

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



**TWENTY THIRD MEETING OF THE AFI SATELLITE NETWORK
MANAGEMENT COMMITTEE (SNMC/23)**

FINAL REPORT

Accra, Ghana, 15-19 February 2016

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Twenty-third Meeting of the AFI Satellite Network Management Committee (**AFISNET SNMC/23**) was held from the 15th to 19th February 2016 at the **New Ghana Civil Aviation Training Academy (GATA) Conference Hall** located in the vicinity of the KOTOKA International Airport, Accra, Ghana at the kind invitation of the Ghana Civil Aviation Authority (GCAA).

1.2 The meeting was opened by Mr **Fifi Fiavi Kwetey** honourable minister of Transport of Ghana. He was assisted by Mr **Simon Allotey**, Director General, Ghana Civil Aviation Authority, Mr **Mamady Kaba**, the Secretary Executive of the Roberts FIR and Mr **Helder Paquete Lima**, Director General, Empresa Nacional de Aeroportos e Segurança Aeria (**ENASA**), Sao Tomé & Principe. Mr **Kwetey** welcomed and thanked the participants to have positively responded to the invitation to the meeting. He reminded the meeting on the crucial role played by AFISNET since its implementation in the provision of aeronautical communication in the concerned Flight Information Regions contributing to the good pace of implementation of regional recommendation since 1995 when the first AFISNET stations were installed.

1.3 He noted that the work programme of SNMC 23rd 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 informed the meeting on ongoing projects being conducted by Ghana in the aviation sector and ensured the meeting on the commitment of the government of Ghana 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. **Charles Kraikue** Head of Technical Department GCAA.

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 **thirty six (36)** participants from one (02) States (**Ghana and Sao Tome & Principe**)), four (04) Air Navigation Service Providers (**ASECNA-17 States, GCAA-Ghana, the Roberts FIR and ATNS**) Representatives of the Authority of Regulation of Telecommunication of Ghana and three Representatives from industry (**INTELSAT, INEO, Rhodes & Schwartz**).

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 Conclusions & Decisions of APIRG/20 meeting and their impacts on AFISNET operation

Agenda Item 6: Outcome of ITU WRC-15 pertaining to VSAT networks and forth coming ATU related meetings

Agenda Item 7: Evolutions on Satellite Technology;

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/23

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/22nd meeting

Conclusion 23/01: *Implementation of SNMC outstanding Conclusions/Decisions*

That:

Concerned SNMC member States/Organizations are urged to implement the outstanding Conclusions/Decisions of SNMC previous meetings including those related to SNMC/22's as presented in **Appendix B** to this report.

Conclusion 23/02: *Regional Test Equipment calibration Centre*

That:

- a) ASECNA pursue the appropriate actions for the effective implementation and operation of the Regional Test Equipment Calibration Center;
- b) NAMA, as a matter of urgency, provide ASECNA with the potential test equipment candidate to be calibrated as stated by SNMC/22 (conclusion 22/04 of SNMC/22 refers.);
- c) ICAO continue to support the development of the Regional Test Equipment Calibration Center by facilitating various partnership;

Decision 23/03: *Follow up of SNMC Conclusions/Decisions*

That:

- a) The Secretariat circulated amongst SNMC members the table developed to summarize SNMC conclusions/decisions;
- b) SNMC coordinator quarterly assess the status of implementation of SNMC conclusions/decisions and update the follow up table with the latest information provided by members.

Conclusion 23/04: *Human Resources Capacity building*

That:

SNMC members endeavor to improve their capacity building for the maintenance personnel. In doing so they should revise and effectively implement their training programmes and plans including personnel exchange amongst AFISNET centers and report to next SNMC.

Conclusion 23/05: Implementation of the provision of the common training manual

That:

In accordance with the provision of the common training manual adopted by SNMC/22, members take the appropriate measures to:

1. Conduct the training of their ATS electronic Personnel (ATSEP);
2. Explore the way for the effective licensing of their maintenance personnel

Decision 23/06: Development of e-learning

That:

In order to take benefit of the provision of the common training manual:

- a) ASECNA develop, a draft e-learning project document to be circulated and considered by SNMC/24;
- b) SNMC members provide ASECNA with their training requirements no later than **31 May 2016** for consolidation;
- c) ICAO and the industry support the SNMC e-learning initiative by providing guidance and technical support.

