

**INTERNATIONAL CIVIL AVIATION ORGANIZATION
WESTERN AND CENTRAL AFRICAN OFFICE**



**SECOND MEETING OF CAFSAT NETWORK
MANAGEMENT COMMITTEE (CNMC/2)**

FINAL REPORT

Dakar, Senegal, 06-08 November 2012

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Second Meeting of the CAFSAT Network Management Committee (CNMC/2) was held in the Conference room of the ICAO regional Office for Western and Central Africa, Dakar, from 06 to 08 November 2012.

1.2 Mr. **Mam Sait JALLOW** Regional Director of the ICAO regional Office for Western and Central Africa welcomed the participants. He rose up the crucial role played by communication in all the sectors of civil aviation in particular in the provision of air navigation services both in terms of quality and capacity. He outlined that within the framework of ICAO plans and guidelines for migrating the Aeronautical Fixed Service (AFS) from the current Aeronautical Fixed Telecommunication Network (AFTN) to the future Aeronautical Telecommunication Network (ATN), CAFSAT appears to be the appropriate interregional satellite based communication network that will ensure the interconnection and the interoperability for a dependable and reliable automation of ATM systems between AFI, EUR and SAM regions.

2. Officers and Secretariat

Mr. **François Xavier SALAMBANGA**, RO/CNS, WACAF Office served as Secretary of the meeting and therefore prepared the working and information papers to be presented accordingly.

3. Attendance

The meeting was attended by twenty five (25) participants from seven (07) States (Angola, Brazil, Cape Verde, Portugal, Senegal, South Africa, Spain) , two (02) Air navigation Service Providers, namely ASECNA and ATNS, and a Communication Integrator Company INSA (Spain).

The list of participants is attached in **Appendix A** to this report.

4. Working Language

The meeting was conducted in the English language.

5. Agenda

The meeting adopted and discussed the following Agenda items through the Work programme as presented in **Appendix B** to this report.

Agenda Item 1: Review of the status of implementation of the Conclusion/Decision of the first meeting of CNMC (CNMC/1)

Agenda Item 2: Review the performance of CAFSAT earth stations and the operational statistics of availability for supported links

Agenda Item 3: Implementation of recommendations 6/19 of Special AFIRAN meeting

Agenda Item 4: Interconnection and interoperability of CAFSAT with its neighbouring networks

Agenda Item 5: Outcome of ITU WRC-12 pertaining to VSATs Networks and preparation of WRC-15

Agenda Item 6: CAFSAT modernization and re-engineering

Agenda item 7: Review of the Terms of Reference and Work Programme of CNMC

Agenda Item 8: Review of the draft Conclusions/Decisions of CNMC/2 Meeting

6. Summary of Conclusions

After deliberation the meeting adopted three (03) Decisions and nine (09) Conclusions.

PART II – REPORT ON AGENDA ITEMS

Agenda Item 1: Review of the status of implementation of the Conclusion/Decision of the first meeting of CNMC (CNMC/1)

1.1 Under this agenda item the reviewed the status of implementation of the Conclusion/Decision of the first meeting of CNMC (CNMC/1) held in Recife, Brazil on 02 May 2011.

1.2 The meeting noted the progress made by Administration and Organizations in the implementation of these conclusions/decisions and encouraged the remaining. The following conclusion was formulated.

Conclusion 2/01: Implementation of the outstanding Conclusion/Decision of the first meeting of CNMC (CNMC/1)

That:

CNMC Members States/Organizations that have not done so, implement the outstanding conclusions/decisions of the first meeting of CNMC.

Agenda Item 2: Review of the performance of CAFSAT earth stations and the operational statistics of availability for supported links

2.1 Under this agenda item the meeting reviewed and analyzed the performance of the Network based on statistics of availability of the links.

