INTERNATIONAL CIVIL AVIATION ORGANIZATION
WESTERN AND CENTRAL AFRICAN OFFICE

TWENTY SEVENTH MEETING OF THE AFI SATELLITE NETWORK
MANAGEMENT COMMITTEE (SNMC/27)

FINAL REPORT

Accra, Ghana, 25-29 November 2019

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PART I – HISTORY OF THE MEETING

1.   Introduction

1.1   The Twenty-Seventh Meeting of the AFI Satellite Network Management Committee (**AFISNET SNMC/27)** was held from the **25** to **29** November 2019 at the 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   Mr**. Simon Allotey**, Director-General, Ghana Civil Aviation Authority (GCAA) in his remarks, welcomed the participants to Ghana on behalf of the Board, Management and staff of the Ghana Civil Aviation Authority. He reminded the meeting on the evolution of AFISNET commissioned since 1994 as a medium for regional integration to provide digital and modern aeronautical satellite communications for the AFI region, highlighted the key achievements of the SNMC and expressed his confidence to the expertise of participants to deliberate and develop fruitful conclusions.

1.3   The meeting was opened by Mr **Joseph Kofi Adda**, Honourable Minister in charge of Aviation, Ghana. He welcomed the participants on behalf of the Government and the People of Ghana, highlighted the importance of AFISNET for the provision of digital aeronautical communication in and beyond the AFI Region.

1.4   He informed the meeting on the on ongoing initiatives and projects being conducted by the Government of Ghana in the aviation sector, in particular the project of a new Air Navigation Services (ANS) Complex to be located in the compound adjacent to the GCAA Training Academy (GATA) building.

1.5   Honourable **Adda** encouraged the participants to conduct professional deliberation and reiterates the commitment of the Government of Ghana to provide the adequate desirable support to conduct the future work on the development of AFISNET.

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

1.7   He wished the meeting, successful deliberations and declared it opened.

2.   Officer and Secretariat

2.1   The meeting elected Ms. **Joyce Asante,** Acting Director Air Traffic Safety Engineering, as Chairperson.

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 coordinated the preparation of the working and information materials to be presented accordingly.

3.   Attendance

3.1   The meeting was attended by Forty-Three (**43)** participants from Six (**06**) Air Navigation Service Providers (*ASECNA-17 States, GCAA-Ghana, NAMA-Nigeria, the Roberts FIR-Guinea, Liberia, Sierra Leone,* **ATNS,** *South Africa, TTCAA-Trinidad & Tobago)***,** Ghana and French Civil Aviation Authorities, Ghana National Communication Authority (**NCA**), and Six (**06**) representatives of the industry namely **AERONAV**, **INEO Energy & Systems, INTELSAT**, **FREQUENTIS, NDSATCOM** and **NOKIA SYSTEMS**).

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/26th meeting

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

Agenda Item 3: Re-engineering of AFISNET (*Implementation of Special AFI/RAN meeting Recommendations 6/18***)-Review & Update of actions taken for the re-engineering and modernization of AFISNET**

Agenda Item 4: Interconnection and interoperability of systems through AFISNET (AMHS, AIDC)

Agenda Item 5: Cyber Safety and Resilience

Agenda Item 6: Outcomes of APIRG 22nd Meeting

Agenda Item 7: Evolutions on Satellite Communication Technology

Agenda Item 8: Outcome of ITU World Radio Communication Conference 2019 (WRC-19)

Agenda Item 9: Review of the Term of Reference and Work Programme of SNMC

Agenda Item 10: Review of the Draft Conclusions/Decisions of SNMC/27

Agenda Item 11: Any other business

6.   Summary of Conclusions and Decisions

        The meeting adopted Twelve (**12**) Conclusions, Two (**02**) Decisions and tasked SNMC members with specific actions.

Agenda Item 1: Follow up of the Conclusions and Decisions of SNMC/26th meeting

Conclusion 27/01: *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/27's as presented in Appendix B to this report.

