ICAO Aviation System Block Upgrade (ASBU) and the implementation of the AMHS Systems

Julio C. Siu
Regional Officer/ Communication, Navigation and Surveillance

III Workshop/Meeting on the Follow-up to the Implementation of the ATS Message Handling System (AMHS) in the NAM/CAR Regions
Santo Domingo, Dominican Republic, 24 to 27 September 2013
Common understanding for future air navigation system
Harmonization of ATM modernization
Formalize future of infrastructure & equipage
Endorsement of revised ICAO Global Air Navigation Plan (GANP)
Agreement of Aviation System Block Upgrades (ASBU)

Item 1 Strategic Issues in Support of One Sky
Item 2: Improving Airport Performance
Item 3: Interoperability & Data – SWIM
Item 4: Optimum Capacity & Efficiency
Item 5: Efficient Flight Paths – through TBO
Item 6: Future Direction
Next Steps coming from AN-Conf/12

Environmental & Operational Assessments

- Committee on Aviation Environmental Protection (CAEP) modeling environmental benefits of ASBU Block 0 modules.
- IATA assessing the operational benefits

Technical Work

- Air Navigation Information Management (IM) Divisional Meeting
- Aviation Data Link Symposium: Now and Tomorrow
- Four priority areas (CDM/ATFM/Continuous Operations (CCO)/ Continuous Descent Operations (CDO))
- Use of the ICAO Fuel Savings Estimation Tool (IFSET)
- An end-to-end system demonstration of new air traffic management concepts
Recommendation 6/1 – Regional performance framework – planning methodologies and tools

That States and PIRGs:

a) finalize the alignment of regional air navigation plans with the Fourth Edition of the *Global Air Navigation Plan* (Doc 9750, GANP) by May 2014;
b) focus on implementing aviation system block upgrade Block 0 Modules according to their operational needs, recognizing that these modules are ready for deployment;
c) use the eANPs as the primary tool to assist in the implementation of the agreed regional planning framework for air navigation services and facilities;
d) involve *regulatory and industry personnel* during all stages of planning and implementation of aviation system block upgrade modules;
e) develop action plans to address the identified impediments to air traffic management modernization as part of aviation system block upgrade planning and implementation activities;

Recommendations in support of the Global System-wide Information management (SWIM):

- REC 3/1 ICAO ASBU relating to performance improvement through the application of SWIM
- REC 3/2 Development of SWIM Concept
- REC 3/4 States and Industry to support SWIM
- REC 3/8 States actions relating to service improvement through AIM as well as digital ATM information

GANP History

Appendix to FANS Report, 1992

Doc 9854, 2005
Global ATM Operational Concept

Doc 9882, 2008
ATM System Requirements

Doc 9883, 2008
Global Performance Manual

Related documents


Encompasses Performance Framework
Addresses ANSP, Regulatory and User requirements
Includes ASBU Methodology

September 2013 Page 5
GANP- Contents (DOC 9750)

Strategic Objective: Capacity and Efficiency

Executive summary
Introduction: Presentation of GANP
Chapter 1: ICAO’s Ten Key Air Navigation Policy Principles
Chapter 2: Implementation
Chapter 3: Aviation System Performance

Appendices:
Appendix 1 Global Air Navigation Plan Evolution and Governance
Appendix 2 Aviation System Block Upgrades
Appendix 3 Hyperlinked Online Support Documentation
Appendix 4 Frequency Spectrum Considerations
Appendix 5 Technology Roadmaps
Appendix 6 Module Dependencies
Appendix 7 Acronym Glossary
GANP Policy Principles

1. Commitment to the Implementation of ICAO’s Strategic Objectives and KPAs
2. Aviation Safety is the highest priority
3. Tiered Approach to Air Navigation Planning
4. Global Air Traffic Management Operational Concept (GATMOC)
5. Global Air Navigation Priorities
6. Regional and State Air Navigation Priorities
7. Aviation System Block Upgrades (ASBUs), Modules and Roadmaps
8. Use of ASBU Blocks and Modules
9. Cost Benefit and Financial issues
New GANP characteristics

