

**CNMC/6**

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



**SIXTH MEETING OF THE CAFSAT NETWORK  
MANAGEMENT COMMITTEE (CNMC/6)**

**FINAL REPORT**

**Lisbon, Portugal, 6-7 June 2016**

**Prepared by ICAO WACAF Office, Secretariat of the meeting**



**The CNMC Meeting is as a result of the SAT Group Decision SAT/15/03:**

*Adoption of the Terms of Reference of CAFSAT Network Management Committee*

**Its Reports are therefore submitted to SAT/CNS/WG for review and action.**

**The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.**

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## **PART I – HISTORY OF THE MEETING**

### **1. Introduction**

**1.1** The Sixth Meeting of the CAFSAT Network Management Committee (CNMC/6) was held at the **Tivoli Oriente** hotel, Lisbon, Portugal, from 06 to 07 June 2016 in parallel with the SAT/FIT/11 Meeting and preceding the SAT/ 21 Meeting (08-10 June 2016).

**1.2** The three meetings were officially opened on the 06<sup>th</sup> June 2016 by **Mr. Luis COIMBRA**, CEO NAV Portugal. **Mr. COIMBRA**, firstly welcomed the participants to the three meetings (CNMC/6, SATFIT/11 and SAT/21) being held in parallel and back to back, and invited them to feel at home in Lisbon.

**1.3** Then, he outlined the continuous success of the SAT Group achievements with regard to the tangible improvement of ATS safety, capacity, efficiency and the contribution to the preservation of the environment over the South Atlantic (SAT). Amongst various success stories he recalled to the attention of the participants the importance of the CAFSAT Network which enables interconnection and interoperability of aeronautical ground/ground communication for ATS/DS coordination and transmission of aeronautical message through the AFTN across AFI, EUR and SAM regions.

**1.4** He also noted the main role of CAFSAT to enable the interconnection and the interoperability of ATM systems between AFI, EUR, NAT and SAM regions of automated ATM systems.

**1.5** He recalled also how Portugal is actively involved in the activities of the CNMC through NAV Control, his Air Navigation Service Provider and reaffirmed the strong commitment of his State to conduct his part of the work carried out by the SAT Group. Finally he wished fruitful deliberations and a nice stay in Portugal to the participants.

### **2. Officers and Secretariat**

The Meeting was chaired by **Mr. Sabino André Galvão Baptista**, Inspector ANS Cabo Verde. **Mr. François Xavier Salambanga**, Regional Officer Communication Navigation and Surveillance (RO/CNS), ICAO WACAF Office and **Mr. Onofrio Smarelli**, Regional Officer Communication Navigation and Surveillance (RO/CNS), ICAO SAM Office served as Secretary of the meeting.

### **3. Attendance**

The meeting was attended by Twenty Six (26) participants from eleven (11) States namely **Angola, Argentina, Cabo Verde, Côte d'Ivoire, France, Ghana, Portugal, Senegal, South Africa, Spain, Trinidad de Tobago**), two (02) international organisations, **ASECNA** and **IATA**. Participants from communication suppliers (**INEO-France, ISEDEFE-Spain** and **AICOX-Spain**) attended the meeting.

**Mr. Javier Lopez Gonzalez**, Chief Field Operations Section (C/FOS) ICAO Technical Cooperation Bureau (TCB) attended the meeting and delivered a presentation.

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

#### **4. Working Language**

The meeting was conducted in the English language and the Working and Information Papers were submitted in this language.

#### **5. Agenda**

The Meeting adopted and discussed through its Work programme, the following Agenda items.

**Agenda Item 1: Review of the status of implementation of the Conclusion/Decision of the fifth meeting of CNMC (CNMC/5)**

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

**Agenda Item 3: Interconnection and interoperability of CAFSAT with its neighboring networks**

**Agenda Item 4: CAFSAT re-engineering and modernization**

**Agenda Item 5: Outcome of ITU World Radiocommunication Conference (WR-15) on issues pertaining to VSATs Networks**

**Agenda Item 6: Implementation of Recommendations 6/19 of Special AFIRAN meeting**

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

**Agenda Item 8: Adoption of the draft Conclusions/Decisions of CNMC/6 Meeting**

**Agenda Item 9: Any other business**

#### **6. Summary of Conclusions**

After deliberation the meeting adopted four (4) Decisions and eleven (10) Conclusions.