Decision 27/02*: Appointment of Focal Points for the operationalization of E-Learning and AFISNET Webpage*

That;
In order to expedite the implementation of SNMC previous Conclusions/Decisions calling upon for the operationalization of the AFISNET Webpage, ANSP hosting SNMC session duly provide/update the contact details of the Focal Point tasked to participate in the development of E-Learning and the AFISNET Webpage.

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

Conclusion 27/03: *Resolution of AFISNET outstanding deficiencies*

That;

In order to ensure a continuous service provision, AFISNET concerned ANSPs endeavor to reinforce their technical coordination and take the appropriate actions aim at resolving in accordance with the agreed time line, the outstanding deficiencies as summarized at Appendix C and report to the current SNMC coordinator.

Conclusion 27/04: *Upgrade of AFISNET Base Band Equipment*

That;
As a matter of urgency and prior to the completion of AFISNET modernization, SNMC ANSPs endeavor to expedite the replacement of obsolete band base equipment in order to ensure, within the timeframe of the AFI Regional Air Navigation Plan the continuous operation of AFISNET and the implementation of *AMHS.*

In particular, necessary actions should be conducted and completed before end of April 2020 to upgrade the networks by migrating from the obsolete multiplexors MOL2P to the NETPERFORMER technology currently used in the various aeronautical VSAT networks.
In this regard, ASECNA develop draft Terms of Reference to be circulated and finalized not later than 31 January2020.

Conclusion 27/05: *Implementation of AIDC*

That;
In the framework of the Memorandum of Cooperation signed by AFISNET Board:
  a) SNMC ANSPs identify and conduct the appropriate actions to facilitate the implementation/interconnection of AIDC.
  b) ICAO reinforce its assistance through guidelines, workshops and convene in this regard, with the support of ASECNA, coordination meeting, before end of May 2020.

Agenda Item 3: Re-engineering of AFISNET (*Implementation of Special AFI/RAN meeting Recommendations 6/18*)

Conclusion 27/06: *Funding of AFISNET re-engineering and modernization*

That;
In reference to the provision of the Memorandum of Cooperation (MoC) signed by AFISNET Board the proposal from ASECNA to pre fund the AFISNET reengineering is recommended by SNMC.
ASECNA in coordination with the current coordinator (GCAA), take the appropriate action to:

  a) Expedite and finalize the development of the specific annex to the MoC as stated in its Article 5-Funding.
  b) Ensure by correspondence, the approval by SNMC Board Members of the above funding mechanism before end of February 2020;

Conclusion 27/07: *Implementation of AFISNET Re-engineering and modernization*

That ASECNA:

  a) Continue and finalize the mobilization of financial resources and coordinate to complete the call for tenders document not later than 31 March, 2020 based on its procedures,
  b) Update the annex to the MoC between AFISNET Members to include among others, cost sharing and reimbursement mechanisms by the others AFISNET members

Agenda Item 4: Interconnection and interoperability of systems through AFISNET (AMHS, AIDC)

Conclusion 27/8: *Surveillance data sharing*

That ASECNA:

a) **Pursue its effort to complete the implementation of the surveillance data sharing project;**
b) **Examine the way to plan additional training sessions for technical personnel in accordance with training needs identified and requested by ANSPs;**
c) **Convene after concertation with Members and the Secretariat, a kick off coordination meeting before end of January 2020;**

Agenda Item 5: Cyber Safety and Resilience

Conclusion 27/9: *Cyber Safety and Resilience for AFISNET*

That;

In order to properly address issues related to Cyber Safety and Resilience for AFISNET, ANSPs with the assistance of the Secretariat conduct as a matter of urgency the following actions:
a) **Technical training on the subject for Maintenance Personnel;**
b) **Development/update of a template for cybersecurity risk assessment;**
c) **Promotion of Cybersecurity and safety resilience awareness programs for Maintenance Personnel for counter- actions**
d) **Information sharing between all AFISNET members**

Agenda Item 6: Outcomes of APIRG 22nd Meeting

Conclusion 27/10: *Implementation of APIRG 22nd Conclusions and Decisions*

That;

Concerned ANSPs identify and implement APIRG 22nd Conclusions and Decisions with impact on AFISNET by actively contributing and participating in the activities of the APIRG Infrastructure and Information Management Sub Group (IIM/SG).

