SAT/14

INTERNATIONAL CIVIL AVIATION ORGANIZATION

FOURTEENTH MEETING ON THE IMPROVEMENT OF AIR TRAFFIC SERVICES OVER THE SOUTH ATLANTIC

FINAL REPORT

(Montevideo, Uruguay, 7-9 May 2008)

INDEX

HISTORY OF THE MEETING

ii-1 PLACE AND DURATION OF THE MEETING

The Fourteenth Inter-Regional Coordination Meeting on the continued improvement of Air traffic Services over the South Atlantic, was held in Montevideo, Uruguay, from 7 to 9 May 2008, under the auspices of Uruguay, supported by INDRA Sistemas S.A. from Spain, and INSA.

ii-2 OPENING CEREMONY AND OTHER MATTERS

Mr. Jorge Fernandez Demarco, Regional Officer ATM/SAR of the ICAO South American Office, greeted the participants, and highlighted the importance of the issues to be dealt with.

Col. Jesus Iglesias, Civil Aviation General Director, welcomed the participants highlighting the importance of the matters to be dealt with have at a regional level, inaugurating the meeting.

ii-3 SCHEDULE, ORGANIZATION, WORKING METHODS, OFFICERS AND SECRETARIAT

The Meeting agreed to hold its sessions from 0800 to 1500 hours, with appropriate breaks. The work was done with the Meeting as a Single Committee, Working Groups and Ad-hoc Groups.

Mr. José Emmanuel Rodrigues, delegate from Cape Verde, served as Chairman of the Meeting and Mr. Anselmo Martínez, delegate from Spain, acted as Rapporteur of the meeting.

Mr. Jorge Fernández Demarco, RO/ATM/SAR Regional Office, Lima, acted as Secretary.

ii-4 WORKING LANGUAGES

The working language of the Meeting was English. and its relevant documentation was presented in this language.

ii-5 AGENDA

The following agenda was adopted:

Agenda Item 1: Air traffic management (ATM)

1 Follow up of SAT/13 and SAT/13/TF/1 Conclusions pertaining to the ATM field
2 RVSM and RNP post-implementation safety assessments.
3 Follow up of the AORRA airspace implementation.
4 Follow up of the Implementation of UN741 and UN866 as unidirectional routes.
5 ATS Contingency planning

Agenda Item 2: Communications, navigation and surveillance (CNS)

1. Follow up of SAT/13 Conclusions pertaining to the CNS field
2. Review of AFS performance
3. Interoperability between aeronautical VSAT networks and potential use of digital VSAT networks to support ATM applications

Agenda Item 3: Communications, navigation and surveillance / Air traffic management (CNS/ATM) Systems

1. Harmonization of ADS/CPDLC programmes
   - Review of the Report of the Second SAT FANS 1/A Interoperability Team (SAT/FIT/2)
2. RVSM implementation
3. Introduction of Performance Based Navigation (PBN) in the South Atlantic
4. Harmonization of CNS/ATM systems evolution tables

Agenda Item 4: Future work programme

Agenda Item 5: Any other business.

ii-6 **ATTENDANCE**

The meeting was attended by 33 participants from 9 States and 4 Organizations, ARINC, ASECNA, IATA, INSA and SITA. The list of participants is shown in pages iii-1 to iii-5.

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Agenda Item 1: Air traffic management (ATM)

Follow up of SAT/13 and SAT/13/TF/1 Conclusions pertaining to the ATM field

1.1 The meeting revised the implementation status of Conclusions and Decisions adopted by the SAT/13/TF/1 Meeting, which was held in Cape Town, South Africa, from 21 to 23 February 2007, and actions taken thereon by SAT Members and the Secretariat.

1.2 In this connection the revised Conclusions and Decisions are shown in **Appendix A** to this part of the report.

Follow up of the AORRA airspace implementation.

Suspension of ATS routes within the AORRA airspace

1.3 An ad-hoc group, consisting of Angola, Argentina, Brazil and South Africa, met at the request of the SAT Plenary to review the ATS route structure contained within the boundaries of the AORRA and to identify those routes considered pertinent in supporting contingency plans.

1.4 SAT Conclusion SAT13/10: Retention of ATS routes within AORRA airspace, was revised. The mentioned conclusion states that "That the States involved in the AORRA implementation should retain a minimum number of selected ATS routes within the AORRA airspace, but however suspend those portions of the routes identified, which are within the boundaries of the AORRA. Such route portions are to be activated in case of contingency measures" refers.

1.5 In response to the above conclusion, it was proposed that a series of ATS routes, together with their allocated five letter significant point identifications be suspended with effect from an agreed AIRAC date, in order to allow full random routing operations and remove any misunderstanding of the application of random routing within the AORRA. The meeting also agreed in a AIP Supplement model to promulgate the suspension of the ATS routes.

1.6 The Ad-hoc group, identified the ATS routes¨, to be suspended and are shown in **Appendix B** to this part of the report.

1.7 The meeting also developed a common text to be published by the relevant State suspending that part of the route which is present in the particulars States FIR, and formulated the following conclusion:

Conclusion SAT/14-1 Suspension of selected ATS Routes within the AORRA airspace

That concerned States publish by the AIRAC date of **3 July, 2008** a common AIP Supplement with effective date **25 September, 2008** to suspend those portions of the routes, shown at **Appendix B** to this part of the report, which are within the boundaries of the AORRA airspace.

Note: an AIP Supplement specimen is shown in Appendix B.

Extension of AORRA Airspace to the North

1.8 The meeting recalled that on the 21st of December 2006, the South Atlantic States implemented a Random Routing Area for aircraft operating between Africa and South America called Atlantic Ocean Random Routing RNAV Area (AORRA).

