INTERNATIONAL CIVIL AVIATION ORGANIZATION
FOURTEENTH MEETING OF THE
AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP

(Yaounde, 23 - 27 June 2003)

Agenda Item 7: Relations with other groups, adjacent regions and worldwide activities

Activities of the Informal Coordination Group for the Improvement of Air Traffic Services over the South Atlantic (SAT)

(Presented by the Secretariat)

SUMMARY

This paper presents achievements and last developments in South Atlantic area, for consideration by APIRG/14.

Action required is at paragraph 3.

References:

- APIRG/13 Meeting
- SAT/10 and SAT/11 Meetings

1. INTRODUCTION

1.1 The Informal Group established for the Improvement of Air Traffic Services over the South Atlantic (SAT) was assigned the role of CNS/ATM Implementation Coordination Group (ICG) for homogenous areas of routing AR-1 (EUR/SAM Corridor), AR-2 (AFI, NAT, SAM Interface). The SAT Group was also requested to act as ICG for areas of routing AR-6 (Iberian Peninsula) and AR-7 (EUR/AFI Interface), taking into consideration their affinities with the EUR/SAM Corridor.

1.2 Two meetings have been organized by the SAT Informal Group since the thirteenth meeting of the APIRG (Sal, Cape Verde - June 2001). The tenth meeting (SAT/10), which was held in Dakar, Senegal from 10 to 13 December 2001 focused on preparations for the implementation of RVSM in the EUR/SAM Corridor, whilst the eleventh meeting (SAT/11) held in Johannesburg, South Africa from 17 to 21 February 2003, put emphasis on RVSM and RNP post-implementation safety monitoring, full implementation of RVSM in the South Atlantic and introduction of random RNAV routing, harmonization of ADS/CPDL programmes. Both meetings also discussed issues relating to the deployment of CAFSAT nodes by participating States as well as the integration of sub-regional VSAT networks.

1.3 This working paper presents major CNS/ATM achievements and last developments within the South Atlantic routing areas AR-1 and AR-2, since APIRG/13.

2. DISCUSSION

AIR TRAFFIC MANAGEMENT

- **Implementation of Required Navigation Performance (RNP) Type 10 / 50 NM lateral spacing**

2.1 RNP10 / 50 NM lateral spacing was successfully implemented in the EUR/SAM Corridor, at the AIRAC date of 4 October 2001.

- **Implementation of a Reduced Vertical Separation Minimum (RVSM)**

2.2 RVSM was successfully implemented in the EUR/SAM Corridor at the AIRAC date of 24 January 2002.

- **Full implementation of RVSM in the SAT area**

2.3 The SAT Group agreed to achieve full implementation of RVSM in the South Atlantic coincidentally with the CAR/SAM Region in January 2005.

- **Pre-implementation safety assessments**

2.4 In view of the implementation of RNP10/50 NM and RVSM, the SAT Group agreed to establish a monitoring agency, SATMA, hosted by AENA, Spain. Related safety assessments were conducted in cooperation with Aeronautical Radio, Inc. (ARINC). A target level of safety (TLS) of $5x10^{-9}$ was adopted for the EUR/SAM Corridor.

- **Post-implementation safety monitoring/assessments**

2.5 SATMA is carrying out RNP10/50 NM and RVSM post-implementation monitoring activities, in coordination with ACCs. A common reporting format was developed to this effect. Monitoring activities include ATC non-approved deviations to be investigated and ATC approved deviations attributable to weather conditions.

2.6 It was agreed that SATMA monitoring duties, responsibilities and procedures should be harmonized with global guidance developed by the Separation and Airspace Safety Panel (SASP). Feasibility of a relevant and appropriate cost recovery mechanism to ensure sustainability of SATMA safety monitoring/safety assessment activities is under consideration.

- **Implementation of random RNAV routing**

2.7 The SAT Group established a study group to carry out studies and preparatory activities in view of the implementation of random RNAV routing in the South Atlantic in 2005.

- **Review of the lack of flight plans and proposals of remedial actions**

2.8 The SAT Group noted with concern that missing plans still remained a topical issue in the EUR/SAM Corridor, despite valuable efforts that have been made by States to implement reliable communication facilities using CAFSAT network, and concluded that further investigations were necessary to eliminate this outstanding, of which communication-oriented investigations.

COMMUNICATIONS

- ***Implementation status of CAFSAT network***

2.9 Achievements in this field concern the development of the CAFSAT network. Brazil (Recife), Cape Verde (Sal), Spain (Las Palmas) and Senegal (Dakar) have already implemented their nodes. The South African node in Johannesburg is being tested, whilst the implementation process is underway in Portugal (Lisbon and Santa Maria).