Agenda Item 7: Evolutions on Satellite Communication Technology

Conclusion 27/11: *Reinforcement of the partnership with the industry*

That;

In order to maintain and increase the awareness of AFISNET technical personnel on technology trends, the ANSPs and the Secretariat pursue the initiatives towards the industry for a strong partnership bearing in mind principles and values governing States procurement process.

Conclusion 27/12: *Promotion of the AFISNET Webpage through partnership with the industry*

That;

The current Coordinator in concertation with the Roberts FIR and the Secretariat:
a) **Develop, circulate to members and finalize, not later than end of march 2020 a formal framework for the industry participation in the promotion of the AFISNET Webpage.**
b) **Liaise with the industry for an effective implementation of the partnership and report to next SNMC**

Agenda Item 8: Outcome of ITU World Radio Communication Conference 2019 (WRC-19)

Conclusion 27/13: *Preparation of ITU 2023 World Radio Communication Conference (WR-23)*

That;
   a) **In consideration of the Agenda Items of the ITU World Radiocommunication Conference of 2023 AFISNET Members plan and conduct appropriate actions aim at ensuring a successful preparation of the ITU 2023 World Radio Communication Conference (WR-23) by:**
      1. **Identifying with reference to the provision of the ICAO Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc. 9817) WRC-23 agenda items with impact to the safe operation of AFISNET;**
      2. **Coordinating the national initiatives for the protection of frequency spectrum operated by all civil aviation actors;**
   b) **ICAO provide in a timely manner, guidance and assistance to address issues emanating from WRC-23 agenda items impacting the safe operation of AFISNET**

Agenda Item 9: Review of the Term of Reference and Work Programme of SNMC

Decision 27/14: *Adoption of the Term of reference and Work Programme of SNMC*

That:

The Term of Reference, Form of Agreement and Work Programme of SNMC are adopted as attached at Appendix D and may be further amended as necessary.

Agenda Item 10: Review of the Draft Conclusions/Decisions of SNMC/27

Agenda Item 11: Any other business

PART II: REPORT ON AGENDA ITEMS

Agenda Item 1: Follow up Conclusions and Decisions of SNMC/26ᵗʰ meeting

1.1   Under this agenda item the meeting reviewed the status of implementation of the Fourteen (**14**) Conclusions and two (**02**) Decisions of the SNMC /26 meeting held in held in **Ouagadougou, Burkina Faso**, from **19 to 23 November 2018**.

1.2   The meeting noted that some conclusions have been partially implemented while others still need to be implemented. The status of implementation of SNMC/26 conclusions/decisions is presented in **Appendix B**.

 The following conclusion was formulated:

Conclusion 27/01: *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/27's as presented in Appendix B to this report.

1.3   The meeting discussed and outlined the importance of the need for the operationalization of the AFISNET Webpage as well as the development of E-Learning and agreed on the appointment of Focal Points by ANSPs to follow up implementation.

The following Decision was formulated:

Decision 27/02: *Appointment of Focal Points for the operationalization of E-Learning and AFISNET Webpage*

That;

In order to expedite the implementation of SNMC previous Conclusions/Decisions calling upon for the operationalization of the AFISNET Webpage, ANSP hosting SNMC session duly provide/update the contact details of the Focal Point tasked to participate in the development of E-Learning and the AFISNET Webpage.

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

2.1   Under this agenda item the meeting reviewed the operational and technical statistics of availability collected by members and addressing the Aeronautical Fixed Service (**ATS/DS & AFTN**) supported by AFISNET. NAMA (**W03A**), GCAA (**W03B1),** ASECNA (**W03D)** and Roberts FIR (**WP03E)** reported on the AFS circuits statistics of operation and outlining the main assumed causes of ATS/DS and AFTN), deficiencies. The update on missing Flight Plans was provided to the meeting by GCAA (**W03B2)** and ASECNA (**WP03C1 & WP03C2**).