1.9 Participating airlines will potentially be able to realize large benefits from Random Route tracks designed to minimize wind effect. Maximum airline participation coupled with minimal requirements or restrictions encourages the use of the Random Routes.

1.10 The implementation of the AORRA area within the South Atlantic has begun with a group of ANSPs determining the extent of the area and considered as the initial phase. Aircraft flying Random Routes within AORRA will use the conventional Airway structure outside of the AORRA area and commence Random Routing only at the boundary. As the conventional ATS Airway structure does not always position the aircraft efficiently for a random route (Flex Track), benefits to airlines will increase with the extension of the current boundary of AORRA airspace to the North. This would make Random Routing and its associated benefits accessible to airlines operating from the Arabian Gulf (Middle East) or Central/Eastern Africa (the middle tier of Africa) in both directions. This will allow airlines to achieve fuel efficiencies and the subsequent reduction in green house gas emissions.

1.11 The meeting recalled that during the SAT/13 Task Force Meeting, Cape Town 21-23 February, extensive discussion took place with regards to the implementation of phases 2-4 of AORRA. In that sense it was agreed to implement phase 2 at the end of December 2008. In this regard IATA presented a new proposal to implement phases 2, 3 and 4 at the same time in December 2008.

1.12 The meeting was of the opinion that it will be a best option to continue with the implementation of phase 2 as it was planned and to continue with phases 3 and 4 when the ADS/CPDLC be fully implemented in the AORRA airspace.

1.13 In that connection, the meeting agreed to reformulate the Conclusion SAT/13/TF/1/04 Implementation of AORRA airspace to specify an implementation date.

Conclusion SAT/14-2 Implementation of phase 2 of AORRA airspace

That States concerned:

a) publish by the AIRAC date of **23 October, 2008** a common AIP Supplement for implementing the phase 2 of AORRA airspace by **18 December, 2008;** and

b) implement AORRA phases 3 and 4 by 17 December 2009.

Additional Entry/Exit significant points on the AORRA boundary

1.14 The meeting analyzed a IATA proposal for additional Entry/Exit waypoints that could be published on the Northern boundary of the Random Routing area on a 5° Longitude basis to allow aircraft to enter/exit the AORRA area when operating on a North-East or South-West axis. The meeting was of the opinion that at this stage it is not convenient to implement additional entry and exit points to the AORRA airspace.

Follow up of the Implementation of UN741 and UN866 as unidirectional routes.

Air traffic statistics of the EUR-SAM corridor during year 2007 and comparative data 2006-2007 and for the period 2004-2007

1.15 SATMA presented the figures of the Air Traffic flying along the EUR-SAM Corridor during year 2007 as well as the evolution of these figures since 2004.

1.16 The Air Traffic figures during 2007 shows a significant increase, 13.5%. This important increase during 2007 is far away from the forecasts for the period 2005-2015 where the most optimistic forecasts were predicting a 7% yearly increase and the most realistic a 4%. The discrete increase during 2006, 3.2% was strongly affected by the crisis of Varig, one of the main operators of the EUR/SAM Corridor, and Air Madrid in the last part of the year. The crisis of Air Madrid is also detected during January 2007, with a negative increase of -1%. But the most surprising aspect during 2007 is the spectacular increase for the period July- December, more than 23% of increase. During this period the figure of more than 3000 flights per month and an average of more than 100 flights per day had been surpassed. The complete presentation made by Spain it is shown in **Appendix C** to this part of the report.

Analysis of the new air traffic routes reallocation after the implementation of UN741 and UN866 as unidirectional routes

1.17 Spain presented a paper with a comparative data 5Th. July- 31st December 2007 and the same period during 2006, reflects the new air traffic routes reallocation after the implementation of UN741 and UN866 as unidirectional routes. After six months of experience with the new route orientation and after analyzing the comparative figures 2006-2007 for this period, it seems that this new route orientation could cope with the unexpected and especially high, (24.1%), increase during the second half of the year 2007. This increase has been accommodated without any negative operative impact in the ACCs involved except in some circumstance of bad weather conditions.

1.18 The comparative figures of the air traffic reallocation since 5th July until 31 December 2007 with the same period during 2006 shows, despite of the spectacular increase during the second half of year 2007 a clear more balanced situation in all the routes of the corridor. The keys of this better balanced situation with a high increase of the traffic flows are as follows:

a) The RANDOM route remains on a steady situation.

b) The high occupancy of route UN741, the main reason to implement this unidirectional two routes system, has decreased from 27.6% during 2006 until 24.3% during 2007.

c) Important and expected increase on route UN866 from the discrete 15.7% of utilisation during 2006, now represents the 22.9% during 2007.

d) The figures of UN873 shows still the highest values of the Corridor but there is a clear descend from the original 42.3% utilisation during 2006 until a more discrete 37.7% utilisation during 2007.

e) Moderate, but positive increase on route UN857. Although its values are still lows, there is a tendency to increase its values: 9.6% of occupancy during 2006 until 11.1% during 2007.

f) The average flights per day on routes UN741 and UN866 completely unbalanced during 2006 (22-12), has been balanced in 2007 with this unidirectional system: average of 24 flights per day on UN741 and 22 flights per day on UN866.

1.19 Analyzing all this data, (the complete information is shown at **Appendix D** to this part of the report), the meeting concluded that the implementation of the two unidirectional routes system has been successful and the ATS service along the EUR-SAM Corridor is more efficient. But this is only a temporary solution, the already commented high increases of the air traffic during the second half of 2007 adds new considerations. These considerations are as follows:

a) The assessment of the lateral and vertical risk proved that the EUR-SAM Corridor was safe, at least, until 2015, but this study was done with a yearly growth rate of 7%. In 2007 the statistics shows a 13.5% as global increase of the year but 24,1% during the second half of the year. This data should be taken into account for next safety assessment about lateral and vertical risk to be performed along to 2008.

b) The unexpected increase of the air traffic flows indicates that the implementation of RNP4 along the EUR-SAM Corridor must be considered by the SAT Group as a relevant target.

