

***First Seminar on RVSM  
Implementation in the CARSAM  
Regions***

***(Lima, Perú, 5-7 August 2002)***

***UNDP /ICAO TC Project RLA/98003***

***"Transition to the CNS/ATM  
Systems in the CAR/SAM Regions"***

***José Moreno***

国际民航组织

***RLA/98/003***

- ***V Meeting CAR/SAM Civil Aviation Authorities***
- ***GREPECAS VI***
- ***May 1999 : Initial activities***
- ***10 States and 1 International Organization***

***RLA/98/003***

***Objectives***

- ***CNS/ATM Implementation and evolutionary improvements***
- ***WGS 84 Implementation***
- ***System Automation***

***RLA/98/003***

***• TRAFFIC FLOWS ANALYSIS***

***• RNAV ROUTES, RNP and RVSM  
IMPLEMENTATION***

国际民航组织

# ***ANALYSIS of MAIN TRAFFIC FLOWS (I)***

- 18 TFs in CAR/SAM Regional ANP (FASID);

- Phase I

- ✓ TF 9 Sao Paulo-Río de Janeiro/Miami

- ✓ TF 10 Sao Paulo-Río de Janeiro/New York

- ✓ TF 11 Buenos Aires/New York

# ***ANALYSIS of MAIN TRAFFIC FLOWS (II)***

- Phase II

- ✓ TF 4 Sao Paulo-Río de Janeiro/Europe
- ✓ TF 6 Santiago-Lima/Los Angeles
- ✓ TF 7 Santiago-Lima/Miami
- ✓ TF 8 Sao Paulo-Río de Janeiro/Miami
- ✓ TF 12 Buenos Aires/Miami
- ✓ TF 15 Mexico/Dallas-Houston-Miami-Los Angeles

# ***ANALYSIS of MAIN TRAFFIC FLOWS (III)***

- Phase III

- ✓ TF 1 Santiago/Buenos Aires-Montevideo
- ✓ TF 2 Buenos Aires/Sao Paulo-Río de Janeiro
- ✓ TF 3 Santiago/Sao Paulo
- ✓ TF 5 Lima/Sao Paulo-Río de Janeiro
- ✓ TF 13 North South America/Europe
- ✓ TF 14 Mexico/Europe
- ✓ TF 16 Central America/Europe
- ✓ TF 17 South America/South Africa
- ✓ TF 18 Santiago/Easter Island-Papeete

# ***ANALYSIS of MAIN TRAFFIC FLOWS (IV)***

## Present Status

- **ATS**
  - ✓ Airspace organization
  - ✓ Minimum longitudinal separation
  - ✓ ATS routes
- **Air Space Management (ASM)**
- **Air Traffic Flow Management (ATFM)**