2.2   Based on the above, a table of identified outstanding deficiencies was developed as attached in **Appendix C** to this report and remedial actions agreed by SNMC/27. The meeting urged members to undertake the appropriate actions aimed at restoring the failing links.

The following Conclusion was formulated:

Conclusion 27/03: *Resolution of AFISNET outstanding deficiencies*

That;

In order to ensure a continuous service provision, AFISNET concerned ANSPs endeavor to reinforce their technical coordination and take the appropriate actions aim at resolving in accordance with the agreed time line, the outstanding deficiencies as summarized at Appendix C and report to the current SNMC coordinator.

2.3   The meeting discussed the issue of the obsolescence of the AFISNET Base Band equipment and noted the law pace of the evolution of the AFISNET re-engineering project. It was agreed that the obsolete base band equipment should be replaced as a matter of urgency in order to ensure continuity of service.

2.4   In this regard, the meeting identified the NETPERFORMER technology currently used by various aeronautical VSAT networks to replace the old multiplexors MOL2P.

The following conclusion was formulated:

Conclusion 27/04: *Upgrade of AFISNET Base Band Equipment*

That;
As a matter of urgency and prior to the completion of AFISNET modernization, SNMC ANSPs endeavor to expedite the replacement of obsolete band base equipment in order to ensure, within the timeframe of the AFI Regional Air Navigation Plan the continuous operation of AFISNET and the implementation of *AMHS*.

In particular, necessary actions should be conducted and completed before end of April 2020 to upgrade the networks by migrating from the obsolete multiplexors MOL2P to the NETPERFORMER technology currently used in the various aeronautical VSAT networks
In this regard, ASECNA develop draft Terms of Reference to be circulated and finalized not later than 31 January 2020.

2.5   The meeting was informed on the successful implementation of AIDC between the Accra and Abidjan ACCs as well as the challenges encountered during the implementation phase.
It was recognized all the benefits expected from the implementations of AIDC and the need to pursue the interconnection through AFISNET in the framework of the Memoranda of Cooperation signed by AFISNET core members.

The following conclusion was formulated:

Conclusion 27/05: *Implementation of AIDC*

That;
In the framework of the Memorandum of Cooperation signed by AFISNET Board:
  a) **SNMC ANSPs identify and conduct the appropriate actions to facilitate the implementation/interconnection of AIDC.**
  b) **ICAO reinforce its assistance through guidelines, workshops and convene in this regard, with the support of ASECNA, coordination meeting, before end of May 2020.**

Agenda Item 3: **Re-engineering of AFISNET** (*Implementation of Special AFI/RAN meeting Recommendations 6/18*)

3.1   Under this agenda item the meeting examined the issue on the re-engineering of AFISNET. The Secretariat (**WP05**) reported to the meeting the outcome of the Joint Technical Team for AFISNET Re-engineering held in Accra Ghana from 26 to 27 February 2019 with the participation of ASECNA, GCAA and ICAO.

3.2   ASECNA (**WP04**) reported on the high-level coordination meeting conducted on 14 June 2019 by SNMC Board to ECOWAS in other to seek for the funding from ECOWAS. The meeting noted that this coordination meeting established:

- a Steering Committee composed of the Commissioner for Infrastructure at the ECOWAS Commission, the Director General of ASECNA, the Director General of Ghana Civil Aviation Authority, the Director General of NAMA, the Secretary General of Roberts FIR and a representative of ICAO, responsible for the direction and supervision of the Project;
- A Team of Experts as responsible for the finalization of the feasibility study of the Project, the preparation of funding requests and all technical tasks for the effective implementation of the Project.

The members of the SNMC Board have undertaken to give a mandate to the ECOWAS Commission to act in their name and on their behalf in seeking funding towards donors and partners.