Analyzing the figures, the meeting acknowledged a good rate of availability of AFS links supported by CAFSAT. However it has been noted dysfunctions on some of the links that cause the decrease of the availability such as Dakar/SAL ATS/DS circuit on April May June and July 2012, Dakar/Atlántico AFTN on July 2011 (96%), Nouakchott/Casablanca AFTN on September 2011 (63%) and Dakar/ Las Palmas AFTN (91, 57%) on August 2012.

2.2 The meeting strongly encouraged Dakar and Sal ACCs to take the appropriate actions such as collaborative investigations through technical missions, exchange of maintenance personal, to restore and stabilize the availability and the Quality of Service of the ATS/DS circuit between the two centers no later than end of December 2012.

The following conclusion was formulated.

Conclusion 2/02: Improvement of the availability of the ATS/DS Circuit between Dakar and Sal

That:

As a matter of urgency, Dakar and Sal ACCs take the appropriate actions such as collaborative investigations through technical missions, exchange of maintenance personal, to restore and stabilize the availability and the Quality of Service of the ATS/DS circuit between the two centers no later than end of December 2012.

2.3 The meeting examined the pace of usage of the Performance Data Collection Form (PDCF) adopted by CNMC1st meeting aiming to facilitating the automation of the survey of CAFSAT network.

2.4 The secretariat reported to have received figures from ASECNA, Brazil, Morocco and Portugal but only those from Brazil and Portugal were under PDCF format.

2.5 The meeting recalled the need to undertake a study for the automation of the collection of statistic figures for easier monitoring/analysis and decision making and urged CNMC members who have not yet done so, to systematically use the Performance Data Collection Form (PDCF) to monthly collect CAFSAT nodes and services parameters. The following conclusion and decision were formulated.

Conclusion 2/03: Utilization of the Performance Data Collection Form (PDCF)

That:

CNMC members who have not done so systematically use the Performance Data Collection Form (PDCF) to monthly collect CAFSAT nodes and services parameters and forward them to CNMC current team leader with copy to CNMC Secretariat.

Decision 2/04: Automation of CAFSAT statistics data collection

That:

In order to facilitate the monitoring of the network and the mitigation of the deficiencies CNMC members participate in a study for the automation of the collection of CAFSAT statistics figures prior to the development of a comprehensive database for AFS-AFTN statistics.

Agenda Item 3: Implementation of recommendations 6/19 of Special AFIRAN meeting

3.1 Under this item the meeting analyzed the status of implementation of recommendation 6/19 of Special AFI/RAN meeting that calls for regular meetings of all AFI networks managers.

The secretariat presented to the meeting the outcome of the previous meetings of the AFI Aeronautical VSAT Networks Managers and recalled the establishment of a Task Force for the AFI Aeronautical VSAT Networks Regional Project by APIRG 18 (Conclusion 18/28).

3.2 The meeting agreed on the need for concerned CNMC members to implement the Conclusion/Decisions derived from the outcome of the meetings of the Task Force for the AFI Aeronautical VSAT Networks Regional Project and pursue their effort to actively participate in the future activities of the Task Force.
The following conclusion was formulated.

Conclusion 2/05: Implement the outcome of the Task Force for the AFI Aeronautical VSAT Networks Regional Project;

That:

CNMC concerned States/Organizations:

- **Implement the Conclusion/Decisions derived from the outcome of the meetings of the Task Force for the AFI Aeronautical VSAT Networks Regional Project;**
- **Pursue their effort to actively participate in the future activities of the Task Force.**

Agenda Item 4: Interconnection and interoperability of CAFSAT with its neighboring networks

4.1 Under this agenda item, the meeting reviewed the status of interconnection of CAFSAT with its neighboring networks (REDDIG, AFISNET) and addressed interoperability issues.

4.2 The meeting noted that AFISNET and CAFSAT Networks are integrated thanks to the installation of a CAFSAT node in Nouakchott and the installation of an AFISNET node in Las Palmas. The integrated network supports ATS/DS and AFTN services with available capability to support others ATN applications.

