INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWELFTH INFORMAL COORDINATION MEETING ON THE IMPROVEMENT OF AIR TRAFFIC SERVICES OVER THE SOUTH ATLANTIC

(SAT/12)

(Sal Island, Cape Verde Archipelago, 15 – 17 December 2004)

R E P O R T

This report has no official status and
is not subject to any formal action by ICAO

PREPARED BY THE WESTERN AND CENTRAL AFRICAN OFFICE

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History of the meeting

ii-1 Introduction

ii-1.1 The Twelfth Informal Coordination Meeting on the improvement of air traffic services over the South Atlantic (SAT/12) was held in Sal Island, Cape Verde Archipelago, from 15 to 17 December 2004. The meeting was hosted by ASA, Cape Verde and was held at the New Area Control Centre of Sal Oceanic Flight Information Region.

ii-1.2 The meeting was officially opened by Mr. Mario Lopez, Chairman of ASA, Cape Verde, who welcomed the participants and wished them fruitful deliberations and a nice stay in Sal Island. In his welcome address, Mr. Mario Lopez emphasized the importance of Informal Coordination Meetings on the improvement of ATS services over the South Atlantic, particularly in relation with the implementation of the CNS/ATM systems. He took this opportunity to reaffirm the commitments of Cape Verde and ASA to the development of international civil aviation community.

ii-1.3 Mr. Mr. Prosper Zo'o-Minto'o, CNS Regional Officer from the ICAO Western and Central African Office, also addressed the meeting and extended his warm welcome to the delegates. He particularly thanked and congratulated the Capeverdean authorities for the arrangement of the meeting and the implementation of an integrated air navigation modernization programme (inaugurated in June 2004), and encouraged all SAT States for their relentless efforts to improve air navigation safety and efficiency in the South Atlantic, by implementing new CNS/ATM applications in their respective FIRs. Mr. Zo'o-Minto'o also underscored the importance of the SAT Group as an interregional mechanism gathering representatives from AFI, EUR, CAR, NAM and SAM Regions, and its anticipated role in the development of interregional interface applications with a view to facilitating the harmonized implementation of air navigation systems giving rise to a global ATM system in an evolutionary fashion.

ii-1.4 Mr. José Emmanuel Rodrigues, Administrator of ASA, Cape Verde was unanimously elected as Chairman of the meeting.

ii-1.5 Mr. Prosper Zo'o-Minto'o, was the Secretary of the meeting. He was assisted by Mr. Jorge Fernandez Demarco and Mr. Onofrio Smarrelli, respectively ATM and CNS Regional Officers from the ICAO, Lima Office.

ii-2 Attendance

ii-2.1 The meeting was attended by 44 participants from 11 contracting States (Angola, Argentina, Brazil, Cape Verde, France (French Guyana), Portugal, Senegal, South Africa, Spain, Trinidad and Tobago and United States of America), 2 international organizations (ASECNA, IATA) and 1 airline operator (TAP).

ii-2.2 The List of participants is shown at **Appendix A** to this part of the report.

ii-3 **Working language**

ii-3.1 The meeting was conducted in English and documentation was made available in this language.

ii-4 Agenda

The meeting adopted at its opening session the following agenda:

Agenda Item 1: Review of SAT/11 Conclusions and Decisions and follow up actions taken thereon by SAT Members and the Secretariat

Agenda Item 2: Review of the Report of the SAT/11 Task Force

Agenda Item 3: Air Traffic Management

1) Investigations on the Lack of Flight Plans
2) Harmonization of RVSM programmes for CAR/SAM and
3) AFI Regions, including flight level allocation scheme
4) Introduction of Random RNAV Routing in the South Atlantic

Agenda Item 4: Communications

1) Performance assessment (AFTN statistics, loss of messages)
2) Extension of VHF coverage
3) VSAT networks: developments, consolidation, interoperability requirements

Agenda Item 5: CNS/ATM Systems Implementation

1) Systems evolution tables
2) ADS/CPDLC programmes

Agenda Item 6: Any other Business

1) Harmonization of ANPs
2) Contingency planning
3) Future Work Programme
4) Venues of Next Meetings

ii-5 Conclusions and decisions

The meeting adopted the following conclusions and decisions :

Conclusion SAT/12/1: Need for further investigations on the lack of flight plans

That, considering the high priority to be accorded to the issue of lack of FPLs, SAT ACCs establish an appropriate mechanism for investigating thereabout on a case by case basis during the period from 1 to 31 March of 2005 as follows:

a) the ACC facing the problem should analyze the reasons why the FPL is missing;
b) the focal points of contact shown at **Appendix 3 - A**, should compile the results of the investigations and exchange the compiled information with the other designated focal points and the Secretary of the SAT Group no later than 15 April 2005;
c) the investigations should be conducted using the form shown at **Appendix 3 - B**.

Conclusion SAT/12/2: Investigation on users FPL procedures

That, in addition to ACC investigations, IATA analyze and evaluate the reliability of the flight plan procedure used by a selected member airline involved with the missing flight plans in the SAT area, and inform SAT members of their findings.

Conclusion SAT/12/3: Flight level allocation scheme applicable in the EUR/SAM Corridor

That :

a) Brazil, Cape Verde, Senegal and Spain publish no later than December 21, 2004, a common NOTAM announcing the new Flight Level Allocation Scheme applicable in the EUR/SAM Corridor as shown in **Appendix 3 - C**.;
b) ICAO and IATA take the appropriate actions to assist in disseminating this information among the users.

Conclusion SAT/12/4: Special coordination procedures for cruise operation of Non – RVSM/RNP10 Compliant aircraft in the EUR/SAM RVSM/RNP10 airspace

That Brazil, Cape Verde, Senegal and Spain publish an AIP Supplement or AIP Amendment implementing the special coordination procedures for cruise operations of Non - RVSM/RNP10 compliant aircraft in the EUR/SAM RVSM/RNP10 airspace on January 20, 2005, as shown in **Appendix 3 - D** in order to be in force on March 17, 2005

Note: The Secretariat will carry out the necessary coordination with Spain and the other States involved for the publication of the AIP Supplement or AIP Amendment.

Conclusion SAT/12/5: Analysis of RVSM safety assessment parameters and aircraft/operator approval status in the EUR/SAM Corridor

That SATMA take the appropriate actions in order to analyze the following parameters, in accordance with ICAO Doc. 9574, Chapter 6 – *System Performance Monitoring*:

- the vertical overlap probability, P z (1 000), does not exceed 1.7 × 10 -8 ;
- the combination of all passing frequency components has no more of an adverse effect on risk than does an opposite- direction passing frequency of 2.5 per aircraft flying hour; and
- the lateral overlap probability, Py (0), is not greater than 0.058 (this is based on a lateral path-keeping accuracy standard deviation of 550 m (0.3 NM)).
- the risk as a result of operational errors and in-flight contingencies.
- the RVSM approval status of operators and aircraft using EUR/SAM Corridor airspace.

Conclusion SAT/12/6: Integrity/Accuracy of RMAs information on RVSM approval status of aircraft and operators

That SATMA should harmonize its database on the RVSM approval status of aircraft and operators with other RMAs in order to avoid discrepancies and to prevent flights from undue penalties and safety risks.

Conclusion SAT/12/7: Collection of Large Height Deviation (LHD) in the EUR/SAM Corridor

That the Secretariat request Brazil, Cape Verde, Senegal and Spain to use the new Large Height Deviation (LHD) Form shown at **Appendix 3 - E** to forward LHD data to SATMA. The LHD Form shall be sent to SATMA, even if no deviation occurs, by the 10th of each month.

Conclusion SAT/12/8: Action plan for random RNAV routing implementation in AORRA airspace

That the action plan developed at **Appendix 3 - F** be adopted for the implementation in November 2005 (*AIRAC date*) of random RNAV routing in the AORRA airspace as described at **Appendix 3 - G**.

Decision SAT/12/9: Establishment of a Study Group on a new airspace structure in the EUR/SAM Corridor

That:

a) To improve the capacity and efficiency of the operations in the EUR/SAM Corridor, a Study Group is established with the mandate to develop short-term, mid-term and long term strategies for the implementation of a new airspace structure; and

b) The terms of reference, work programme and composition of the Study Group are shown at **Appendix 6 – C to the report on Agenda Item 6**.

Conclusion SAT/12/10: Lateral offset procedures

That, in order to mitigate collision risk, the lateral offset procedures should be used in the SAT airspace; to this effect:

a) Brazil, Cape Verde, Senegal and Spain publish a NOTAM based on the model shown at **Appendix 3 - H** on December 21, 2004 to be effective on January 20, 2005;
b) Angola, Brazil, Cape Verde, Senegal, South Africa and Spain publish the AIP SUPP/AIP Amendment based on the model shown at **Appendix 3 - I** on January 20, 2005 for applicability on March 17, 2005; and
c) ICAO and IATA take the appropriate actions to assist in disseminating this information among users.

Conclusion SAT/12/11: Amendment to the AFI Part to the SUPPS (Doc. 7030)

That, in order to harmonize the AFI and SAM Parts of the *SUPPs (Doc. 7030),* the Secretariat develop an amendment proposal to be presented to the SAT/13 meeting.

Conclusion SAT/12/12: Extension of the ATS route UM799

That ICAO coordinate with States involved the extension of ATS Route UM 799 from SLI VOR/DME in Amazonica FIR to appropriate points within Canarias and Sal FIRs.

Conclusion SAT/12/13: Improvement of AFS performance in the South Atlantic

That the following measures be implemented to improve AFS performance in the SAT area:

a) To harmonize monitoring procedures, protocols and reporting methodologies;
b) To hold AFTN monthly statistics on circuits availability and quarterly statistics on transit times in accordance with the established procedures, disseminate these data among all AFTN correspondents within the SAT area, and coordinate the corrective measures to be implemented as necessary;
c) To harmonize AFI, EUR and SAM Routing Directories on a regular basis and effectively implement the agreed requirements therein at each AFTN switching centres under ICAO coordination; and
d) To designate focal points of contact responsible for technical coordination between SAT centres. Contact details (postal addresses, telephone numbers, fax numbers and electronic mail addresses) of the designated focal points should be sent to the Secretary of the SAT Group no later than 15 January 2005.

Conclusion SAT/12/14: Investigations on the loss of AFTN messages between SAT ACCs

That, in order to further analyze and mitigate the loss of AFTN messages in the South Atlantic, including flight plan messages, Atlantico, Canarias, Casablanca, Dakar, Johannesburg, Lisbon, Luanda, Piarco, Rochambeau, Sal and Santa Maria ACCs:

a) Carry out a three-day survey on AFTN performance from 15 to 17 March 2005 (inclusive), using the form and model messages attached as **Appendix 4-A** to this part of the report. In so doing, they should:
    1. Provide a list of the AFTN addresses of their ACC correspondents in the SAT area; and

2. Send the results of the AFTN survey to the Secretary of the SAT Group before 30 March 2005;

b) Take into account the following elements when analyzing the AFTN link operation during the investigations on the loss of flight plans to be conducted on a case by case basis from 1 to 31 March 2005 in accordance with SAT/12 Conclusion 12/1:
   1. Availability of the AFTN circuit(s) involved, based on the implemented routing configuration;
   2. Transit times;
   3. End user terminals (AFTN PC, teletype); and
   4. Alphabetic codes (ITA-2, IA-5).