- Scope extends to airspace users and regulators
- E (electronic)-based
- Separate technology roadmaps for C, N, S, IM and avionics
- Implementation is based on near, medium and long terms through Blocks 0, 1, 2 and 3 timeframes
- Supported by web based Regional ANPs, called eANPs
- ICAO Fuel Savings Estimation Tool (IFSET) will be a part of the revised global plan
ASBU: New National/Regional Plans - interoperability challenges

- Air traffic growth expands rapidly every 15 years
- Growth can be a double-edged sword. Challenge is how to achieve both safety and operational improvements
- The 37th session of ICAO General Assembly advised to redouble our efforts with focus on ensuring interoperability of systems while at the same time maintaining or enhancing aviation safety.

Many Regional and National ATM modernization programmes are being developed worldwide

- They are following ICAO’s Global Air Navigation Plan and Operational Concept, but nevertheless they are different in their own way
- thus resulting in interoperability challenges

Examples..
Global framework is needed to ensure:

- Safety is maintained and enhanced
- ATM improvement programs are harmonized
- Barriers to future efficiency and environmental gains are removed, at reasonable cost

- Aligned with ICAO ATM Operational Concept
- Block upgrades will allow structured approach to meet regional and local needs, while considering associated business cases
- They reflect recognition that all modules are not required in all airspaces
**ASBU methodology**

### Current methodology

- Scope covers only ground equipment for ANSPs
- Planning based on short and medium term
- Implementation process is through GPIs

### ASBU methodology

- Scope extends to airspace users and regulators
- Planning based on short, medium and long terms
- Implementation process is through Blocks and corresponding modules

### ASBU Advantages

- Takes into account all related issues such as air/ground Systems, air/ground procedures, air/ground regulatory requirements and business case formulation,
- One stop planning at the same time flexible and scalable
- Modules provide a series of measurable, operational performance improvements, which could be introduced as needed
Each Module is defined as follows:

- Intended *Operational Improvement/Metric* to determine success
- Necessary *Procedures/Air and Ground*
- Necessary *Technology/Air and Ground*
- Positive *Business Case* per Upgrade
- *Regulatory Approval Plan/Air and Ground*
- *Well understood* by a Global Demonstration Trial
  - All synchronized to allow initial implementation
  - Won’t matter *when or where* implemented
ASBU: PIAs

- 4 Main Performance improvement areas (B0)
  - Airport Operations (5 modules)
  - Globally interoperable systems & data (3 modules)
  - Optimum capacity & flexible flights (7 modules)
  - Efficient flight path (3 modules)

- Block 0 will serve as the enabler and foundation for the envisioned future aviation systems.
# ASBU: Global Readiness Checklist

<table>
<thead>
<tr>
<th>Global Readiness Checklist</th>
<th>Status (ready or date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards Readiness</td>
<td>✓</td>
</tr>
<tr>
<td>Avionics Availability</td>
<td>✓</td>
</tr>
<tr>
<td>Infrastructure Availability</td>
<td>✓</td>
</tr>
<tr>
<td>Ground Automation Availability</td>
<td>✓</td>
</tr>
<tr>
<td>Procedures Available</td>
<td>✓</td>
</tr>
<tr>
<td>Operations Approvals</td>
<td>✓</td>
</tr>
</tbody>
</table>

- Each Module is evaluated for its readiness
- If any component is not found to be ready it moves to a future Block for implementation
- Those Modules that are not specifically ready at a Block release are noted as “dates of readiness”

**All Block 0 Modules Have Met the Readiness Criteria**
### Performance Improvement Area 2:

**Globally Interoperable Systems and Data – Through Globally Interoperable System Wide Information Management**

**Title of the Module:**

**B0-FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration**

<table>
<thead>
<tr>
<th>Elements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. AIDC</td>
</tr>
<tr>
<td>2. (Not included in the Module but added here as they are closely linked to this Module) AMHS/IPS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipage/Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Nil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipage/Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>- A set of AIDC messages in FDPS</td>
</tr>
<tr>
<td>- AFTN (AMHS/IPS)</td>
</tr>
</tbody>
</table>