1.20 It was also received information from Senegal on the impact of the implementation of UN741 and UN866 as unidirectional routes in Oceanic Dakar FIR. **Appendix E** to this part of the report shown the analysis carried out by Senegal on this implementation.

1.21 The meeting took note that from the point of views of Dakar ACC the air traffic controllers workload has decreased slightly making the management of the traffic on these routes more comfortable and in the other hand more aircraft use optimal flight level.

1.22 Brazil also presented the follow-up of the Implementation of UN741 and UN866 as unidirectional routes and some difficulties observed regarding the filling out of the flight plan by some airlines. In this connection, the meeting was of the opinion that this type of information should be provided to IATA in order to contact the corresponding airlines and look to solve the problem identified.

1.23 After the discussion of this issue and due to the increase of the traffic identified in the EUR/SAM Corridor, the meeting was of the opinion to perform a new safety assessment in the EUR/SAM corridor. In order to carry out this activity SATMA request from the involved States data traffic information of the traffic operating outside Canarias FIR. In that sense the meeting formulate the following conclusion:

Conclusion SAT/14-3 New safety assessment in the EUR/SAM Corridor

That:

a) in order to perform a new safety assessment the States concerned in the EUR/SAM corridor provide to SATMA the data traffic information from 5 July 2007 to 31 July, 2008 of the traffic operating outside Canarias FIR; and

b) SATMA present the results of the safety analysis to the SAT 14/TF/1.

Expected benefits derived from the implementation of UN741 and UN866 as Unidirectional Routes

1.24 Spain presents the expected benefits, in terms of fuel and CO2 emissions reductions, obtained with the implementation of UN741 and UN866 as unidirectional routes.

1.25 After nine months of experience with this new unidirectional system, all data about the new air traffic distribution and flight level allocation is available and, comparing this information with the previous bi-directional system, the benefits in terms of fuel savings and CO2 emissions reductions can be assessed in this study. The complete presentation of this issue it is shown at **Appendix F** to this part of the report.

1.26 The results obtained are clearly positives in terms of fuel consumptions:

FUEL SAVING ($ USD)	AVERAGE PER YEAR	2008	2015	2008-2015
NORMAL CASE (7%)	1,500,363	1,228,438	1,729,415	12,002,901
OPTIMIST CASE (10%)	2,028,952	1,572,719	2,321,298	16,231,614

1.27 The air community could reduce its CO2 emissions anticipating the new foreseen restrictions.

CO2 EMISSIONS SAVING (TON CO2)	AVERAGE PER YEAR	2008	2015	2008-2015
NORMAL CASE (7%)	5399	4800	8342	55022
OPTIMIST CASE (10%)	9826	5998	11310	73437

1.28 The meeting appreciated the information provided and request SATMA to periodically perform a cost - benefit analysis in terms of fuel and CO2 emissions reductions in close coordination with IATA and air carriers, and formulate the following decision:

Decision SAT 14/ 4 Cost-benefit analysis in terms of fuel and CO2 emissions reductions

That SATMA, in close coordination with IATA and air carriers, periodically perform a cost-benefit analysis in terms of fuel and CO2 emissions reductions to be presented in SAT meetings.

ATS Contingency planning

1.29 The meeting noted the documentation presented by Spain describing basic guidelines to define a harmonized ATS contingency plan for the EUR-SAM Corridor.

1.30 After a deep discussion of this topic, the meeting was of the opinion that the above procedures are appropriate to include in the ATS contingencies plan of EUR/SAM States involved and also agreed in the convenience to include the ATS contingency procedures as Appendix of the respective Letters of Agreements. The meeting formulated the following conclusion:

Conclusion SAT/14-5 Contingency Plan for the EUR SAM Corridor

That:

a) States concerned publish by AIRAC date 31 July 2008 an AIC with the contingency procedures shown at **Appendix G** to this part of the Report, to be effective on 25 September 2008;

b) States concerned make the appropriate arrangement before 25 September, 2008 in order to include the contingency procedures approved as an Appendix to the Letters of Agreement;

c) Brazil make the necessary arrangements to harmonize its contingency plan with the contingency procedures shown in Appendix C to this part of the report with regard to the EUR/SAM corridor within Atlantico FIR; and

c) Cape Verde coordinate the drafting of NOTAM and AIC models, as well as the list of focal points within the ACCs concerned.

APPENDIX A

STATUS OF CONCLUSIONS AND DECISIONS RELATED TO SAT/13/TF/1 MEETING AND SAT/13 MEETING

SAT/13/TF/1 MEETING		
Conclusions and Decisions	**Implementation status**	**Remarks**
Conclusion SAT/13/TF1/01: Action plan to avoid the lack of flight plans That: a) SAT ACCs experiencing the problem of missing flight plans continue to analyze and conduct investigations on the related contributing factors in real time, using the sample form at **Appendix G** to this report; and b) States explore their ATM system capabilities to accommodate automatic exchange of coordination messages.	Valid	
Conclusion SAT/13/ TF1/02: Collection of Large Height Deviation (LHD) and Lateral Deviation (LD) in the EUR/SAM corridor That a) SATMA publish/post the Large Height Deviation (LHD) and Lateral Deviation (LD) data received from States in SATMA Website: **www.satmasat.com** for discussion at SAT meetings and to clarify codification for DATA PRESENTATION. Note 1) Nil Report delivered by State. Note 2) Report received, reflecting nil deviations b) SATMA contact Operators in EUR/SAM corridor regarding collection LHD and LD data. c) EUR/SAM States send to SATMA raw LHD and LD data directly by the 10th of each month, including when no deviations are recorded using and filling up exhaustively the Forms shown at Appendices G to this part of the report and Appendix 1C to SAT/13 report; d) States and Organizations concerned should use the diagram and the descriptive codes for vertical errors contained in Appendix I to this part of the report when evaluating the time spent by an aircraft at an unexpected flight level (or altitude) for the purposes of informing SATMA; and e) ACCs exchange LHD with the adjacent ACCs involved for proper operational analysis, in addition to the national reporting systems.	Valid	