Conclusion SAT/12/15: Consolidation of aeronautical VSAT networks

That, taking due account of networks development plans and technical considerations:

a) CAFSAT Network should be established on Satellite IS 10-02 as soon as practicable; and
b) The Secretariat carry out the necessary coordination with INTELSAT to secure the required bandwidth for civil aviation use in view of the transfer of CAFSAT network services to IS10–02 satellite.

Decision SAT/12/16: Study on networks interoperability requirements

That the work programme of the SAT CNS Working Group be amended to include a detailed study on VSAT networks interoperability requirements, including the consolidation of VSAT networks on IS 10.02 satellite; the results and appropriate recommendations from the study should be presented to the next SAT meeting.

Conclusion SAT/12/17: Adoption of FANS 1/A operational manual

That in order to ensure harmonization of ADS/CPDLC procedures/systems with other regions:

a) SAT States adopt the FANS 1/A operational manual (FOM) developed for the Pacific Ocean, Indian Ocean, Bay of Bengale;
b) South Africa (ATNS), in coordination with the Secretariat and States in charge of the development of the FOM, carry out co-ordinations in order to include SAT FIRs into the manual and keep the manual updated.

Conclusion SAT/12/18: Creation of a FANS 1/A interoperability team (FIT)

That a SAT FANS 1/A interoperability team (FIT) be created to oversee the monitoring of FANS 1/A system performance to ensure that it continues to meet safety and interoperability requirements and that operations and procedures are working as specified. The FIT main objectives are to:

a) follow the ADS/CPDLC tests that are being carried out by SAT States and adjacent States;
b) review identified problem reports and determine appropriate resolution;

c) develop interim operational procedures to mitigate the effects of problems until such time as they are resolved;
d) monitor the progress of problem resolution;
e) prepare summaries of problems encountered and their operational implications;
f) assess system performance based on information in CRA periodic reports; and
g) authorize and co-ordinate system testing.

Conclusion SAT/12/19: ATS contingency plans

That:

a) SAT ACCs carry out the necessary bilateral coordination through electronic correspondence to develop and implement harmonized ATS contingency plans in accordance with ICAO provisions in Annex 11 and Doc 9426; through the focal points of contact shown at **Appendix 6-A**; and
b) Once finalized, the coordinated ATS contingency plans be submitted to the ICAO Council for approval as temporary amendments to regional ANPs.

Decision SAT/12/20: Terms of reference, future work programme and composition of the SAT Group bodies

That the future terms of reference, work programme and composition of the SAT ATM Working Group (ATM/WG), Study Group on the implementation (IAS/SG) of a new airspace structure and CNS Working Group (CNS/WG) respectively be as shown at **Appendices 6-B, 6-C** and **6-D** to this part of the report.

SAT/12 MEETING, SAL ISLAND, CAPE VERDE, 15-17 DECEMBER 2004
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Agenda Item 1: Follow up on Conclusions from SAT/11 Meeting.

1.1 Under this agenda item, the meeting reviewed the implementation status of the conclusions and decisions adopted by the Eleventh Meeting on the improvement of air traffic services over the South Atlantic (SAT/11), which was held in Johannesburg, South Africa, from 17 to 21 February 2003, and follow up actions taken thereon by SAT Members and the Secretariat. The implementation status of these conclusions and decisions is shown at **Appendix 1-A** to this part of the report.

Status of Implementation of SAT/11 Conclusions and Decisions		
Conclusions and Decisions	**Implementation status**	**Remarks**
Conclusion 11/1:Status reports on missing flight plans in the SAT area That, monthly status reports on missing plans be established by SAT participating ACCs. Such reports on missing flight plans to be circulated to SAT members and submitted to SAT Task Force for further action, should include the following elements for each flight involved: date, time, aircraft type, flight number, point of departure, destination, as listed in **Appendix A** to *the* Report.	Still valid.	
Conclusion 11/2:Need for further investigations That EUR/SAM ACCs: a) undertake further investigations on the lack of flight plans, including individual cases, with emphasis on the aeronautical fixed telecommunication network (AFTN) links, switching centres, routing directory and transit time statistics as defined in ICAO Doc 8259; and *b)* report their findings to the SAT Task Force for remedial actions.	Still valid.	See Report on Agenda Item 4.
Conclusion 11/3:Implementation of repetitive flight plans (RPLs) That EUR/SAM ACCs investigate ways to implement harmonized repetitive flight plans (RPLs) procedures in accordance with ICAO provisions.	Cancelled.	
Conclusion 11/4:Aeronautical Information Circular (AIC) on SATMA new reporting format That the States in EUR/SAM Corridor publish an aeronautical information circular (AIC) on SATMA new reporting format to be sent to them and made available on SATMA website (www.satmasat.aena.es).	Cancelled.	
Conclusion 11/5:Participation in the monitoring process That in order for the monitoring process to be efficient and reliable: a) all EUR/SAM ACCs endeavour to follow data collection procedures by forwarding relevant and precise data to SATMA, the monitoring agency using the adequate reporting format and taking due account of agreed reporting dates; and b) all airline operators be fully involved and actively participate in the reporting process.	a) Still valid. b) Still valid.	
Conclusion 11/6:Harmonization of RVSM and RNP monitoring policies That: a) SATMA's handbook be reviewed so as to reflect the global guidance material developed by ICAO Separation and airspace safety panel (SASP) when finalized; b) The RVSM monitoring duties and responsibilities defined by SASP be adopted for SATMA; and c) SATMA RNP monitoring duties and responsibilities be harmonized with those defined for the other monitoring agencies.	a) Still valid. b) Still valid. c) Still valid.	
Conclusion 11/7:Need for a cost recovery mechanism to support SATMA That SATMA RVSM and RNP monitoring duties and responsibilities be supported by a relevant and appropriate cost recovery mechanism.	Cancelled.	

Status of Implementation of SAT/11 Conclusions and Decisions		
Conclusions and Decisions	**Implementation status**	**Remarks**
Conclusion 11/8:RVSM exemptions in the EUR/SAM Corridor That: a) Those States in agreement to establish the exemption procedures for civil aircraft do so on a case by case basis, as an interim measure; and b) The exemption procedures be considered by the SAT Task Force in view of a possible uniform application in the EUR/SAM Corridor.	a) Cancelled. b) Completed.	 Reformulated. See Report on Agenda Item 3.
Decision 11/9:Establishment of a Study Group on the implementation of random RNAV routing in AR1/AH2 and AR2/AH8. That : a) A Study Group be established with the mandate of carrying out the necessary work to achieve a smooth implementation of random RNAV routing in AR1/AH2 and AR2/AH8; and b) The terms of reference, work programme and composition of the Study Group be as proposed in Appendix C to the Report.	a) Completed b) Completed.	
Conclusion 11/10:Implementation of random RNAV routing in AR1/AH2 and AR2/AH8 That: a) Random RNAV routing be implemented in the EUR/SAM Corridor (AR1/AH2) and AFI/NAT/SAM Interface (AR2/AH8) at AIRAC date of November 2005; b) SAT services providers take all necessary measures to implement the required systems sufficiently in time to support random RNAV operations, including ADS and CPDLC capabilities; and c) IATA's assistance be requested to keep the SAT Group informed of its associate airlines aircraft equipage status with respect to ADS and CPDLC functionalities, as additional requirements which would increase the benefits.	a) Still valid for AORRA airspace. b) Still valid. c) Still valid.	Reformulated. See Report on Agenda Item 3.
Conclusion 11/11: Implementation of ATS UL375, UL435 and UL695 That ACCs concerned should publish the ATS Routes UL 375 (Atlanta/Capetown), UL 435 (Atlanta/Johannesburg) and UL 695 (Antigua/Ascension Island) entry/exit points in the EUR/SAM Corridor, including the ATS route intersection points with the same designators and the same aeronautical coordinates, at a coordinated AIRAC date as soon as the amendment proposal SAM 03/1-ATM/AIS is approved by the ICAO Council.	Completed.	
Conclusion 11/12:Integration/Interoperability of VSAT networks That : a) the consolidation of aeronautical telecommunication services on a common satellite space segment should be the objective in order to achieve a full integration of existing/planned VSAT networks (AFISNET, CAFSAT, REDDIG, SADC, etc.) and facilitate their interoperability, thus forming a seamless and cost-effective network for the benefit of aviation stakeholders; b) as a matter of urgency, ICAO Regional Offices undertake the necessary coordination of the Regions concerned, for them to have the same level of information and for individual States to make their final position as for the opportunity offered by the INTELSAT Satellite IS10-02@359° East to be launched by November 2003, in accordance to their formal regional and	a) Still valid for CAFSAT and SADC. b) Completed in AFI.	Reformulated. See Report on Agenda Item 4. Migration of 55 AFISNET earth stations completed in 2004.

Status of Implementation of SAT/11 Conclusions and Decisions		
Conclusions and Decisions	**Implementation status**	**Remarks**
national decision-making processes; c) a meeting be organized before the end of April 2003 between INTELSAT and States/Organizations managing VSAT networks, in order to examine all aspects of the migration to the INTELSAT Satellite IS10-02@359° East; and d) the Secretariat should channel the outcome of the meeting referred to in c) hereabove to the respective regional planning mechanisms as soon as possible.	c) Completed	Planning Meeting on VSAT Networks Integration held in Johannesburg, from 31/03 to 01/04/2004.
Conclusion 11/13:Use of AFISNET and CAFSAT networks to support GNSS That, when applicable, AFISNET and CAFSAT networks be used to support the introduction of GNSS applications in the EUR/SAM Corridor	Still valid.	Implemented by Spain and ASECNA for EGNOS validation trials in EUR and Central AFI (Zone A).
Conclusion 11/14:Extension of VHF radio coverage Dakar Oceanic FIR That Senegal explore all diplomatic avenues, including high level missions to Cape Verde in the second quarter of 2003 in order to finalize the institutional arrangements for the implementation of Dakar remote VHF station in Santiago Island (Cape Verde) as soon as possible.	Still valid.	First ministerial meeting (Cape Verde/Senegal) held in Praia (July/August 2004). See Report on Agenda Item 4.
Conclusion 11/15:Communications surveys and ATS incidents reporting in the South Atlantic That ACCs and users be encourged to promote aeronautical mobile communications surveys in the South Atlantic, on a regular basis, as well as the appropriate reporting of ATS incidents with appropriate details for their analysis.	Still valid.	
Decision 11/16: Guidance material for ADS/CPDL programmes That the development of guidance material for the establishment of ADS/CPDL programmes be included in the Task Force and Technical Working Group work programmes in order to provide necessary assistance to States and to facilitate harmonization of ADS/CPDLC programmes in the SAT Region.	Completed.	
Conclusion 11/17:Full implementation of RVSM in the SAT area (AR1/AH2 and AR2/AH8) That States take the appropriate measures to achieve full implementation of RVSM in the SAT area (AR1/AH2 and AR2/AH8) coincidentally with the CAR/SAM Region, in January 2005.	Not completed.	Delay decision in AFI. See Report on Agenda Item 3.
Conclusion 11/18:CNS/ATM systems evolution tables That the CNS/ATM systems evolution tables for AR1/AH2 and AR2/AH8 be amended to include full implementation of RVSM coincidentally with the CAR/SAM Region as per Appendix D to the Report.	Completed.	Need for update due to the "delay decision" in AFI. See Report on Agenda Item 3.
Conclusion 11/19:Amendments to AFI ANP and CNS/ATM implentation plan following the establishment of Atlantico FIR That the ATS/DS requirements in the AFI air navigation plan (Doc 7474) and the the list of EUR/SAM (AR1) FIRs in the CNS/ATM implementation plan (Doc 003) be amended following the establishment of Atlantico oceanic flight information region (FIR)	Completed.	APIRG/14.