Conclusion 23/07: Finalization, Operation and Maintenance of the AFISNET Website

That:

- a) SNMC concerned members endeavor to provide GCAA with the necessary data they will wish to be published on the AFISNET Webpage;
- b) The Robert FIR take the adequate urgent action in order to complete the development and operation of its Website;
- c) The coordinating organization afford the funding of the maintenance of the Website

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

Conclusion 23/08: Restoration of the AFS circuits

That:

As a matter of urgency concerned SNMC members take the appropriate action to restore the failing AFS (ATS-AFTN) circuits summarized in **Appendix D** to this report no later than **30/06/2016**.

Conclusion 23/09: Mitigation of missing Flight Plans

That:

As a matter of urgency,

1. Members who have not yet done so establish the multidisciplinary local investigation Group composed with technical and operational personnel and including airlines representative in order to address the main causes of missing Flight Plans and report to the SNMC current coordinator for consideration by SNMC/24.
2. ASECNA assist SNMC members by circulating its methodology for addressing missing Flight Plans no later than **30 April 2016**.

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

Conclusion 23/10: *Consideration of the outcome of the audit for interconnecting AFISNET to its neighboring networks*

That:

In order to ensure cost effectiveness the expansion of AFISNET and its interconnection to its neighboring networks should be conducted taking due account of the outcome of the audit.

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

Decision 23/11: *Expansion of the Mandate of the Joint Technical Team for AFISNET evaluation and re-engineering of AFISNET*

That:

The mandate of the Joint Technical Team for AFISNET evaluation and re-engineering is expanded to carry out its remaining tasks aiming to modernizing AFISNET.

Conclusion 23/12: *Roadmap for AFISNET Re-engineering*

The Joint Technical Team for AFISNET evaluation and re-engineering finalize the roadmap for AFISNET re-engineering to be submitted to the approval of SNMC Board no later than **31 March 2016**.

The cost of the meeting for the finalization of the Roadmap of AFISNET will be supported by the common budget allocated to AFISNET Audit.

Agenda Item 5: *Review of the Conclusions & Decisions of APIRG/20 meeting and their impacts on AFISNET operation*

Conclusion 23/13: *Implementation of AMHS*

That in accordance with APIRG/20 relevant conclusions SNMC members;

1. Identify AMHS circuits' requirements (speed, transit time, latency...) and upgrade the VSAT backbone in the re-engineering process;
2. Plan and conduct where possible trials on interconnection of AMHS in consideration of the AFI AMHS Manual as well as the AFI AMHS IP Infrastructure Test Guidelines adopted by APIRG/20.

Agenda Item 6: *Outcome of ITU WRC-15 pertaining to VSAT networks and forthcoming ATU related meetings*

Conclusion 23/14: *Protection of the C-Band operated by AFISNET*

That:

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

- a) Implement Resolution 154 (Rev. WRC 15) by licencing the AFISNET and other C-band VSAT Stations and by ensuring their Registration in the ITU Master International Frequency Register (MIFR);
- b) Reinforce 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 and WATRA.

Agenda Item 7: *Evolutions on Satellite Technology;*

Conclusion 23/15: *Satellite back up*

That:

In consideration of the criticism of the safety of life related information carried on AFISNET members and the industry examine the mechanism of an emergency plan to be activated as effective backup solutions to address satellite failure.

Conclusion 23/16: Partnership with the industry

That:

- a) SNMC members pursue their initiative to build a strong and balanced partnership with the industry in order to take benefit of the availability of resources for technical support and training.
- b) SNMC Secretariat continue to liaise with the industry for the coordination of joint actions with the members.

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

Decision 23/17: Adoption of the Term of reference and Work Programme of SNMC

That:

The Term of reference and Work Programme of SNMC are adopted as attached at **Appendix F**

PART II: REPORT ON AGENDA ITEMS

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

1.1 Under this agenda item the meeting reviewed the status of implementation of Thirteen (13) Conclusions and Four (04) Decision of the SNMC /22 meeting held from 15 to 19 December 2014 in Lomé (Togo).

1.2 It was noted that some conclusions have been partially implemented while others need to be implemented. The status of implementation of SNMC/22 conclusions/decisions is presented in **Appendix B**.