3.3   After discussion about the two funding scenarios (either by ECOWAS or by ASECNA) the SNMC meeting agreed to recommend the offer by ASECNA to prefund the re-engineering project and tasked ASECNA and GCAA current SNMC coordinator to conduct the appropriated actions for the implementation of the project.

The following conclusion was formulated:

Conclusion 27/06: *Funding of AFISNET re-engineering and modernization*

That;
In reference to the provision of the Memorandum of Cooperation (MoC) signed by AFISNET Board the proposal from ASECNA to pre fund the AFISNET reengineering is recommended by SNMC.
ASECNA in coordination with the current coordinator (GCAA), take the appropriate action to:

- c) **Expedite and finalize the development of the specific annex to the MoC as stated in its Article 5-Funding.**
- d) **Ensure by correspondence, the approval by SNMC Board Members of the above funding mechanism before end of February 2020;**

3.2   The meeting also tasked ASECNA to continue and finalize the mobilization of the resources and coordinate to complete the call for tenders document before the end of the first quarter of year 2020 and update the MoC between ASECNA and AFISNET Core Members to include among others, cost sharing and reimbursement mechanisms by the others AFISNET members.

The following conclusion was formulated:

Conclusion 27/07: *Implementation of AFISNET Re-engineering and modernization*

That ASECNA:

- c) **Continue and finalize the mobilization of financial resources and coordinate to complete the call for tenders document not later than 31 March, 2020 based on its procedures,**
- d) **Update the annex to the MoC between AFISNET Core Members to include among others, cost sharing and reimbursement mechanisms by the others AFISNET members**

3.3   The meeting was also informed by the Secretariat (**WP07**) on the supporting mechanisms available at ICAO Technical Cooperation Bureau (TCB) programme and the constant availability of ICAO/TCB to assist in association with the WACAF Office, the AFISNET Community in the area of AFISNET re-engineering.

Agenda Item 4: Interconnection and interoperability of systems through AFISNET (AMHS, AIDC)

4.1   Under this agenda item the meeting discussed the issue on networks interconnectivity. ASECNA (**WP08A**) updated the meeting on the evolution of the AFISNET nodes beyond the AFI region and on the actions undertaken with ATNS in order to maintain the existing links with the AFISNET Network and insure connectivity from the NAFISAT and SADC Networks.

4.2   GCAA presented to the meeting (**WP08B**) the example of successful interoperability between the Accra and Abidjan ACCs with the implementation of AIDC together with the challenges and constraints experienced. The meeting commanded this important achievement as key step in the implementation of ICAO ASBUB0-FICE Module, encouraged experience sharing, especially among member states who have already implemented AIDC and requested the ICAO regional Office to provide regular training, workshops, and seminars as a means of increasing awareness on AIDC.

4.3   ATNS updated the meeting (**WP08C**) with the interconnectivity process undertaken to ensure service provision through interconnected AFISNET and SADC/2, AFISNET and NAFISAT networks.

4.4   The issue on aeronautical surveillance data sharing through AFISNET was discussed by the meeting; ASECNA informed the meeting on the status of implementation of the surveillance Data Sharing Project. The equipment purchased was under shipment towards ANSPs and the training of technical personnel planned. The meeting applauded this initiative, encouraged ASECNA to pursue its effort to complete the implementation of the surveillance data sharing project, plan additional training and convene a kick off meeting before the end of January 2020.

The following conclusion was formulated:

Conclusion 27/08: *Surveillance data sharing*

That ASECNA:

   a) **Pursue its effort to complete the implementation of the surveillance data sharing project**
   b) **Examine the way to plan additional training sessions for technical personnel in accordance with training needs identified and requested by ANSPs;**
   c) **Convene after concertation with Members and the Secretariat, a kick off coordination meeting before end of January 2020**

Agenda Item 5: Cyber Safety and Resilience

5.1   Under this Agenda Item the meeting addressed issues related to Cyber Safety and Resilience of AFISNET. In this regard, the Secretariat presented (**WP09A**) regional initiative on Cyber Safety and Resilience of ANS systems.