# ***ANALYSIS of MAIN TRAFFIC FLOWS (V)***

## Present Status

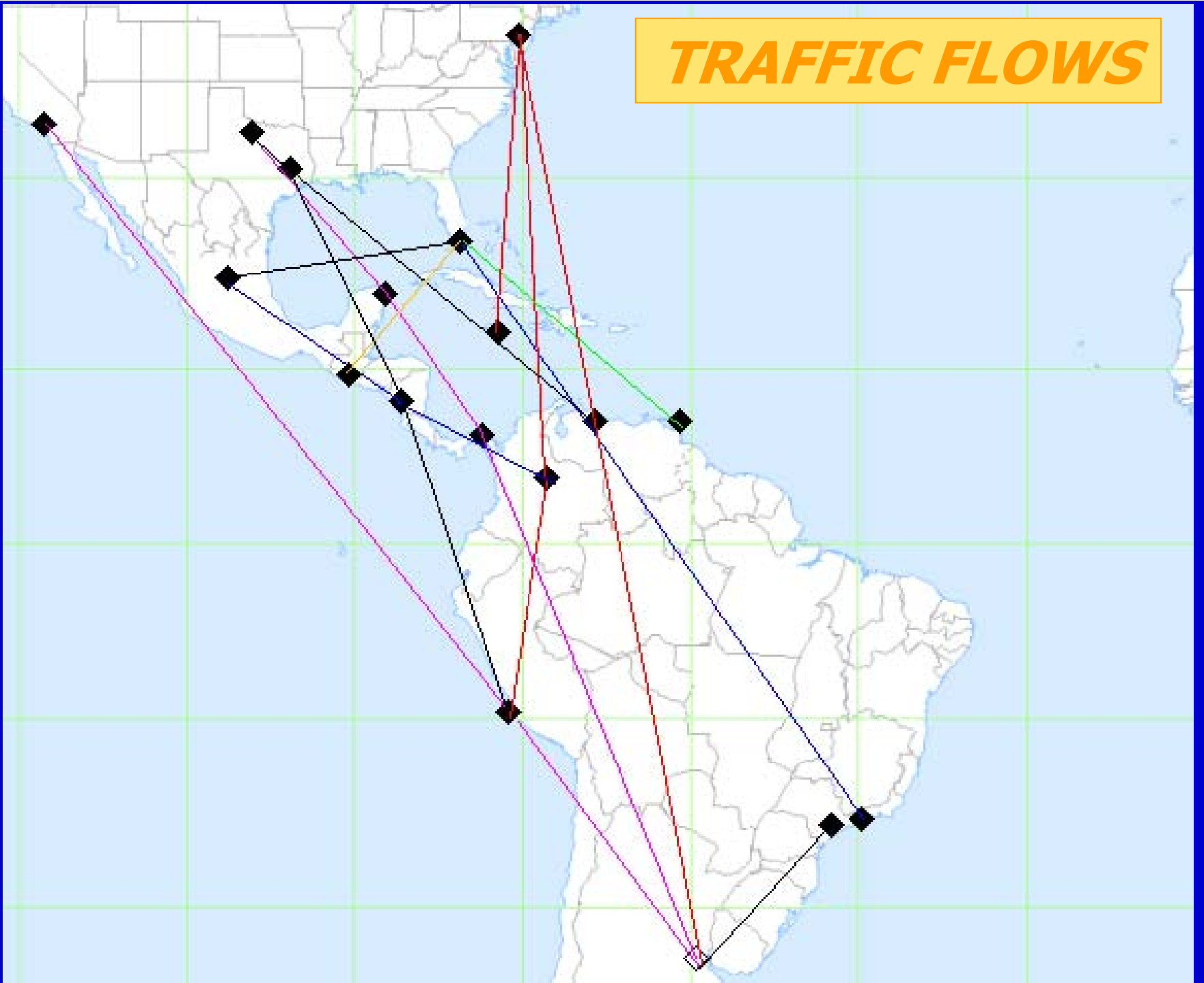
- **Communications**
  - ✓ **Aeronautical Mobile Service (AMS)**
  - ✓ **Aeronautical Fixed Service (AFS)**
    - **AFTN**
    - **ATS Speech circuits**
- **Navigation**
- **Surveillance**

# ***ANALYSIS of MAIN TRAFFIC FLOWS (VI)***

## ATM evolution in Traffic Flows

- ✓ 10 minutes minimum longitudinal separation
- ✓ RNAV routes
- ✓ Parallel RNAV 50 NM routes spacing
- ✓ RNP 10/50 NM RNAV longitudinal separation
- ✓ RVSM

# TRAFFIC FLOWS



# ***PRE-OPERATIONAL TRIALS AND IMPLEMENTATION (I)***

“GREPECAS planning endorsed by RAN  
CAR/SAM/3 Selected city pairs”

## **Objectives:**

- ✓ Identify problems during implementation
- ✓ Enable users to utilize avionics installed
- ✓ Reduce flight time and obtain fuel savings
- ✓ Apply 10 minutes and/or 80 NM MNT longitudinal separation
- ✓ RNP and RVSM

# ***PRE-OPERATIONAL TRIALS AND IMPLEMENTATION (II)***

## **Tasks**

- Analyze Pre-operational RNAV routes
- Determine requirements
- Review Letters of Operational Agreement
- Develop Implementation Programme

# First ATM Authorities and Planners Meeting – Workshop (AP/ATM/1); Lima, Peru, July 2000)

- ✓ Santiago - Lima/Miami: UT 780
- ✓ Sao Paulo - Rio de Janeiro/Miami: UT 795  
and UT 799



Miami

UL 780

UL 795

Santiago de Chile

Sao Paulo

# AP/ATM/2, Lima, Peru, 14 - 18 May 2001

- Buenos Aires/Miami: UT 410
- Sao Paulo-Rio de Janeiro/Los Angeles: UT 655
- Sao Paulo-Rio de Janeiro/New York: UT 776 and UT 419 (Due to lack of ATC in Guyana, non-defined trajectory by USA and prohibited airspace in Brazil, trials on these RNAV routes were postponed by July 2002).



# ***AP/ATM/3 Meeting (I)***

- Amendment CAR/SAM ANP - Basic Volume
- IMPLEMENTATION (NO TRIALS) of NEW RNAV routes two AIRAC periods after amendment approval by ICAO's COUNCIL:
  - **UL 793 (Buenos Aires/New York)**
  - **UL 674 (Caracas/Houston)**
  - **UL 337 (Por of Spain/Miami)**
  - **UL 423 (Bogotá/San José/México)**
  - **UL 471 (San Salvador/ /Miami)**