

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



**TWENTY SECOND MEETING OF THE AFI SATELLITE NETWORK
MANAGEMENT COMMITTEE (SNMC/22)**

FINAL REPORT

Lomé, Togo, 15-19 December 2014

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Twenty-second Meeting of the AFI Satellite Network Management Committee (SNMC/22) was held at the **EDA OBA HOTEL** located within the central district, Lomé, Togo from 15 to 19 December 2014 at the kind invitation of ASECNA with the support of the Civil Aviation Authority of Togo.

1.2 The meeting was opened by Mr **Abélin PASSOLI**, the Technical Adviser of the Ministry of Public Work and Transport of Togo. He welcomed and thanked the participants to have positively responded to the invitation to the meeting. He reminded the meeting on the outcome of the LIM/AFI meeting held in Lomé from 12 to 27 April 1988, which recommended the implementation of VSAT Networks for the provision of aeronautical communication in the AFI Region and noted the good pace of implementation of such recommendation since 1995 when the first stations were implemented.

1.3 He noted that the work programme of SNMC 22nd session was huge and drew the attention of the participants on the key agenda items the deliberation on which needed to be conducted with the spirit of collaboration and consensus.

1.4 He ensured the meeting on the commitment of the government of Togo to provide the adequate desirable support to conduct the future work on the development of the network.

He expressed his confident to the ability of the participants to come out with tangible proposals for the improvement of the network.

He wished the meeting successful deliberations and declared it opened.

2. Officer and Secretariat

2.1 The meeting elected as Chairman, Mr. **Bissa Sougue**, Head of Operational Communication ASECNA HQs.

2.2 Mr. **François-Xavier Salambanga**, Regional Officer Communication Navigation and Surveillance ICAO Regional Office Western and Central Africa, served as Secretary of the meeting and therefore prepared the working and information papers to be presented accordingly.

3. Attendance

3.1 The meeting was attended by Forty Five (45) participants from one (01) State (**Togo**), three (03) Air Navigation Service Providers (**ASECNA-17 States, GCAA-Ghana, NAMA-Nigeria**), one (01) Regional Economic Community (**ECOWAS**), Representatives of the Authority of Regulation of Telecommunication of Togo (**ARTP**) and Representatives from industry (**Togo Telecom, INTELSAT, INEO, Asky Airlines**). France DGAC and Cape Verde participated in the meeting as observers.

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

4. Working Language

4.1 The meeting was conducted in the English language.

5. Agenda of the meeting

5.1 The following Agenda was adopted:

Agenda Item 1: Follow up Conclusions and Decisions of SNMC/22nd meeting

Agenda Item 2: Review of AFISNET operational and technical statistics of availability

Agenda Item 3: Interconnection and interoperability of AFISNET with its neighboring networks (CAFSAT, NAFISAT, SADC2)

Agenda Item 4: Evaluation and Re-engineering of AFISNET (*Implementation of Special AFI/RAN meeting Recommendations 6/18*)

Agenda Item 5: Review of the Conclusion & Decision of APIRG extraordinary meeting and their impacts on AFISNET operation

Agenda Item 6: Preparation of ITU WRC-15 and ATU related meetings

Agenda Item 7: AFISNET band width re-engineering;

Agenda Item 8: Review of the Term of reference and Work Programme of SNMC

Agenda Item 9: Review of the Draft Conclusions/Decisions of SNMC/22

Agenda Item 10: Any other business

6. Summary of Conclusions and Decisions

The meeting adopted Thirteen (13) Conclusions and Four (04) Decisions and tasked SNMC members with specific actions.

Agenda Item 1: Follow up Conclusions and Decisions of SNMC/21st meeting

Conclusion 22/01: Implementation of SNMC/21 outstanding conclusions and Decisions

That:

Concerned SNMC member States/Organizations are urged to implement the outstanding Conclusions/Decisions of SNMC previous meetings including those related to SNMC/21's as presented in Appendix B to this report.

Decision 22/02: Finalization of the Common Training Manual for AFISNET maintenance personnel

That;

The Common Training Manual for AFISNET Maintenance Personnel finalized and presented by the SNMC/22 ad'hoc Commission is adopted as guidance to be considered by SNMC members for capacity building of Maintenance Personnel.

Conclusion 22/03: Organization of Training with the Satellite Provider

That;

In order to reinforce the capacity of AFISNET maintenance personnel, SNMC Secretariat coordinate with the Satellite Provider, INTELSAT, the organization of training courses during year 2015.

Conclusion 22/04: Development of a calibration center for AFISNET Test Equipment

That;

In order to fulfill the requirements of Safety Management System (SMS):

- a) NAMA complete the collection of potential test equipment candidate to be calibrated and forward not later than 31 March 2015 to ASECNA for consideration;
- b) ASECNA finalize the study on the calibration center by 30 June 2015
- c) AFISNET members endeavor to give high priority to the development of the regional calibration center

Decision 22/05: Naming of the secured AFISNET SNMC Webpage

That;

www.afisnetsnmc.org is considered as the domain name of the secured SNMC Webpage

Conclusion 22/06: Finalization of the AFISNET SNMC Secured Webpage

That;

- a) **The Roberts FIR formally send no later than 28 February 2015 its Logo to GCAA for consideration for the design of the secured webpage;**
- b) **AFISNET members provide GCAA no later than 30 April 2015 with the raw data they wish to populate for the completion of the Webpage;**

Conclusion 22/07: Integration of AFISNET related Projects in the ECOWAS Regional Air Transport Data Base initiative

That;

SNMC members identify the possible AFISNET related projects to be included in the ECOWAS Regional Air Transport Data Base initiative for search of support and funding

Agenda Item 2: Review of AFISNET operational and technical statistics of availability

Conclusion 22/08: Restoration of the availability of failing circuits

That;

As a matter of urgency AFISNET concerned Organizations develop bilateral/multilateral actions and take the appropriate initiatives in order to mitigate the deficiencies as presented in Appendix C as soon as possible.