The conclusions/decisions are summarized below:

**Agenda Item 1: Review of the status of implementation of the Conclusions/Decisions of the fifth meeting of CNMC/5 meeting**

**Conclusions 6/01: Implementation of the outstanding Conclusions and Decisions of CNMC/5 Meeting**

**That;**

**CNMC Administrations/Organizations endeavor to implement the outstanding Conclusions/Decisions of the fifth meeting of CNMC.**

**Conclusion 6/02: Restoration of the Nouakchott Casablanca ATS/DS circuit**

**That;**

**ASECNA and ONDA pursue their effort and hold the planned bilateral technical coordination meeting aiming to finalizing and implementing the plan of action for the restoration of the Nouakchott Casablanca ATS/DS circuit and report to the CNMC current coordinator before **31 December 2016.****

**Conclusion 6/03: Effective utilization of the Performance Data Collection Form (PDCF)**

**That;**

- a) CNMC Secretariat send a correspondence to all CNMC members with an attached PDCF form in view to recall the commitment taken by members to use this form for CAFSAT performance data collection;**
- b) CNMC members to duly fill up the Performance Data Collection Form (PDCF) and periodically report to the current CNMC coordinator with copy to the Secretariat;**
- c) The current CNMC coordinator develop a follow up table to be periodically updated and remind every quarter, States/Organizations that have not forwarded the PDCFs.**

**Conclusion 6/04: Focal points for CAFSAT Re-engineering and modernization**

**That;**

- a) States/Organizations who have not yet done so, namely Argentina, Cabo Verde and South Africa, endeavor to nominate their Focal Point to participate in the forthcoming activities on the CAFSAT Re-engineering and modernization;**
- b) Piarco and Cayenne to be involved in the aim to implement the remaining needed circuits.**

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

**Conclusion 6/05: Collection and record of the causes of instability of the CAFSAT links**

**That;**

CNMC members collect record and report to the coordinator with copy to the Secretariat, the causes and sources of instability experienced in CAFSAT nodes operation for sharing and for further assessment in the aim to ensuring the Network sustainability.

**Agenda Item 3: Interconnection and interoperability of CAFSAT with its neighboring networks**

**Conclusion 6/06: Interconnection and interoperability**

**That;**

In order to avoid the duplication of aeronautical VSAT Networks and to ensure costs effectiveness CAFSAT members pursue their effort to ensure the interconnection and interoperability of CAFSAT with its neighboring Networks taking into consideration the best practices available in this matter in the SAM and AFI Regions.

**Agenda Item 4: CAFSAT re-engineering and modernization**

**Decision 6/07: Completion of phase I of the CAFSAT Modernization and re-engineering**

**That;**

Phase I of the CAFSAT Modernization and re-engineering is considered completed as attached at **Appendix C**.

**Conclusion 6/08: Revitalization of Phase II of CAFSAT Modernization and re-engineering**

**That;**

**CNMC Members:**

- a) Consider the impact of the new strategic plan of the CAFSAT supplier ( ISDEFE) to ensure CAFSAT sustainability and;
- b) Revitalize the process to conduct Phase II of CAFSAT modernization and re-engineering.
- c) Take into account the technology evolution to ensure the cost effectiveness for the future development of the network.



**Decision 6/09: Term of Reference and updated schedule for CAFSAT Re-engineering and modernization Phase II**

**That;**

**ASECNA develop a draft Terms of Reference and an updated schedule for CAFSAT Re-engineering and modernization Phase II to be circulate amongst CNMC members no later than **31 August 2016.****

**Decision 6/10: Coordination meeting of the Joint Technical Team for CAFSAT Re-engineering and modernization**

**That;**

**In order to carry out its task in the time frame,**

- a) The Joint Technical Team for CAFSAT engineering and modernization hold its first coordination meeting in Canarias as soon as possible but no later than **31 October 2016** and;**
- b) The Terms of Reference for CAFSAT Re-engineering and modernization development be completed no later than **31 December 2016** for approval by CNMC core members.**

**Conclusion 6/11: Regional and Inter-regional project mechanisms**

**That;**

**In the framework of CAFSAT modernizing, members take into consideration the experience gained in implementing regional Networks (AFISNET, NAFISAT, SADC/2, REDDIG II, MEVA III) and bear in mind the regional assistance projects mechanisms available at ICAO (Regional Offices and Technical Cooperation Bureau).**