4.3 The meeting was reminded that during the last SAT meetings (Recife 2011 and Las Palmas 2012), it was recognized the need to establish an ATS/DS circuit between Abidjan and Recife. As Abidjan is not provided with a CAFSAT node as well as Recife is not provided with an AFISNET's it was agreed to establish a provisional double hoop link between the two centers. This link which should be established by rerouting the incoming signal from Abidjan AFISNET station into the Dakar Recife CAFSAT link and vice versa, is not yet implemented.

4.4 In the other hand the interconnection between REDDIG and CAFSAT would be implemented involving Uruguay, French Guyana (SAM Region) and Trinidad Tobago (Car Region). The meeting considered that as in this moment CAFSAT will be migrating in a new network, in order to facilitate the interconnection and reduce the cost of interconnection for the States it is important to be aware of the new technology of CAFSAT.

4.5 The meeting encouraged concerned Sates/Organizations to realize or complete the interconnection process between CAFSAT and the neighboring networks in order to implement the remaining interconnection required for ATM operation and pursue their

collaboration when modernizing their respective networks components in order to build an harmonized interregional network provided with the capability to support the forthcoming CNS applications.

The following conclusion was formulated.

Conclusion 2/06: Interconnection and interoperability of CAFSAT with its neighboring networks

That:

CNMC concerned Sates/Organizations (Uruguay, French Guyana, Trinidad & Tobago, Brazil, Côte d'Ivoire, realize/complete the interconnection process between CAFSAT and the neighboring networks (REDDIG, AFISNET) in order to implement the remaining ATS/DS circuits required for ATM operation and pursue their collaboration when modernizing their respective networks components in order to build a harmonized interregional network provided with the capability to support the forthcoming CNS applications.

Agenda Item 5: Outcome of ITU WRC-12 pertaining to VSATs Networks and preparation of WRC-15

5.1 The meeting was informed on the main outcomes of ITU World Radiocommunication Conference (ITU-WRC-12) which was held in Geneva during the first quarter of year 2012. The meeting noted satisfactory that ICAO position on issue related to the provision of frequency spectrum for civil Aviation was considered by the Conference.

5.2 The Secretariat and the Rapporteur of the AFI Frequency Management Group provided the meeting with all the details of the actions undertaken for the submission on the draft resolution aiming to ensuring the protection of the 34.4-4.2Ghz operated by Aeronautical VSAT (including AFISNET) in Region 1. Resolution 154 (COM 6/24)-WRC-12 and the following actions taken after the Conference were presented to the meeting as well as the issue related to the preparation of WRC 15.

5.3 The meeting recognized the efforts deployed by the stakeholders during the Conference to reach positive results and called upon CNMC members to promote the outcome on issues of WRC-12 related to the provision of spectrum for civil aviation, participate in related futures activities and strengthen their collaboration with their National Authorities of Regulation of Telecommunication to ensure their support.

The following conclusion was formulated.

5.4 The meeting recognized that the preparation of WRC comprises various activities at national, sub / regional and international level and includes various stakeholders such as National Authorities of Regulation of Telecommunication, Civil Aviation Authorities (CAA), Air Navigation Service Providers (ANSPs), Airports Operators and Airlines, regional specialized associations.

5.5 While the National Authorities of Regulation of Telecommunication are leading the conference preparation process by capturing and arbitrating the needs from the spectrum users in line with ITU Radio Regulation, CAAs which should be holding the flag of the Civil Aviation community by summarizing the position of ICAO as well as the local concerns of aviation industry in terms of availability of spectrum, prevention and mitigation of harmful interferences.

Specialized regional Group such as the African Telecommunication Union (ATU), the Inter-American Telecommunication Commission (CITEL), the European Conference of Postal and Telecommunications Administrations (CEPT) are coordinating the actions within the concerned regions before, during and after the WRC meetings.

5.6 The meeting therefore noted that key role of CNMC members in the preparation of WRC-15 will be to sensitize their respective CAAs to provide ATU, CITEL and CEPT through their regulators with the concerns of the aviation community what suppose that the position of ICAO is captured understood and shared with these stakeholders.