Conclusion 22/09: Monitoring of Missing Operational messages (Flights Plans, OPMETS and NOTAMs)

That;

All AFISNET Organizations set up local multidisciplinary Group composed of operational and technical personnel in order to monitor the missing operational messages (Flights Plans, OPMETS and NOTAMs) and report to the current SNMC coordinator (ASECNA).

Conclusion 22/10: Personnel exchange

That;

As a matter of urgency AFISNET members reinforce the exchange of maintenance personnel and increase their language proficiency (French and English) in order to minimize the Mean Time To Repair (MTTR) of AFISNET components.

Agenda Item 3: Interconnection and interoperability of AFISNET with its neighboring networks (CAFSAT, NAFISAT, SADC2)

Conclusion 22/11: Balanced Interconnection of AFISNET with its Neighbors

That;

Concerned AFISNET members continue the balanced interconnection exercise of the Networks taking into account the preservation of the Network topology & technology.

Agenda Item 4: Evaluation and Re-engineering of AFISNET (Implementation of Special AFI/RAN meeting Recommendations 6/18)

Decision 22/12: Approval of the report on the evaluation of the call for tenders for the external audit of AFISNET

That;

The updated report on the evaluation of the bids for the call of tenders launched for the external audit of AFISNET is approved with the comments incorporated by SNMC core members.

Conclusion 22/13: Conduct of AFISNET Audit

That;

As a matter of urgency ICAO expedite the conduct of the external audit of AFISNET in accordance with the result of the call for tenders. In particular ICAO should:

1. Carry out the negotiation with the awarded tender;
2. Update the audit schedule to be forwarded to SNMC members

Agenda Item 5: Review of the Conclusion & Decision of APIRG extraordinary meeting and their impacts on AFISNET operation

Conclusion 22/14: Alignment of SNMC work with the new structure of APIRG

That;

SNMC align its work programme and procedure with the new structure and work arrangement agreed by APIRG extraordinary meeting

Agenda Item 6: Preparation of ITU WRC-15 and ATU related meetings

Conclusion 22/15: Preparation of ITU WRC-15

That;

SNMC members endeavor to continuously support ICAO position for WRC-15 in this regard they will:

1. Sensitize their CAAs to bring the position of ICAO to the National Authority of Regulation of Telecommunication;
2. Actively participate in national and regional WRC-15 related preparatory meetings and report to the current SNMC coordinator

Agenda Item 7: AFISNET band width re-engineering;

Agenda Item 8: Review of the Term of reference and Work Programme of SNMC

Decision 22/16: Term of Reference and Working arrangement of SNMC

That;

The Term of Reference and Working arrangement of SNMC are adopted as presented in Appendix D

Agenda Item 9: Review of the Draft Conclusions/Decisions of SNMC/21

Agenda Item 10: Any other business

Conclusion 22/17: Development of the ToRs of AUSCA

That;

SNMC Secretariat:

- 1. Develop a draft Term of Reference and Working arrangements of the AFI User of Satellite for Civil Aviation (AUSCA) and circulated no later than 30 June 2015, to members for comments and;**
- 2. Continue the coordination action with Stakeholders with the aim of holding an AUSCA session before next WRC-15**

PART II: REPORT ON AGENDA ITEMS

Agenda Item 1: Follow up Conclusions and Decisions of SNMC/21

1.1 Under this agenda item the meeting reviewed the status of implementation of 10 Conclusions and 07 Decisions of the SNMC /21 meeting held in December 2013 in Conakry (Guinea).

1.2 It was noted that some conclusions have been partially implemented while others need to be implemented. The status of implementation of SNMC/21 conclusions/decisions is presented in **Appendix B**. The following conclusion was formulated:

Conclusion 22/01: Implementation of SNMC/21 outstanding conclusions and Decisions

That:

Concerned SNMC member States/Organizations are urged to implement the outstanding Conclusions/Decisions of SNMC previous meetings including those related to SNMC/21's as presented in Appendix B to this report.

1.3 The meeting also reviewed the status of development of the Common Training Manual for AFISNET maintenance personnel presented by GCAA and noted that Ghana was still waiting for inputs from some of the SNMC members. The meeting set up an ad'hoc Commission tasked with action on finalizing the Manual and adopted the draft **Common Training Manual** for AFISNET maintenance personnel as guidance to be considered by SNMC members for capacity building of Maintenance Personnel.

The following Decision was formulated:

Decision 22/02: Finalization of the Common Training Manual for AFISNET maintenance personnel

That;

The Common Training Manual for AFISNET Maintenance Personnel finalized and presented by the SNMC/22 ad'hoc Commission is adopted as guidance to be considered by SNMC members for capacity building of Maintenance Personnel.

1.4 The meeting examined the way to reinforce the capacity of AFISNET maintenance personnel. INTELSAT, the satellite provider offered to provide training on satellite techniques during year 2015. The meeting applauded this proposal and tasked the Secretariat to coordinate with INTELSAT the organization of training courses during year 2015.

