

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



**TWENTY SIXTH MEETING OF THE AFI SATELLITE NETWORK
MANAGEMENT COMMITTEE (SNMC/26)**

FINAL REPORT

Ouagadougou, Burkina Faso, 19-23 November 2018

PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Twenty-Sixth Meeting of the AFI Satellite Network Management Committee (**AFISNET SNMC/26**) was held from the 19th to 23rd November 2018 at the **Hotel Splendid** located **1108 Avenue Kwamé N’Khrumah, Ouagadougou, Burkina Faso** at the kind invitation of the **Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar (ASECNA)** with the support of the Agence Nationale de l’Aviation Civile (**ANAC**), the **Burkina Faso Civil Aviation Authority**.

1.2 The meeting was opened by Mr **Vincent T. Dabilgou**, Honourable Minister in charge of Transport, Burkina Faso. He was assisted by Mr. **Azakaria Traoré**, Director General CAA Burkina Faso, **Edgar Fulgence Ouedraogo**, Representative of ASECNA in Burkina Faso and **Moumouni Barro**, Delegate of ASECNA Director General for Burkina Faso national aeronautical activities.

1.3 Honourable **Dabilgou** welcomed and thanked the participants for their attendance and reminded the meeting on the key role of communication in air navigation service provision. He congratulated SNMC members for the successful achievements by SNMC since its establishment enabling the operation of a sustainable satellite based aeronautical communication infrastructure across the concerned area. He recognized the contribution of SNMC to regional integration through the provision of a channel that facilitates seamless exchange of aeronautical critical information.

1.4 He drew the attention of the meeting on ongoing initiatives and projects being conducted by the Government of Burkina Faso in the aviation sector, in particular the project of a new airport located in Donsin in the vicinity of Ouagadougou.

1.5 Mr **Dabilgou** encouraged the participants to conduct professional deliberation and reiterates the commitment of the Government of Burkina Faso 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. **Mbayang GUEYE**, Technical Adviser DG ASECNA, 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 papers to be presented accordingly.

3. Attendance

3.1 The meeting was attended by Sixty (**60**) participants from five (**05**) Air Navigation Service Providers (**ASECNA-17 States, GCAA-Ghana, NAMA-Nigeria, the Roberts FIR-Guinea, Liberia, Sierra Leone and ATNS, South Africa**), Burkina Faso and French Aviation Authorities, Burkina Faso Authority of Regulation of Communication (**SACAA**), Burkina Faso Air Force, the Economic Commission of Western African States (**ECOWAS**), and five (**05**) representatives of the industry namely **AERONAV, ENGIE INEO, FREQUENTIS, ONATEL & TELECEL**).

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/25th meeting

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

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

Review & Update of the planning for the re-engineering and modernization of AFISNET

Agenda Item 4: Interconnection and interoperability of systems through AFISNET and its neighboring networks (CAFSAT, NAFISAT, SADC2)

Agenda Item 5: Status of implementation of the Outcomes of APIRG 21st Meeting

Agenda Item 6: Evolutions on Satellite Communication Technology;

Agenda Item 7: Preparation of the ITU World Radio Communication Conference 2019 (WRC-19)

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

Agenda Item 9: Review of the Draft Conclusions/Decisions of SNMC/26

Agenda Item 10: Any other business

6. Summary of Conclusions and Decisions

The meeting adopted Fifteen (11) Conclusions, Five (05) Decisions and tasked SNMC members with specific actions.

Agenda Item 1: Follow up Conclusions and Decisions of SNMC/25th meeting

Conclusion 26/01: 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/26's as presented in Appendix B to this report.