SAT/13/TF/1 MEETING		
Conclusions and Decisions	**Implementation status**	**Remarks**
Conclusion SAT/13/TF/1/03: AIP Supplement on RNP10 and RVSM post-implementation procedures applicable in the EUR/SAM Corridor That those States which have not yet done so publish an AIP Supplement on RNP10 and RVSM operations post-implementation procedures applicable in the EUR/SAM Corridor, by the AIRAC date of 10th May 2007, for implementation by 5th July 2007, using as reference the specimen shown at Appendix H. to this part of the report.	Completed	
Conclusion SAT/13/TF/1/04: Implementation of AORRA airspace That: a) Angola to expedite the improvement of communications in Luanda oceanic FIR to meet the implementation of AORRA phase 1 by June 2007. b) States involved in phase 2 implement AORRA by no later than 31 December 2008; and c) States involved in phases 3 and 4 implement AORRA by no later than 31 December 2009	Completed Supersed Supersed	See Conclusion SAT/14-2
Conclusion SAT/13/TF/1/05: Need for contingency arrangements aimed at upgrading the level of air safety in Luanda Oceanic FIR That, as a matter of urgency in the interest of the safety of international air navigation over the oceanic airspace, a) Applicable procedures for users' guidance when experiencing radio communications failure with Luanda ACC shall be published in the Angolan AIP. and b) The ICAO Regional Offices, Dakar and Nairobi be requested to facilitate the necessary arrangements between Angola and South Africa or any other neighbouring State in a position to provide assistance, with a view to improving the level of air safety in the short term within Luanda oceanic FIR.	Valid Completed	Coordination with South Africa is on going
Conclusion SAT/13/TF/1/06: EUR/SAM Contingency Plan That Spain coordinates with other SAT States concerning the development of a comprehensive ATS Contingency Plan for the EUR/SAM Corridor in accordance with ICAO provisions in Annex 11 and Doc 9426, and present the result to SAT/14 meeting.	Completed	
Conclusion SAT/13/TF/1/07: Implementation of Atlantico/Luanda ATS/DS circuit That Angola, Brazil and South Africa consider the implementation of Atlantico/Luanda ATS/DS link via Johannesburg through CAFSAT/SADC interconnection.	Supersede	See Conclusion SAT/14-6

SAT/13/TF/1 MEETING		
Conclusions and Decisions	**Implementation status**	**Remarks**
Conclusion SAT/13/TF/1/08: Implementation of Las Palmas/Nouadhibou and Las Palmas/Nouakchott ATS/DS links That AENA (Spain) and ASECNA explore ways and means of solving as soon as possible the ATS/DS deficiencies between Las Palmas and Nouakchott and between Las Palmas and Nouadhibou ATS units, based on the agreed principle of interconnecting AFISNET-CAFSAT as the optimal technical solution.	Completed	See Conclusion SAT/14-7
Conclusion SAT/13/TF/1/09: Implementation of ADS/CPDLC plans by SAT States a) That SAT members be apprised of the various conclusions related to the need of an implementation/operational application of ADS/CPDLC in the SAT area by the end 2010 or before. b) Note; Canarias FIR, SAL Oceanic FIR, Dakar Oceanic FIR and Atlantico FIR (EUR/SAM Corridor), will take the appropriate measures aiming at full operational implementation by December 2008, in compliance with previous SAT conclusions.	Supersede	See SAT FIT/3 Report
Conclusion SAT/13/TF/1/18: Procedures applicable to non-RVSM capable aircraft in the South Atlantic due to MASPS failure That, in view of situations where an aircraft might lose RVSM capability, in the oceanic airspace, due to equipment failure affecting MASPS, SAT States include in their respective letters of procedures the provision that a 2000 ft vertical separation from other aircraft shall be applied to that flight and that the aircraft be allowed to continue as per the filed flight plan until within range of its destination or suitable alternate before being required to clear RVSM designated airspace, taking into account restrictions published for specific airspace portions.	Completed	
Conclusion SAT/13/TF/1/19: AFI States' cooperation with ARMA in data collection That AFI States be requested to fully cooperate in providing AFI Regional Monitoring Agency (ARMA) with timely and exhaustive information in order for the RMA to perform its duties and responsibilities in an efficient and effective manner.	Valid	
Conclusion SAT/13/TF/1/20: Implementation of UN741 and UN866 as unidirectional routes. That the concerned SAT member States implement routes UN741 and UN866 as unidirectional routes on the AIRAC date of 5th July 2007.	Completed	