The following Conclusion was formulated:

Conclusion 22/03: Organization of Training with the Satellite Provider

That;

In order to reinforce the capacity of AFISNET maintenance personnel, SNMC Secretariat coordinate with the Satellite Provider, INTELSAT, the organization of training courses during year 2015.

1.5 ASECNA presented to the meeting the updated study on the development of a calibration centre for AFISNET Test equipment. The scope of the study was expanded to the Test equipment similar to those used for AFISNET and including meteorological sensors.

1.6 The study inventoried a total of 6361 measuring devices (1251 measuring equipment and 5100 meteorological sensors) used by ASECNA, GCAA and Roberts FIR. Information from NAMA is still awaited as well as information from other states/organizations with potential test equipment similar to those used for AFISNET and candidate to calibration by the centre.

However the study indicated benefit that can be awaited from the activities of the center:

1. Reduction of deadlines of calibration of test equipment (15 days against 60days currently experienced);
2. Reduction of cost of calibration operation (€ 312 per calibration operation against € 1069 for external operation, what represents 30% of benefit cost);
3. Opportunity to expand the activities of the centre to various possible candidate to Test equipment calibration operation

1.7 ASECNA proposed to examine the possibility of pre funding the Test equipment centre composed of a building, adequate equipped laboratory and trained personnel. The meeting applauded the outcome of the study and requested NAMA who agreed to complete the list of Test equipment and encouraged ASECNA to finalize the study which will be presented to AFISNET decision makers.

The following conclusion was formulated:

Conclusion 22/04: Development of a calibration center for AFISNET Test Equipment

That;

In order to fulfill the requirements of Safety Management System (SMS):

- d) NAMA complete the collection of potential test equipment candidate to be calibrated and forward not later than 31 March 2015 to ASECNA for consideration;**
- e) ASECNA finalize the study on the calibration center by 30 June 2015**
- f) AFISNET members endeavor to give high priority to the development of the regional calibration center**

1.8 GCAA who was tasked by SNMC/21 with the coordination of the development of a secured AFISNET SNMC Webpage presented a proposal of a page with logos of SNMC core members (ASECNA, GCAA, NAMA) except Roberts's.

1.9 The meeting also discussed and agreed on the name of the Webpage (www.afisnetsnmc.org) and examined the issue related to the cost of hosting the Webpage. In this regard it was agreed that GCAA will endeavor to host the finalized Webpage until SNMC/23 during which a final decision will be taken on the best mechanism of funding the website.

1.10 SNMC members were therefore requested to provide GCAA with the relevant row data they wish to publish on the webpage and GCAA encouraged finalizing the Webpage.

The following Decision and conclusion were formulated:

Decision 22/05: Naming of the secured AFISNET SNMC Webpage

That;

www.afisnetsnmc.org is considered as the domain name of the secured SNMC Webpage

Conclusion 22/06: Finalization of the AFISNET SNMC Secured Webpage

That;

- c) The Roberts FIR formally send no later than 28 February 2015 its Logo to GCAA for consideration for the design of the secured webpage;**
- d) AFISNET members provide GCAA no later than 30 April 2015 with the raw data they wish to populate for the completion of the Webpage;**

1.11 The meeting was informed by ECOWAs on his ongoing initiatives taken with funding institutions such as the African Development Bank for finding support for funding a Regional Air Transport Data Base. The meeting encouraged this initiative and noted that as AFISNET is a regional integrated network its funding needs could be supported by regional integration communities. It was agreed that SNMC summarized his future project which can be candidate to be funded through the ECOWAS initiatives.

The following conclusion was formulated:

Conclusion 22/07: Integration of AFISNET related Projects in the ECOWAS Regional Air Transport Data Base initiative

That;

SNMC members identify the possible AFISNET related projects to be included in the ECOWAS Regional Air Transport Data Base initiative for search of support and funding

Agenda Item 2: Review of AFISNET operational and technical statistics of availability

2.1 Under this agenda item the meeting examined the technical and operational statistics of availability of AFISNET links and circuits presented by ASECNA, GCAA and NAMA. The presentations and Working Papers emphasized on the deficient AFS (AFTN & ATS/DS) links that need to be improved upon. The meeting agreed to extend the scope of the ad'hoc commission and tasked it with the actions consisting on examining the deficiencies and developing agreed remedial actions to be conducted to clear out these deficiencies.

The action plan for the improvement of identified failing links and circuits developed by the ad'hoc commission is presented in **Appendix C**

The following conclusion was formulated:

Conclusion 22/08: Restoration of the availability of failing circuits

That;

As a matter of urgency AFISNET concerned Organizations develop bilateral/multilateral actions and take the appropriate initiatives in order to mitigate the deficiencies as presented in Appendix C as soon as possible.

2.2 The meeting discussed issues related to missing operational AFTN messages (Flights Plans, OPMETS and NOTAMs). ASECNA made two presentations respectively on missing Flights plans and OPMETS.

For the Flight plans it was noted that the main causes of missing flight plans are:

- Flights Plans not having AFTN address of destination of the air traffic concerned centres **(60, 25%)**;

- Missing Flight Plans due to various technical problems and human factor (routing, training of staff responsible for the transmission of flight plan ...) (8, 33%);
- Missing Flight Plans due to unused collective addresses (PDAI) (27, 55%);
- Others contributive factors (3, 87%).