Decision 26/02: Updated list of Focal Points

That:

- 1) In order to effectively implement SNMC Conclusions/Decisions the attached updated list and contact details of appointed Focal Points (Appendix C) is established to carry out the following:
 - a) Follow up the status of implementation of the conclusions/decisions of the SNMC meeting;
 - b) Identify a platform and develop an action plan for the implementation of E-Learning;
 - c) Provide the Roberts FIR with accurate information to be uploaded on the AFISNET Website and identify the best opportunities for the marketing of the website.
 - d) Participate in the joint Technical team for AFISNET evaluation and re-engineering
- 2) The specialized groups of expert will take advantage of emerging communication applications (E-Mailing, Skype, WhatsApp's ...) to conduct the tasks in the scope of their mandate

Conclusion 26/03: Qualification requirements for the member of the study Group tasked to develop the website

That:

SNMC concerned members appoint experts properly trained in the edition, validation and development for the SNMC website or provide when needed, adequate training in such areas to their personnel member of the study Group tasked to develop and to promote the website.

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

Conclusion 26/04: Removal of deficiencies of aeronautical fixed service circuits supported by AFISNET

That:

- a) SNMC Members periodically share their circuits' availability with the view of coordinating their plans for remedial action.
- b) Concerned ANSPs endeavor to remove the deficiencies of the aeronautical fixed service circuits supported by AFISNET identified and attached at Appendix D, no later than the deadline commonly agreed.

Conclusion 26/05: Implementation of AMHS and AIDC through AFISNET

That;

In order to improve Aeronautical Fixed Service and to comply with the AFI regional Air Navigation Plan (AFI ANP), SNMC ANSPs increase their cooperation in planning and continuously implementing the AIDC and AMHS links identified respectively in Table 1 and 2 attached to this report

Conclusion 26/06: Mitigation of missing flight Plans

That;

- a) SNMC ANSPs increase/improve the activities of their Local Groups established with the aim to conduct remedial actions to mitigate the missing Flight Plans;
- b) ASECNA provide assistance to members as need may be

Decision 26/07: Assessment and Monitoring of the performance of AFISNET

That;

In order to identify the faulty components of AFISNET links, the performance of the network should continue to be monitored from end to end through the assessment of the four Levels, identified by the SNMC.

Conclusion 26/08: Automation of the collection and development of performance statistics data through the Performance Data Collection Form (PDCF)

That;

- a) When finalizing the technical specification for AFISNET re-engineering and modernization, the Joint Technical Team (JTE) include in the requirements the automation of the collection and development of performance statistics data through the Performance Data Collection Form (PDCF).
- b) The statistics developed for each level (1 to 4) will be subject to regular analysis exchange amongst members in view for remedial action to be conducted

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

Review & Update of the planning for the re-engineering and modernization of AFISNET

Decision 26/09: Approval of the technical specifications and planning for AFISNET re-engineering and modernization

That;

- a) The report of the JTE coordination meeting in Cotonou is adopted as presented in Appendix E.
- b) The technical specifications and the planning for AFISNET re-engineering and modernization reviewed by the JTE coordination meeting in Cotonou is approved as updated by the SNMC Core members during SNMC/26.

Conclusion 26/10: Follow up meeting of SNMC Board with the ECOWAS Commission

That;

As a matter of urgency for the mobilization of funding of AFISNET re-engineering and modernization,

- a) The follow up meeting of AFISNET Directors Generals with the ECOWAS Commission agreed by Decision 1 of the AFISNET Board meeting in Montreal, should be convened in Abuja, Nigeria on early February 2019;
- b) The meeting will be preceded by a technical preparatory coordination meeting between the ECOWAS Department of Transport and the SNMC Joint Technical Team for AFISNET Re-engineering;
- c) The SNMC current Coordinator (ASECNA), with the assistance of NAMA and the Secretariat undertake the concertation with members and with ECOWAS for an appropriate date of the meeting taking, due account of the availability of the Board members and ECOWAS Decision Makers.