SAT/13/TF/1 MEETING		
Conclusions and Decisions	**Implementation status**	**Remarks**
Conclusion SAT/13/TF/1/21: Operational Procedures for the implementation day of the double unidirectional routes UN741 and UN866 That the transitional procedure at attachment to this report shall be adopted by all concerned ACCs for implementation with Spain as co-ordinator of all the activities during the transition.	Completed	
Conclusion SAT/13/TF/1/22: AIC publication for the implementation of the unidirectional of UN741 and UN866 routes That Concerned States shall publish AIC for the implementation of the unidirectional of UN741 and UN866 routes on the AIRAC date of 10th May 2007 using the text attached at Appendix D to this report.	Completed	
Conclusion SAT/13/TF/1/23: NOTAM publication for the implementation of UN741 and UN866 as unidirectional routes That Concerned States publish a trigger NOTAM at least fourteen days before implementation, using the text attached at **Appendix E** to this report.	Completed	
Conclusion SAT/13/TF/1/24: Safety Plan for Transition day to the new route structure in EUR/SAM Corridor That States or ATM Providers (Cape Verde, Brazil, Senegal and ASECNA) nominate and forward to SATMA a contact person to handle SATMA transition safety plan tasks before the transition day, not later then 1st June 2007.	Completed	
Conclusion SAT/13/TF/1/25: SARSAT/COSPAS SPOCs That the ICAO Regional Office, Dakar coordinate with SAT AFI States and Organizations concerning the updating of SARSAT-COSPAS points of contact addresses and forward the updated information to the SARSAT-COSPAS Mission Control Centre (MCC) located in Maspalomas, Spain.	Valid	
Decision SAT/13/TF/1/01: Future work programme That the SAT Group work programme be amended as per Appendices 4A, 4B and 4C to SAT/13 report.	Supersed	See Conclusion SAT/14-16

SAT/13 MEETING		
Conclusions and Decisions	**Implementation status**	**Remarks**
Conclusion SAT/13/13: Aeronautical communications network development strategies That SAT States and Organizations concerned: a) Take the proper actions to achieve and apply comprehensive strategies for the interconnection of VSAT networks to meet ATS requirements in the South Atlantic area; b) Work towards seamless regional/inter-regional digital communication networks based on the Internet Protocol Suite (IPS); c) Give due consideration to managed network services (e.g. a virtual private network (VPN)) subject to availability and cost effectiveness.	Valid	
Conclusion SAT/13/14: Standardization of the Internet Protocol Suite and need for end-to-end performance requirements a) That ICAO be requested to expedite its work on: b) The standardization of the Internet Protocol Suite for the States and Organizations to implement it in conformity with Article 28 of the Chicago Convention; and c) The establishment of a universally agreed set of end-to-end performance requirements to facilitate the formulation and administration of contracts for obtaining managed network services.	Valid	
Conclusion SAT/13/15: Communications systems upgrading and maintenance That SAT States and Organizations concerned take the necessary steps to upgrade as required and secure spare parts of operational equipment in order to minimize any potential critical impact on the current communications system.	Valid	
Conclusion SAT/13/16: ATS Voice Numbering Plans for AFI and SAM Regions That SAT States, Organizations concerned and ICAO Regional Offices, Dakar and Lima take the necessary steps to include in GREPECAS and APIRG work programmes studies on the implementation OF ATS Voice Numbering Plans for AFI and SAM Regions, as defined by the recommendation contained within the *ICAO Manual on ATS Ground-Ground Voice Switching and Signalling* (Doc 9804, Chapter 2 Section 2.3).	Valid	

SAT/13 MEETING		
Conclusions and Decisions	**Implementation status**	**Remarks**
Conclusion SAT/13/17 Implementation of ATS No.5 Protocol in the SAT area That: a) SAT States and Organizations be encouraged to carry out technical research and in-depth investigations on their systems in view of a potential implementation of the ATS No.5 protocol in the SAT area, in accordance with ICAO guidance material contained in Annex 10 and Doc 9804; b) Cape Verde, Portugal, Spain and ASECNA implement trials in order to establish the prerequisites related to the implementation of ATS-N5 signalling using VSAT links and appropriate CODECs (as required); and c) SAT CNS Working Group work programme be amended to include the analysis of all aspects related to the implementation of ATS No.5 protocol.	Valid	
Conclusion SAT/13/18: Amendment proposals to AFI and SAM AFTN Routing Directories That AFI and SAM AFTN Routing Directories be amended to incorporate Ezeiza/Johannesburg and Johannesburg/Recife circuits.	Valid	
Conclusion SAT/13/24: Implementation of AMHS That: a) SAT States and Organizations take advantage of the experience gained by Argentina and Spain in the deployment of AMHS systems in the SAT Area; and b) Argentina, Cape Verde and Spain arrange for the interconnection of their AHMS systems, on a trial basis, and present the results to the next SAT meeting.	Superseded	See Conclusion SAT/14-8

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APPENDIX B

DRAFT AIP SUPPLEMENT

AIRAC
AIP SUPPLEMENT
S???
2008

AIRAC Effective Date: 25th September 2008

ATLANTIC OCEAN RANDOM ROUTING RNAV AREA (AORRA)

SUSPENSION OF ROUTES WITHIN THE AORRA

1. INTRODUCTION

1.1 The objective of the South Atlantic Group (SAT) is to facilitate the efficient provision of Air Traffic

Services in the South Atlantic Area and to plan the implementation of CNS/ATM Systems.

1.2 As per decisions reached by the SAT/11 and SAT/12 meetings, the implementation of that part of the AORRA corresponding to the oceanic sectors of Angola, Argentina, Brazil,

1.3 South Africa(Including delegated Namibian airspace) and Uruguay has been achieved.

1.4 Conclusion SAT13/10 of the SAT 13 meeting, Retention of ATS routes within AORRA airspace reflects : "That the States involved in the AORRA implementation should retain a minimum number of selected ATS routes within the AORRA airspace, but however suspend those portions of the routes identified, which are within the boundaries of the AORRA. Such route portions are to be activated in case of contingency measures."