For the OPMETs it was noted that the Main cause of missing data are:

- Instability of AFTN and GTS links due to facilities failure;
- Problem of coordination between different centers (ASECNA's, Accra, Casablanca, Johannesburg, Nigeria, ...);
- Long transit time response time experienced by certain sites;
- Omission of validation and routing of certain OPMETs data produced by some centers;
- Lack of respect of the responsibilities given to each center (CNM,RTH,...);
- AMBEX Handbook not yet applied by some centers;
- Political Events (Bangui, Tripoli, Maiduguri, ...);
- Others...

Mitigation measures undertaken have been shared both for Missing Flights Plans and missing OPMETs amongst others:

- Update the routing table of each center to take into account new AFTN circuits and broadcast collective address of each center;;
- Exchanges of data on missing flight plans between different centers concerned in accordance with the conclusion 17/42 of the 17th APIRG;
- Maintaining awareness local information staff in charge of flight plan to respect the routing procedures of flight plans in accordance with conclusion 18/18 of APIRG/18th meeting;
- Investigate systematically missing FPL and OPMETs coordinating with neighboring centers in order to request missing data;
- Strengthen technical cooperation for a quick restart of defective circuits.
- Properly compliance of each center with with Table MET 2A;
- Education of operators to verify and ensure the transmission of OPMET data produced;
- Sensitization of each center to ensure its national responsibility, regional and international level SMT;
- Strengthen exchanges of personnel (technical and operational) between centers.

The following conclusion was formulated:

Conclusion 22/09: Monitoring of Missing Operational messages (Flights Plans, OPMETS and NOTAMs)

That;

All AFISNET Organizations set up local multidisciplinary Group composed of operational and technical personnel in order to monitor the missing operational messages (Flights Plans, OPMETS and NOTAMs) and report to the current SNMC coordinator (ASECNA).

2.3 The meeting discussed in length the issue related to the hurdles encountered by maintenance personnel to coordinate resulting in longer Mean Time To Repair. The meeting confirmed the necessity to increase the exchange of technical personnel between center in order to take facilitate maintenance operation. GCAA and NAMA committed to undertake such exchange as soon as possible to clear out the deficiency encountered in the Kano Accra link.

2.4 It was also noted that the language barrier was one of the cause of misunderstanding between maintenance personnel of ASECNA respectively with GCAA and with NAMA. The meeting recommended that both side should endeavor to increase language proficiency of AFISNET maintenance personnel including training in English and French languages as needed.

The following conclusion as formulated:

Conclusion 22/10: Personnel exchange

That;

As a matter of urgency AFISNET members reinforce the exchange of maintenance personnel and increase their language proficiency (French and English) in order to minimize the Mean Time To Repair (MTTR) of AFISNET components.

Agenda Item 3: Interconnection and interoperability of AFISNET with its neighboring networks (CAFSAT, NAFISAT, SADC2)

3.1 Under this agenda item the Secretariat presented to the meeting the ongoing and planned action aiming to ensuring the interconnection of AFISNET with its neighboring Networks (CAFSAT, SADC/2, and NAFISAT).

The meeting noted that during the last SAT 19 Meeting in Buenos Aires, Argentina, 6-8 August 2014 an informal side meetings was held between representatives of ASECNA, Brazil and Trinidad & Tobago to discuss interconnection and interoperability issues.

3.2 The discussions led to a proposal from ASECNA to offer three AFISNET VSATs respectively to Brazil, French Guyana and Trinidad & Tobago. These stations will be designed for the establishment of the Atlántico/Abidjan, Rochambeau/Dakar, Trinidad & Tobago/Rochambeau ATS/DS circuits. This offer seems to be applauded by French Guyana and Trinidad & Tobago. The discussion between ASECNA and Brazil is still ongoing.

3.3 The meeting applauded this initiative and encouraged ASECNA to pursue his effort for the completion of the interconnection/expansion of AFISNET in order to provide a reliable ground communication in the concerned area.

The meeting also recognized the completion of the interconnection of AFISNET with SADC/2 and NAFISAT and noted the pending interconnection between Bangui (AFISNET) and Gbadolite (RVA domestic Network) to establish the ATS/DS circuit, due to the current situation in Central African Republic.

The following conclusion was formulated:

Conclusion 22/11: Balanced Interconnection of AFISNET with its Neighbors

That;

Concerned AFISNET members continue the balanced interconnection exercise of the Networks taking into account the preservation of the Network topology & technology.

Agenda Item 4: Evaluation and Re-engineering of AFISNET (Implementation of Special AFI/RAN meeting Recommendations 6/18)

4.1 Under this agenda item the Secretariat presented to the meeting the progress made in the implementation of the relevant conclusion and decision of SNMC related to **Recommendations 6/18** of the Special AFI/RAN meeting held in Durban from 24 to 29 November 2008. The Secretariat briefed the meeting on the call for tenders launched on 10 September 2014 by ICAO TCB with the closing date on 2 October 2014, further extended till 31 October 2014. ANSPS confirmed to have received the related document forwarded by the Secretariat for publication in local newspapers in order to ensure a wide awareness by the industry of AFISNET Audit.

4.2 The meeting established a working Group composed of representatives of ASECNA, NAMA and GCAA in order to examine the report on the evaluation of the bids developed by ICAOTCB. The Secretariat summarized up the comments and inputs from the working Group and a consolidated report was presented by the Group Rapporteur (ASECNA) to the core members of AFISNET in order to be deliberated in a confidential environment.

Due to its confidentiality this document is not in Appendix to this current report.

The meeting applauded the results of the work undertaken by ICAO and approved the report with the comments made by the working Group.