**Agenda Item 5: Outcome of ITU World Radiocommunication Conference (WR-15) on issues pertaining to VSATs Networks**

**Conclusion 6/12: Protection of the C-Band operated by CAFSAT**

**That;**

**In order to ensure an efficient protection of the C-Band operated by CAFSAT members initiate and conduct the adequate actions for the effective implementation of ITU Resolution 154 (Rev. WRC 15):**

- a) **Implement Resolution 154 (Rev. WRC 15) by licencing the CAFSAT nodes and other C-band VSAT Stations and by ensuring their Registration in the ITU Master International Frequency Register (MIFR);**
- b) **Reinforce the collaboration with their National Authority of Regulation of Telecommunication in order to submit and support civil aviation spectrum requirements contained in ICAO position for the future WRC-19;**
- c) **Ensure their participation to regional and sub-regional meetings organized by ITU, ATU, CEPT and CITEL.**

**Agenda Item 6: Implementation of Recommendations 6/19 of Special AFIRAN meeting**

**Conclusion 6/13: Participation in VSATs Network coordination meetings**

**That;**

**In the aim at sharing experience and best practices CNMC members endeavor to regularly attend the coordination meetings on aeronautical VSAT Networks operations (AFISNET, NAFISAT, SADC/2, REDDIG II and MEVAIII).**

**Agenda Item 7: Review of the Terms of Reference and Working Arrangements of CNMC**

**Decision 6/14: Terms of Reference and Working Arrangements of CNMC**

**That;**

**The Terms of Reference and Working Arrangements of CNMC are adopted as presented in **Appendix F****

## **PART II – REPORT ON AGENDA ITEMS**

### **Agenda item 1: Review of the status of implementation of the Conclusion/Decision of the fifth meeting of CNMC (CNMC/5)**

**1.1** Under this agenda item the meeting reviewed the status of implementation of the conclusions and decisions of the fifth meeting of the CNMC. The meeting noted the progress made in the implementation of some of these conclusions/decisions and encouraged CAFSAT members to implement the outstanding. The status of implementation of the conclusions/decisions of CNMC/5 is presented at **Appendix B** to this report.

The following conclusion was formulated:

#### **Conclusions 6/01: Implementation of the outstanding Conclusions and Decisions of CNMC5 Meeting**

**That;**

**CNMC Administrations/Organizations endeavor to implement the outstanding Conclusions/Decisions of the fifth meeting of CNMC.**

**1.2** The meeting examined the performance of CAFSAT links and noted the outstanding unavailability of the Nouakchott/Casablanca circuit resulting in deficiency of ATS/DS coordination between the two centers. ASECNA remembered the meeting on the actions already initiated with ONDA including a technical mission to Casablanca and informed the participants on the forthcoming coordination meeting scheduled to take place in Dakar in order to seek for the best technical arrangements aiming to clearing out the dysfunction. In the absence of ONDA, the meeting applauded the process and encouraged the concerned centers to undertake the urgent necessary action in order to restore the circuit.

The following conclusion was formulated:

#### **Conclusion 6/02: Restoration of the Nouakchott Casablanca ATS/DS circuit**

**That;**

**ASECNA and ONDA pursue their effort and hold the planned bilateral technical coordination meeting aiming to finalizing and implementing the plan of action for the restoration of the Nouakchott Casablanca ATS/DS circuit and report to the CNMC current coordinator **before 31 December 2016.****

**1.3** The Secretariat reported to the meeting the low pace of usage of the Performance Data Collection Form (**PDCF**). The utilization of this tool as a harmonized tool in the view of the automation of the assessment of CAFSAT performance was called upon in the past by CNMC meetings in particular **Decision 5/04: Assessment of CAFSAT AFS performance through the Performance Data Collection Forms (PDCFs)**. It was noted that despite this Decision no data in the PDCF format was received from CAFSAT nodes except from Portugal for the Lisbon and Santa Maria stations.

The meeting confirmed the usefulness of the PDCF for the assessment of CAFSAT performance and urged the Secretariat to circulate again the form and CAFSAT stations to duly fill it up. The current coordinator was tasked to periodically follow up the status of implementation of these conclusions on the usage of PDCF.