1.5 The purpose of this publication is to advise users that in compliance with the SAT Conclusion SAT14-1, sections of routes, identified in the accompanying table, which are contained within the present boundaries of the AORRA as published by the States concerned, will be suspended with effect from 25th September 2008

2. DESCRIPTION OF ATS ROUTES SUSPENDED WITHIN THE AORRA AIRSPACE

2.1 **As of 0001 UTC on AIRAC Date 25th September 2008,** the following sections of ATS routes as contained within the boundaries of the AORRA as presently published by the States concerned will be suspended.

Johannesburg Oceanic FIR

UL435	ILDIR	S 18 00 00	E010 00 00	IBLOK	S 18 47 40.00 E 011 40 34.00
UQ11	UBVER	S 27.55.40	E014 17.70	OKTEL	S 28 07 53.81 E 015 00 00.00

UQ18 ILDIR S 18 00 00 E010 00 00 UVGOD S 29 09 43.27 E 015 00 00.00
UL375 USENA S18 27 48 W 006 07 12 BUXIR S 32 00 00.00 E 015 00 00.00

UA405 ETOBO S 233900 W 010 00 00 OKDOG S 33 05 00.00 E 015 00 00.00
UL224 ITGIV S 325600 W 010 00 00 ITMEK S 34 12 00.00 E 015 00 00.00
UL211F MUNES S 40 19 58 W 010 00 00 ITLIK S 35 16 00.00 E 014 59 57.00

Angola FIR

UL435 URAPI S 09 49 07 W003 48 00 ILDIR S18 00 00 E010 00 00
UL375 ETAXO S 15 00 00 W010 00 00 USENA S18 27 48 W 006 07 12

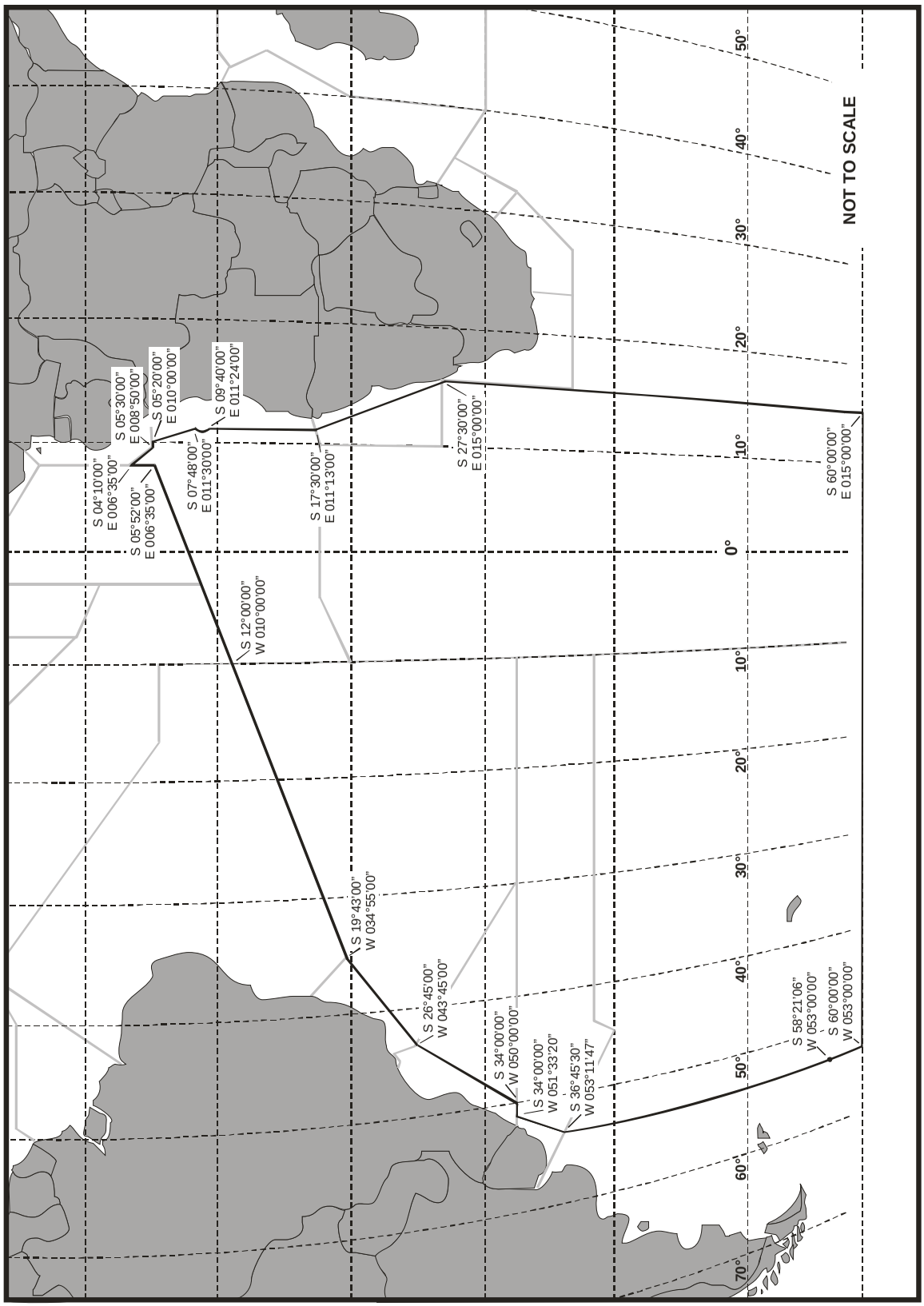
UR991F GAPEL S 08 17 08 E 000 19 00 ILDIR S18 00 00 E010 00 00
UG853F TERBA S 04 47 09 E 006 35 00 OPAPO S07 48 00 E011 30 00
UL340 ILGER S17 22 04 W 010 00 00 ONTAR S09 40 00 E011 24 00