The following Decision was formulated:

Decision 22/12: Approval of the report on the evaluation of the call for tenders for the external audit of AFISNET

That;

The updated report on the evaluation of the bids for the call of tenders launched for the external audit of AFISNET is approved with the comments incorporated by SNMC core members.

4.3 The meeting recalled the importance to expedite the evaluation to enable Organizations conduct the reengineering exercise at their earliest convenience and confirmed the main forthcoming steps of the Audit as agreed by the SNMC previous meetings:

1. Finalization of the negotiation and signature of the contract with the awarded company by ICAO TCB;
2. Update of the programme and schedule of the Audit to be forwarded to AFISNET members;
3. Conduct of the audit with the participation of the Joint Technical Team for Evaluation through the following steps:

- *Kick off meeting in Lagos, Nigeria,*
- *Visit to identified sites,*
- *Follow up meeting in Accra, Ghana,*
- *Report review meeting WACAF, Dakar,*
- *Final report submission meeting in ASECNA,*

The following conclusion was formulated:

Conclusion 22/13: Conduct of AFISNET Audit

That;

As a matter of urgency ICAO expedite the conduct of the external audit of AFISNET in accordance with the result of the call for tenders. In particular ICAO should:

1. Carry out the negotiation with the awarded tender;
2. Update the audit schedule to be forwarded to SNMC members

Agenda Item 5: Review of the Conclusion & Decision of APIRG extraordinary meeting and their impacts on AFISNET operation

5.1 The Secretariat presented to the meeting the outcome of the Africa-Indian Ocean (AFI) Planning and Implementation Regional Group Extraordinary Meeting (APIRG/EO) held in Lusaka, Zambia, from 10 to 11 July 2014.

5.1 The meeting noted the relevance of the migration of APIRG structure as well as the project approach developed for its future function and encouraged members to align their programme and procedure with the new work arrangement agreed by APIRG extraordinary meeting.

The following conclusion was formulated:

Conclusion 22/14: Alignment of SNMC work with the new structure of APIRG

That;

SNMC align its work programme and procedure with the new structure and work arrangement agreed by APIRG extraordinary meeting

Agenda Item 6: Preparation of ITU WRC-15 and ATU related meetings

6.1 The Secretariat presented to the meeting the position of ICAO to WRC 15 and summarized up the actions conducted in coordination with the Rapporteur of the AFI Frequency Management Group (ASECNA).

The issue related to the protection of the C-Band operated by AFISNET was discussed and the Secretariat reminded the participants the ATU 3rd meeting scheduled to take place in Abuja Nigeria from 26 to 30 January 2015.

6.2 Togo National Authority of Regulation of Telecommunication (**ARTP**) applauded ICAO position as well as the actions undertaken to secure the C-band and ensure the meeting operated by the Network.

The meeting encouraged the participants to sensitize their respective Authority of Regulation of Telecommunication and the Secretariat to continue building a robust lobby in preparation of ITU World Radiocommunication Conference 2015.

The following conclusion was formulated:

Conclusion 22/15: Preparation of ITU WRC-15

That;

SNMC members endeavor to continuously support ICAO position for WRC-15 in this regard they will:

- 3. Sensitize their CAAs to bring the position of ICAO to the National Authority of Regulation of Telecommunication;**
- 4. Actively participate in national and regional WRC-15 related preparatory meetings and report to the current SNMC coordinator**

Agenda Item 7: AFISNET band width re-engineering;

7.1 Under this agenda item a detailed presentation made by INTELSAT gave opportunity to concerned SNMC members to submit if desirable their request for band conversion.

The presentation from INTELSAT also outlined the opportunity to take benefit of the new technology in order to improve the efficiency of and to improve economics through improved link efficiency.

7.2 SNMC members were encouraged to consider this information provided by INTELSAT when renewing their contracts.

Agenda Item 8: Review of the Term of reference and Work Programme of SNMC

8.1 Under this agenda item the meeting reviewed the Terms of reference and Work Programme of SNMC.

8.2 The meeting decided to include the International Federation of Air Traffic Control Associations (**IFATCA**) as member observer of SNMC.

The following decision was formulated:

Decision 22/16: Term of Reference and Working arrangement of SNMC

That;

The Term of Reference and Working arrangement of SNMC are adopted as presented in Appendix D

Agenda Item 9: Review of the Draft Conclusions/Decisions of SNMC/21

9.1 Under this agenda item, the meeting reviewed and amended when necessary, the draft conclusions and decisions presented by the Secretariat.

9.2 It was reminded that the follow up of the implementation of these conclusions and decisions will be under the responsibility of ASECNA the current SCNMC coordinator until next SNMC 23 meeting

Agenda Item 10: Any other business

10.1 Under this agenda item the meeting gave opportunity to the industry to make presentation. ASKY airline based in Lomé made a presentation. As user, ASKY is generally satisfied with the quality of the Air/Ground communication in the AFI region. However, ASKY pointed out some observations which apply to the DASH Q400 operations flying with a maximum cruise level of FL250:

a- Difficulties to contact ACCRA FIR when flying COTONOU (Flying COO/NIM): sometime, need to go up to 20.000fts; usually maintain communication with COTONOU requesting them to link as with ACCRA; and often, this is unsuccessful.