The following conclusion was formulated:

**Conclusion 6/03: Effective utilization of the Performance Data Collection Form (PDCF)**

**That;**

- a) **CNMC Secretariat send a correspondence to all CNMC members with an attached PDCF in view to recall the commitment taken by members to use this form for CAFSAT performance data collection;**
- b) **CNMC members to duly fill up the Performance Data Collection Form (PDCF) and periodically report to the current CNMC coordinator with copy to the Secretariat;**
- c) **The current CNMC coordinator develop a follow up table to be periodically updated and remind every quarter, States/Organizations that have not forwarded the PDCFs.**

**1.4** The meeting reviewed the status of implementation of **Conclusion 5/11: *Future phase of the CAFSAT modernization and re-engineering*** calling upon for the nomination of Focal Points to participate in the studies for the modernization and re-engineering of CAFSAT. States identified to have not yet provided their representatives were urged to do so.

The following conclusion was formulated:

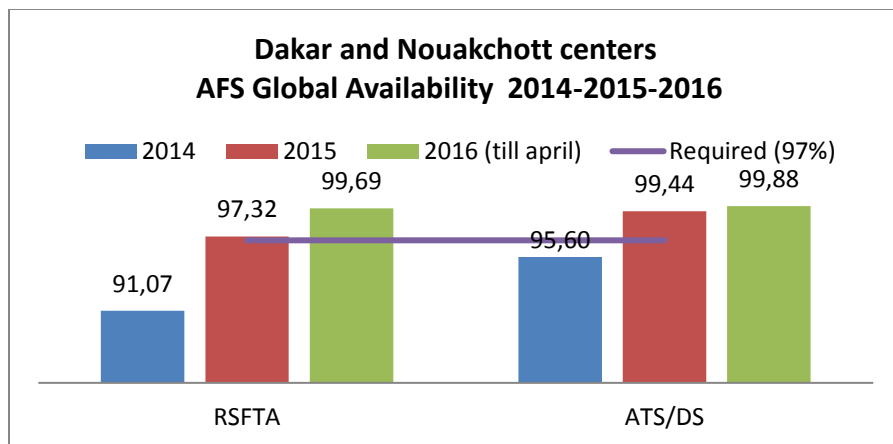
**Conclusion 6/04: Focal points for CAFSAT Re-engineering and modernization**

**That;**

- a) **States/Organizations who have not yet done so, namely Argentina, Cabo Verde and South Africa, endeavor to nominate their Focal Point to participate in the forthcoming activities on the CAFSAT Re-engineering and modernization;**
- b) **Piarco and Cayenne to be involved in the aim to implement the remaining needed circuits.**

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

**2.1** Under this agenda item the meeting reviewed the statistics on the availability of CAFSAT links provided by ASECNA (**WP04**). The meeting noted that in general, from 2014 to 2016, the AFS circuits on Dakar and Nouakchott nodes operated satisfactory and met the performance required by ICAO as reported in the figures below.



However instability of some CAFSAT AFTN links was recorded as follows:

- Sal on April and May and from August until October 2015;
- Rio on March, April and June 2015;
- Johannesburg on April and July 2015;
- Madrid on January 2015.

The meeting was reminded that the Casablanca/Nouakchott AFTN and ATS/DS links unavailable since January 2014 due to technical problems in Casablanca have not yet been restored and informed that the initiatives between ASECNA and ONDA were ongoing to find suitable solutions.

**2.2** The meeting also reviewed the operational statistics on the Lisbon and Santa Maria stations presented by Portugal (*WP03*) under the PDCF format summarized in **Appendix C**. The meeting applauded the analysis by ASECNA on the causes of instability of the links, recognized the effort of Portugal to comply with the principle agreed to record and report the statistics under the PDCF format.

CAFSAT members were encouraged to consider the above and share the causes and results of instabilities on CAFSAT links.

The following conclusion was formulated:

**Conclusion 6/05: Collection and record of the causes of instability of the CAFSAT links**

**That;**

**CNMC members collect record and report to the coordinator with copy to the Secretariat, the causes and sources of instability experienced in CAFSAT nodes operation for sharing and for further assessment in the aim to ensuring the Network sustainability.**

**Agenda Item 3: Interconnection and interoperability of CAFSAT with its neighboring networks**

**3.1** Under this agenda item the meeting was provided with details on the actions conducted to implement **conclusion 3/6 of CNMC/3** and **Conclusion 5/07 on Communication Requirement between Abidjan, Cayenne, Dakar, Piarco, Recife, Sal and Santa Maria** of CNMC/ 3 & 5 meetings calling ANSPs (**ASECNA, DECEA, DGAC** and **TTCAA**) to implement AFS circuits no later than 31 December 2015. In this regard the collaboration between the concerned ANSPs resulted in bilateral agreements for the implementation of AFISNET nodes in **Cayenne** and **Piarco**.