The following conclusion was formulated:

Conclusion 23/01: Implementation of SNMC outstanding Conclusions/Decisions

That:

Concerned SNMC member States/Organizations are urged to implement the outstanding Conclusions/Decisions of SNMC previous meetings including those related to SNMC/22's as presented in **Appendix B to this report.**

1.3 ASECNA presented to the meeting the progress made in the development of the calibration centre for AFISNET Test equipment as decided by SNMC previous meetings. The scope of the study was expanded to the Test equipment similar to those used for AFISNET stations and including meteorological sensors and the potential test equipment candidate to be calibrated which were to be collected and forwarded by NAMA was reported to still be awaited.

The status of implementation of the initiatives and actions conducted by ASECNA is summarized in **Appendix C** to this report.

1.4 The meeting applauded the work conducted since SNMC/22, requested NAMA to complete the list of equipment to be tested by providing the awaited information on measuring devices and encouraged ICAO to pursue the assistance for the development of the Regional Test Equipment Calibration Center by facilitating various partnerships.

The following conclusion was formulated:

Conclusion 23/02: Regional Test Equipment calibration Centre

That:

- a) **ASECNA pursue the appropriate actions for the effective implementation and operation of the Regional Test Equipment Calibration Center;**
- b) **NAMA, as a matter of urgency, provide ASECNA with the potential test equipment candidate to be calibrated as stated by SNMC/22 (conclusion 22/04 SNMC/22 refers.);**
- c) **ICAO continue to support the development of the Regional Test Equipment Calibration Center by facilitating various partnership;**

1.5 The meeting discussed the status of implementation of SNMC Conclusions and Decisions and noted a lack of continuous follow up by the coordinator between two SNMC meetings resulting in law pace of implementation or reporting on the actions conducted.

It was agreed that the Secretariat circulate amongst members the table summarizing the conclusion and Decision and SNMC coordinator assess quarterly the status of implementation and update the follow up table.

The following Decision was formulated:

Decision 23/03: Follow up of SNMC Conclusions/Decision

That:

- a) **The Secretariat circulated amongst SNMC members the table developed to summarize SNMC conclusions/decisions;**
- b) **SNMC coordinator quarterly assess the status of implementation of SNMC conclusions/decisions and update the follow up table with the latest information provided by members.**

1.6 The meeting was informed on the status of achievement of the various training plans and programmers including technical personnel exchange conducted by SNMC members and noted a low pace of effective implementation. The need for Human Resources Capacity building embracing training language proficiency as emphasized by the meeting.

The following conclusion, was formulated:

Conclusion 23/04: Human Resources Capacity building

That:

SNMC members endeavor to improve their capacity building for the maintenance personnel. In doing so they should revise and effectively implement their training programmes and plans including personnel exchange amongst AFISNET centers and report to next SNMC.

1.7 The meeting was reminded on the provision of the common training manual developed by GCAA and adopted by SNMC/22 and noted that this manual was not widely used to train the maintenance personnel. The issue of the maintenance personnel licensing was also discussed and it was agreed that even though strongly recommended, its implementation should depend on individual policy adopted by each SNMC member.

1.8 GCAA provided the meeting with a detailed presentation on ICAO improvements on the PANS-Training Document and the ICAO ATSEP Training Manual. The meeting strongly encouraged SNMC members to conduct the training of their ATS electronic Personnel (ATSEP) in line with the provision of the common training manual and take the appropriate measures to explore the way for the effective licensing of their maintenance personnel in line with their States policies.

The following conclusion was formulated:

Conclusion 23/05: Implementation of the provision of the common training manual

That:

In accordance with the provision of the common training manual adopted by SNMC/22, members take the appropriate measures to:

- 1. Conduct the training of their ATS electronic Personnel (ATSEP);**
- 2. Explore the way for the effective licensing of their maintenance personnel**

1.9 The meeting also discussed the issue related to the sharing of technical courses and noted that AFISNET provides the opportunity to develop an e-learning in line with the provision of the common training manual. It was agreed that SNMC members should provide ASECNA with their training requirements no later than 31 May 2016 for the development of draft e-learning project document to be circulated for consideration of SNMC/24.

The following Decision was formulated:

Decision 23/06: Development of e-learning

That:

In order to take benefit of the provision of the common training manual:

- a) **ASECNA develop, a draft e-learning project document to be circulated for consideration by SNMC/24;**
- b) **SNMC members provide ASECNA with their training requirements no later than 31 May 2016 for consolidation;**
- c) **ICAO and the industry support the SNMC e-learning initiative by providing guidance and technical support.**

1.10 GCAA presented to the meeting the AFISNET Webpage (<http://afisnetsnmc.org>) developed according to Conclusion 21/17 of SNMC/21, Decision 22/05 and Conclusion 22/06 of SNMC/22.