- a. Sometimes, difficulties to contact KANO when in KANO FIR (NDJ to NIM).
- b. Sometimes, difficulties to contact ROBERTS when entering in ROB FIR from the East.
- c. Sometimes, background noise with ACC North
- d. When on its routing, an aircraft is clearly identified by its call sign as communicated by the pilots nevertheless, this is often not in accordance with the associated billing process with NAMA.

10.2 The meeting considered these difficulties and urged concerned ANSPs to liaise with ASKY in order to seek for the best way to tackle these function bearing in mind that the VHF coverage in the lower airspace is basically shortened compared to the coverage in the upper airspace.

10.3 INEO made a presentation on the Security of ATM systems and communication Networks. He emphasized that with Internet, all the diversity of the network (satcom, satellite network, ADS-B network, interconnection, office network, etc.), the risk of attack by piracy, cracking, hacking which has been going on for centuries is increased.

The meeting noted the relevance of the subject and proposed to continue to seek for the development of a strategy aiming to dealing with the security of the Network.

10.4 The Secretariat briefed the meeting on the results of the consultation undertaken to establish a forum with the satellite industry, the Authorities of Regulation of Telecommunication Air Navigation Service Providers.

The meeting applauded the initiatives undertaken by the secretariat and encouraged the Secretariat to develop and circulate the Terms of Reference of the AFI Users of Satellite for Civil Aviation (AUSCA).

The following conclusion was formulated:

Conclusion 22/17: Development of the ToRs of AUSCA

That;

SNMC Secretariat:

- 1. Develop a draft Term of Reference and Working arrangements of the AFI User of Satellite for Civil Aviation (AUSCA) and circulated no later than 30 June 2015, to members for comments and;**
- 2. Continue the coordination action with Stakeholders with the aim of holding an AUSCA session before next WRC-15**

10.5 NAMA reported that the SCPC satellite earth station has become consistently difficult to sustain due to lack of spare parts. Of particular interest are the antenna components (ACU, Motor controllers, Angular resolvers, Radom, etc) which could not be repaired nor replaced. Therefore NAMA presented to the meeting a project consisting in a changing the the 11 meter dishes in Lagos and Kano to 4 meter VSAT antennas. The meeting noted this information and encouraged NAMA to take into account the current and future links implemented in these stations with their neighbors when finalizing the project.

10.6 GCAA presented an information paper on global flight tracking for civil aviation and the satellite based ADS-B and indicated the ongoing studies being conducted by ITU for the provision of adequate spectrum for these services. The importance of this new agenda item of WRC-15 was mentioned to the meeting.

10-7 In accordance with the planning of SNMC meetings GCAA offered to host the next SNMC 23nd in Kumasi during year 2015. The meeting applauded this offer with thanks and tasked the Secretariat to coordinate with GCAA for the venue and dates of the meeting the template for hosting SNMC future meetings is presented at **Appendix E**.

APPENDIX A

List of participants

STATE/ETAT ORGANIZATION	No	NAME/NOM	OFFICIAL TITLE /FONCTION	ADDRESS/ADRESSE	TELEPHONE/E-Mail
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Appendix B

Status of implementation of the Conclusions/Decisions of SNMC 21

<u>Agenda Item 1: Follow up on SNMC/21 Conclusions</u>				
Conclusions/Decision	Text	Organization	Status of implementation	Comments
Conclusion 21/01	Implementation of SNMC/20 outstanding conclusions and Decisions			
	<p>That:</p> <p>Concerned SNMC member States/Organizations are urged to implement the outstanding Conclusions/Decisions of SNMC previous meetings including those related to SNMC/20's as presented in Appendix B to this report</p>	All Organizations	Ongoing	
<u>Agenda Item 2: Review of AFISNET operational and technical statistics of availability</u>				
Conclusion 21/02	Restoration of the availability of failing circuits and implementation of new bilateral AFS circuits			
	<p>That:</p> <p>a) SNMC concerned member States/Organizations undertake corrective actions in order to restore and stabilize as required, the reliability and availability of the AFS circuits as summarized in Appendix C;</p> <p>b) ASECNA and Roberts FIR initiate and conduct bilateral consultations in order to implement by the end of March 2014, the</p>	<p>ASECNA, GCAA NAMA</p> <p>ASECNA & Roberts</p>	Ongoing	Implemented

	<p>following bilateral circuits:</p> <p>Roberts /Bamako: ATS/DS;</p> <p>Roberts/Abidjan: AFTN.</p>			
Decision 21/03	<p>Finalization of the Common training Manual for AFISNET maintenance personnel and inclusion into the Audit exercise</p>			
	<p>That:</p> <p>a) In the framework of the mandate of the Task Force established by SNMC/20, States/Organizations endeavor to provide no later than end of March 2014, GCAA with their latest additional comments on the draft Common Training Manual for AFISNET maintenance personnel.</p> <p>b) GCAA finalize by end of April 2014, the Manual and forward it to the Secretariat for inclusion into the AFISNET external audit exercise for advice.</p>	GCAA	Ongoing	Discussed by a commission
Conclusion 21/04	<p>Implementation of training plans for AFISNET Maintenance personnel</p>			
	<p>That:</p> <p>In the framework of the implementing of the training plans for AFISNET Maintenance personnel;</p> <p>a) States/Organizations consider the training capability existing in the Region to develop partnership with the industry (Satellite providers, Base</p>	All Organizations	Ongoing	