Discussions are ongoing between **ASECNA** and **DECEA** for the implementation of the **Recife** node.

The service currently provided is ATS/DS between Dakar ACC and Cayenne ACC, Dakar ACC and Piarco ACC.

**3.2** The node in Recife will enable the provision of ATS/DS service between Abidjan ACC and Recife ACC.

In a near future these links are planned to support AIDC in support to the implemented ATS/DS circuits between concerned ACCs.

The meeting applauded this collaboration and encouraged members to pursue their effort to ensure the interconnection and interoperability of CAFSAT with its neighboring Networks

The following conclusion was formulated:

**Conclusion 6/06: Interconnection and interoperability**

**That;**

**In order to avoid the duplication of aeronautical VSAT Networks and to ensure costs effectiveness CAFSAT members pursue their effort to ensure the interconnection and interoperability of CAFSAT with its neighboring Networks taking into consideration the best practices available in this matter in the SAM and AFI Regions.**

**Agenda Item 4: CAFSAT re-engineering and modernization**

**4.1** Under this agenda item the meeting assessed the statuses of implementation of phase I of the CAFSAT Modernization and re-engineering. It was noted that Ezeiza and Casablanca were in a process to install new CAFSAT nodes so the Phase I is no longer needed for these ACCs.

The meeting noted that this phase was successfully completed by the other CNMC members and decided to end the exercise.

The following decision was formulated:

**Decision 6/07: Completion of phase I of the CAFSAT Modernization and re-engineering**

**That;**

**Phase I of the CAFSAT Modernization and re-engineering is considered completed as attached at **Appendix D****

**4.2** The Secretariat reminded the meeting the actions planned to be conducted in the framework of Phase II of CAFSAT modernization and re-engineering and noted that members have neither appointed nominees nor provided their contribution for the finalization of the roadmap for this exercise.

**4.3** Furthermore the Secretariat informed the meeting that on February 2016 a visit from ISDEFE representative received in the ICAO Regional Office in Dakar provided the following information:

- As a result of changes in the public companies of the Government of Spain, INSA (the CAFSAT supplier) was absorbed by the company ISDEFE.
- ISDEFE has drafted a new strategic plan to be compliant with the Spanish and European regulation for government owned companies. As a result of this plan, ISDEFE will focus its activity on the strategic consultancy, giving priority to the needs of the Spanish Government.
- Impact of the new ISDEFE strategic focus on CAFSAT activities:

- ✓ ISDEFE guarantees the compliance of all ongoing activities and commitments (current installation and test in Luanda, Azores, Lisbon)
- ✓ ISDEFE will discontinue future developments and new node integration, installation and testing. A company named AICOX was presented to be able to pursue these activities.
- ✓ ISDEFE will be able to continue providing consultancy service, studies and plans if required by ICAO or any other ATM authority

The meeting noted this information and agreed to revitalize the process to conduct Phase II of CAFSAT modernization and re-engineering.

The following conclusion was formulated:

**Conclusion 6/08: Revitalization of Phase II of CAFSAT Modernization and re-engineering**

**That;**

**CNMC Members:**

- a) **Consider the impact of the new strategic plan of the CAFSAT supplier ( ISDEFE) to ensure CAFSAT sustainability and;**
- b) **Revitalize the process to conduct Phase II of CAFSAT modernization and re-engineering.**
- c) **Take into account the technology evolution to ensure the cost effectiveness for the future development of the network.**

**4.4** The meeting discussed a paper from ASECNA (**WP13**) recognizing that the planning implementation, operation and maintenance of the CAFSAT network have provided deep expertise in satellite technology for the different ANSPs involved and built a spirit of collaboration and cooperation. As example Phase I of CAFSAT upgrade was considered to have been successfully conducted through the conclusions and decision of the CNMC with the assistance of its Secretariat.

**4.5** Portugal presented on behalf (ENAIRES, ONDA and NAV Portugal) (**WP15**) the outcome of a technical coordination meeting held in Lisbon from 30<sup>th</sup> to 31<sup>st</sup> March 2016 with AIRCOX, a facilities supplier.

During the discussions the intention of ONDA to install a new CAFSAT station in the future Agadir ACC was considered as well as the intention of NAV Portugal to install new and powerful transmitters in Lisbon station to have the possibility to increase the bandwidth of Lisbon station in order to implement new services.