#### Implementation monitoring and intended performance impact

<table>
<thead>
<tr>
<th>Implementation progress</th>
<th>Qualitative performance benefits associated with five main KPAs only</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Indicator: Percentage of ATS units with AIDC</td>
<td></td>
</tr>
<tr>
<td>2. Indicator: States implementing AMHS/IPS</td>
<td></td>
</tr>
<tr>
<td>KPA-Access/Equity Not Applicable</td>
<td></td>
</tr>
<tr>
<td>KPA-Capacity Reduced controller workload and increased data integrity supporting reduced separations translating directly to cross sector or boundary capacity flow increases.</td>
<td></td>
</tr>
<tr>
<td>KPA-Efficiency The reduced separation can also be used to more frequently offer aircraft flight levels closer to the optimum; in certain cases, this also translates into reduced en-route holding.</td>
<td></td>
</tr>
<tr>
<td>KPA-Environment Not Applicable</td>
<td></td>
</tr>
<tr>
<td>KPA-Safety Better knowledge of more accurate flight plan information.</td>
<td></td>
</tr>
</tbody>
</table>

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ASBU: Understanding the Relationships

Performance Improvement Areas
- Airport Operations
- Globally Interoperable Systems and Data
- Optimum Capacity and Flexible Flights
- Efficient Flight Path

Block 0
- 18 Modules (2013)
- B0-15

Block 1
- 17 Modules (2018)
- B1-15

Block 2
- 10 Modules (2023)
- B2-15

Block 3
- 7 Modules (2028 & >)
- B3-15
Threads Between Modules... and Across Blocks

Airport Operations

Block 0
Improved Traffic Flow through Runway Metering

Block 1
Improved Approach & Departure Management through Integration

Block 2
Linked AMAN/DMAN

Block 3
Integrated AMAN/DMAN/SMAN

Available Now  2018  2023  2028>

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New ASBU Modules Identifiers: Number vrs acronym

<table>
<thead>
<tr>
<th>Old ASBU Modules Numbering System</th>
<th>New ASBU Modules Identifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>APTA</td>
</tr>
<tr>
<td>70</td>
<td>WAKE</td>
</tr>
<tr>
<td>15</td>
<td>RSEQ</td>
</tr>
<tr>
<td>75</td>
<td>SURF</td>
</tr>
<tr>
<td>80</td>
<td>ACDM</td>
</tr>
<tr>
<td>81</td>
<td>RATS</td>
</tr>
<tr>
<td>25</td>
<td>FICE</td>
</tr>
<tr>
<td>30</td>
<td>DAIM</td>
</tr>
<tr>
<td>31</td>
<td>SWIM</td>
</tr>
<tr>
<td>105</td>
<td>AMET</td>
</tr>
<tr>
<td>10</td>
<td>FRTO</td>
</tr>
<tr>
<td>35</td>
<td>NOPS</td>
</tr>
<tr>
<td>84</td>
<td>ASUR</td>
</tr>
<tr>
<td>85</td>
<td>ASEP</td>
</tr>
<tr>
<td>86</td>
<td>OPFL</td>
</tr>
<tr>
<td>101</td>
<td>ACAS</td>
</tr>
<tr>
<td>102</td>
<td>SNET</td>
</tr>
<tr>
<td>05</td>
<td>CDO</td>
</tr>
<tr>
<td>40</td>
<td>TBO</td>
</tr>
<tr>
<td>20</td>
<td>CCO</td>
</tr>
<tr>
<td>90</td>
<td>RPAS</td>
</tr>
</tbody>
</table>
ASBU Approach

- Timing/sizing of the block upgrades are in response to
  - need for Mature standards,
  - Integrated air and ground solutions and
  - Establishment of positive business cases
- Block “0” optimizes current onboard equipage and provides baseline
- Modules lacking specific maturity are purposefully placed in later blocks
- Block upgrades respond to issue of non-homogeneous areas