	<p>band facilities manufacturers) and the sub-regional economic integration organizations (ECOWAS, ECAS, UEMOA, CEMAC) in order to take benefit of possible integrated training projects funding;</p> <p>b) ICAO in collaboration with AFCAC continue his assistance on training planning and implementation.</p>			
Conclusion 21/05:	Establishment of Licenses for AFISNET Maintenance Personnel			
	<p>That:</p> <p>a) SNMC States/Organizations, who have not done so, expedite the study for a possible issuance of licenses to AFISNET Maintenance personnel as part of Human Resource capacity building in the framework of the implementation of the Safety Management System (SMS).</p> <p>b) ICAO include this requirement in the updated Terms of reference of AFISNET external Audit exercise</p>	Organizations, ICAO	Ongoing	Discussed by a commission
Decision 21/06	Development of a calibration center for AFISNET Test Equipment			
	<p>That:</p> <p>In accordance with Decisions 18/02 of SNMC/18, 19/04 of SNMC/19 and Decision 20/05 of SNMC/20 meetings;</p>	Organizations, ASECNA, ICAO	Ongoing	ASECNA reported; Study to be finalized

	<p>a) SNMC member States/Organizations explore possible additional candidates for the calibration of test equipment similar to those used for AFISNET and forward no later than end of January 2014 their exhaustive expanded list of test equipment</p> <p>b) Based on the additional data received, ASECNA pursue its effort in the development of the study for the implementation of the regional calibration center and circulate by end of March 2014 a draft document on it feasibility for consideration by the joint Technical Team for AFISNET Evaluation and reengineering and possible inclusion in the external audit exercise;</p> <p>c) ICAO continue its assistance to the planning and implementation process.</p>			
Agenda Item 3: Implementation of Special AFIRAN meeting recommendations 6/18 and 6/19				
Decision 21/07	Update/Confirmation of States Representatives in the AFISNET Joint Technical Evaluation and re-engineering Team			
	<p>That: SNMC core member States/organizations;</p> <p>a) Update/confirm by forwarding to the Secretariat no later than end of February 2014, the name, qualification and detailed contacts of their nominees to participate in the</p>	<p>Organizations ICAO</p>	<p>Implemented</p>	<p>Lists of Focal points have been forwarded by States</p>

	<p>oversight of AFISNET external Audit;</p> <p>b) Provide as a matter of urgency any additional requirement to be included in the future revised Terms of reference of the Audit of AFISNET</p>			
Conclusion 21/08	Evaluation of the applicants for AFISNET external Audit			
	<p>That:</p> <p>In consideration of the Term of reference for AFISNET external evaluation, the proficiency of most of the applicants presented by ICAO TCB does not comply with the requirements of the Audit exercise.</p>		Implemented	No Action is required
Decision 21/09	Revision of AFISNET Technical Evaluation and re-engineering process			
	<p>That:</p> <p>In consideration of the result of the call for application of individual experts to participate in AFISNET evaluation and reengineering ICAO;</p> <p>a) Review as a matter of urgency the formula to conduct the Audit with preference to committing consultancy companies with consolidated telecommunication expertise (Expertise in Satellite Communication techniques and infrastructures, Local and Wide Area Networks hardware and software, Maintenance organization, management and Personnel training, ...) instead of individual experts.</p> <p>The chosen company should be responsible for the coordination of its team</p>	ICAO	Implemented with Ongoing action	<p>Letters exchanges Between ICAO TCB and SNMC Members</p> <p>International call for tender launched</p> <p>Bids received & evaluated</p> <p>SNMC to give</p>

	<p>on and off site activities and accountable of the Audit Results and AFISNET member/staff should not be authorized to be candidate to the external audit team.</p> <p>b) Extend as wide as possible the publication of the call for application in appropriate webpages in order to ensure a good pace of participation of such companies;</p> <p>c) Finalize a new planning to be completed preferably before the end of the second quarter of year 2014 and conduct the project in the framework of the current allocated budget without any additional cost.</p>			<p>comments for approval</p> <p>ICAO to submit a new planning</p>
<p>Agenda Item 4: Interconnection and interoperability of AFISNET with its neighboring networks (CAFSAT, NAFISAT, SADC2)</p>				
<p>Conclusion 21/10</p>	<p>Completion of the interconnection process between AFISNET and its neighboring networks</p> <p>That:</p> <p>a) Concerned States/Organizations pursue their efforts to complete the interconnection between AFISNET and its neighboring networks in order to implement the required AFS circuits for ATM operation as summarized in Appendix D.</p> <p>b) ICAO continue to assist the concerned stakeholders with guidance and technical coordination meetings aiming to meeting agreement on cost effectiveness solutions for the implementation of the interconnection.</p>	<p>ICAO and Organizations</p>	<p>Implemented with Ongoing actions</p>	<p>ICAO promoted the interconnection with SAT Members</p>
<p>Agenda Item 5: Outcome of ITU WRC-12 pertaining to VSATs Networks and preparation of WRC-15</p>				
<p>Conclusion 21/11</p>	<p>Implementation of Resolution 154 (COM 6/24)- WRC-12 and preparation of WRC-15</p>			

	<p>That:</p> <p>a) SNMC Sates/Organizations endeavor to:</p> <ol style="list-style-type: none"> 1) Continuously sensitize their CAAs on the issues related to ITU <i>Resolution 154 (COM 6/24)- WRC-12</i> calling upon for “possible technical and regulatory measures in some countries in Region 1 to support the existing and future FSS earth stations in the 3 400-4 200 MHz band used for satellite communications related to safe operation of aircraft and reliable distribution of meteorological information” ; 2) Strengthen partnership with stakeholders involved in aeronautical spectrum operation (Communication Service providers, Airline, Airport operators....) 3) Ensure involvement in the National preparatory activities for WRC-15 and in the Conference; <p>b) ICAO pursue assistance in line with the outcome of the 12th Air Navigation Conference and the ICAO 38th Assembly through the activities of the ITU Working Parties.</p>	<p>ICAO and Organizations</p>	<p>On going</p>	<p>Draft document submitted to the CPM Working Party 4C</p>
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Appendix C