**4.6** This coordination meeting made recommendations amongst which:

- The need to continue with the current CAFSAT network approach (decentralized CAFSAT stations being ANSPs responsible of procurement and operation of them) with a satellite modem that is fully compatible with the actual network;
- The option to continue with the same satellite operator unless another option that has considerable economical savings can be found;

- Proposal of guidelines regarding the different components of the system (base band, modems, RF and M&C)

**4.7** The meeting decided to nominate an ad' hoc Commission tasked to identify specific actions to be completed by each State/Organization in an agreed time frame and to revitalize CAFSAT JTE by tasking it through a Roadmap to set up the Term of Reference for CAFSAT re-engineering taking into account the experience gained in the conduct of a re-engineering exercise of similar Networks in particular AFISNET. The expected outcome of the tasks will lead to operational and technical requirements for CAFSAT re-engineering and modernization in a balanced transparent and cost effective manner.

The following Decision was formulated:

**Decision 6/09: Term of Reference and updated schedule for CAFSAT Re-engineering and modernization Phase II**

**That;**

**ASECNA develop a draft Terms of Reference and an updated schedule for CAFSAT Re-engineering and modernization Phase II to be circulate amongst CNMC members no later than **31 August 2016.****

**4.8** In consideration of the information given by the supplier the meeting agreed that it was advisable to carry out the modernization exercise in a timely manner. In this regard Spain kindly offered to host a coordination meeting of the Joint Technical Team for CAFSAT engineering and modernization (**JTE**) in Canarias in the aim to examine the draft Terms of Reference to be developed by ASECNA.

The following Decision was formulated:

**Decision 6/10: Coordination meeting of the Joint Technical Team for CAFSAT Re-engineering and modernization**

**That;**

**In order to carry out its task in the time frame,**

- a) The Joint Technical Team for CAFSAT engineering and modernization (JTE) hold its first coordination meeting in Canarias as soon as possible but no later than **31 October 2016** and;**
- b) The Terms of Reference for CAFSAT Re-engineering and modernization development be completed no later than **31 December 2016** for approval by CNMC core members.**

**4.9** The meeting was provide with a presentation by INEO a communication facilities provider who gave an update on the evolution and trend of communication technology used by satellite based networks.



**4.10** The meeting was provided with a presentation by the Secretariat (**WP08A & WP08B**) on regional aeronautical VSAT projects (REDDIG II and MEVA III) conducted in the CAR /SAM regions. In addition to this presentation, the ICAO Technical Cooperation Bureau (**TCB**) brought to the attention of the meeting (**WP08C**) the ICAO's Technical Cooperation Programme mechanisms that enables the establishment of an institutional agreement to operate and manage the CAFSAT network through an ICAO regional project coordinated by TCB through a permanent Project Administrator and supported by the Regional Offices for the monitoring of technical and operational aspects.

**4.11** The meeting noted with interest the information given and some CAFSAT core members (ASECNA, Spain and Portugal) reminded to the attention of the meeting the existence of the Joint Technical Team tasked to conduct the network modernization and re-engineering with the technical assistance of the Secretariat and explained to the meeting that their mandate as representative of the ANSPs does not empower them to take responsibility in setting up a regional Project as proposed by the TCB. The meeting however agreed to bear in mind the regional assistance projects mechanisms available at ICAO (Regional Offices and Technical Cooperation Bureau) for the future activities.

The following conclusion was formulated:

**Conclusion 6/11: Regional and Inter-regional project mechanisms**

**That;**

**In the framework of CAFSAT modernizing, members take into consideration the experience gained in implementing regional Networks (AFISNET, NAFISAT, SADC/2, REDDIG II, MEVAIII) and bear in mind the regional assistance projects mechanisms available at ICAO (Regional Offices and Technical Cooperation Bureau).**

**Agenda Item 5: Outcome of ITU World Radiocommunication Conference (WR-15) on issues pertaining to VSATs Networks**

**5.1** The Secretariat reported (**WP09A**) to the meeting on the outcome of ITU World Radiocommunication Conference (**WRC-15**) held in Geneva, Switzerland from 2 to 27 November 2015 with the participation of about 3 300 delegates from 162 ITU Member States and 130 other entities, including international organizations and industry.

