| Africa - Europe | 304 458 | 385 796 | 742 779 | 4.8 | 4.5 | 4.6 |
| Africa - Middle East | 137 921 | 203 072 | 582 358 | 8.0 | 7.3 | 7.5 |
| Africa - North America | 7 924 | 10 434 | 22 123 | 5.7 | 5.1 | 5.3 |
| Africa - Asia/Pacific | 14 711 | 20 277 | 45 643 | 6.6 | 5.6 | 5.8 |
| Intra Africa | 261 224 | 371 063 | 1 194 087 | 7.3 | 8.1 | 7.9 |
| Total | 726 238 | 990 642 | 2 586 990 | 6.4 | 6.6 | 6.6 |
| (1) OAG data | | | | | | |



AIRCRAFT MOVEMENT SHARES BY ROUTE GROUP 2012 AND 2032







Performance Based Planning Framework

- **ICAO Special Regional Air Navigation Meeting (November 2008) supported the need to adopt a performance-based approach to regional and national air navigation planning in the AFI Region, aligned with the Global Air Navigation Plan (Doc 9750, GANP)**
 - ✓ **GANP developed to assist States and regional planning groups in identifying the most appropriate operational improvements to achieve near- and medium-term benefits on the basis of current and foreseen aircraft capabilities and ATM infrastructure while the**
 - ✓ **Global Air Traffic Management Operational Concept (Doc 9854) provides the overall vision of a performance based ATM system.**



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AFI Regional Performance Objectives

- **APIRG uses the Performance Framework Forms (PFFs)**
 - developed by the ICAO Special AFI RAN of 2008 as
 - amended from time to time through the regional planning process,
 - to identify individual parties responsible for achieving the performance objectives as well as to establish timeframes for implementation.
- **AFI States**
 - to develop national plans,
 - using the PFFs, harmonized and aligned with the regional PFFs, and
 - associated tasks to include the necessary detailed actions to successfully achieve national performance objectives.



AFI Regional Performance Objectives

- **RVSM Implementation (PFF ATM/01)**
- **PBN Implementation (en-route, terminal and approach) (PFFs ATM/02, ATM/03 and ATM/04)**
- **Enhancement of CNS Infrastructure (PFF CNS/01)**
- **Search and Rescue (PFF SAR/01)**
- **Transition from AIS to AIM (PFFs AIM/01 and AIM/02)**
- **Improvement of the provision of Meteorological Services (PFFs MET/01, MET/02)**
- **Improvement of Aerodrome Operations (PFF AGA/01)**



CNS PERFORMANCE OBJECTIVES (PFF)

CORRECTION OF DEFICIENCIES AND ENHANCEMENT OF AERONAUTICAL TELECOMMUNICATIONS

Benefits

| | |
|--------------------|--|
| Safety | • Implementation of AFI ANP |
| | • Enhanced safety in flight operations |
| | • Uniform implementation of CNS/ATM systems (AFI ANP, Doc 003) and relevant ICAO SARPs |
| Efficiency | • Improved flight planning and coordination |
| Environment | • Reduction in fuel consumption |



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AFI Regional Performance Objectives

CNS PERFORMANCE OBJECTIVES (PFF)

| Strategy: <i>Short term (2010); Medium term (2011 - 2015)</i> | | | | |
|---|--|--------------------|----------------|----------------------------|
| ATM Operational Concepts Components | Tasks | Timeframe Tart-End | Responsibility | Status |
| | Communications | | | |
| | Aeronautical mobile service (AMS) | | | |
| | <ul style="list-style-type: none"> ▪ provision of VHF in FIRs (Angola, Chad, Congo, DR Congo, Sudan, Somalia) | 2008–2012 | States | Ongoing Implemented in DRC |
| | <ul style="list-style-type: none"> ▪ provision of controller-pilot data link communications (CPDLC) | 2010-2015 | States | On-going |
| | Aeronautical fixed service (AFS) | | | |
| | <ul style="list-style-type: none"> ▪ implementation of Aeronautical Message Handling System (AMHS) | 2010-2012 | States | In progress |
| | <ul style="list-style-type: none"> ▪ implementation of ATS Inter-facility Data Communications (AIDC) | 2010-2012 | States | In progress |