Status of Implementation of SAT/11 Conclusions and Decisions		
Conclusions and Decisions	**Implementation status**	**Remarks**
managed by Brazil.		
Decision 11/20:Task Force future work programme That the SAT Task Force future work programme should include the tasks listed in Appendix E to the Report.	Completed.	
Decision 11/21:Technical Working Group future work programme That the SAT Technical Working Group future work programme should include the tasks listed Appendix F to the Report	Completed.	

Agenda Item 2: Review of the Report on SAT/11 Task Force Meeting

2.1 Under this Agenda item, the meeting reviewed the Report on the SAT/11 Task Force Meeting (Rio de Janeiro, Brazil, from 13 to 16 April 2004) as summarized by the Secretariat. The meeting particularly analyzed the SAT Force draft conclusions and decisions covering operational and technical issues, and endorsed most of these conclusions and decisions following further discussions under Agenda items 3, 4, 5 and 6.

Agenda item 3: Air Traffic Management

- Investigations on the lack of flight plans
- Harmonization of RVSM programmes for CAR/SAM and AFI Regions, including flight level allocation scheme
- Introduction of Random RNAV Routing in the South Atlantic
- Harmonization of procedures - Use of strategic lateral offsets

3.1 Investigations on the lack of flight plans in the SAT area

3.1.1 The meeting was presented with status reports on missing flight plans established by Brazil, Senegal and South Africa as requested by previous SAT meetings. It recalled SAT/8 Conclusion 4/1, SAT/9 Conclusion 3/1, SAT/10 Conclusion 10/3 and SAT/11 Conclusion 11/1 relating to the loss of flight plans and expressed great concern at its persistence and magnitude in the EUR/SAM Corridor (an RNP/10 and RVSM environment). It therefore reiterated the need for continued surveillance and on site management.

3.1.2 In this connection, the meeting agreed that States involved should establish an appropriate mechanism in each ACC in order to analyze and investigate the lack of flight plans on a case by case basis and during a period of one month, and that each State designate a focal point responsible for compiling the survey's findings. In addition, the meeting also requested IATA to carry out an appropriate investigation among selected member airlines. After a thorough discussion on this issue, the meeting formulated the following conclusions:

Conclusion SAT/12/1: Need for further investigations on the lack of flight plans

That, considering the high priority to be accorded to the issue of lack of FPLs, SAT ACCs establish an appropriate mechanism for investigating thereabout on a case by case basis during the period from 1 to 31 March of 2005 as follows:

a) the ACC facing the problem should analyze the reasons why the FPL is missing;
b) the focal points of contact shown at **Appendix 3 - A**, should compile the results of the investigations and exchange the compiled information with the other designated focal points and the Secretary of the SAT Group no later than 15 April 2005;
c) the investigations should be conducted using the form shown at **Appendix 3 - B**.

Conclusion SAT/12/2: Investigation on users FPL procedures

That, in addition to ACC investigations, IATA analyze and evaluate the reliability of the flight plan procedure used by a selected member airline involved with the missing flight plans in the SAT area, and inform SAT members of their findings.

3.2 Harmonization of RVSM programmes for AFI and CAR/SAM Regions

Implementation of RVSM in AFI, CAR and SAM Regions

3.2.1 The meeting took cognizance of the outcome of the "Go/Delay Decision" Meeting of AFI RVSM Stakeholders held in Dakar from 18 to 19 November 2004. It particularly the decision taken by the stakeholders to postpone the implementation of RVSM operations in the AFI Region to January 2006, in order for the States and operators concerned to take all the necessary steps as defined in the Strategic/Action plan adopted by APIRG/14.

3.2.2 The meeting was also informed that RVSM operations will be implemented in the CAR/SAM Regions by 20 January 2005 as planned by GREPECAS, except within part of Atlantico FIR, Montevideo FIR, Ezeiza FIR and Comodoro FIR where suitable transition areas will have to be established until RVSM implementation in the AFI Region.

Flight level allocation scheme (FLAS) in the EUR/SAM Corridor

3.2.3 The meeting noted that the *flight level allocation scheme* in ICAO Annex 2 – *Rules of the Air*, Appendix 3 will be applicable in the CAR/SAM States involved in RVSM implementation in order to ensure the required harmonization with the adjacent ICAO Regions (NAM, NAT and PAC). Furthermore, it recalled that in order to accommodate Canarias and Recife ACCs requirements, Brazil, Cape Verde, Senegal and Spain had opted to apply an RVSM post-implementation flight level allocation scheme not compliant with Annex 2 provisions within the EUR/SAM Corridor.

3.2.4 The meeting therefore agreed that the *flight level allocation scheme* in ICAO Annex 2 should be adopted for the EUR/SAM Corridor. Taking into account that the RVSM implementation date of 20 January 2005 at 09:01 UTC in CAR/SAM Region, the meeting was of the view that Brazil, Cape Verde, Senegal and Spain should publish no later than December 21, 2004, a common NOTAM announcing the new flight level allocation scheme applicable in the EUR/SAM Corridor, so as to give an AIRAC cycle advance notice to the airspace users. It was recognized that, due to time constraints, ICAO and IATA would assist in disseminating this information among the airspace users. The meeting accordingly formulated the following conclusion:

Conclusion SAT/12/3: Flight level allocation scheme applicable in the EUR/SAM Corridor

That :

a) Brazil, Cape Verde, Senegal and Spain publish no later than December 21, 2004, a common NOTAM announcing the new Flight Level Allocation Scheme applicable in the EUR/SAM Corridor as shown in **Appendix 3 - C**.;
b) ICAO and IATA take the appropriate actions to assist in disseminating this information among the users.

RVSM and RNP exemptions

3.2.5 The meeting discussed at length a proposal to allow RVSM and RNP/10 exemptions in the EUR/SAM Corridor, such exemptions being in force in several areas where RVSM and RNP/10 operations have been implemented (e.g. WATRS and ASIA/PAC). Likewise, exemptions would be allowed in CAR/SAM Regions, in accordance with the RVSM AIC published by all CAR/SAM States on 17 April 2003.

3.2.6 It therefore recommended that States responsible for the provision of air traffic services in the EUR/SAM Corridor authorize temporary RVSM/RNP/10 exemptions for non-approved/certified aircraft, under the following circumstances:

a) The aircraft is being initially delivered to the State of Registry or Operator.

b) The aircraft was formally RVSM/RNP-10 approved but has experienced an equipment failure and is being flown to a maintenance facility for repair in order to meet RVSM/RNP-10 requirements and/or obtain approval.

c) The aircraft is being utilized for mercy or humanitarian purposes.

3.2.7 Considering one the one hand that the EUR/SAM Corridor situated at the interface between AFI, CAR/SAM and EUR Regions, is one of the busiest airspaces in the world, and one the other hand the peculiarities of the European airspace, the meeting agreed that the exemptions should be limited to Atlantico/Recife FIRs, Canarias FIR (Southern part only[1]), Dakar FIR and Sal FIR. In this connection, the States concerned decided to publish the necessary aeronautical information regarding special coordination procedures applicable for cruise operations of Non - RVSM/RNP10 compliant aircraft within EUR/SAM. The meeting formulated the following conclusion:

Conclusion SAT/12/4: Special coordination procedures for cruise operations of non – RVSM/RNP10 compliant aircraft in the EUR/SAM airspace

That Brazil, Cape Verde, Senegal and Spain publish an AIP Supplement or AIP Amendment implementing the special coordination procedures for cruise operations of non - RVSM/RNP10 compliant aircraft in the EUR/SAM airspace on January 20, 2005, as shown in **Appendix 3 - D** in order to be in force on March 17, 2005

Note: The Secretariat will carry out the necessary coordination with Spain and the other States involved for the publication of the AIP Supplement or AIP Amendment.

RVSM safety assessment parameters

3.2.8 The meeting recalled SAT Conclusion 11/6 and reiterated the need for SATMA, the SAT monitoring agency to adopt the RMA Handbook developed by SASP, whose publication as an ICAO manual is expected by the end of 2006, in order to ensure harmonization of monitoring procedures worldwide. It particularly requested SATMA to ascertain whether all the parameters defined in Doc 9574, Chapter 6 - System Performance Monitoring - were duly taken into account when performing safety assessments and, such being the case, to continuously monitor these parameters. SATMA should also monitor the approval status of all operators and aircraft using the EUR/SAM Corridor. In light of the above, the meeting formulated the following conclusions:

Conclusion SAT/12/5: Analysis of RVSM safety assessment parameters and aircraft/operator approval status in the EUR/SAM Corridor

That SATMA take the appropriate actions in order to analyze the following parameters, in accordance with ICAO Doc. 9574, Chapter 6 – *System Performance Monitoring*:

- the vertical overlap probability, P z (1 000), does not exceed 1.7×10^{-8} ;
- the combination of all passing frequency components has no more of an adverse effect on risk than does an opposite- direction passing frequency of 2.5 per aircraft flying hour; and
- the lateral overlap probability, Py (0), is not greater than 0.058 (this is based on a lateral path-keeping accuracy standard deviation of 550 m (0.3 NM)).
- the risk as a result of operational errors and in-flight contingencies.
- the RVSM approval status of operators and aircraft using EUR/SAM Corridor airspace.

[1] *In order to prevent non – approved aircraft from entering the European RVSM airspace.*

Conclusion SAT/12/6: Integrity/Accuracy of RMAs information on RVSM approval status of aircraft and operators

That SATMA should harmonize its database on the RVSM approval status of aircraft and operators with other RMAs in order to avoid discrepancies and to prevent flights from undue penalties and safety risks.