Atlántico FIR

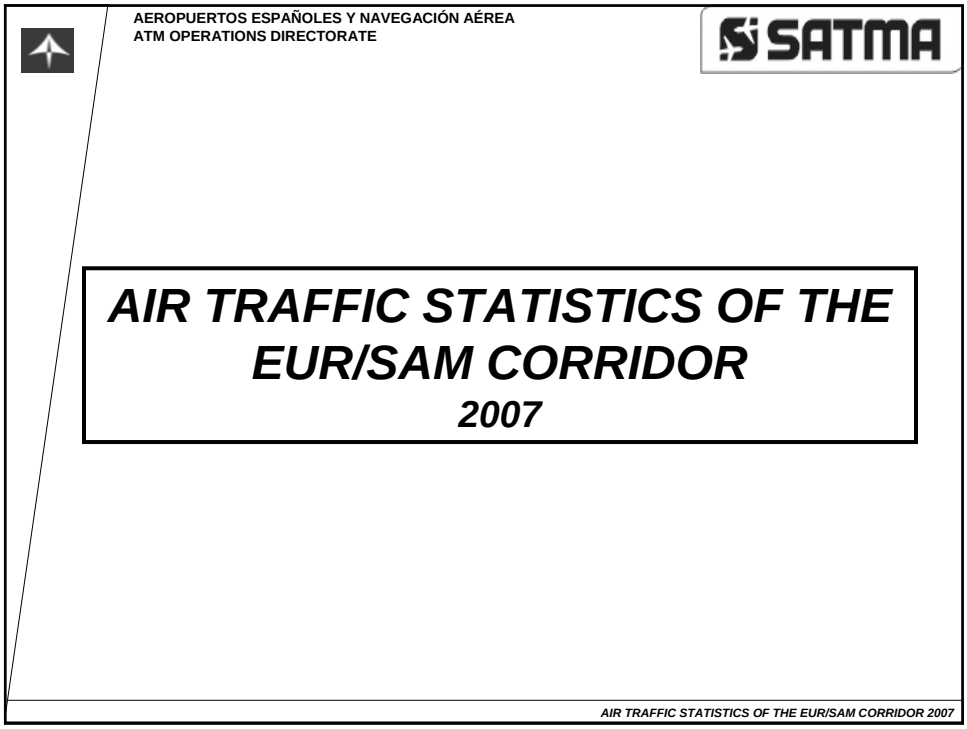
UL224 CIDER S 24 07 49.80 W 040 16 23.40 ITGIV S32 5600 W010 00 00
UL340 EKALO S 22 26 00.00 W 038 08 48.00 ILGER S17 22 04 W010 00 00
UL375 SISET S 13 07 39.00 W 013 03 29.00 ETAXO S15 00 00 W010 00 00

Ezeiza FIR

UL211F GUXOR S 37 22 30.00 W 053 00 00.00 MUNES S40 19 58.00 W010 00 00


NOT TO SCALE
50°
40°
30°
20°
10°
0°
10°
20°
30°
40°
50°
60°
70°
S 04°10'00" E 006°35'00"
S 05°52'00" E 006°35'00"
S 05°30'00" E 008°50'00"
S 05°20'00" E 010°00'00"
S 07°48'00" E 011°30'00"
S 09°40'00" E 011°24'00"
S 17°30'00" E 011°13'00"
S 27°30'00" E 015°00'00"
S 60°00'00" E 015°00'00"
S 12°00'00" W 010°00'00"
S 19°43'00" W 034°55'00"
S 26°45'00" W 043°45'00"
S 34°00'00" W 050°00'00"
S 34°00'00" W 051°33'20"
S 36°45'30" W 053°11'47"
S 58°21'06" W 053°00'00"
S 60°00'00" W 053°00'00"

APPENDIX C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ATM OPERATIONS DIRECTORATE
SATMA
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2007
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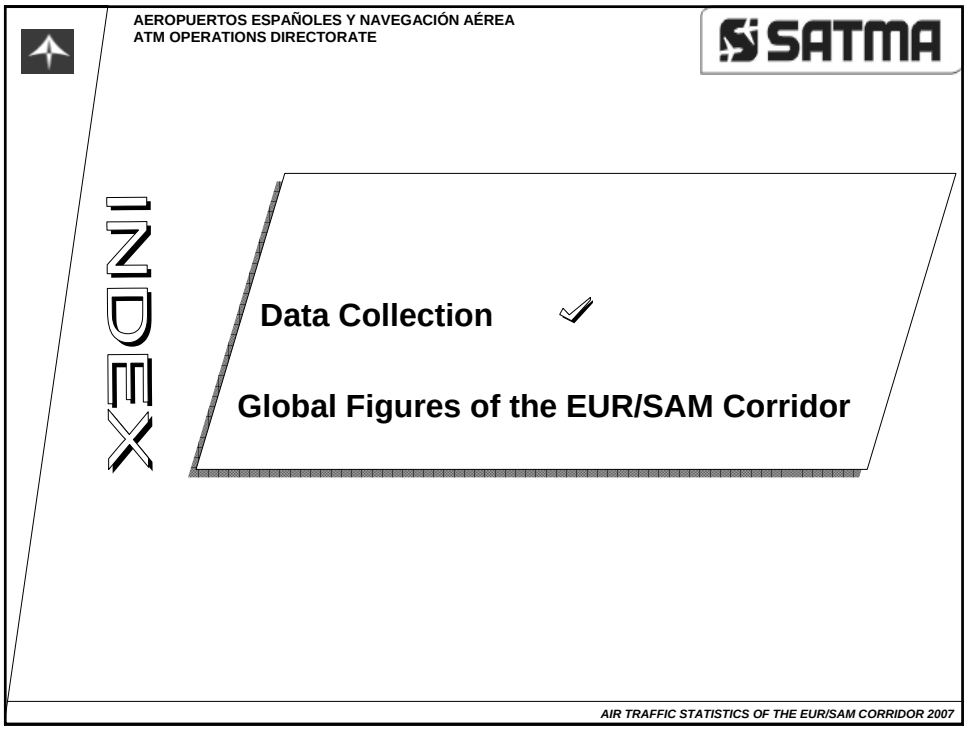
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DATA COLLECTION (I)