5.2   The meeting was updated on the status of implementation of the ongoing APIRG COM Project 5: *Assessment of AFI Aeronautical Networks Cyber Security* with the objectives to:

▪   Implement a cyber-security policy over the AFI region, which would assess all issues including the definition of common threats scenarios, training, performances, security studies, audits and controls.
▪   Assess the cyber issues on all systems and networks if the analysis has not yet been made
▪   Implement a systematic process of cyber risk evaluation on all new systems
▪   Assess and prevent internal and external threats impact on the availability, the reliability, the integrity and the continuity of the AFI aeronautical networks.

5.3   GCAA presented to the meeting (**WP18**) a Gap Analysis on AFISNET cyber safety and resilience and noted a lacks of sufficient integrated and scalable adoption and application of systemic cyber risk assessment:

a)   Insufficient knowledge of AFISNET Maintenance Personnel about the risks facing critical infrastructure networks as well as the frequency and impact of cyber-attacks on the cumulative components systems and associated data.

b)   Insufficient culture of the same personnel on risk and impact across the AFI Region (organizations and sectors) that share common cyber resources.

c)   Limited understanding of the correlation of risk across the ecosystem and imperfect view of where risk is concentrated.

d)   Insufficient understanding of how to roll up to assess cybersecurity risk exposure at larger scales, up through a macroscopic level

5.4   The meeting noted that as Cybersecurity risks have a direct impact across the entire aviation industry, the nature of these risks requires a new approach in terms of actions, learning from the safety approach taking into account the similarities and differences.

The meeting also agreed that since the risk assessment methodology might suffer from the uncertainty of hostile actors' intent and capability measurement, its outcomes should be mostly qualitative and subjective:

a)   Security management should not only be a matter of understanding threats but also realizing how internal vulnerabilities could be exploited, not only those related to hardware and software, but also human weaknesses. In this field, the emerging capability of antagonists should be better investigated.

b)   A real-time adaptive response in terms of countermeasures and remediation processes in a very reliable, efficient and timely manner.

5.5   The meeting also agreed that the key to managing the AFI region's cybersecurity risks within the aviation sector, is to develop a 360-degree approach, a comprehensive strategy capable of predicting cyber risks to the aviation ecosystem, identifying and implementing suitable controls to prevent cyber risks, the capability to monitor / detect attacks and the ability to respond and recover from successful attack elaborated as follows:

Predict: "Predictive" capabilities that will enable the ANSP's to learn from external events via external monitoring of the hacker underground to proactively anticipate new attack types against the current state of systems and information that it is protecting, and to proactively prioritize and address exposures;

Prevent: "Preventive" strategies include policies, products, and processes that are put in place to prevent a successful attack;

Detect: "Detective" capabilities designed to find attacks that have evaded the preventive category. The key goal of this category is to reduce the dwell time of threats and, thus, the potential damage they can cause;

Respond: "Responsive" functions are required to investigate and remediate issues discovered by detective activities (or by outside services), to provide forensic analysis and root cause analysis, and to recommend new preventive measures to avoid future incidents.

In view of the above, the following Conclusion was formulated:

<u>Conclusion 27/09</u>: *Cyber Safety and Resilience for AFISNET*

That;

In order to properly address issues related to Cyber Safety and Resilience for AFISNET, ANSPs with the assistance of the Secretariat conduct as a matter of urgency the following actions:

a) **Technical training on the subject for Maintenance Personnel;**
b) **Development/update of a template for cybersecurity risk assessment;**
c) **Promotion of Cybersecurity and safety resilience awareness programs for Maintenance Personnel for counter- actions;**
d) **Information sharing between all AFISNET members**

Agenda Item 6: Outcomes of APIRG 22nd Meeting

6.1   Under this Agenda item the meeting was provide (**WP10**), with the outcome of the Twenty-second Meeting of the AFI Planning and Implementation Group (APIRG/22) held in conjunction with the Fifth Meeting of the AFI Regional Aviation Safety Group (RASG - AFI/5) in Accra, Ghana, from 29 July to 2 August 2019. Attended by 217 participants from AFI States, Regional / International Organizations and Industry APIRG/22 deliberated under nine (09) Agenda items and adopted forty-two (42) Conclusions and Five (05) Decisions.