The Home page of the website is presented under the slogan “*Global plans to coordinate multilateral strategic progress*” with links to the webpages of NAMA, GCAA and ASECNA made available. The Roberts FIR was urged to complete its website and GCAA offered to assist Roberts in this regard if needed.

1.11 The meeting applauded the Website, congratulated GCAA for the achievement and noted that members should endeavor to provide GCAA with the necessary data they will wish to be published on the AFISNET Webpage. GCAA pointed out the issue of the funding of the cost of the maintenance of the Webpage. It was proposed that the current coordinating SNMC member should support the maintenance cost until a sustainable funding mechanism is found. An identified source of funding could be hosting advertising for the industry and members and the Secretariat were strongly encouraged to explore the possible opportunities and proposals.

The following conclusion was formulated:

Conclusion 23/07: Finalization, Operation and Maintenance of the AFISNET Website

That:

- a) **SNMC concerned members endeavor to provide GCAA with the necessary data they will wish to be published on the AFISNET Webpage;**
- b) **The Robert FIR take the adequate urgent action in order to complete the development and operation of its Website;**
- c) **The coordinating organization afford the funding of the maintenance of the Website**

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

2.1 The meeting examined the statistics of availability of the Aeronautical Fixed Service (ATS/DS & AFTN) supported by AFISNET. ASECNA, GCAA and NAMA reported to the meeting their assessment of the AFS links. The meeting noted the progress made to restore the deficiencies of some links and summarized the links which need remedial actions in order to maintain and improve their availability.

The following conclusion was formulated:

Conclusion 23/08: Restoration of the AFS circuits

That:

As a matter of urgency concerned SNMC members take the appropriate action to restore the failing AFS (ATS-AFTN) circuits summarized in Appendix D to this report no later than 30/06/2016.

2.2 The meeting discussed the issue pertaining to the missing flight plans.

ASECNA provided to the meeting a detailed analysis of the situation encountered in its Air Traffic Control Centers as well as the remedial actions taken and the results attained.

2.3 The meeting recognized that it was essential to establish the multidisciplinary local investigation Group composed with technical and operational personnel and including airlines representatives in order to address the main causes of missing Flight Plans.

It was also agreed that ASECNA assist SNMC members with its best practices resulting in a good pace of reduction of the operational messages.

The following conclusion was formulated:

Conclusion 23/09: Mitigation of missing Flight Plans

That:

As a matter of urgency,

- 1. Members who have not yet done so establish the multidisciplinary local investigation Group composed with technical and operational personnel and including airlines representative in order to address the main causes of missing Flight Plans and report to the SNMC current coordinator for consideration by SNMC/24.**
- 2. ASECNA assist SNMC members by circulating its methodology for addressing missing Flight Plans no later than 30 April 2016.**

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

3.1 The meeting was provided with the ongoing interconnection and interoperability actions being taken in order to ensure seamless ground/ground communication in the area of coverage of AFISNET and its neighboring networks (**CAFSAT, NAFISAT, SADC2**).

ATNS reported on the NAFISAT and SADC/2 upgrade project and the ongoing co-operation with ASECNA to ensure interoperability of networks to provide continued connectivity.

3.1 In this regard the specification and design of the NAFISAT and SADC2 network upgrade was developed to make provision for the retention of the current technical interface solution with AFISNET and a decision on the way forward will be made after the ICAO Audit and a decision on the AFISNET upgrade.

3.1 ATNS also mentioned to be experiencing problems in maintaining the obsolete Memotec equipment, particularly in respect of the N'Djamena, Niamey and Brazzaville circuits and suggested that this equipment at all the SADC2/NAFISAT/AFISNET interconnections be upgraded as soon as possible – preferably with Net Performer FADs possibly before the NAFISAT upgrade.

3.4 ASECNA reported to the meeting the actions taken to implement 3rd conclusion of the CAFSAT Network Management Committee (CNMC/3) **Conclusion 3/06:**

Communication requirement between Abidjan / Cayenne / Dakar / Piarco / Recife / Sal and Santa Maria and CNMC/4 Conclusion 4/08: Backup, Interoperability for CAFSAT Network.

In this regard the expansion of AFISNET was made possible by the provision by ASECNA, of three (3) AFISNET VSAT nodes for **Cayenne, Piarco and Recife**.