Data collection for RVSM and RNP10 post-implementation safety assessment reporting

3.2.9 The meeting recalled SAT Conclusions 10/1 and 10/2 requesting the South Atlantic Monitoring Agency (SATMA) to develop a post-implementation assessment programme to ensure the stability, safety and efficiency of the new environment after the implementation of RNP10 and RVSM, and provide the SAT Group and its established bodies' meetings with safety assessment reports, based on the traffic data compiled by all ACCs in accordance with established procedures. The meeting also reiterated the need for ACCs and users to report any large height deviation (LHD) to SATMA for monitoring purposes. With regard to LHD, the meeting developed and adopted a new reporting format, and formulated the following conclusion:

Conclusion SAT/12/7: Collection of Large Height Deviation (LHD) in the EUR/SAM Corridor

That the Secretariat request Brazil, Cape Verde, Senegal and Spain to use the new form shown at **Appendix 3 - E** to forward LHD data to SATMA. The LHD form shall be sent to SATMA, even if no deviation occurs, by the 10th of each month.

3.3 Introduction of Random RNAV routing in the South Atlantic

3.3.1 The Meeting recalled SAT/11 Conclusions 11/9 on the establishment of a Random RNAV Routing Study Group (RRSG) tasked with the implementation of random RNAV routing in the EUR/SAM Corridor (AR1/HA2) and AFI/NAT/SAM Interface (AR2/HA8) at AIRAC date of November 2005. It noted that, when addressing its assigned work, the Study Group examined the following implementation options:

Options	**Description**
1	Option 1 includes: • All of the Johannesburg Oceanic FIR west of and abutting the IORRA North of 60°S; • Most of the oceanic areas of the Luanda FIR Oceanic area; • Most of the oceanic areas of the Comodoro Rividavia FIR north of 60°S; • Most of the oceanic areas of the Ezeiza FIR; • All of the Montevideo Oriental and Oceanic sectors; • A large section of the Atlantico FIR.
2	Option 2 incorporates all of Option 1 but also includes all of the Atlantico, Dakar and Accra FIRs south of the equator.
3	Option 3 incorporates all of the two previous options but includes a larger section of the Dakar FIR north of the equator but commencing southeast of track UA302, leaving that track procedurally clear of the AORRA.
4	Option 4 incorporates all of Option 3 but includes further sections of the Atlantico and Dakar FIRs, allowing the AORRA to abut the EURSAM Corridor.

3.3.2 It also noted that after analyzing the advantages and disadvantages of each proposal and the appropriateness of implementing random RNAV routing in the whole SAT area at once or gradually, the

Study Group proposed the following implementation phases taking due account of some anticipated difficulties in the EURSAM Corridor:

- ***Phase A:*** *Introduction of random RNAV routing in November 2005 (AIRAC date) in the southern part of the SAT area as described at* ***Appendix 3-G*** *to this part of the report; and*
- ***Phase B:*** *Introduction of random RNAV routing in December 2006 (AIRAC date) in the whole South Atlantic, including the EUR/SAM Corridor and the corresponding portion of Johannesburg FIR.*

3.3.3 The meeting acknowledged the expected benefits to the users of the airspace, as reflected in the following comparison showing the savings from the ability to random routing, for one flight on the route Johannesburg-Ezeiza:

- FAJS-SAEZ Fixed routing RTE-138 total cost R303671
- FAJS-SAEZ Least time track routing SACCJ total cost R278671

The least time track routing is approx R25000 (8%) less in total cost than the fixed routing (equivalent approx. U$S 2800)

- FAJS-SBGR Fixed routing Ext-188594 total cost R255892
- FAJS-SBGR Least time track routing SACEV total cost R246492

The least time track routing is approx R9400 (4%) less in total cost (equivalent approx. U$S 1050)

3.3.4 Nonetheless, the meeting noted that airline operators in AFI and SAM Regions had further considered Phase B of the introduction of random RNAV routing in the South Atlantic at their respective regional meetings, based on the outcome of the SAT Task Force (RRSG) Meeting. In this connection, IATA's position was that, at this stage, the current fixed route structure should be maintained in the EUR/SAM Corridor.

3.3.5 Mindful of the anticipated benefits to the users, and taking into consideration the above users' requirement in the EUR/SAM Corridor, the meeting therefore developed a detailed plan of action for the implementation of Phase A (AORRA airspace, Option 1) involving all parties concerned and including all related aspects (such as safety assessment, procedures, co-ordination, operator requirements, ATS workload, human factors, etc., with a clear description tasks, requirements, responsibilities, etc). It considered that some activities which are largely administrative in nature excluding the safety assessment, should not impact on the decision to implement the procedure, and that the safety assessment had to a large extent already been supported by the random routing activities carried out in the Indian Ocean.

3.3.6 It also discussed at length the necessity of implementing ADS/CPDLC before the introduction of random routing, and felt that, though ADS and CPDLC were not mandatory as such in a random RNAV routing environment, these applications must be considered as prerequisites in some areas, due to traffic complexity and safety considerations. Regarding the AORRA airspace (Phase A), the meeting was of the opinion that, although ADS/CPDLC equipped aircraft would enhance safety through surveillance, the need for aircraft to be equipped should not delay the implementation of the procedure, being it understood that the ADS equipment operated by the ATS providers could have the facility of inputting flight plan tracks and thus providing the necessary situational awareness with regard to the conflict potential.

After discussions, the meeting formulated the following conclusion:

Conclusion SAT/12/8: Action plan for random RNAV routing implementation in AORRA airspace

That the action plan developed at **Appendix 3 - F** be adopted for the implementation in November 2005 (*AIRAC date*) of random RNAV routing in the AORRA airspace as described at **Appendix 3 - G**.

Random RNAV routing West of UN741 and extension of RNAV Route UM799

3.3.7 The meeting took cognizance of the introduction of random RNAV routing West of UN 741 and the related approval requirements (users requirement for random routing, utilization limited to airlines operating from Santiago de Chile to Madrid and vice versa, flight operations at a distance of at least 50 NM from UN741, monitoring of the target level of safety).

3.3.8 It also noted the implementation on 19 February 2004, of a fixed RNAV route (UM799) from San Juan (JUA) VOR/DME in Mendoza FIR to Sao Louis (SLI) VOR/DME in Amazonica FIR, in order to join Santiago de Chile with Madrid and other airports in Europe. UM799 continues to Madrid as a random route until ROSTA.

3.3.9 After noting the concerns expressed by some States at the occurrence of ATS incidents to flights operating within that complex area where only flight information and alerting services are provided (class G airspace), the meeting concluded that a fixed RNAV route will improve the provision of air traffic services to those flights, and formulated the following conclusion:

Conclusion SAT/12/9: Extension of RNAV Route UM799

That ICAO coordinate with States involved the extension of ATS Route UM 799 from SLI VOR/DME in Amazonica FIR to appropriate points within Canarias and Sal FIRs.

New airspace structure in the EUR/SAM Corridor

3.3.10 The meeting acknowledged the need for short-term, medium-term and long-term strategies to improve the airspace capacity and operations efficiency and to meet users needs in the EUR/SAM. In this connection, it agreed to establish of a Study Group in order to further analyze the current operational environment within the EUR/SAM Corridor and explore ways and means of restructuring the corresponding airspace, including the feasibility of a unidirectional ATS route structure and RNP4 operations, and using ADS/CPDLC functionalities in view of the medium-term/long-term objective of a random routing area. The meeting accordingly formulated the following decision:

Decision SAT/12/10: Establishment of a Study Group on a new airspace structure in the EUR/SAM Corridor

That:

a) To improve the capacity and efficiency of the operations in the EUR/SAM Corridor, a Study Group is established with the mandate to develop short-term, medium-term and long term strategies for the implementation of a new airspace structure; and

b) The terms of reference, work programme and composition of the Study Group are shown at **Appendix 6 – C** to the report on Agenda Item 6.

3.4 Harmonization of procedures

Use of strategic lateral offsets

3.4.1 The meeting noted the amendment of the *Regional Supplementary Procedures (Doc. 7030),* SAM Part, incorporating the lateral offset procedures that will be applicable as of 20 January 2005, in connection with RVSM implementation in CAR and SAM Regions, and was presented with relevant working papers prepared on this issue by Brazil, Spain and South Africa.

3.4.2 The meeting recalled ICAO State letter AN 13/11.6-04/85 of 27 August 2004 on the *Revised guidelines on the use of strategic lateral offsets*, whose paragraph 5 recommends that "*as it is desirable that offset procedures be standardized to the maximum extent possible, to reduce the likelihood of pilots inadvertently applying procedures different from those specified for the airspace in which they are operating, these strategic lateral offset procedures be implemented on a regional basis, after co-ordination among all States involved*". Action should also be taken to incorporate the procedures and details of the airspace where the procedures will be applied in the *Regional Supplementary Procedures*. Paragraph 6 of the same letter states that "*as the studies undertaken by SASP showed that the application of these procedures would result in an overall increase in the safety of operations in remote and oceanic airspace, all States who are responsible for the provision of air traffic services in such airspace are urged to authorize the use of strategic lateral offsets in accordance with these guidelines*".

3.4.3 In order to enhance safety within the SAT area, it therefore called upon concerned SAT FIRs to authorize the use of strategic lateral offset procedures as a matter of urgency. Moreover, in order to harmonize the AFI and SAM Parts of Doc. 7030, it was also agreed that the Secretariat should develop an amendment proposal to the AFI Part of the SUPPs for consideration by SAT/13 Meeting. The meeting subsequently formulated the following conclusions:

Conclusion SAT/12/11: Strategic lateral offset procedures

That, in order to mitigate collision risk, strategic lateral offset procedures should be used in the SAT airspace; to this effect:

a) Brazil, Cape Verde, Senegal and Spain publish a NOTAM based on the model shown at **Appendix 3 - H** on December 21, 2004 to be effective on January 20, 2005;
b) Angola, Brazil, Cape Verde, Senegal, South Africa and Spain publish the AIP SUPP/AIP Amendment based on the model shown at **Appendix 3 - I** on January 20, 2005 for applicability on March 17, 2005; and
c) ICAO and IATA take the appropriate actions to assist in disseminating this information among users.

Conclusion SAT/12/12: Amendment to the AFI Part of the *SUPPS (Doc. 7030)*

That, in order to harmonize the AFI and SAM Parts of the *Regional Supplementary Procedures (Doc. 7030),* in respect of strategic lateral offset procedures, the Secretariat develop an amendment proposal for consideration SAT/13 Meeting.

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STATUS OF FLIGHTS IN THE SAT REGION WITHOUT FPL

ACC :_____

Date	FIR	Aircraft Identification	Type of Aircraft	Departure Aerodrome	Destination Aerodrome	Was the FPL received by the adjacent ACCs?	Was the FPL Address correct?	Was the AFTN link functioning properly?*	Remarks
1	2	3	4	5	6	7	8	9	10

* *The following elements shall be investigated when addressing AFTN operation (Column 9):*

1. *Availability of the AFTN circuit(s) involved, based on the implemented routing configuration ;*
2. *Transit times;*
3. *End user terminals (AFTN PC, teletype); and*
4. *Alphabetic codes (ITA-2, IA-5).*

NOTAM RELATED TO THE MODIFICATION OF THE FLIGHT LEVEL ALLOCATION SCHEME IN THE EUR/SAM CORRIDOR

In relation with the implementation of the RVSM in the CAR/SAM Regions on January 20, 2005, at 09:01 UTC (see AIP Supplement (only Brazil)) and in order to avoid flights in opposite direction at the same flight level, a new Flight Level Allocation Scheme will be established in the EUR/SAM Corridor on January 20, 2005, at 09:01 UTC, in accordance with ICAO Annex 2, Appendix C, as follows:

ATS routes: UN 741, UN 866, UN 873 and UN 857

Southbound traffic: EVEN LEVELS – 400, 380, 360, 340, 320, 300
Northbound traffic: ODD LEVELS – 410, 390, 370, 350, 330, 310, 290

Operators are requested to plan their flights under this flight level allocation scheme.