Decision 26/11: Preparation of the Follow up meeting of SNMC Board with the ECOWAS Commission

That;

In preparation of the follow up meeting of AFISNET Directors Generals with the ECOWAS Commission,

- a) NAMA, with the assistance of the Secretariat, is tasked to locally coordinate with ECOWAS Department of transport, the practical preparatory organization of the meeting;**
- b) ASECNA, with the assistance of the Secretariat is tasked to develop the project document to be presented for discussion by the Board and ECOWAS;**

Conclusion 26/12: AFISNET Re-engineering project funding

That;

- a) The ECOWAS Commission be encouraged by SNMC members to continue to seek for the mobilization of financial resources to enable the diligent effective implementation of AFISNET re-engineering and modernization project**
- b) Meanwhile, ASECNA is encouraged to continue seeking and planning for an alternative prefunding solution in accordance with Decision 3 of the SNMC Board Meeting in Montreal, October 2018;**

Agenda Item 4: Interconnection and interoperability of systems through AFISNET and its neighboring networks (CAFSAT, NAFISAT, SADC2)

Conclusion 26/13: Interconnection and interoperability of AFISNET with its neighboring networks

That,

When conducting the reengineering of AFISNET SNMC members endeavor to maintain/improve the interconnection/Interoperability of AFISNET with its neighboring networks in order to ensure service continuity across the networks.

Agenda Item 5: Status of implementation of the Outcomes of APIRG 21st Meeting

Conclusion 26/14: Consideration of Regional APIRG Projects by SNMC

That;

In order to ensure a harmonized implementation, SNMC members consider the regional planning and implementation mechanisms defined by the APIRG Project Approach in the conduct of the AFISNET re-engineering project.

Agenda Item 6: Evolutions on Satellite Communication Technology;

Agenda Item 7: Preparation of the ITU World Radio Communication Conference 2019 (WRC-19)

Conclusion 26/15: Preparation of the ITU World Radio Communication Conference 2019 (WRC-19)

That;

- a) SNMC Administrations reinforce their support to the ICAO position for the ITU World Radiocommunication Conference scheduled to take place on November 2019**
- b) In this regard, they will summarize and share with stakeholders and mainly the Authority of Regulation of Telecommunication issues encountered in the operation of aeronautical spectrum and regularly attend the national preparatory meetings.**

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

Decision 26/16: 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 F and may be further amended as necessary.

Agenda Item 9: Review of the Draft Conclusions/Decisions of SNMC/26

Agenda Item 10: Any other business

PART II: REPORT ON AGENDA ITEMS

Agenda Item 1: Follow up Conclusions and Decisions of SNMC/25

1.1 Under this agenda item the meeting reviewed the status of implementation of the Fifteen (15) Conclusions and Seven (07) Decisions of the SNMC /25 meeting held in Freetown, Sierra Leone, from 18th to 22nd December 2017

1.2 It was noted that some conclusions have been partially implemented while others still need to be implemented. The status of implementation of SNMC/25 conclusions/decisions is presented in **Appendix B**.

The following conclusion was formulated:

Conclusion 26/01: 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/26's as presented in Appendix B to this report.

1.3 The meeting noted the persistent weakness in following up and coordinating of the Conclusions and Decisions of SNMC meetings resulting in lack of their effective implementation and agreed to update the list of Focal Points tasked to follow up the implementation of the conclusions/decisions of the SNMC meeting

1.4 The Focal Point Team was also assigned the tasks to identify a platform and develop an action plan for the implementation of E-Learning; provide the Roberts FIR with accurate information to be uploaded on the AFISNET Website and identify the best opportunities for the marketing of the website.

1.5 Moreover, in order to avoid multiplicity of specialized Teams, it was decided that this Team will participate in the joint Technical team for AFISNET evaluation and re-engineering. The specialized group of expert was advised to take advantage of emerging communication applications (E-Mailing, Skype, WhatsApp's ...) to conduct the tasks in the scope of their mandate.

The update list of Focal point is presented at **Appendix C** to this report.