Addresses ANSP, aircraft and regularity requirements
- Identified 4 improvement areas
- Implementation through Block Upgrades (0, 1, 2, and 3) each comprising a number of modules
- Each module is explained in a standardized 4-5 pages template (checklist)
  - provide a series of measurable, operational performance improvements
  - Organized into flexible & scalable building blocks
  - Could be introduced as needed
  - all modules are not required in all airspaces

NAM/CAR Regions adopted 15 Block 0 modules for the 2013-2018 period (RPBANIP)

September 2013
ASBU Block 0 in Perspective

Performance Improvement Areas

- **Airport Operations**
  - B0-AMET – Meteorological information supporting enhanced operational efficiency and safety
  - B0-RSEQ – Improved Runway Traffic Flow through Sequencing (AMAN/DMAN)
  - B0-ACDM – Improved Airport Operations through A-CDM
  - B0-SURF – Safety & Efficiency of Surface Operations (A-SMGCS 1-2 & cockpit moving map)

- **Globally Interoperable Systems and Data**
  - B0-FICE – Increased Interoperability, Efficiency & Capacity through Ground-Ground Integration
  - B0-ASUR – Initial surveillance capability ADS-B Out, MLAT)
  - B0-ACSA – ACAS Improvements
  - B0-ACDA – ACDA – ACDA

- **Optimum Capacity and Flexible Flights**
  - B0-DAIM – Service Improvement through Digital Aeronautical Information Management
  - B0-NOPS – Improved Flow Performance through Planning based on a Network-Wide view
  - B0-TBO – Improved Safety & Efficiency through the initial application of Data Link En-Route
  - B0-ACSA – ACAS

- **Efficient Flight Path**
  - B0-APE – APE – APE
  - B0-AMET – Meteorological information supporting enhanced operational efficiency and safety
  - B0-RSEQ – Improved Runway Traffic Flow through Sequencing (AMAN/DMAN)
  - B0-ACDM – Improved Airport Operations through A-CDM
  - B0-SURF – Safety & Efficiency of Surface Operations (A-SMGCS 1-2 & cockpit moving map)
  - B0-ACSA – ACAS

ToC

- **ToC**
- **ToD**
- **CTA**
- **B0-AMET – Meteorological information supporting enhanced operational efficiency and safety**
- **B0-RSEQ – Improved Runway Traffic Flow through Sequencing (AMAN/DMAN)**
- **B0-ACDM – Improved Airport Operations through A-CDM**
- **B0-SURF – Safety & Efficiency of Surface Operations (A-SMGCS 1-2 & cockpit moving map)**
- **B0-AMET – Meteorological information supporting enhanced operational efficiency and safety**
- **B0-RSEQ – Improved Runway Traffic Flow through Sequencing (AMAN/DMAN)**
- **B0-ACDM – Improved Airport Operations through A-CDM**
- **B0-SURF – Safety & Efficiency of Surface Operations (A-SMGCS 1-2 & cockpit moving map)**

*September 2013*
### Globally Interoperable Systems and Data (PIA 2)

<table>
<thead>
<tr>
<th>B0-25</th>
<th>FICE</th>
<th>Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Supports the coordination of ground-ground data communication between ATSU based on ATS Inter-facility Data Communication (AIDC) defined by ICO Document 9694</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B0-105</th>
<th>AMET</th>
<th>Meteorological information supporting enhanced operational efficiency and safety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>This module includes meteorological information supporting ATM decision support such as WAFS, IAVW, TCAC, Aerodrome warnings, Wind shear and SIGMET. This module enables the reliable identification of applicable ATM solutions when meteorological conditions are impacting (observed) or expected to impact (forecast) aerodromes or airspace</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B0-30</th>
<th>DAIM</th>
<th>Service Improvement through Digital Aeronautical Information Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Transition from product centric to data centric. Introduction of digital processing and management of information, by the implementation of AIS/AIM making use of AIXM, moving to electronic AIP and better quality and availability of data</td>
</tr>
</tbody>
</table>

- **In Block 0 we improve overall operations and continue to enable Collaborative Decision Making through improved interfacilities communications using standard information formats and baseline Met Services**
AMHS related - CNS/ AIM/ Avionic Roadmaps
AMHS related - CNS/ AIM/ Avionic Roadmaps