The meeting applauded the initiative of ASECNA aiming to ensuring a seamless aeronautical ground/ground communication provision and advise that due account of the outcome of the AFISNET audit should be taking when conducting expansion of AFISNET and its interconnection to its neighboring networks in order to ensure cost effectiveness.

The following conclusion was formulated:

Conclusion 23/10: Consideration of the outcome of the audit for interconnecting AFISNET to its neighboring networks

That:

In order to ensure cost effectiveness, the expansion of AFISNET and its interconnection to its neighboring networks should be conducted taking due account of the outcome of the audit.

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

4.1 The Secretariat presented to the meeting the detailed outcome of the external Audit of AFISNET conducted by ADPi on behalf ICAO with the collaboration of the Joint Technical Team for AFISNET evaluation and re-engineering. The report also presented a document developed by the consulting company and proposing short, medium and long terms actions to sustain AFISNET.

The meeting tasked the representatives of the core members in the JTE attending the meeting to review the proposal made by the Audit.

4.2 The JTE reviewed the proposal and developed a draft road map action for AFISNET Re-engineering. However the time constraints could not enable the JTE to complete in details its work. Moreover in the absence of Nigeria the meeting agreed to expand the mandate of the JTE to carry out its remaining tasks aiming to modernizing AFISNET.

The following Decision was formulated:

Decision 23/11: Expansion of the Mandate of the Joint Technical Team for AFISNET evaluation and re-engineering of AFISNET

That:

The mandate of the Joint Technical Team for AFISNET evaluation and re-engineering is expanded to carry out its remaining tasks aiming to modernizing AFISNET.

4.3 With regard to the decision above, the meeting also noted the urgency to complete the roadmap in order to launch the AFISNET modernization exercise taking due account of current projects being conducted by SNMC members.

4.4 The Secretariat provided the meeting with the financial report of the Audit.

The meeting noted and appreciated the full involvement of the JTE along the Audit steps ensuring thus, full transparency and ownership in the audit process. SNMC members were encouraged to continue and reinforce their Collaborative Decision Making (CDM) approach for the future steps leading to the modernization of AFISNET and ICAO called upon to continue supporting the initiatives to sustain/modernize AFISNET.

4.5 The meeting noted a positive balance in the project budget and decided that this balance will fund the future SNMC activities such as SNMC meetings in particular the meetings related to the development of the AFISNET modernization roadmap to be completed before end of march 2016.

The following conclusions was formulated:

Conclusion 23/12: Roadmap for AFISNET Re-engineering

That:

The Joint Technical Team for AFISNET evaluation and re-engineering finalize the roadmap for AFISNET re-engineering to be submitted to the approval of SNMC Board no later than 31 March 2016.

The cost of the meeting for the finalization of the Roadmap of AFISNET will be supported by the common budget allocated to AFISNET Audit.

Agenda Item 5: Review of the Conclusions & Decisions of APIRG/20 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 (APIRG) 20th Meeting held, in Yamoussoukro, Cote d'Ivoire from 27th November to 2nd December 2015 with focus on the agenda items which may have important impact on AFISNET operation and therefore SNMC activities.

5.2 APIRG/20 examined the status of implementation of the AFI Air Navigation Plan (ANP) and noted effort made by AFI States to comply with the AFI Aeronautical Fixed Service (AFS-AFTN & ATS/DS) implementation plan with significant improvements, notably with the implementation of aeronautical satellite telecommunications networks.

5.3 APIRG/20 meeting also reviewed the status of implementation of AFTN circuits, identified its deficiencies and encouraged State/Organizations to conduct the appropriate actions aiming to restoring the performance of the Aeronautical Fixed Services (ATS/DS-AFTN) with regard to these deficiencies and agreed that in order to improve the availability and Quality of Service, the AFI Region should implement Conclusion 19/25 of APIRG 19 which calls upon States to consider **VoIP** as an alternative to the current point to point based ATS/DS with respect to the reference to guidelines for the implementation of VoIP as ATN Ground Application provided in ICAO Manual for the ATN using IPS Standards and Protocols (Doc 9896) Part III (Guidance Section).

5.4 APIRG/20 meeting examined the work conducted by the AFI ATS Message Handling System Task Force (AMHS/TF), reviewed the planning and implementation activities conducted by AFI States and noted the progress made in the implementation of AMHS in the Region. The draft AFI AMHS Manual as well as the AFI AMHS IP Infrastructure Test Guidelines developed by the study group were adopted.