AIP SUPP OR AIP AMENDMENT

SPECIAL COORDINATION PROCEDURES FOR AIRCRAFT OPERATIONS WITHIN THE RVSM/RNP10 AIRSPACE ALONG THE EUR/SAM CORRIDOR BY NON APPROVED/CERTIFIED AIRCRAFT

1. No aircraft shall flight plan to operate in the RVSM/RNP10 airspace at the EUR/SAM corridor unless it is RVSM approved and RPN10 certified to operate in this airspace by the State of Registry or the State of operator, as the case may be, except in the following circumstances:

    a) The aircraft is being initially delivered to the State of Registry or the State of the operator;
    b) The aircraft is approved/certified but experienced navigation degradation and is being flown back to base or to a maintenance facility for repairs;
    c) The aircraft is engaged on a humanitarian or mercy flight;
    d) State aircraft.

    Note: The procedures below do not apply:
        1) To State aircraft to which no restrictions apply;
        2) North of 27 North in the Canarias FIR where no exceptions are allowed.

2. Special coordination procedures:
    a) Aircraft under 1.a. and 1.b. shall not flight plan to operate between 21:00 UTC and 09:00 UTC.
    b) Aircraft operators of non compliant aircraft shall obtain a special authorization from the first ACC concerned, i.e., Atlantico, Canarias, Dakar, or Sal ACC. authorization must be requested no more than 12 hours and no less than 4 hours before the intended time of departure.
    c) In addition the operator shall notify by phone all other ACCs concerned of the following elements (see 4. for contact details):
        1) Aircraft identification;
        2) Type of aircraft;
        3) Departure aerodrome and ETD,
        4) Route;
        5) Position and estimated time over the entry and exit points of each FIR concerned;
        6) Requested Flight Level;
        7) Destination aerodrome and ETA.
    d) The operator shall insert STS/NONRVSM and/or STS/RNP10 in field 18 of the ICAO Flight Plan.
    e) Separation minima to be applied to aircraft operating under these provisions are 2000ft vertically and/or 100NM laterally as the case may be.

3. These provisions are intended to address the special cases listed and shall not be taken as a means to circumvent the normal RVSM and/or RNP requirements and processes.

4. Contacts

    - Atlantico ACC: 55.81 3461-8330/3464 4107
    - Canarias ACC:
    - Dakar ACC:
    - Sal ACC:

SOUTH ATLANTIC MONITORING AGENCY (SATMA)

Report of Large Altitude Deviation for aircraft cleared at the RVSM airspace

Report to the South Atlantic Monitoring Agency (SATMA) of an altitude deviation of 300ft or more, including:

1) Those due to ACAS;
2) Turbulence and contingency events; and
3) Operational errors resulting in operation at flight levels other than cleared by ATC or coordinated by ATC units.

Name of FIR: _____

Please complete Section I or II as appropriate

SECTION I:

There were no reports of large altitude deviation for the month of _____

SECTION II:

There was/were _____ report(s) of an altitude deviation of 300 ft for aircraft cleared at or above FL290.

Details of the altitude deviation are attached (Form A).
(Please use a separate form for each report of altitude deviation).

SECTION III:

When complete, please forward the report(s) to:

South Atlantic Monitoring Agency (SATMA)

E-mail : **satma@aena.es**

Fax: **+ 34 928 57 70 52**

Form A

REPORT OF AN ALTITUDE DEVIATION FOR AIRCRAFT CLEARED BETWEEN FL 290 AND FL 410

(1) Reporting unit

(2) Location of deviation (lat/long or fix)

(3) Date and time of occurrence (UTC)

(4) Airway or portion of airspace

(5) Flight identification (optional) and type of aircraft (mandatory)

(6) Flight level assigned

(7) Observed or reported final flight level or altitude
Note : Please provide the source of information - Mode C/Pilot report

(8) Duration at incorrect flight level or at incorrect altitude reported in (7)
(9) Cause of deviation

(10) Other traffic in conflict

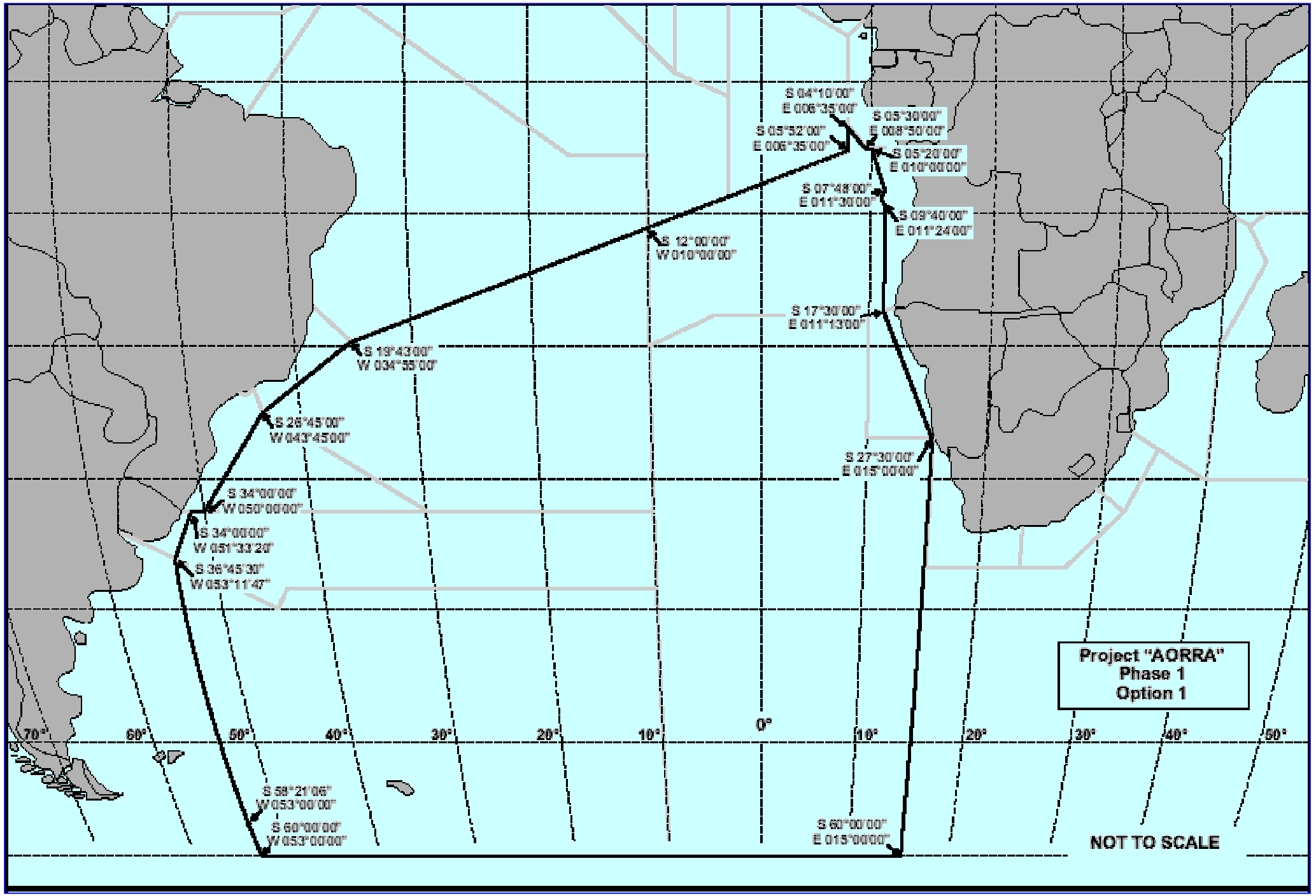
(11) Crew comments, if any, when notified

(12) Remarks

ACTION PLAN FOR THE IMPLEMENTATION OF RANDOM AREA NAVIGATION (RNAV) ROUTING IN AORRA AIRSPACE

Activities	*Responsible Area*	*Starting date*	*Finalization date*	*Status of application*	*Remarks*
1.Notification to the CARSAMMA/ARMA of ADS/CPDLC equipped aircraft	States IATA	April 2004	Permanent activity	On going	
2.Identification of operational needs.	SAT States	N/A	December 2004	Completed	
3.Cost-benefit analysis considering : - ***ATS services providers; and*** - ***Users.***	States/ Users	April 2004	December 2004	Completed	There is definite benefit to users of the airspace
4.Study of the impact in the airspace ATC simulations	States	April 2004	December 2004	Completed	The study must consider the use of airspace simulation tools
5.AIC/AIP Supplement for the dissemination of information	States	N/A	April 2005		Most of the information related to the implementation by all means available will ensure the success of the implementation in the target date.
6.National Documentation	SAT States	April 2004	March 2005		Publication of entry/exit points to the Random airspace.
7.Coordination with ATS providers and users	States	December 2004	Permanent activity	On going	Most of the dissemination of the programme will ensure the success of the implementation in the target date.

Activities	*Responsible Area*	*Starting date*	*Finalization date*	*Status of application*	*Remarks*
8.Programme for airspace safety assessment.	CARSAMMA/ARMA	December 2004	Permanent activity		Considering the goal of 5 X 10^{-9} (TLS) in fatal accidents by flight hour, safety assessment is a fundamental element to implement the programme.
9.Data collection programme for the evaluation of airspace safety	States and Users	December 2004	Permanent activity		
10.Conduct local training for air traffic controllers/crew members	States	June 2005	November 2005		
11.Date of the Random Routing implementation	States	N/A	November 2005		


S 04°10'00"
E 006°35'00"
S 05°30'00"
E 008°50'00"
S 05°52'00"
E 006°35'00"
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 12°00'00"
W 010°00'00"
S 17°30'00"
E 011°13'00"
S 19°43'00"
W 034°55'00"
S 26°45'00"
W 043°45'00"
S 27°30'00"
E 015°00'00"
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"
S 60°00'00"
E 015°00'00"
Project "AORRA"
Phase 1
Option 1
NOT TO SCALE
70°
60°
50°
40°
30°
20°
10°
0°
10°
20°
30°
40°
50°

MODEL NOTAM

STRATEGIC LATERAL OFFSETS IN OCEANIC AIRSPACE TO MITIGATE COLLISION RISK AND WAKE TURBULENCE

Pilots should use the Strategic Lateral Offset Procedure as standard operating practice in the course of normal operations to mitigate collision risk and wake turbulence. The Strategic Lateral Offset Procedure will be in force on January 20, 2005 at 0901 UTC in the (Atlantico FIR, Dakar Oceanic FIR, Canarias FIR, Sal Oceanic FIR, as applicable) FIR**.**

Strategic lateral offsets shall be applied only by aircraft with automatic offset tracking capability.