THE NECESSARY FLIGHT PLAN INFORMATION TO PERFORM THIS STUDY IS OBTAINED FROM PALESTRA (AENA´S DATA BASE):

1. **THIS FLIGHT PLAN DATA CONTAINS INITIAL FLIGHT PLAN INFORMATION THAT IS UPDATED BY RADAR AND CONTROLLERS WITH PILOT POSITION REPORTS.**

2. **THE AIR TRAFFIC MOVEMENTS REFLECTED IN THIS STUDY ARE:**

   - **ALL AIRCRAFTS USING UN741, UN866, UN873 AND UN857 WHOSE FLIGHT PLANS CONTAINS INFORMATION ABOUT EDUMO, TENPA, IPERA AND GUNET FIX POINTS.**
   - **AIRCRAFT USING THE RANDOM ROUTE.**

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AIR TRAFFIC STATISTICS OF THE EUR/SAM CORRIDOR 2007

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DATA COLLECTION (II)

4. **THIS STUDY DOES NOT REFLECT:**

   - **TRAFFIC NOT OVERFLYING CANARIES FIR/UIR.**
   - **DATA FROM EAST-WEST FLOWS CROSSING THE EUR-SAM CORRIDOR.**
   - **TRAFFIC TO THE SOUTH ORIGIN- DESTINATION CAPE VERDE.**

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GLOBAL FIGURES

MONTH	SOUTHBOUND		NORTHBOUND		TOTAL TRAFFIC IN THE CORRIDOR						% VARIATION	% VARIATION
	2006	2007	2006	2007	2005	DAILY	2006	DAILY	2007	DAILY	2005 - 2006	2006 - 2007
JANUARY	1330	1290	1364	1373	2485	80	2694	86	2663	85	8%	-1%
FEBRUARY	1152	1239	1212	1248	2162	77	2364	84	2487	88	9%	5%
MARCH	1339	1404	1294	1360	2358	76	2633	84	2764	89	12%	5%
APRIL	1217	1321	1268	1293	2193	73	2485	82	2614	87	13%	5%
MAY	1237	1270	1251	1336	2171	70	2488	80	2606	84	15%	5%
JUNE	1180	1244	1223	1289	2250	75	2403	80	2533	84	7%	5%
JULY	1142	1414	1197	1495	2516	81	2339	75	2909	93	-7%	24%
AUGUST	1215	1449	1259	1558	2591	83	2474	79	3007	97	-5%	22%
SEPTEMBER	1107	1403	1194	1441	2387	79	2301	76	2844	94	-4%	24%
OCTOBER	1204	1478	1212	1388	2459	79	2416	77	2866	92	-2%	19%
NOVEMBER	1231	1581	1267	1527	2476	82	2498	83	3108	103	1%	24%
DECEMBER	1297	1611	1295	1696	2714	87	2592	83	3307	106	-4%	28%
AVERAGE	1221	1392	1253	1417	2397	79	2474	81	2809	92	3.2%	13.5%

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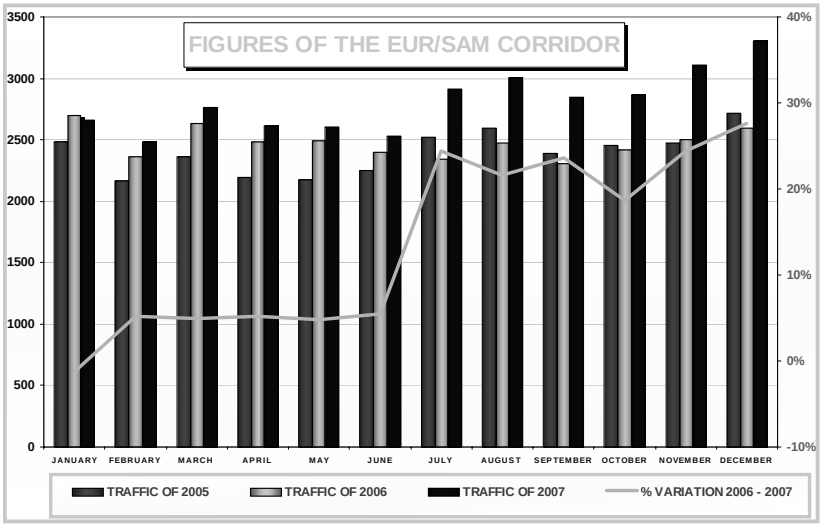

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NUMBER OF MOVEMENTS PER AIRCRAFT OPERATOR

AIRCRAFT OPERATOR	TRAFFIC OF 2006	TRAFFIC OF 2007	% VARIATION 2006 - 2007
TAP	5332	6306	18.3%
IBE	4068	4550	11.8%
TAM	1574	3430	117.9%
AFR	2311	2993	29.5%
ARG	1289	1435	11.3%
TCV	1412	1355	-4.0%
MPD	271	1159	327.7%
AEA	425	1056	148.5%
VRN	0	875	
DLH	584	789	35.1%
LAN	707	740	4.7%
REST	11714	9020	-23.0%

AIR TRAFFIC STATISTICS OF THE EUR/SAM CORRIDOR 2007