AFI Regional Performance Objectives

CNS PERFORMANCE OBJECTIVES (PFF)

| | | | | |
|--|--|-----------|--------|-------------|
| | Navigation | | | |
| | <ul style="list-style-type: none"> implementation of GNSS – carry out survey to determine the implementation status and identify the specific assistance needed if any | 2009-2015 | States | Ongoing |
| | Surveillance | | | |
| | <ul style="list-style-type: none"> implementation of AFI surveillance plan for en-route operations, including provision of automatic dependent surveillance (ADS-C) | 2008-2015 | States | In progress |
| | Aeronautical spectrum | | | |
| | <ul style="list-style-type: none"> implementation of automation support tools to enhance frequency management | 2008–2009 | | Ongoing |
| | Performance measurement | | | |
| | <ul style="list-style-type: none"> Development of performance measurement plan for CNS services | 2010-2012 | APIRG | Not started |
| Linkage to Global Plan Initiatives (GPIs) | <i>GPI/9: Situational awareness; GPI/10: Terminal area design and management; GPI/17: Implementation of data link applications; - GPI/21: Navigation systems; GPI/22: Communication network infrastructure; GPI/23 – Aeronautical spectrum</i> | | | |



Regional Performance Objectives Implementation Strategy

Capacity and Efficiency Improvements while maintaining operational safety

GANP requirements



Services, Facilities and Human Resources

Assessment of current situation



Forms (PFFs)
ASBU Air Navigation Report Forms

Implementation Strategy

| Performance Requirement Area | Block 0 (2013) | Block 1 (2014) | Block 2 (2015) | Block 3 (2016 onwards) |
|---|----------------|----------------|----------------|------------------------|
| Airport Operations | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ |
| Global Interoperability, Systems and Data | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ |
| Optimum Capacity and Efficient Flight | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ |
| Efficient Flight Path | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ |

Monitoring and Reporting



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ASBU Block 0 Modules

| Performance Improvement Areas (PIA) | Module | Module Name |
|-------------------------------------|---------|--|
| PIA 1 Airport Operations | B0-RSEQ | Improve Traffic flow through Runway Sequencing (AMAN/DMAN) |
| | B0-APTA | Optimization of Approach Procedures including vertical guidance |
| | B0-WAKE | Increased Runway Throughput through optimized Wake Turbulence Separation |
| | B0-SURF | Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2) |
| | B0-ACDM | Improved Airport Operations through Airport-CDM |



ASBU Block 0 Modules

| | | |
|---|----------------|--|
| PIA 2 Globally Interoperable Systems and Data - Through Globally Interoperable System Wide Information Management | B0-FICE | Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration |
| | B0-DATM | Service Improvement through Digital Aeronautical Information Management |
| | B0-AMET | Meteorological information supporting enhanced operational efficiency and safety |