There are three positions that an aircraft may fly: centerline, 1 or 2 NM right. Offsets are not to exceed 2 NM right of centerline.

There is no ATC clearance required for this procedure and it is not necessary that ATC be advised.

Aircraft transiting radar-controlled airspace shall remain on their established offset positions unless otherwise instructed by ATC.

AIP SUPPLEMENT

STRATEGIC LATERAL OFFSETS IN OCEANIC AIRSPACE TO MITIGATE COLLISION RISK AND WAKE TURBULENCE

1. Pilots should use the Strategic Lateral Offset Procedure as standard operating practice in the course of normal operations to mitigate collision risk and wake turbulence. The Strategic Lateral Offset Procedure will be in force throughout the (Atlantico FIR, Canarias FIR, Dakar Oceanic FIR, Johannesburg FIR, Luanda FIR and Sal Oceanic FIR as applicable) FIR**.** This procedure is to be used for both wake vortex encounters, and to mitigate the heightened risk of collision when non-normal events such as operational altitude deviation errors and turbulence induced altitude deviations occur due to highly accurate navigational systems.

2. Strategic Lateral Offset Procedures will be applied using the following guidelines:

2.1 Strategic lateral offsets and those executed to mitigate the effects of wake turbulence are to be made to the right of a route or track;

2.2 In relation to a route or track, there are three positions that an aircraft may fly: centerline, 1 or 2 NM right; and,

2.3 Offsets are not to exceed 2 NM right of centerline.

3. The intent of this procedure is to reduce risk (increase the safety margin) by distributing aircraft laterally and equally across the three available positions. In this connection, pilots must take account of the following:

3.1 Aircraft without automatic offset programming capability must fly the centerline;

3.2 Aircraft capable of being programmed with automatic offsets may fly the centerline or offset 1 or 2 NM right of centerline to obtain lateral spacing from nearby aircraft;

3.3 Pilots should use whatever means are available (e.g. ACAS, communications, visual acquisition, GPWS) to determine the best flight path;

3.4 Any aircraft overtaking another aircraft is to offset within the confines of this procedure, if capable, so as to create the least amount of wake turbulence for the aircraft being overtaken;

3.5 For wake turbulence purposes, pilots are also to fly one of the three positions at *2.2* above and never offset to the left of centerline nor offset more than 2 NM right of centerline;

NOTE-
It is recognized that the pilot will use his/her judgment to determine the action most appropriate to any given situation and has the final authority and responsibility for the safe operation of the aeroplane. The air-to-air channel, 123.45 MHz, may be used to co-ordinate the best wake turbulence offset option.

3.6 Pilots may apply an offset outbound at the oceanic entry point but must return to centerline at the oceanic exit point. This provision applies to aircraft entering airspace in the (NAME OF FIR) FIR where direct controller-pilot VHF or UHF voice communication is available.

3.7 (NAME OF THE AIRSPACE). Aircraft transiting radar-controlled airspace shall remain on their established offset positions unless otherwise instructed by ATC.

3.8 There is no ATC clearance required for this procedure and it is not necessary that ATC be advised; and,

3.9 Voice position reports are to be based on the current ATC clearance and not the exact co-ordinates of the offset position.

Agenda item 4: Communications

- System performance assessment (AFTN statistics, loss of messages)
- Extension of VHF coverage
- VSAT networks: developments, consolidation, interoperability requirements

4.1 System performance assessment

Technical coordination

4.1.1 The meeting noted that difficulties had being experienced by CAFSAT members in coordinating changes in the network due to the lack of a single point of responsibility. In this connection, it recalled that SAT/7 Meeting (Casablanca, Morocco, October 1998) had assigned to Spain (Canarias FIR) the mandate of coordinating the implementation of CAFSAT network. It also agreed that SAT COM centres should designate their focal points of contact to be responsible for technical coordination with their correspondents.

4.1.2 Furthermore, the meeting recognized the need for SAT COM centres to ensure a continued system performance assessment using harmonized monitoring procedures, protocols and reporting methodologies (including AFTN circuits' availability and transit times statistics). It also underscored the necessity of harmonizing the AFI, EUR and SAM AFTN routing directories under ICAO coordination, on a regular basis, and effectively implementing the agreed routing requirements therein.

4.1.3 The following conclusion was formulated by the meeting:

Conclusion SAT/12/13: Improvement of AFS Performance in the South Atlantic

That the following measures be implemented to improve AFS performance in the SAT area:

a) To harmonize monitoring procedures, protocols and reporting methodologies;
b) To hold AFTN monthly statistics on circuits availability and quarterly statistics on transit times in accordance with the established procedures, disseminate these data among all AFTN correspondents within the SAT area, and coordinate the corrective measures to be implemented as necessary;
c) To harmonize AFI, EUR and SAM Routing Directories on a regular basis and effectively implement the agreed requirements therein at each AFTN switching centres under ICAO coordination; and
d) To designate focal points of contact responsible for technical coordination between SAT centres. Contact details (postal addresses, telephone numbers, fax numbers and electronic mail addresses) of the designated focal points should be sent to the Secretary of the SAT Group no later than 15 February 2005.

Investigations on the loss of AFTN messages

4.1.5 The meeting considered the persistent loss of AFTN messages between SAT ACCs. In this connection, it analyzed the AFI AFTN Routing Directory (2004 Edition) and the SAM AFTN Routing Directory as amended following the implementation of new AFTN circuits through the South American Digital Network (REDDIG), which is operational since September 2003., being it understood that this analysis would help in visualizing how the AFTN messages are routed between the AFI and SAM Regions.

4.1.6 The meeting therefore agreed on the need for SAT ACCs to conduct a three-day survey (*data collection*) by mid March 2005. It also recalled its Conclusion 12/1 on case-by-case investigations to be conducted on the loss of flight plans from 1 to 30 March 2005, and recommended that these investigations should include technical elements such as the availability of the AFTN circuit(s) involved based on the actual routing configuration, transit times, end-user terminals (AFTN PC or teletype) and alphabetic codes (ITA-2 or IA-5). The meeting accordingly formulated the following conclusion:

Conclusion SAT/12/14: Investigations on the loss of AFTN messages between SAT ACCs

That, in order to further analyze and mitigate the loss of AFTN messages, including flight plan messages in the South Atlantic, Atlantico, Canarias, Casablanca, Dakar, Johannesburg, Lisbon, Luanda, Piarco, Rochambeau, Sal and Santa Maria ACCs:

a) Carry out a three-day survey on AFTN performance from 15 to 17 March 2005 (inclusive), using the form and model messages attached as **Appendix 4-A** to this part of the report. In so doing, they should:
    1. Provide a list of the AFTN addresses of their ACC correspondents in the SAT area; and
    2. Send the results of the AFTN survey to the Secretary of the SAT Group before 30 March 2005;

b) Take into account the following elements when analyzing the AFTN link operation during the investigations on the loss of flight plans to be conducted on a case by case basis from 1 to 31 March 2005 in accordance with SAT/12 Conclusion 12/1:
    1. Availability of the AFTN circuit(s) involved, based on the implemented routing configuration;
    2. Transit times;
    3. End user terminals (AFTN PC, teletype); and
    4. Alphabetic codes (ITA-2, IA-5).

    *Note: The forms to be used for 2, 3 and 4 above are shown at **Appendices 4-B** and **4-C** to this part of the report.*

4.2 Extension of VHF radio coverage within Dakar Oceanic Flight information region (FIR)

4.2.1 The meeting considered the progress so far made in the implementation of SAT Conclusions 10/18 and 11/4 relative to the extension of VHF radio coverage within Dakar Oceanic Flight Information (FIR), using a remote station based in Cape Verde (Santiago Island). In this connection, it noted that a ministerial meeting between Cape Verde and Senegal took place in Praia, in July/August 2003, and that the intended implementation option will be based on the use of the CAFSAT link between Dakar and Sal, and a fiber optic link between Sal and Santiago. Senegal and ASECNA indicated that the CAFSAT option was accepted as a compromise, being it understood that their preferred option was to use a direct AFISNET link between Dakar and Santiago, taking account of cost-effectiveness considerations, and that the required equipment had subsequently been acquired.

4.2.2 Furthermore, Senegal was of the view that the lessons learnt from the previous official meetings, made it necessary to conclude an agreement concluded on technical matters before any other meeting at ministerial level. To this effect, Senegal proposed the establishment of an ad hoc committee composed of Cape Verde, Senegal, ICAO, ASECNA and IATA in order to review all operational and technical matters related to the implementation of Dakar Oceanic FIR remote VHF station in Santiago Island.

4.2.3 From Cape Verde's point of view, a cooperative agreement, including all related practical/technical matters (maintenance arrangements, frequency coordination, etc.) should be reached between the Governments of Cape Verde and Senegal prior to the implementation.

4.2.4 Following discussions, and taking into consideration the administrative implications of the project and other non-technical factors, the meeting encouraged the concerned parties to pursue their efforts to implement the Dakar Oceanic FIR remote VHF station in Santiago Island (Cape Verde); and reach a cooperative agreement thereon, including all related administrative and technical matters such as maintenance/financial arrangements, frequency coordination, etc. between their respective Governments prior to proceeding with the implementation of the project.

4.3 VSAT networks: developments, consolidation, interoperability requirements

Developments

4.3.1 The meeting took note of the implementation of a CAFSAT link between Atlantico and Johannesburg oceanic FIRs. The meeting also noted Argentina's project to implement its CAFSAT node in Ezeiza in 2005.

Consolidation of VSAT networks

4.3.2 The meeting recalled the previous discussions held by the SAT Group on the issue of consolidating the VSAT networks developed by States to meet ANP requirements for communications (AFTN, ATS/DS) with a view to ensuring full connectivity and optimizing VSAT infrastructure. It noted that, in light of SAT Conclusion 11/12, APIRG Conclusion 14/12 and the Regional Planning Meeting held in Johannesburg (31 March - 1 April 2004) to which a number of SAT States[1] attended, the Task Force established by SAT/11 had discussed the technical aspects of, and advantages associated with, the consolidation of aeronautical VSAT networks (AFISNET, CAFSAT, SADC, etc.) by using a common new generation satellite, that is the opportunity offered INTELSAT satellite IS 10-02 @ 359° East which is operational since August 2004.

4.3.3 The meeting took cognizance of the successful implementation of AFISNET network migration onto satellite IS 10-02 on 12 October 2004 (Indian Ocean) and 23 November 2004 (Western and Central AFI) by AFI States, of which 3 SAT Members: Ghana, South Africa and ASECNA[2]. As far as CAFSAT network is concerned, the meeting noticed that some SAT States (namely Brazil, South Africa and Spain) putting forward cost-benefit considerations and their network development plans were not supportive of its migration in the short-term. ASECNA informed the meeting that the discontinuation of CAFSAT services on satellite IS 801 was being considered, based on the assumption that VSAT networks consolidation would be achieved in the near future.