5.7 The attention of the meeting was also reminded on the necessity to register CAFSAT nodes in order to ensure a suitable protection of the operation on the frequency C-band.

The following decision and conclusion were formulated.

Decision 2/07: Registration of CAFSAT nodes

That:

As a matter of urgency Sates/Organizations register or update the coordinates and characteristics of their CAFSAT nodes no later than end of December 2012, in order to facilitate implementation of ITU Resolution 154 WRC-12

Conclusion 2/08: Implementation of the outcome of ITU WRC-12

That:

CNMC Sates/Organizations

a) Present and defend WRC-12 outcome on issues related to the provision of spectrum for civil aviation;

c) Actively participate in the studies called upon by Resolution COM6/24-WRC 12 through the activities of Regional Aeronautical Frequency Management Groups, Aeronautical Communication Panel Working Group F and Regional Telecommunication groups (ATU, CITEL, CEPT...) meetings;

c) Reinforce their collaboration with their National Authority of Regulation of Telecommunication in order to submit and support the position of ICAO for the future WRC-15/16.

5.8 The secretariat reported to the meeting on the outcome of the workshops on ICAO Aviation System Block Upgrades (ASBU) in particular the workshop held in Dakar from 16 to 20 July 2012. The meeting noted that the 12th Air Navigation Conference to be held in Montreal from 10 to 30 November will adopt the ASBU concept. The meeting therefore invited CNMC Administration and Organizations to endeavour to implement the conclusion and decisions of the 12th Air Navigation Conference and to take into account the ASBU concept and methodology for the future development of CAFSAT.

Agenda Item 6: CAFSAT modernization and re-engineering

6.1 Under this agenda item the meeting examined the current developing projects planned or conducted by States/Organizations through the Joint Technical Team for CAFSAT network evaluation and re-engineering (JTT) established by CNMC 1st meeting with Spain as Team leader.

6.2 It was reported that since then, the modernization/development on the network has continue to be undertaken. As example, Portugal has conducted an upgrade of Lisbon and Santa Maria nodes, Brazil is in the process of modernizing the Recife station, when Angola intends to provide Luanda with a CAFSAT node in coordination with Brazil project.

6.3 It was recalled that a draft Document for CAFSAT evaluation and re-engineering had been circulated by Spain among concerned SAT members for consolidation but by the time being, no contribution was received back from members.

6.4 The meeting agreed that in order to ensure the continuity of service operating on CAFSAT, the implementation of phase 1 of the roadmap for CAFSAT re-engineering consisting on the replacement of the obsolete base band components of the nodes appears to be a matter of urgency.

The following conclusion was formulated.

Conclusion 2/09: Implementation of Phase 1 of the roadmap for CAFSAT re-engineering

That:

States/Organizations that have not done so, implement phase 1 of the roadmap for CAFSAT re-engineering consisting on the replacement of the obsolete base band components of their nodes.

6.5 The meeting reviewed the conclusions/decisions of the SAT/17 meeting held in Las Palmas Spain from 18 to 20 April Spain pertaining to CAFSAT and noted the the difficulties encountered by Spain to find contact persons in SAT States to respond to the request for comments on the reengineering preparation activities.

6.6 The Secretariat reminded the meeting with the importance for each State to nominate a contact person to handle the re-engineering exercise as called upon by decision SAT/16/05 (Establishment of a Joint Technical Team for CAFSAT Network evaluation and re-engineering) to comply with Decision SAT17/04(Nomination of contact persons for the joint technical team for CAFSAT evaluation and re-engineering).

6.7 It was agreed that SAT concerned members communicate to Spain (Team Leader) the name and the title of their designated contact person for the joint technical team for CAFSAT evaluation and re-engineering no later than end of April 2012. The following conclusion was formulated.