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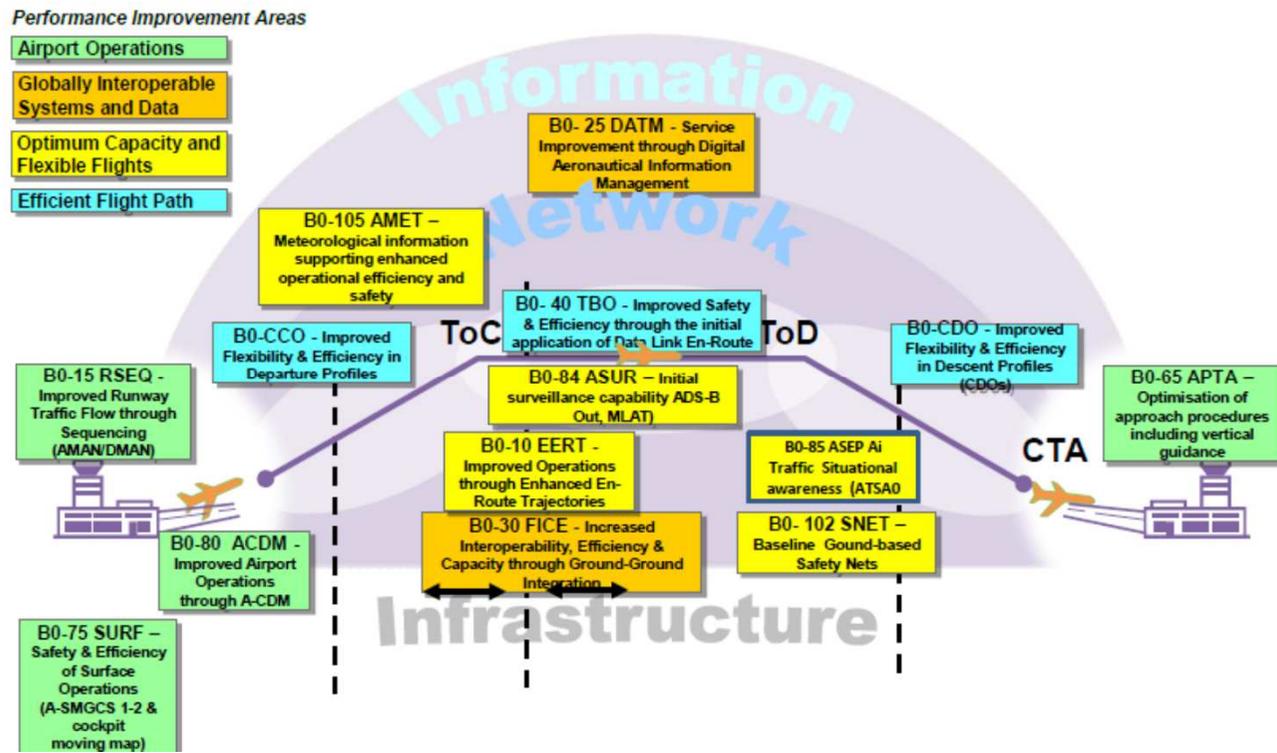
ASBU Block 0 Modules

| | | |
|---|----------------|---|
| PIA 3 Optimum Capacity and Flexible Flights – Through Global Collaborative ATM | B0-FRTO | Improved Operations through Enhanced En-Route Trajectories |
| | B0-NOPS | Improved Flow Performance through Planning based on a Network-Wide view |
| | B0-ASUR | Initial capability for ground surveillance |
| | B0-ASEP | Air Traffic Situational Awareness(ATSA) |
| | B0-OPFL | Improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B |
| | B0-ACAS | ACAS Improvements |
| | B0-SNET | Increased Effectiveness of Ground-Based Safety Nets |



ASBU Block 0 Modules

| | | |
|--|---------------|---|
| PIA 4 Efficient Flight Path – Through Trajectory-based Operations | B0-CDO | Improved Flexibility and Efficiency in Descent Profiles (CDO) |
| | B0-TBO | Improved Safety and Efficiency through the initial application of Data Link En-Route |
| | B0-CCO | Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO) |





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Relationship between Regional Performance Objectives and ASBU Block 0 Modules

| | PIA1 | | | | | PIA2 | | | PIA3 | | | | | | PIA4 | | |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|----------------|--------------|--------------|--------------|
| | B0-15 RSEQ | B0-65 APTA | B0-70 WAKE | B0-75 SURF | B0-80 ACDM | B0-25 FICE | B0-30 DATM | B0-105 AMET | B0-10 FRTO | B0-35 NOPS | B0-84 ASUR | B0-86 OPFL | B0-101 ACAS | B0-102 SNET | B0-05 CDO | B0-20 CCO | B0-40 TBO |
| PFF AFI ATM/01 | | | | | | | | | X | | | X | | | | | |
| PFFAFI ATM/02 | | | | | | | | | X | | | | | | | | X |
| PFFAFI ATM/03 | | X | | | | | | | X | | | | | | X | X | X |
| PFF AFI ATM/04 | | | | | | | | | X | | | | | | X | X | X |
| PFF AFI CNS/01 | | | | | | X | | X | | X | | | | | | | X |
| PFFAFI MET/01 | | | | | | | | X | | | | | | | | | |
| PFF AFI MET/02 | | | | X | | | | X | | | | | | | | | |
| PFFAFI SAR/01 | | | | | | | | | | | | | | | | | |
| PFF AFI AIM/01 | | | | | | | | X | | | | | | | | | |
| PFF AFI AIM/02 | | | | | | | | X | X | | | | | | | | |
| PFF AFI AGA/01 | | | | X | X | | | | | | | | | | | | |





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THANK YOU