4.3.4 The meeting's attention was drawn to the fact that the feasibility or otherwise of CAFSAT migration to IS 10-02 will largely depend upon bandwidth arrangements with INTELSAT. Therefore, considering the increasing demand from non-aeronautical users, the Secretariat was requested to approach INTELSAT Company in order to secure the required bandwidth to the maximum extent possible. The following conclusion was formulated:

[1] Ghana, Portugal Senegal (ASECNA) and South Africa.
[2] ASECNA and ATNS, South Africa also operate CAFSAT earth stations.

Conclusion SAT/12/15: Consolidation of aeronautical VSAT networks

That, taking due account of VSAT networks development plans and technical considerations:

a) CAFSAT Network should be established on Satellite IS 10-02 as soon as practicable; and
b) The Secretariat carry out the necessary coordination with INTELSAT to secure the required bandwidth for civil aviation use in view of the transfer of CAFSAT network services to IS 10 – 02 satellite.

Interoperability of VSAT networks

4.3.5 The meeting agreed on the need to pursue the objective of consolidating aeronautical VSAT networks (AFISNET, CAFSAT, SADC, etc.) on a common satellite space segment as a means of achieving an integrated seamless and cost-effective network, and of facilitating their interoperability, the final objective for accommodating time-critical applications using satellite technology.

4.3.6 In this connection, the meeting was informed that the Eleventh Air Navigation Conference (2003) recognized the importance of interoperability and seamlessness with respect to the future ATM system based on the ATM operational concept, and recommended that ICAO, when developing ATM requirements, define a corresponding minimum set of requirements for interoperability and seamlessness (*Recommendation 1/5 refers*).

4.3.7 The meeting was of the view that, considering the peculiarities of satellite-based systems and the characteristics of existing or planned VSAT networks, there was a need to establish a study group on VSAT networks interoperability requirements, including their consolidation on IS 10-02. The following decision was adopted accordingly:

Decision SAT/12/16: Study on VSAT networks interoperability requirements

That the work programme of the SAT CNS Working Group be amended to include a detailed study on VSAT networks interoperability requirements, including the consolidation of VSAT networks on IS 10.02 satellite; the results and appropriate recommendations from the study should be presented to the next SAT meeting.

Note: The Secretariat will provide the SAT CNS/WG with the necessary guidance and documentation by 15 January 2005.

THREE-DAY SURVEY ON AFTN

TABLE EXPLANATION

1	**Message transmission:**	AFTN address of the flight plan originator
2	**Destination:**	AFTN address of the flight plan final destination.
3	**Type:**	There are three types of AFTN messages to be sent : • Message 1 : short length message of 160 characters • Message 2 : medium length message of 860 characters • Message 3 : long message of 1700 characters
4	**Priority** :	Messages of types 1, 2 and 3 are to be sent with SS,DD,FF and GG priorities.
5	**Tx:**	Indicates the transmission times (UTC) for the different AFTN messages of different priorities.
6	**INTERMEDIATES 1,2,3…N**	Indicate the AFTN addresses of all the downstream ACCs before the final destinations. Message addresses are those utilized for flight plans. Example: An AFTN message simulating a flight plan for an aircraft flying from Atlantico ACC to Madrid ACC (final destination), shall indicate Dakar Oceanic ACC, Sal ACC and Las Palmas ACC AFTN addresses as intermediate ACCs.
7	**TR:**	Indicates the time at which the AFTN messages are received by the intermediate ACCs and the final destination.
8	**Quality code:**	Indicates the reception status and/or quality of the AFTN messages, as follows: X - AFTN message not received 1 - Truncated or corrupted message 2 - Reception quality adequate.

FIRST DAY (15 March 2005)

MESSAGE Transmission (1)			DESTINATION (2)							
TYPE (3)	PRIORITY (4)	T_X (5)	INTERMED. 1 (6)		INTERMED.2		INTERMED.3		INTERMED.N	
			T_R (7)	QUALITY CODE (8)	T_R	QUALITY CODE	T_R	QUALITY CODE	T_R	QUALITY CODE
MESSAGE 1	SS	09:00								
	DD	10:00								
	FF	11:00								
	GG	12:00								
MESSAGE 2	SS	13:00								
	DD	14:00								
	FF	15:00								
	GG	16:00								
MESSAGE 3	SS	17:00								
	DD	18:00								
	FF	19:00								
	GG	20:00								

SECOND DAY (16 March 2005)

MESSAGE Transmission (1)			DESTINATION (2)							
TYPE (3)	PRIORITY (4)	T_X (5)	INTERMED. 1 (6)		INTERMED.2		INTERMED.3		INTERMED.N	
			T_R (7)	QUALITY CODE (8)	T_R	QUALITY CODE	T_R	QUALITY CODE	T_R	QUALITY CODE
MESSAGE 2	SS	21:00								
	DD	22:00								
	FF	23:00								
	GG	24:00								
MESSAGE 3	SS	01:00								
	DD	02:00								
	FF	03:00								
	GG	04:00								
MESSAGE 1	SS	05:00								
	DD	06:00								
	FF	07:00								
	GG	08:00								

THIRD DAY (17 March 2005)

MESSAGE Transmission (1)			DESTINATION (2)							
TYPE (3)	PRIORITY (4)	T_X (5)	INTERMED. 1 (6)		INTERMED.2		INTERMED.3		INTERMED.N	
			T_R (7)	QUALITY CODE (8)	T_R	QUALITY CODE	T_R	QUALITY CODE	T_R	QUALITY CODE
MESSAGE 3	SS	09:00								
	DD	10:00								
	FF	11:00								
	GG	12:00								
MESSAGE 1	SS	13:00								
	DD	14:00								
	FF	15:00								
	GG	16:00								
MESSAGE 2	SS	17:00								
	DD	18:00								
	FF	19:00								
	GG	20:00								

MESSAGE 1

TEXT 162 CHARACTERS

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

END OF MESS 162 CHARACTERS OK

MESSAGE 2

TEXT 852 CHARACTERS

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]

END OF MESS 852 CHARACTERS OK

MESSAGE 3

TEXT 1750 CHARACTERS

AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
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AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
AFTN/TESTS: CHECK AND RESPOND TO THIS AFTN TEST MESSAGE 1234567890[CR] [CR] [LF]
END OF MESS 1750 CHARACTERS OK

INSTRUCTIONS FOR USE OF THE AFTN TRANSIT TIME STATISTICS FORM

23 January/April/July/October of each year

Transit time statistics should be computed for the messages received by a station during the 24-hour period of 230001 - 240001 of the month.

Column 1: Insert the ICAO Location Indicators of the AFTN station where the received message was originally filed for transmission.

Column 2: Show the Location Indicator of the station that actually transmitted the message to your station. In the case of direct circuits, the entry in Col. 2 would, therefore, be identical with the entry in Col. 1. Where traffic originating at a point is received over different routes, e.g. instances where alternate routing has been used, a separate entry should be made for each route.

Columns 3 and 4: In Col. 4 enter the total number of messages received from the Station of Origin during the 24-hour period covered by the Form for each Priority Group. Separate figures are to be shown to indicate the message classifications listed in Col. 3, viz. Priorities FF and higher, and Priority GG.

Column 5: Show the ICAO recommended transit times against each priority classification.

Column 6: The highest actual transit times experienced in respect of each priority classification are to be entered. Each time is found by examining the time interval between time of filing and time of delivery of each message in each priority classification, discarding the 5% having the highest transit time and then recording the highest transit time for the remaining 95% of the messages in each priority classification.

Example: If during the 24-hour period, 100 messages are received in each category (FF and higher, and GG) then for each category reject the five highest transit times. Of the remaining 95 messages, select the highest transit time - this is the figure to be shown in Col. 6 in respect the appropriate priority classification.

Column 7: Following the removal of 5% of messages in each priority classification having the highest transit time, the median time achieved for the remaining 95% of messages in each priority classification is to be recorded in this column.

Median transit time is defined as follows:

When the achieved transit time in any one category of messages are arranged in a sequential descending order, the median transit time for that group is the one achieved by the message which has as many messages above as there are below, after rejecting five percent of highest transit times.

Example: If there are 60 messages in a 24-hour period in any one category, arrange their achieved transit times in a descending order. Reject three (5%) messages with the highest transit times. The median transit time value for that group is the one achieved by the 29th message, which ha 28 messages above and 28 messages below it.

Column 8: Following the removal of 5% of the total messages in each priority classification having the highest relay time, the highest relay time for the remaining 95% of messages in each priority classification. Relay time of the addressee station is contained in paragraphs 3.1.60 and 3.1.61 of Doc 8259.

Column 9: Enter any appropriate observations noted regarding circuit operations, (for example, peak load periods, circuit failures, etc.), that are of relevance in respect of the Transit Time Statistics recorded in the Form.

AFTN TRANSIT TIME STATISTICS
TRAFFIC (CLASS A) RECEIVED FOR LOCAL DELIVERY

STATION (Location Indicator): ……(Month)…….(Year)

Location indicators		Message Priority Grouping	Total Number of messages for each Priority Group	Transit Time prescribed by ICAO	Highest Transit Time Experienced	Median Transit Time Achieved	Maximum Relay Time Experienced	Remarks
Station of Origin	Last Relay centre Received from							
1	2	3	4	5	6	7	8	9
			FF and higher					
			GG					
			FF and higher					
			GG					
			FF and higher					
			GG					

INVESTIGATIONS ON THE LOSS OF FLIGHT PLANS BETWEEN SOUTH ATLANTIC ACCs

AFTN END USER SYSTEMS AND DATA TRANSFER CODES

ACC NAME:		FLIGHT PLAN ORIGINATOR (ACC OR AERODROME REPORTING OFFICE)	FLIGHT PLAN RECIPIENTS				
			SAT ACC#1	SAT ACC#2	SAT ACC#3		SAT ACC#N
END USER SYSTEM	1. AFTN TERMINAL (PC OR TELETYPE)						
	2. ALPHABETIC CODE (ITA-2 OR IA-5)						

Agenda Item 5: CNS/ATM systems implementation

- Systems evolution tables
- ADS/CPDLC programmes

5.1 Systems evolution tables

5.1.1 The meeting was presented with the AFI CNS/ATM systems evolution tables (en-route operations) for routing areas AR-1 and AR-2, and SAM ATM evolution tables (en-route operations) for routing areas HA-1 and HA. It agreed that these tables should be harmonized, taking into consideration the on-going regional RVSM, RNP and RNAV routing implementation programmes, as well as the activities carried out by the South Atlantic Group (SAT). The required harmonization includes the validation of ATM functions and the corresponding CNS requirements to be implemented, the implementation target dates. The meeting also recommended that CNS/ATM systems be presented using the SAM format.

5.2 ADS/CPDLC programmes

ADS trials and evaluation in an operational environment

5.2.1 The meeting noted that ATNS, South Africa had implemented an ADS/CPDLC service in its area of responsibility since 1999, allowing for enhanced communication and surveillance in remote areas, including the transitioning areas between Angolan, Namibian, South American and South African managed airspace, and that this ADS/CPDLC service was willing to accommodate in any ADS/CPDLC validation process within the South Atlantic Ocean and adjacent continental AFI areas for operations and for trials and demonstrations.