6.2   Among this outcome five Conclusions are pertaining to AFISNET:

6.2.1   Conclusion 22/01:   Effective implementation of AFI Regional ANS projects calling upon States and industry to:
a)   Commit the necessary resources and infrastructure towards implementation of APIRG decisions and conclusions;
b)   Effectively participate in AFI projects, including those linked to the APIRG Decisions and Conclusions;
c)   Strengthening the effectiveness and efficiency of ANS related projects

6.2.1   Conclusion 22/23: Effective coordination of IIM COM Project 2, AIM Project 3, Spectrum Project and MET Project 2 calling upon Sates (Nigeria - coordinator of AIM Project 3 and COM Project 2; Senegal -coordinator of MET Project 2 and Uganda - coordinator of Spectrum Project) to confirm to the APCC with copy to the Secretariat, their commitment to effectively lead the respective projects teams they were volunteer to coordinate and States willing to coordinate the above projects express their interest to the Secretariat in case the current nominated States may not be willing to continue the coordination**;**

6.2.1   Conclusion   22/27:   Implementation   of   AMHS   in   the   AFI   Region urging Administrations/Organizations to speed up the planning, implementation, operation and monitoring of AMHS;

6.2.1   Conclusion 22/29: Support to ICAO Position for ITU WRC-19 asking Administrations to intensify the supporting initiative and actions towards their national Authority of Regulation of Telecommunication to ensure that the ICAO position for WRC-19 is shared understood and reflected in the national position of the State to the Conference**,** participate in the national coordination meetings and in the Conference itself and coordinate with the aviation industry to identify the national concerns on spectrum and promoteICAO policy in the matter prior to the Conference

6.2.1   Conclusion 22/34: Organization of a Round Table for APIRG Projects Funding inviting ICAO to explore with the assistance of AFCAC and Regional Economic Commissions, mechanisms for the establishment of a framework for the funding of APIRG Projects preferably before the end of year 2020 and convene a Round Table meeting to consider in particular the Air Navigation Deficiencies identified by APIRG and the outcome of assessments and gap analysis of the AFI Air Navigation Infrastructure and systems and identify feasible solutions to be funded. The outcome of the Round Table be shared with the African Union and United Nations specialized institutions promoting a sustainable development

6.3   The meeting applauded the above conclusion and agreed that the future activities of SNMC should be aligned accordingly with their statements.

The fallowing Conclusion was formulated:

Conclusion 27/10: *Implementation of APIRG 22ⁿᵈ Conclusions and Decisions*

That;

Concerned ANSPs identify and implement APIRG 22ⁿᵈ Conclusions and Decisions with impact on AFISNET by actively contributing and participating in the activities of the APIRG Infrastructure and Information Management Sub Group (IIM/SG).

Agenda Item 7: Evolutions on Satellite Communication Technology

7.1   Under this agenda item the meeting was provided with presentations from the industry (**WP11**-ND SATCOM; **WP12-**INEO; **WP13**-AERONAV; **WP14-**INTELSAT; **WP15**-NOKIA & **WP16**-FREQUENTIS). These presentations provided the meeting with the recent technical evolution and trends on satellite and related communication technology.
The meeting applauded these provisions aiming to increase the awareness of AFISNET technical personnel on technology trends and tasked the Secretariat to pursue the efforts towards the industry for a strong partnership.

The following conclusion was formulated:

Conclusion 27/11: *Reinforcement of the partnership with the industry*

That;

In order to maintain and increase the awareness of AFISNET technical personnel on technology trends, the ANSPs and the Secretariat pursue the initiatives towards the industry for a strong partnership bearing in mind principles and values governing States procurement process.