**5.2** The report focused on WRC agenda item pertaining to VSAT networks in particular WRC-15 on Agenda Item 9.5.1 *Consideration of technical and regulatory actions in order to support existing and future operation of fixed-satellite service earth stations within the band 3 400 – 4 200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some countries in Region 1 (Resolution 154 (WRC-12))*. This agenda item was subject to intense discussion and continuous coordination leading the conference to agree on a revision of Resolution 154 fully in line with the ICAO Position. The revised resolution is attached as **Appendix E** to this report.

**5.3** The meeting noted that this important result is justified by the involvement of C-band FSS industry and users in the debates and coordination activities undertaken before and during the conference. During this conference, CNMC Members (ASECNA, GCAA, South Africa) as well as other AFI partners (Kenya, Togo) and industry partners provided useful support to the initiative and this should be recognized and encouraged. In order to ensure an efficient protection of the C-Band operated by CAFSAT, the meeting urged concerned CNMC members to initiate and conduct the adequate actions for the effective implementation of ITU **Resolution 154 (Rev. WRC 15)**

The following conclusion was formulated:

**Conclusion 6/12: Protection of the C-Band operated by CAFSAT**

**That;**

**In order to ensure an efficient protection of the C-Band operated by CAFSAT members initiate and conduct the adequate actions for the effective implementation of ITU Resolution 154 (Rev. WRC 15):**

- a) Implement Resolution 154 (Rev. WRC 15) by licencing the CAFSAT nodes and other C-band VSAT Stations and by ensuring their Registration in the ITU Master International Frequency Register (MIFR);**
- b) Reinforce the collaboration with their National Authority of Regulation of Telecommunication in order to submit and support civil aviation spectrum requirements contained in ICAO position for the future WRC-19;**
- c) Ensure their participation to regional and sub-regional meetings organized by ITU, ATU, CEPT and CITEL.**

**Agenda Item 6: Implementation of Recommendations 6/19 of Special AFIRAN meeting**

**6.1** Under this agenda item the Secretariat (**WP10**) provided the meeting with an update on the coordination activities related to the implementation and operation of aeronautical VSAT networks as called upon by Recommendations 6/19 of the Special AFIRAN meeting.

**6.2** The VSAT network management committees involving SAT members held regular coordination meetings such as the annual meetings of AFISNET Management Committee (SNMC), the NAFISAT and SADC/2 supervisory bodies meetings which both gave opportunity to address issues pertaining to the ground/ground and air/ground components of ATN and to continue the work on the definition of the conditions for the development of a robust sustainable telecommunication infrastructure based on the modernization of the existing VSAT Networks (AFISNET, CAFSAT, SADC/2, NAFISAT). The issues related to the performance of the networks (availability, speed of the ground segment to support ATN application such as AMHS and AIDC, surveillance data exchange) were considered by the meetings.

**6.3** Furthermore the outcome of the coordination meeting of VSAT Managers held in Johannesburg South Africa from 25 to 26 May 2015 in order to review ICAO general and regional requirements pertaining to VSAT as well as the work done by AFI VSAT Network Managers was considered.

The meeting applauded the information given and encourage SAT concerned members to endeavor to attend the coordination meetings on Aeronautical VSAT Networks;

The following Conclusion was formulated:

**Conclusion 6/13: Participation in VSATs Network coordination meetings**

**That;**

**In the aim at sharing experience and best practices CNMC members endeavor to regularly attend the coordination meetings on aeronautical VSAT Networks operations (AFISNET, NAFISAT, SADC/2, REDDIG II and MEVAIII).**

**Agenda Item 7: Review of the Terms of Reference and Working Arrangements of CNMC**

**7.1** The meeting reviewed and adopted the Terms of Reference of CNMC presented by the Secretariat and attached at **Appendix F**

The following decision was formulated:

**Decision 6/14: Terms of Reference and Working Arrangements of CNMC**

**That;**

**The Terms of Reference and Working Arrangements of CNMC are adopted as presented in **Appendix F****

**Agenda Item 8: Review of the draft Conclusions/Decisions of CNMC/6 Meeting**

**8.1** Under this agenda item the meeting discussed, amended and approved the draft Conclusion/decisions presented by the Secretariat (**WP15**).

**Agenda Item 9: Any other business**

**9.1** The meeting discussed the venue of the future session and agreed to align it with the future date and venue of SAT 22 meeting.

**9.2** The Meeting expressed its gratitude to NAV Portugal and to the Portugal CAA for hosting and facilitating the holding of this meeting.