Adoption of FANS1/A operations manual in the South Atlantic

5.2.2 The meeting was informed that, in addressing the development of operational guidance material ADS/CPDLC applications, SAT/11 Task Force proposed the adoption of a common FANS 1/A manual. In this connection, it recalled that, though supported by non-ATN SARPs compliant data link services provided by ARINC and SITA, FANS-1/A operations had already been introduced in many regions (Pacific Ocean, Indian ocean, Bay of Bengale); it noted that the informal coordinating groups of these regions had developed a common FANS-1/A operations manual and had established a FANS 1/A interoperability team in order to harmonize their operational procedures and to ensure systems interoperability. It therefore agreed to adopt this operations manual by adding SAT FIRs to its current area of applicability, as a means of ensuring the desired harmonization within the SAT area and with its adjacent areas. Consequently, the meeting formulated the following conclusions:

Conclusion SAT/12/17: Adoption of FANS 1/A operational manual

That in order to ensure harmonization of ADS/CPDLC procedures/systems with other regions:

a) SAT States adopt the FANS 1/A operational manual (FOM) developed for the Pacific Ocean, Indian ocean, Bay of Bengale;
b) South Africa (ATNS), in coordination with the Secretariat and States in charge of the development of the FOM, carry out co-ordinations in order to include SAT FIRs into the manual and keep the manual updated.

Note: The Secretariat will take action in coordination with South Africa (ATNS) in order to have the FANS 1/A operational manual posted on the ICAO public website.

Conclusion SAT/12/18: Creation of a FANS 1/A interoperability team (FIT)

That a SAT FANS 1/A interoperability team (FIT) be created to oversee the monitoring of FANS 1/A system performance to ensure that it continues to meet its performance, safety and interoperability requirements and that operations and procedures are working as specified. The FIT main objectives are to:

a) follow the ADS/CPDLC tests that are being carried out by SAT States and adjacent States;
b) review identified problem reports and determine appropriate resolution;
c) develop interim operational procedures to mitigate the effects of problems until such time as they are resolved;
d) monitor the progress of problem resolution;
e) prepare summaries of problems encountered and their operational implications;
f) assess system performance based on information in CRA periodic reports; and
g) authorize and co-ordinate system testing.

Note: The Secretariat should contact all parties involved: ATS provider States and Organizations, users, industry (Airbus, Boeing, ARINC, SITA), etc.

Agenda Item 6: Any other business.

- Harmonization of procedures
- Contingency planning
- Future work programme

6.1 Harmonization of procedures

On-line data interchange (OLDI) procedures between Canarias and Sal ACCs

6.1.1 The meeting was instrumental for the signing of a letter of procedures specifying common rules and message formats between Canarias and Sal ACCs in view of the implementation of on-line data interchange (OLDI) in January 2005.

Letter of agreement between Dakar Oceanic and Rochambeau ACCs

6.1.2 The meeting was also an opportunity for Dakar Oceanic ACC and Rochambeau ACC to finalize and sign a letter of agreement aimed at improving flight coordination between the two ACCs.

6.2 Contingency planning

6.2.1 The meeting acknowledged the need for ATS contingency plans to be implemented in South Atlantic FIRs, in order to comply with ICAO provisions (Annex 11, Doc 9426). These ATS contingency plans should be coordinated between SAT ACCs on a bilateral basis and, once finalized, they should be submitted to the ICAO Council for approval as temporary amendment to ANPs.

Conclusion SAT/12/19: ATS contingency plans

That:

a) SAT ACCs carry out the necessary bilateral coordination through electronic correspondence to develop and implement harmonized ATS contingency plans in accordance with ICAO provisions in Annex 11 and Doc 9426; through the focal points of contact shown at **Appendix 6-A**; and

b) Once finalized, the coordinated ATS contingency plans be submitted to the ICAO Council for approval as temporary amendments to regional ANPs.

6.3 Future work programme

6.3.1 The meeting updated the future work programme of the SAT Group and the terms of reference, work programme and composition of its auxiliary bodies, and adopted the following decision:

Decision SAT/12/20: Terms of reference, future work programme and composition of the SAT Group auxiliary bodies

That the future terms of reference, work programme and composition of the SAT ATM Working Group (ATM/WG), Study Group on the implementation (IAS/SG) of a new airspace structure and CNS Working Group (CNS/WG) respectively be as shown at **Appendices 6-B, 6-C** and **6-D** to this part of the report.

ATS CONTINGENCY PLAN FOCAL POINTS

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TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION OF THE SAT ATM WORKING GROUP (ATM/WG)

- Considering the evolutionary implementation of CNS/ATM systems in areas of routing AR1/HA1 AR-2/HA8, the Task Force should explore ways and means to achieve further enhancements in ATM capacity and aeronautical telecommunications, and to implement CNS/ATM elements taking into consideration the timescales agreed for these areas of routing. It will be guided by the requirements identified in the AFI and CAR/SAM CNS/ATM Implementation Plans.

- *Note: The Task Force will adopt a pragmatic approach and may set up auxiliary bodies to carry out specific tasks, as necessary.*

WORK PROGRAMME

TASK No.	SUBJECT	TARGET DATE
1.	Analyze ATM deficiencies and make proposals for their elimination.	Continuous
2.	Monitor pre-implementation/post-implementation safety assessments for RVSM and RNP operations in the South Atlantic.	Continuous
3.	Study and evaluate RVSM, RNP/RNAV procedures applicable in the AFI/CAR/SAM and EUR/SAM Interface areas.	Continuous
4.	Monitor flight plan availability and propose appropriate corrective measures.	Continuous
5.	Keep ADS/CPDLC operational guidance material updated.	Continuous
6.	Conduct studies related to the implementation of the Global ATM Operational Concept and other enabling concepts within the SAT area.	Continuous
7.	Continue studies related to the implementation of the AORRA airspace.	SAT/13

- Note: The ATM/WG should take appropriate action on pressing issues and submit its proposal to the SAT/13 meeting.

COMPOSITION

- *The Task Force of multi-disciplinary nature shall comprise of experts from States responsible of FIRs in routing areas AR1/AH2 and AR2/AH8, and experts from adjacent FIRs and international organizations.*
- ***Rapporteur:*** *Spain*
- ***Task Team leaders:*** *South Africa (Tasks Nos. 5 and 7).*

- ***Working arrangements****: The ATM/WG should complete its work and submit its proposal to the SAT Group. The ATM/WG should work through electronic correspondence prior to meetings.*

TERMS OF REFERENCE, WORKING PROGRAMME AND COMPOSITION OF THE SAT STUDY GROUP ON THE IMPROVEMENT OF THE AIRSPACE STRUCTURE IN THE EUR/SAM CORRIDOR (IAS/SG)

- To develop a strategy for the short-term, mid-term and long term for the implementation of a new airspace structure in the EUR/SAM Corridor with the end to improve the capacity and efficiency of the operations and to meet users needs.

WORK PROGRAMME

TASK No.	SUBJECT	TARGET DATE
1.	Analyze the current operational situation within the EUR/SAM Corridor taking into account statistics and users needs.	SAT/13
2.	Explore ways and means to restructure the EUR/SAM Corridor airspace	SAT/13
3.	Develop a short term plan using the current separation standards based on RNP10 including the implementation of new ATS routes.	SAT/13
4.	Analyze the advantage of introducing unidirectional ATS routes.	SAT/13
5.	Study the feasibility of implementing RNP4, using ADS/CPDLC functionalities.	SAT/13
6.	Continue studies to implement a random routing area, using ADS/CPDLC functionalities.	SAT/13
7.	Develop necessary cost benefit analysis for the different options.	SAT/13
8.	Establish means to develop the safety assessment for the different options.	SAT/13
9.	Develop an action plan for the different options.	SAT/13

COMPOSITION

- Brazil, Cape Verde, France, Portugal, Senegal, Spain, Trinidad and Tobago, United States, ASECNA and IATA.
- ***Rapporteur****: Spain.*

- ***Working arrangements****: The IAS/SG should take the appropriate action to complete its work and submit its proposals to the next meeting of the SAT Group. The IAS/SG should work through electronic correspondence prior to meetings.*

TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION OF THE SAT CNS WORKING GROUP (CNS/WG)

- Considering the CAR/.SAM and AFI Air Navigation Plans, the SAT CNS/WG should explore ways and means of achieving further enhancements in ATM efficiency within in areas of routing AR1/HA-1 AR-2/HA8, by resorting to emerging technologies and, in particular, by taking advantage of rationalization, integration and harmonization of systems where appropriate.

- Implementation of new systems should be sufficiently flexible to accommodate existing and future services in an evolutionary and cost-effective manner.

- The associated institutional arrangements shall not inhibit competition among service providers complying with relevant ICAO Standards, Recommended Practices and Procedures.

WORK PROGRAMME

TASK No.	SUBJECT	TARGET DATE
1.	Analyze CNS deficiencies and make proposals for their elimination.	Continuous
2.	Carry out, as required, studies on the use of existing VSAT networks potentialities to cater for aeronautical telecommunication requirements in the SAT area. Such studies should include coordination issues, service channel interfaces, monitoring and control, system architecture, new services, user interfaces and bandwidth monitoring.	Continuous
3.	Undertake investigations on the lack of flight plans, including individual cases, with emphasis on the aeronautical fixed telecommunication network (links, switching centres, routing directory and transit time statistics).	Continuous
4.	Carry out a detailed feasibility study on the interoperability between aeronautical VSAT networks of relevance to SAT area (AFISNET, CAFSAT, REDDIG, SADC), including their consolidation on Satellite IS 10.02 and harmonization of AFS end-to-end protocols, in order to achieve an integrated, seamless and cost-effective network.	SAT/13
5.	Evaluate the feasibility of using existing or emerging digital VSAT networks (AFISNET, CAFSAT, , REDDIG, SADC, etc.) to support ATS data link applications in an ATN environment.	SAT/13
6.	Considering the implementation time-frames in the AFI and SAM CNS/ATM implementation plans, address cost-benefit aspects for the use of CNS/ATM applications (as required).	Continuous
7.	Harmonize the technical aspects of ADS/CPDLC programmes developed by SAT States/FIRs, taking due account of the operational guidance material contained in the FANS 1/A Operational Manual. Issues such as the use of common standards, transmission protocols, data formats, procedures, methods of work, etc… should be addressed in this connection.	SAT/13

COMPOSITION

- The CNS/WG being of multi-disciplinary nature shall comprise of experts from States responsible of FIRs in the area concerned, experts from adjacent FIRs and international organizations and the aeronautical industry.
- ***Rapporteur****: Senegal.*
- ***Task Team leaders****: ASECNA (Tasks. Nos.2 and 4), South Africa (Task No.7)*
- ***Working arrangements****: The CNS/WG should complete its work and submit its proposal to the CNS/WG. The CNS/WG should work through electronic correspondence prior to meetings.*