Conclusion 2/10: Nomination of focal points and finalization of phase 2 of the roadmap for CAFSAT re-engineering

That:

States/Organizations forward to Spain (Team Leader for the CAFSAT re-engineering and modernization) no later than end of February 2013, the nominated focal points and their comments on the Reference Document.

6.8 The meeting also considered in particular the evolution of the project consisting to implement the ATS/DS circuit between Luanda and Atlántico. Brazil confirmed to the meeting on its ongoing discussion for a contract which is expected to be signed by the end of year 2012 with INSA, the CAFSAT network provider in order to modernize its node in Recife. This project takes into consideration the need for the link with Luanda.

6.9 The secretariat reported to the meeting on the coordination teleconference held on 29 June 2012 between Angola, Brazil, INSA and ICAO regional WACAF Office. The teleconference agreed on a draft schedule of the effective the establishment of the ATS/DS link before the end of June 2013. This planning is presented in **Appendix B**. This Teleconference

Conclusion 2/11: Implementation of the CAFSAT node in Luanda

That:

Angola and Brazil pursue their effort in the implementation of the ATS/DS circuits between Luanda and Recife by the installation of the CAFSAT node in Luanda and the corresponding modem in Recife in the time frame attached in **Appendix B to this report.**

Agenda Item 7: Review of the Terms of Reference and Work Programme of CNMC

7.1 Under this agenda item the meeting reviewed and the Terms of Reference and Work Programme of CNMC.

7.2 It was agreed that ENANA, the Angola Air Navigation service provider currently CNMC observers will fully be core member after the implementation of the CAFSAT node in Luanda.

7.3 The meeting also agreed to add CITEL and CEPT as regional and international organizations.

7.4 The meeting was also informed on the deliberation of SAT 17 related to the venue and holding of CNMC. It was decided that opportunity should be taken to hold CNMC

meetings during SAT meetings period in order to take benefit of the presence of participants of SAT states. Through Decision SAT 17/06, it was agreed that CNMC meetings will be held in parallel with SAT/FIT meetings with merged sessions if necessary.

Based on the information above the meeting updated the term of reference and work programme of CNMC as presented in **Appendix C**.

The following decision was formulated;

Decision 2/12: Terms of Reference and Work Programme of CNMC

That:

The Term of Reference and Work arrangement of CNMC are revised as attached in **Appendix C**

Agenda Item 8: Review of the draft Conclusions/Decisions of CNMC/2 Meeting

Under this agenda item the meeting discussed, amended and approved the draft conclusion/decisions presented by the secretariat.

Agenda Item 9: Any other business

The meeting expressed its gratitude to the ICAO WACAF Regional Office for hosting and facilitating the holding of this meeting.

APPENDIX A

Second Meeting of the Central Atlantic FIR Satellite Network Management Committee (CNMC/2) (Dakar, Senegal, 6 – 8 November 2012)