7.2   The meeting also discussed on the promotion of the AFISNET Webpage through partnership with the industry. The industry adhered to the principle to use the AFISNET Webpage to host its information in a cost recovery manner. The meeting tasked GCAA and Robert to develop with the assistance of the Secretariat, a formal framework for partnership with the industry to be circulated to members and finalized for implementation.

The following Conclusion was formulated:

Conclusion 27/12: *Promotion of the AFISNET Webpage through partnership with the industry*

That;

The current Coordinator in concertation with the Roberts FIR and the Secretariat:
   a) **Develop, circulate to members and finalize, not later than end of march 2020 a formal framework for the industry participation in the promotion of the AFISNET Webpage;**
   b) **Liaise with the industry for an effective implementation of the partnership and report to next SNMC**

Agenda Item 8: Outcome of ITU World Radio Communication Conference 2019 (WRC-19)

8.1   Under this agenda item the meeting was informed (**WP17**) on the outcome of the ITU World Radiocommunication Conference (ITU WRC) held from 29 October to 29 November 2019 in Sharm El-Sheikh, Egypt. During this meeting attended by more than three thousand (3000) participants, the ICAO Team developed strategies with participants from CAAs of AFI States to promote ICAO Position for the Conference. Short side meetings with ATU Sec Gen and other stakeholders allowed to share ICAO views on agenda items with particular importance to ICAO.

8.2   The key outcome of the conference for ICAO was successful with the following results:

- 100% Achievment of ICAO Position
- All ICAO concerns addressed by the conference
- Increased awareness of the Agenda of the future ITU WRC-**23**

8.3   Based on the above, the participants were invited to identify with reference to the provision of the ICAO Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc. 9817), agenda items of the *ITU 2023 World Radio Communication Conference (WR-23)* with impact to the safe operation of AFISNET;

The following Conclusion was formulated:

Conclusion 27/13: *Preparation of ITU 2023 World Radio Communication Conference (WR-23)*

That;
   a) **In consideration of the Agenda Items of the ITU World Radiocommunication Conference of 2023, AFISNET Members plan and conduct appropriate actions aim at ensuring a successful preparation of the ITU 2023 World Radio Communication Conference (WR-23) by:**
      3. **Identifying with reference to the provision of the ICAO Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc. 9817), WRC-23 agenda items with impact to the safe operation of AFISNET;**
      4. **Coordinating the national initiatives for the protection of frequency spectrum operated by all civil aviation actors;**
   b) **ICAO provide in a timely manner, guidance and assistance to address issues emanating from WRC-23 agenda items impacting the safe operation of AFISNET.**

Agenda Item 9: Review of the Term of Reference and Work Programme of SNMC

9.1   Under this agenda item the meeting reviewed the Terms of Reference and Work Programme of SNMC together with the Form of agreement.

9.2   The amended Terms of reference attached in **Appendix D** to this report with the amendments highlighted was adopted by the meeting.

The following decision was formulated

Decision 27/14: *Adoption of the Term of reference and Work Programme of SNMC*

That:

The Term of Reference, Form of Agreement and Work Programme of SNMC are adopted as attached at Appendix D and may be further amended as necessary.

Agenda Item 10: Review of the Draft Conclusions/Decisions of SNMC/27

10.1   Under this agenda item, the meeting reviewed and amended when necessary, the draft conclusions and decisions presented by the Secretariat (**WP20**).

10.2   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 28 meeting to be hosted by NAMA.

Agenda Item 11: Any other business

11.1   Under this agenda item the meeting discussed issues related to the organization of the Surveillance data sharing kick off meeting to be held before end of January 2020 (**Conclusion 27/8:** *Surveillance data sharin*g) and reminded ASECNA and the Secretariat to coordinate the effective holding of this important meeting.

11.2   The meeting recalled the rotation process adopted for hosting SNMC meetings. In this regard **NAMA** is the member who will host the next SNM/28 meeting during year 2020.
The Secretariat was tasked to update the table as attached at **Appendix E** to this report.

*************** END ***************