- **SWIM**
  - **BLOCK 0** (2018): SWIM CONOPS
  - **BLOCK 1** (2023): SWIM G-G
    - B1-FICE, DAIM, SWIM - SWIM (Ground-Ground): Flight intents before departure, ATM information exchanges
  - **BLOCK 2** (2028): SWIM A-G
    - B2-FICE SWIM (Ground-Ground): Inter-Centre coordination
    - B2-SWIM SWIM (Air-Ground): Aircraft integration
  - ATM Information Reference and Service Model, Common Governance, ISO, OGC, etc.
AMHS-related CNS/ AIM/ Avionic Roadmaps

<table>
<thead>
<tr>
<th>INFORMATION MANAGEMENT</th>
<th>BLOCK 0 2018</th>
<th>BLOCK 1 2023</th>
<th>BLOCK 2 2028</th>
<th>BLOCK 3 2028</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FLIGHT &amp; FLOW</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>B1-DAIM, B1-FICE</td>
<td></td>
<td>B2-FICE</td>
<td>B3-FICE, B3-TBO</td>
<td></td>
</tr>
<tr>
<td>Exchange of Flight Intents</td>
<td>before Departure</td>
<td>(Initial FF-ICE)</td>
<td></td>
<td></td>
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<tr>
<td>Flight and Flow Coordination</td>
<td></td>
<td>(Initial FF-ICE)</td>
<td></td>
<td></td>
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<tr>
<td>4D Trajectories, Full FF-ICE</td>
<td></td>
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<tr>
<td><strong>CAPABILITIES</strong></td>
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<tr>
<td><strong>ENABLERS</strong></td>
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<tr>
<td><strong>AIS/AIM</strong></td>
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<tr>
<td>B0-DAIM</td>
<td>B1-DAIM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIS-AIM Enhanced quality Paper &amp; Digital data availability</td>
<td>Digital Data exchange &amp; services, shorter update cycles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Digital NOTAM</td>
<td>Electronic Charts, Digital Briefing, In Flight updates</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CAPABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ENABLERS</strong></td>
<td>eAIP, AIXM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METEOROLOGY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1-DAIM, B1-AMET</td>
<td></td>
<td>B3-AMET</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional alphanumeric codes replaced by digital data; enhanced quality</td>
<td>Digital MET Data exchange &amp; MET Information services, In Flight updates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CAPABILITIES</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>ENABLERS</strong></td>
<td>WXXM</td>
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</tr>
</tbody>
</table>
Block 0: Priority

Block 0 initiatives must leverage on existing on-board avionics

3 Priorities have been agreed to by the Global community:
- Performance Based Navigation (PBN)
- Continuous Descent Operations (CDO)
- Continuous Climb Operations (CCO)

- Block 0 risks are minimum
  - Global Readiness Checklist is complete
  - The Modules are well understood and supported
- States need to ensure successful deployment of Block 0
  - If Block 0 is not implemented as a foundation, certain functionalities may not be available as enablers for future blocks
- Identify and resolve policies necessary to enable the future blocks now
ASBU B0 Implementation

The Modules of Block 0 are ready for implementation today

- Standards are ready – The Infrastructure is available
- Avionics are ready – Ground Automation is ready
- Procedures and Operational Approvals are in place

Need to ensure that regional implementation of the Blocks or the Modules are well described and ready for implementation

- ICAO and States (training organization, Administration, etc.) to provide training on ASBU approach
- Training entities to update training curricula for ASBU Approach
- Training to ensure interoperability and effective ASBU implementation
**Air Navigation Reporting**

**PROCESS**

- PIRGs are progressing with planning and implementation of ASBUs
- The next step calls for an air navigation performance measurement, monitoring and reporting strategy.