List of participants

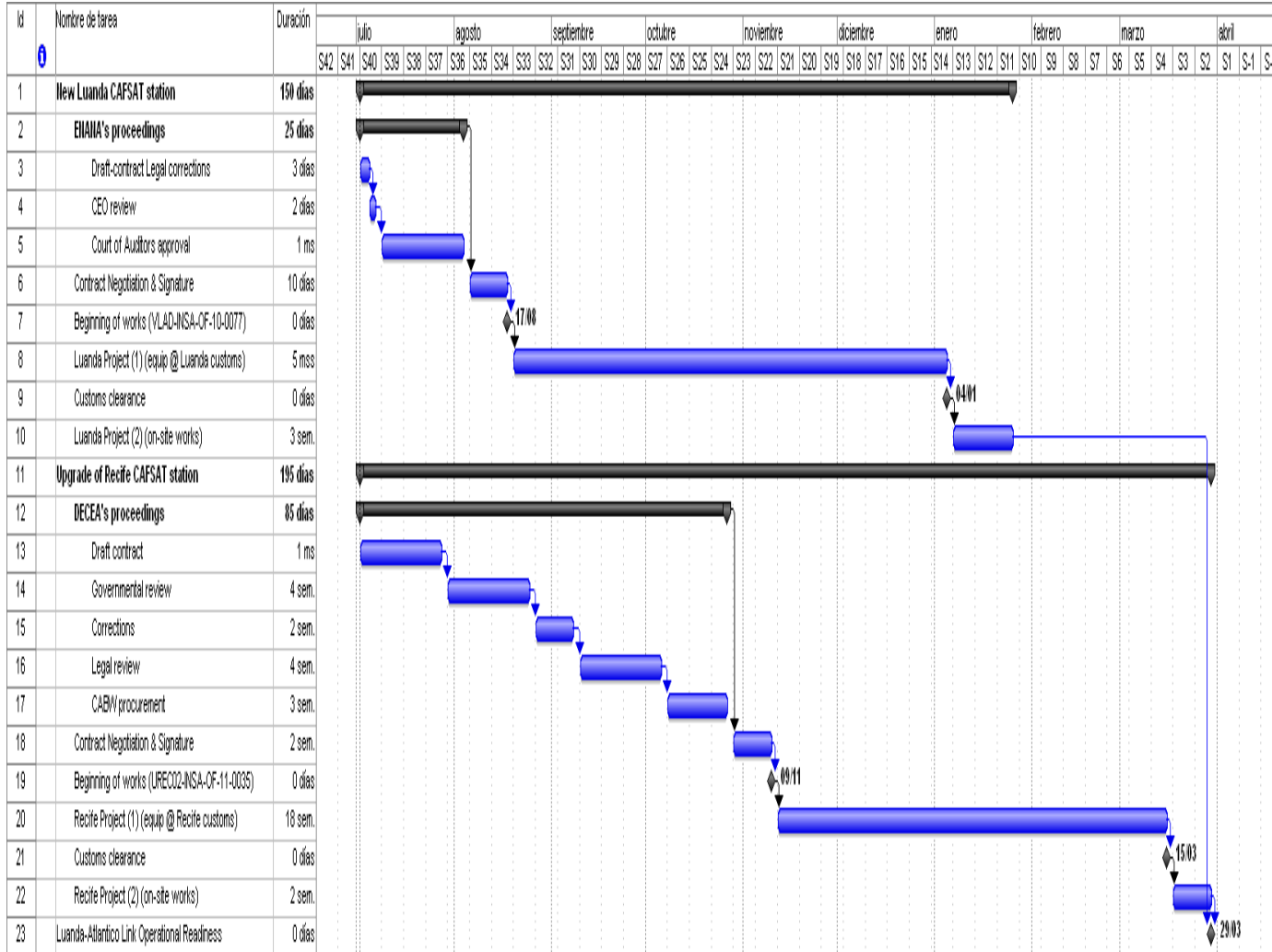
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APPENDIX B

Schedule for the establishment of the Luanda-Recife ATS/DS circuit



APPENDIX C

TERMS OF REFERENCE OF THE CAFSAT NETWORK MANAGEMENT COMMITTEE (CNMC)

