



International Civil Aviation Organization

## SEMINAR/WORKSHOP (SAM ANIP-PB)

**Part I**

Jorge Fernández Demarco  
ATM Adviser, ICAO SAM Office, Lima

9 - 13 May 2011

---

---

---


---

---

---

---

---



### *Performance-Based Implementation Plan for the SAM Region*

**(Part I –ATM)**

2011 South American Regional Office 2

---

---

---


---

---

---

---

---



### Content

- History
- ATM Global operational concept
- SAMIG current and future activities related to ATM

2011 South American Regional Office 3

---

---

---

---

---

---

---

---

### Trajectory towards ATM CONOPS

- 2006 Global Air Navigation Plan approved
- 2003 AN 11<sup>th</sup> approved ATM CONOPS
- 1998 CNS/ATM Systems approved by Council
- 1993 Coordinated Global Plan approved
- 1992 Asembly endorsed CNS/ATM concept
- 1991 AN 10<sup>th</sup> approved FANS concept
- 1988 FANS Concept developed

2011 South American Regional Office 4

---

---

---

---

---

---

---

---

---

---

---

---

### Evolution of CNS/ATM Systems to Global Concept

- Premise 1**
  - CNS/ATM Systems are **NOT** only ATS, they represent the total aeronautical system
- Premise 2**
  - Technology is **NOT** an end, a concept based on operational requirements is needed.
- Result**
  - CONOPS development conceived to guide implementation of CNS/ATM technology.

2011 South American Regional Office 5

---

---

---

---

---

---

---

---

---

---

---

---

### Air Traffic Management Operational Concept

- Operational concept is a vision and describes how to operate a global integrated ATM system – environment 2025
- Provides the ATM community with clear objectives to design and implement ATM with the support of CNS systems

2011 South American Regional Office 6

---

---

---

---

---

---

---

---


---

---

---

---

**Approach Statement**



*Achieve a global ATM, inter-functional system for all users during all flight phases, covering all safety levels agreed, provide economically optimum operations, be sustainable with regard to the environment and meet national requirements for aviation safety.*

2011 South American Regional Office 7

---

---

---

---


---





---

---

---

**Grounds**



-  ATM Community
-  Ruling principles
-  Expectations
-  Conceptual change

2011 South American Regional Office 8

---

---

---

---


---

---

---

---

**ATM Community**



- Aerodrome - air operators/services
- Airspace providers
- Airspace users – UAV/crewed
- ATSP – air traffic controllers, engineers, technicians
- Supporting companies – manufacturers / regulations
- States – regulatory authorities
- ICAO – regulates, coordinates, facilitates

2011 South American Regional Office 9

---

---

---

---

---

---

---

---

**Governing principles**

- Safety – maximum priority
- Human factor – essential function
- Technology – vs. ATM requirements
- Information – timely, accurate, QA
- Collaboration – CDM strategic/tactical
- Continuity - contingencies

2011 South American Regional Office 10

---

---

---

---

---

---

---

---

**Expectations**

- Safety – Risk management
- Access and equity – equal opportunities
- Capacity – DCB
- Efficiency - economical profitability
- Flexibility – dynamic trajectories
- Predictability - itineraries

2011 South American Regional Office 11

---

---

---

---

---

---

---

---

**Key concept changes**

The ATM system needs to be disaggregated to understand the sometimes complex interrelationship between its components.

**ATM System: A Holistic Entity**

Disaggregated for discussion and role understanding

Complex: AOM, DCB, AO, TS

Interaction: CM, AUO, ATM SDM

Information management

All components must be present in the ATM system

**ATM System: A Holistic Entity**

The ATM system cannot, however, function without all of its components. The components must be integrated.

**AOM** — Airspace organization and management  
**DCB** — Demand/capacity balancing  
**AO** — Aerodrome operations  
**TS** — Traffic synchronization  
**CM** — Conflict management  
**AUO** — Airspace user operations  
**ATM SDM** — ATM service delivery management

2011 South American Regional Office 12

---

---

---

---

---

---

---

---

Key concept changes

- Organization and airspace management (AOM)
- Aerodrome operations (AO)
- Balance between Demand and Capacity (DCB)
- Traffic Synchronization (TS)
- Airspace Users Operations (AUO)
- Conflict management (CM)
- ATS provision management (ATM SDM)  
Information services

2011 South American Regional Office 13

---

---

---

---

---

---

---

---

Questions?

2011 South American Regional Office 14

---

---

---

---

---

---

---

---

**ICAO**  
Uniting Aviation on  
Safety | Security | Environment



---

---

---

---

---

---

---

---