**Methodology for reporting**

- States to send data to RO through Air Navigation Report Form (ANRF) or equivalent form/on ongoing basis
- RO will consolidate data from all States and publish through Regional Performance Dashboard /on ongoing basis
- HQ will consolidate data from all ROs and publish Global Air Navigation Report/annually

- The current Performance Framework Form (PFF) has been redesigned and aligned with ASBU framework and called the Air Navigation Report Form (ANRF)
- ANRF will be the basis for performance reporting of the ASBU implementation
- The ANRF templates for all the 18 Modules of ASBU Block 0 will be available in the upcoming Regional eANP.
Transparency and sharing of information are fundamental to a safe and efficient global air transportation system.

- These dashboards will illustrate the regional implementation status relating to the strategic objectives on Safety, Air Navigation Capacity and Efficiency, and Environmental Protection.
- The Dashboard will show targeted performance at the regional level and will, initially, contain graphics and maps with a planned expansion to include the Aviation System Block upgrades (ASBU) Block 0 Modules.
- This new interactive online system will be in place for March 2014 for the all ICAO regions and will be updated at regular intervals.
- Dashboard will be user friendly and able to deliver the message at glance.

ICAO is introducing “Regional ‘Performance Dashboard’ - the homepages for every public website of the ICAO Regional Offices.”
For Safety: Effective Implementation (No State names)
For Efficiency: Air Navigation Implementation (by State)
For Environment: Fuel savings and CO2 reduction (by State)

Regional Performance Indicators

Regional Performance by Strategic Objective

Message: Provide the status of Safety, Efficiency, and Environment for the Region
### SAFETY

**Metrics**

1. **Safety Oversight**  
   *Effective Implementation by State*

2. **Accidents and serious incidents**  
   *Number of accidents per million departures*

3. **Runway Excursions and Incursions**  
   *Runway excursion and incursion accidents as a percentage of all accidents*

4. **Aerodrome certification**  
   *Number of certified international aerodromes*

5. **SSP/SMS Implementation**  
   *Implement Phase 1 of State Safety Programmes (SSP) and ensure that all Service Providers implement a Safety Management System (SMS)*

### AIR NAVIGATION

**Metrics**

1. **PBN TERMINAL**  
   *% of international aerodromes with APV*

2. **PBN ENROUTE**  
   *% of PBN routes/airspaces*

3. **CDO**  
   *% of international aerodromes/TMAs with CDO*

4. **CCO**  
   *% of international aerodromes/TMAs with CCO*

5. **Estimated Fuel Savings/CO2 Emissions Reduction Based on IFSET**

6. **ATFM**  
   *% of ATS Units/international aerodromes providing ATFM service*

7. **AIM**  
   *% of needed elements (from AIS to AIM Roadmap) facilitating the transition from AIS to AIM that have been implemented – PHASE I*
# Regional Target in RPBANIP on AMHS

## 6. Optimization and Modernization of Communication Infrastructure

### Benefits
- **Efficiency**
  - Improvements in ATS coordination
  - Increase availability of communications
  - Avoid misunderstandings in communications
- **Continuity**
  - Improvement of airspace interoperability and seamlessness
- **Safety**
  - Allow improvements to the provision of air traffic control services to all aircraft operations
  - Improvement in safety in airspaces and aerodromes