1. Mandate of the CAFSAT Management Committee

- 1.1 Decide on the network concept and topology in accordance with the relevant ATM operation requirements and based on ICAO SARPs and guidance materials.
- 1.2 Ensure the continued operation of the CAFSAT network, meeting the CNS/ATM plan requirements of the AFI /NAT/EUR/SAM Regions while taking into consideration CNS/ATM plans of adjacent regions, and including approval of deployment plans and/or extension plans.
- 1.3 Decide on type and levels of service to be provided, and monitor the performance of the Network providers (facilities and leased band) to ensure that service delivery meets required service performance for Aeronautical Fixed Service criteria previously pre-determined in accordance with the Manual of ATS ground-ground Voice Switching and Signaling (Doc 9804), the Procedures for Air Navigation Services - ATS Management (DOC. 4444), Annex X Vol.II, Chap. 4 and Annex XI.
- 1.4 Ensure that participating States/Organizations provide statistics on the Network Performance, and investigate service delivery complaints from users.
- 1.5 Review and take the appropriate actions to clear the service dysfunctions within the required service performance defined criteria in line with ATM PBN and SMS requirements.
- 1.6 Monitor the harmonization of the implementation of facilities and services and, where necessary, ensure interregional connectivity, taking due account of cost/benefit analysis, business case development and financing issues:
 - Study the extension of the network to other countries.
 - Propose the network integration and interoperability with other neighboring networks
- 1.7 Monitor and harmonize the Network maintenance operation and management by defining a cooperation methodology between network centers in regard with:
 - Maintenance personnel team training and exchange, redeployment if necessary of a technical assistance;
 - Spare parts exchange, fault location/repairs, and turnaround time
 - Development and modernization of CAFSAT after a Joint Technical Evaluation and Re-engineering team assessment.
- 1.8 Review and adopt the annual follow up on the meeting conclusion and update the future work programme.
- 1.9 The report of CAFSAT Network Management Committee is to be addressed to SAT/CNS-WG

2. Composition and organization of the Committee

The CAFSAT Network Management Committee (CNMC) is composed of member States/Organizations hosting/operating CAFSAT nodes, namely:

- **AENA (Spain)**
- **ANAC (Argentina)**
- **ASA (Cape Verde)**
- **ASECNA (Côte d'Ivoire, Mauritanie, Sénégal)**
- **ATLANTICO FIR (Brazil)**
- **ATNS (South Africa)**
- **NAV Portugal (Portugal)**
- **ONDA (Morocco)**

Observers as facilities providers (**INSA**), satellite spectrum providers (**INTELSAT**), Airline Associations (**IATA**), Maintenance Personnel Association (**IFATSEA**), neighboring Networks (**AFISNET**) can join the Committee.

- 2.1 The Chair of the Committee shall be elected by the Committee from among the Committee members every year. The Chair may be re-elected for no more than two periods of one year each. The mandate as Chair of the Committee shall not exceed three years.
- 2.2 ICAO shall be the Secretary of the Committee.
- 2.3 To ensure that the Committee functions optimally, the designated representatives of Air Navigation Service Providers should have experience in the provision of air navigation infrastructure and services. Advisors may accompany the Representative.

3. Participation by International Organizations

Moreover those listed in paragraph 2, the Committee may invite representatives of appropriate regional and international organizations (ATU, CITEL, CEPT, ITU, EUROCONTROL...) to attend meetings in the capacity of observer.

4. Establishment and Dissolution of Contributory Bodies

- 4.1 In order to assist in its work, the Committee may establish bodies, e.g. task forces, charged with preparatory work on specific issues. Representation in such contributory bodies should be by specialists in the subjects concerned and familiar with the issues under consideration.
- 4.2 The establishment and work of contributory bodies shall be governed by the following provisions:
 - a) A contributory body shall only be formed when it has been clearly identified that it is likely to make a substantial contribution to the resolution of the issue in question.
 - b) A contributory body shall be given clear and concise terms of reference describing its task and an expected target date for its completion.
 - c) The composition of a contributory body shall be such that, although intended to be as small as possible, all participating States and any organization deemed to be able to make valid contributions shall be given an opportunity to participate in it.
 - d) A contributory body shall be dissolved as soon as it has either completed its assigned task or it has become apparent that work on the subject in question cannot be usefully continued.

5. Working arrangements

- 5.1 The Committee ordinary meeting will be hosted by one of the State\organization and held at least once a year in principle in parallel with the SAT /FIT meeting;
- 5.2 The committee can hold in case of absolute necessity extraordinary meetings to clear out urgent problems that may be a threat to the service provided by the network;
- 5.3 The invitation letter to the meetings is issued by the Secretariat in coordination with the hosting State/Organization.
- 5.4 Decisions shall be reached by consensus.
- 5.3 Two-thirds of members shall constitute a quorum and, where a quorum is not achieved, decisions will be reached through correspondence under the Chair Person coordination.