- ***Expansion of CAFSAT network to cater for all AFS requirements within the SAT Region***

2.10 The SAT Group explored possibilities of expanding the CAFSAT network in order to cater for AFS requirements, especially ATS/DS requirements: Atlantico ACC/Luanda ACC, Dakar Oceanic ACC/Piarco ACC and Dakar Oceanic ACC/Rochambeau ACC. The Group post-poned discussions on the link Atlantico/Luanda as Angola did not attend SAT/10 and SAT/11 meetings. Concerning the links *Dakar Oceanic/Piarco and Dakar Oceanic/Rochambeau,* the SAT Group was of the view that, due to the very low traffic between these FIRs, it could anticipated that cost/benefit aspects will not be in favour of implementing CAFSAT nodes in Trinidad – and - Tobago and French Guyana. Currently, the ATS/DS links between Dakar Oceanic and these two ACCs utilize public telephone services (PSTN).

- ***Review of the results of the test on VSAT double hop link***

2.11 The SAT Group welcomed the initiative taken by Cape Verde and Spain therefore to carry out double hop trials between Las Palmas and Sal ACCs in order to ascertain the ability of such a link to meet ATS/DS requirements. The propagation times of 387 milliseconds (one hop) and 677 milliseconds (two hops) have been reported, voice quality being subject to operational validation by air traffic controllers.

2.12 The SAT Group also noted the implementation of an operational double hop link by Spain and ASECNA, to cater for ATS/DS requirement between Las Palmas and Nouakchott, by using Nouakchott/Dakar leg on AFISNET and Dakar/Las Palmas leg on CAFSAT.

- **Interconnection/Interoperability of the existing VSAT networks (CAFSAT, REDDIG, AFISNET and SADC network)**

2.13 The SAT Group felt that consolidation of services on a limited number of space segments could facilitate the interconnection of existing/planned networks and their interoperability, and considered proposals in this respect, of which the use of a single transponder on INTELSAT Satellite IS 10-02 to be launched in 2003, covering the entire AFI Region and the EUR/SAM Corridor.

- **Extension of VHF radio coverage within Dakar Oceanic FIR using a remote VSAT node located Cape Verde Archipelago**

2.14 At its tenth meeting, the SAT Group recommended the extension of VHF radio coverage within Dakar Oceanic FIR using a remote VSAT station located in Cape Verde, in accordance to AFI/7 Recommendation 5/12c.

2.15 To this effect, administrative coordination and technical preparations are being carried out by States and Organizations concerned.

NAVIGATION

- **Use of AFISNET and CAFSAT networks to support GNSS**

2.16 The SAT Group was informed that Dakar/Las Palmas link on CAFSAT was instrumental for EGNOS Test Bed data transfer between Dakar reference and monitoring station (RIMS) and the Central Processing Facility (CPF) in Honefoss[1] (Norway), using the communication infrastructure connecting Spain RIMSs in Majorca, Malaga and Great Canary to the same CPF.

SURVEILLANCE

- ***Sharing of ADS data between selected ACCs***

2.17 The SAT Group monitored ADS/CPDLC trials conducted by Spain (Canary Islands), including the sharing of data between Las Palmas ACC and Sal ACC in Cape Verde. In this connection, personnel training sessions have been organized for technical staff and air traffic controllers, and a workstation has been installed in Sal ACC for controllers to monitor ADS and radar signals to be sent by the ADS/CPDLC system in Las Palmas. The SAT Group recommended participation of all FANS 1/A - equipped aircraft operating in the EUR/SAM Corridor. Guidance material for use by aircraft operators was developed and made available for this purpose on SATMA Website (**www.satmasat.com**).

[1] The link Dakar/Honefoss meets the requirement for transmission delays (< 1 sec.).

- ***Harmonization of ADS/CPDLC programmes***

2.18 Noting that most of SAT States and Organizations had developed/are about to develop ADS and CPDLC implementation plans for their respective FIRs, the SAT Group acknowledged the need for common guiding principles in these fields.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) take note of the activities of the SAT Informal Group, and the progress made in the improvement of air navigation services in the EUR/SAM Corridor, including the successful implementation of RNP/10 (50 NM lateral spacing) and RVSM; and

b) encourage the work being carried out by the SAT Informal Group and its positive contribution to inter-regional co-ordination between AFI, EUR and SAM Regions.

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