ACTION PLAN FOR AFISNET CIRCUITS AVAILABILITY IMPROVEMENT

N°	Action	Deadline	Who	Observations
1	Restoration of Kano/Accra link	March 2015	NAMA& GCAA	AFTN and ATS/DS circuit unavailable since May 2014
2	Improvement of Accra/Lome and Accra/Niamtougou links	March 2015	ASECNA/GCAA	Monitoring for further improvement
3	Improvement of Brazzaville/Kano	March 2015	ASECNA/NAMA	Monitoring for further improvement
4	Improvement Libreville/Lagos and Libreville/Kano links	March 2015	ASECNA/NAMA	Monitoring for further improvement

Appendix D**TERMS OF REFERENCE OF THE SATELLITE NETWORK
MANAGEMENT COMMITTEE (SNMC)**

1. Mandate of the Satellite Network 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 AFISNET **network**, meeting the CNS/ATM plan requirements of the AFI /MID /EUR 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 (facilities and leased band providers) to ensure that service delivery meets the Required Service Performance Level (RSPL) and the Required Communication Performance criteria previously pre-determined when applicable, in accordance with the Manual of Required Communication Performance (RCP Doc. 9869).
- 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 RSPL /RCP defined criteria in line with ATM PBN and SMS requirements.
- 1.6 Monitor the harmonization of the implementation of facilities, 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 with regard to:
 - Maintenance personnel team training and exchange, redeployment if necessary of a technical assistance team or personnel;
 - Spare parts **sharing** exchange, fault location/repairs, and turnaround time
 - Development and modernization of AFISNET after a Joint Technical Evaluation and Re-engineering team assessment.
- 1.8 Review and adopt the annual follow up on the meeting conclusions and update the future work programme.
- 1.9 The report of the Satellite Network Management Committee is to be addressed to SNMC members States/Organizations

2. Composition and organization of the Committee

2.1 Members

The Satellite Network Management Committee (SNMC) is composed of **core member States/Organizations** hosting/operating AFISNET nodes namely:

- **ASECNA (18 Member States)***
- GCAA (Ghana)
- NAMA (Nigeria)
- **Roberts FIRs (Liberia, Sierra Leone, Guinea)**

2.2 Observers

Observers as composed below can participate in SNMC meetings **when invited** but shall have no voting rights:

- Air Navigation Service Providers (**ENANA**-Angola, **ENNA**-Algeria, **DCA**-Mauritius FIR; **GCAA**-The Gambia, - **ENASA**-Sao Tome & Principe, ~~AENA~~**ENNAIRE**-Spain, **DGAC**-France, **RVA**- DRC...);
- AFISNET SATCOM Facilities Providers;
- Satellite Spectrum Providers (e.g. **INTELSAT**);
- National Frequency Regulators;
- Airline Associations (**IATA**);
- **International Federation of Air Traffic Safety Electronic Associations (IFATSEA)**;
- **International Federation of Air Traffic Control Associations (IFATCA)**
- Neighboring Networks Committees (**CAFSAT**, **NAFISAT**& **SADC/2...**).
- Air navigation equipment manufacturers.
- Search & Rescue agencies.

2.3 At the beginning of every ordinary meeting, the chairperson of the Committee shall be proposed by the host organization and nominated by SNMC members. The chairperson's mandate shall not exceed one year, unless under exceptional conditions that no meeting takes place the following year. In that case, the chairperson shall have his/her mandate extended by default until the next SNMC meeting is held.

2.4 ICAO shall be the Secretary of the Committee.

- 2.5 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 member organization's Representative.

3. Participation of International Organizations

Apart from those listed in paragraph 2, the Committee may invite representatives of appropriate regional and international organizations (**ATU, ITU, EUROCONTROL, SITA, ECOWAS...**) 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 on such contributory bodies should be by specialists in the fields concerned and who are 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 an 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's ordinary meetings will be hosted by one of the member States\Organizations on a rotational basis and held at least once a year;

- 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 Invitation letters to meetings will be issued by the Secretariat in coordination with the hosting State/Organization.
- 5.4 Decisions shall be reached by consensus.
- 5.5 Two-thirds of members shall constitute a quorum and, where a quorum is not achieved, decisions will be reached through correspondence under the coordination of the chairperson.

** Benin, Burkina Faso, Cameroon, Central Africa, Chad, Comoros, Congo, Cote d'Ivoire, Equatorial Guinea, Gabon, Guinea Bissau, Madagascar, Mali, Mauritania, Niger, Senegal, Togo*

APPENDIX E

**Twenty-Second meeting of the AFI Satellite Network Management Committee (SNMC/22)
(Lom, Togo, 15–19 December 2013)**

Template for SNMC future venue

SNMC Meeting	Year	Hosting State/Organization	Remarks
SNMC/20	2012	Nigeria	Completed
SNMC/21	2013	Roberts FIR	Completed
SNMC/22	2014	ASECNA	Completed
SNMC/23	2015	Ghana	
SNMC/24	2016	Nigeria	
SNMC/25	2017	Roberts FIR	