### Strategy

<table>
<thead>
<tr>
<th>ATM- Components</th>
<th>Task Description</th>
<th>Start-End</th>
<th>Responsible</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AO, TS, CM, AOM</td>
<td>Review the status of performance of current ATS Services and identify deficiencies or improvements (ATIN, oral ATS services, A-G communications)</td>
<td>2013-2015</td>
<td>States, Territories</td>
<td>Valido</td>
</tr>
<tr>
<td>AOM, SDM</td>
<td>Implementation of improvements to communication services in accordance to required RCPs</td>
<td>2014-2016</td>
<td>States, Territories</td>
<td>Valido</td>
</tr>
<tr>
<td>AOM, SDM</td>
<td>Develop Regional ATN Planning documents</td>
<td>2013-2015</td>
<td>GREPECAo</td>
<td>Valido</td>
</tr>
<tr>
<td>AO, TS, CM, AOM</td>
<td>Coordination and testing of ATN: G-G Application implementation aspects (AMHS, AIDC, etc.)</td>
<td>2011-2018</td>
<td>States, Territories</td>
<td>Valido</td>
</tr>
<tr>
<td>AO, TS, CM, AOM</td>
<td>Planning, trial and implementation activities for A-G data Applications (DCL, D-ATIS, etc.)</td>
<td>2011-2018</td>
<td>States, Territories</td>
<td>Valido</td>
</tr>
<tr>
<td>AO, TS, CM, AOM</td>
<td>Technical review of Regional Telecommunication networks for ATN implementation</td>
<td>2013-2015</td>
<td>States, Territories</td>
<td>Valido</td>
</tr>
<tr>
<td>AO, TS, CM, AOM</td>
<td>Implement available technologies to facilitate ground and airborne applications (CPDLC, ADS-C, ADS-B)</td>
<td>2013-2018</td>
<td>States, Territories</td>
<td>Valido</td>
</tr>
<tr>
<td>AO, TS, CM, AOM</td>
<td>Implement the necessary communication network for ACDM</td>
<td>2014-2018</td>
<td>States, Territories</td>
<td>Valido</td>
</tr>
</tbody>
</table>
Regional Target in RPBANIP on AMHS

ANRF on AMHS

1. **REGIONAL PERFORMANCE OBJECTIVE**: B0-25/FICE
   - Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

2. **Performance Improvement Area**: 2
   - Globally Interoperable Systems and Data Through Globally Interoperable System Wide Information Management

3. **ASBU B0-25/FICE**: Impact on Main Key Performance Areas (KPA)

4. **ASBU B0-25/FICE**: Planning Targets and Implementation Progress
   - 1. MEVA IIIHP Network implementation: 100% implementation, August 2013
   - 2. AMHS implementation: 6 States by December 2014
   - 3. AIDC implementation: 5 AIDC communications by December 2014
   - 4. ATN router structure implementation: 70% by June 2016

5. **ASBU B0-25/FICE**: Implementation Challenges

8. **ASBU B0-25/FICE**: Performance Monitoring and Measurement
   - 8A. **ASBU B0-25/FICE**: Implementation
     - Elements
       - MEVA IIIHP Network implementation
       - AMHS implementation
       - AIDC implementation
       - ATN router structure implementation

     - Performance Indicators/Supporting Metrics
       - 1. MEVA IIIHP Network implementation
         - Indicator: Percentage of MEVA Members implemented in MEVA IIIHP
         - Supporting metric: MEVA IIIHP Services contracted implemented
       - 2. AMHS implementation
         - Indicator: Percentage of States with AMHS interconnected with other AMHS
         - Supporting metric: Number of AMHS interconnections implemented
       - 3. AIDC implementation
         - Indicator: Percentage of ATS units with AIDC
         - Supporting metric: Number of AIDC systems installed
       - 4. ATN router structure implementation
         - Indicator: Percentage of ATN infrastructure implemented
         - Supporting metric: Number of ATN routers implemented in accordance to CAR/SAM P3555 Table 3555.1

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**Key Performance Areas**: Metrics (if not indicate qualitative Benefits)

- Access & Equity
  - Reduces controller workload
  - Increases data integrity, supporting separation reduction and efficiency

- Capacity
  - Increases boundary capacity flow

- Efficiency
  - Enables optimum aircraft flight levels
  - Less aircraft in holding

- Environment
  - NIL

- Safety
  - Increases timely and accurate flight plan information for ATCs
Air Navigation Reporting Current

REPORTS

DATA

ANALYSIS

PAPER

ELECTRONIC / PAPER

ELECTRONIC / PAPER

September 2013
Air Navigation Reporting
Future

REPORTS

DATA

ANALYSIS

REPORTS

DATA

ANALYSIS

ONLINE

ONLINE

ONLINE

September 2013
Measuring Against the Global Plans

Reporting Mechanism and Tools

Regional Bodies

Web Portal

Report

- **Visualize** the status of implementation through dynamic and interactive charts
- **Provide feedback** on the data (qualification of the data)
- **Perform self-assessments**, generate ad-hoc **reports** and **export** data
- **Provide a venue** for data collection towards the **Annual Reports**
Thank You