5.5 SNMC/23 applauded this outcome and urged members to identify AMHS circuits' requirements (speed, transit time, latency...) and upgrade the VSAT backbone in the re-engineering process. It was agreed that SNMC members plan and conduct where possible, trials on interconnection of AMHS in consideration of the AFI AMHS Manual as well as the AFI AMHS IP Infrastructure Test Guidelines adopted by APIRG/20.

The following conclusion was formulated:

Conclusion 23/13: Implementation of AMHS

That in accordance with APIRG/20 relevant conclusions SNMC members;

Identify AMHS circuits' requirements (speed, transit time, latency...) and upgrade the VSAT backbone in the re-engineering process;

Plan and conduct where possible trials on interconnection of AMHS in consideration of the AFI AMHS Manual as well as the AFI AMHS IP Infrastructure Test Guidelines adopted by APIRG/20.

Agenda Item 6: Outcome of ITU WRC-15 pertaining to VSAT networks and forthcoming ATU related meetings

6.1 The Secretariat reported 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.

6.2 The report focused on WRC agenda item pertaining to VSAT networks in particular 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.

6.3 The meeting noted that 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, ASECNA, GCAA, Kenya, South Africa, 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 AFISNET, the meeting urged SNMC 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 23/14: Protection of the C-Band operated by AFISNET

That:

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

- a) Implement Resolution 154 (Rev. WRC 15) by licencing the AFISNET and other C-band VSAT Stations and by ensuring their Registration in the ITU Master International Frequency Register (MIFR);**
- b) Reinforce 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 and WATRA.**

6.4 The Secretariat informed the meeting on the action already undertaken as well as on the forthcoming ATU related meetings. The meeting also welcomed the positive contribution of the representative of the Ghana communication regulation authority who urged the aviation community to clearly share information on the aviation spectrum requirements for consideration.

Agenda Item 7: Evolutions on Satellite Technology;

7.1 Under this agenda item the meeting was provided with the presentation of the industry. In this regards INTELSAT, the satellite provider informed the meeting on its fleet and the technology trends

in the near and medium future. The issue of satellite backup was discussed and the criticism of the safety of life related information carried on AFISNET was recognized as well as the need for AFISNET members and the industry to examine the mechanism of an emergency plan to be activated as effective backup solutions to address satellite failure.

The following conclusion was formulated:

Conclusion 23/15: Satellite back up

That: In consideration of the criticism of the safety of life related information carried on AFISNET members and the industry examine the mechanism of an emergency plan to be activated as effective backup solutions to address satellite failure.

7.2 The meeting was also provided with a presentation by Rhodes & Schwartz, a test equipment manufacturer. It was noted that a strong and balanced partnership with the industry can result in benefit on an availability of resources for technical support and training for the benefit of AFISNET maintenance personnel.

7.3 The meeting urged SNMC members to pursue their initiative in building partnership with the industry and invited SNMC Secretariat to continue to liaise with the industry for the coordination of joint actions with the members

Conclusion 23/16: Partnership with the industry

That:

- a) **SNMC members pursue their initiative to build a strong and balanced partnership with the industry in order to take benefit of the availability of resources for technical support and training.**
- b) **SNMC Secretariat continue to liaise with the industry for the coordination of joint actions with the members.**

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 together with the Form of agreement. The amended Terms of reference attached in Appendix to this report with the amendments highlighted was adopted by the meeting.

The following decision was formulated:

Decision 23/17: Adoption of the Term of reference and Work Programme of SNMC

That:

The Term of reference and Work Programme of SNMC are adopted as attached at **Appendix F**

Agenda Item 9: Review of the Draft Conclusions/Decisions of SNMC/23

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 GCAA the current SNMC coordinator until next SNMC 24 meeting to be hosted by NAMA

Agenda Item 10: Any other business

10.1 Under this agenda item the meeting was provided by Ghana with a presentation on WRC 15 allocation of 4 MHz bandwidth in the band 1089-1091MHz to the Aeronautical Mobile Satellite (R) Service (AMS(R)S) for safety of life application Satellite based on ADS-B.

10.2 The meeting noted that such allocation will facilitate access to this existing terrestrial technology to areas where ground infrastructure is limited, such as in Africa, thus helping to provide non-discriminatory access to a modern technology and meet specific aviation technology requirements in some developing and developed countries and encouraged member states to share information on the satellite base ADS-B.