The following Decision was formulated:

Decision 26/02: Updated list of Focal Points

That:

- a) **In order to effectively implement SNMC Conclusions/Decisions the attached updated list and contact details of appointed Focal Points (Appendix C) is established to carry out the following:**
- b) **Follow up the status of implementation of the conclusions/decisions of the SNMC meeting;**
- c) **Identify a platform and develop an action plan for the implementation of E-Learning;**
- d) **Provide the Roberts FIR with accurate information to be uploaded on the AFISNET Website and identify the best opportunities for the marketing of the website.**
- e) **Participate in the joint Technical team for AFISNET evaluation and re-engineering**
- f) **The specialized groups of expert will take advantage of emerging communication applications (E-Mailing, Skype, WhatsApp's ...) to conduct the tasks in the scope of their mandate**

1.6 The meeting discussed the status of implantation of the SNMC Website. In this regard the Roberts FIR reported to the meeting (**WP07**) the results of the initiatives and actions undertaken since SNMC/25 for the consolidation of the Website: <http://www.afisnetsnmc.org>. The meeting noted with appreciation that since it's commission during the SNMC/25 meeting on December 2017 the Website is active, functioning and is ready for the addition of contents and applications.

1.7 The meeting was informed that the Roberts Fir has ensured the availability and continuity of the site domain (<http://www.afisnetsnmc.org>) with its renewal set forth until November 23, 2027.

To secure the domain in accordance with the new security policy of Google, a Secure Socket Layer (SSL) certificate was configured to encrypting the traffic between the users' device and the site's web server, thereby protecting users' data from viruses, hackers, and other online malicious threats while using the site.

1.8 The meeting applauded the initiatives and actions reported above by the Roberts Fir and agreed that ANSPs should intensify the provision of the website with relevant information. It was also noted the need to appoint qualified personnel, in the edition validation and development of the SNMC Website in order to promote the website.

The following Conclusion was formulated.

Conclusion 26/03: *Qualification requirements for the members of the study Group tasked to develop the website*

That:

SNMC concerned members appoint experts properly trained in the edition, validation and development for the SNMC website or provide when needed, adequate training in such areas to their personnel member of the study Group tasked to develop and to promote the website.

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 (W3A), GCAA(W3B), Roberts FIR (WP3D) and ASECNA (W3E), 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 ASECNA (WP3F).

Based on the above, a table of identified outstanding deficiencies was developed as attached in **Appendix D** to this report and remedial actions agreed by SNMC/26. The meeting urged members to undertake the appropriate actions aimed at restoring the failing links.

The following Conclusion was formulated:

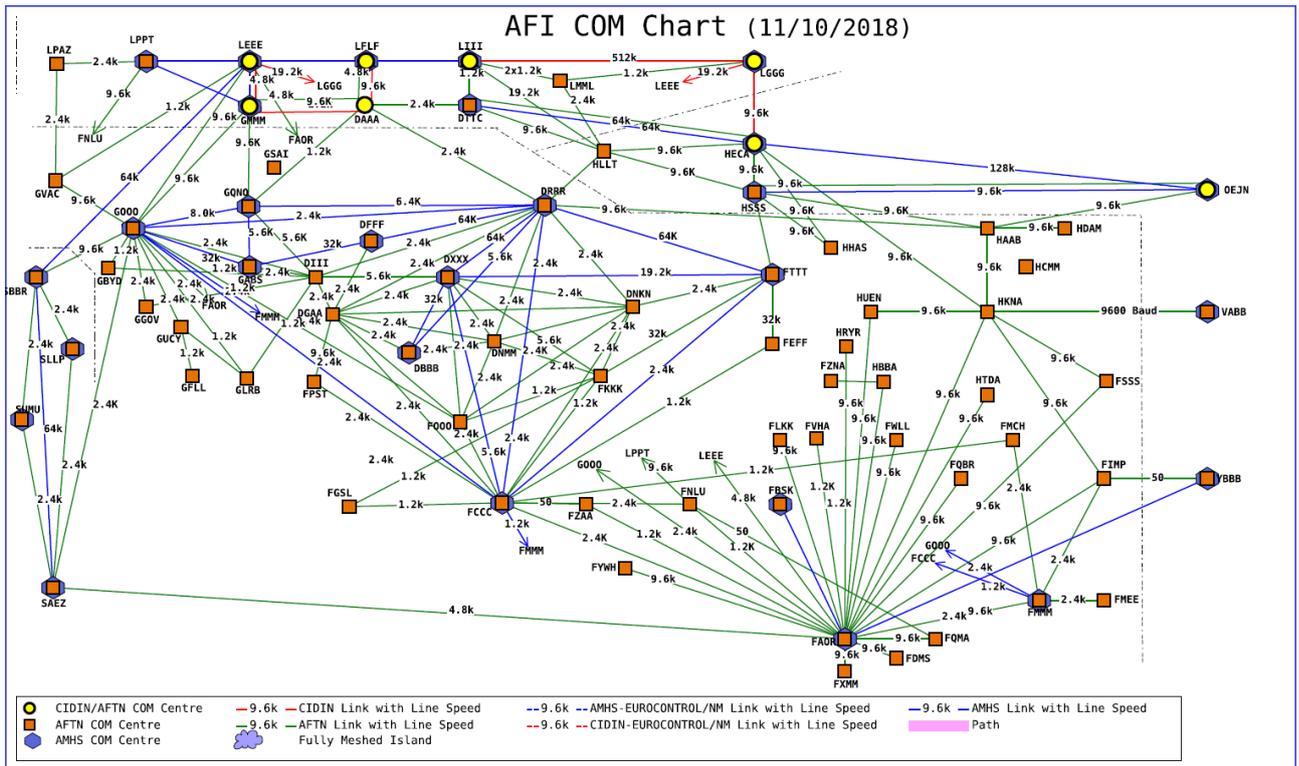
Conclusion 26/04: *Removal of deficiencies of aeronautical fixed service circuits supported by AFISNET*

That:

- a) **SNMC Members periodically share their circuits' availability with the view of coordinating their plans for remedial actions.**
- b) **Concerned ANSPs endeavor to remove the deficiencies of the aeronautical fixed service circuits supported by AFISNET identified and attached at Appendix D, not later than the deadline commonly agreed.**

2.2 The meeting discussed issues on the implementation of AMHS and AIDC. In this regards ASECNA provided the meeting with the Chart below showing status of all AMHS centers identified on October 2018 in the AFI region. Ten (10) ASECNA centers were reported to be fully operational with AMHS circuits implemented according to the AFI COM Chart.

AFI AFTN/AMHS Chart



2.3 The need to establish AMHS links with other AFI centers was emphasized and the links were summarized on the table below. The meeting noted that prior condition for the implementation AMHS link is to upgrade the current legacy Asynchronous circuits between centers, into IP circuits.

Table I: Implementation of AMHS

Centre 1	Centre 2	Capability MHS	Focal Point Centre 1	Focal Point Centre 2
Accra (DGAA)	Abidjan (DIII)	Yes	TBD	TBD
	Brazzaville (FCCC)	Yes		Pandzou Giscard
	Cotonou (DBBB)	Yes		Loya Koda
	Lomé (DXXX)	Yes		Metowogo K. Mawunyo
	Niamey (DRRR)	Yes		Iro Mahamane
	Ouagadougou (DFFF)	Yes		Bande Aissata
Brazzaville (FCCC)	Khartoum (HSSS)	Yes	Pandzou Giscard	TBD
	Luanda (FNLU)	Yes		TBD
	Nairobi (HKNA)	Yes		TBD
	Addis Ababa (HAAA)	Yes		TBD
Niamey (DRRR)	Accra (DGAA)	Yes	Iro Mahamane	TBD
	Alger (DAAA)	Yes	Iro Mahamane	TBD
Johannesburg (FAOR)	Antananarivo (FMMM)	Yes	TBD	Andrianierenana Nary
	Brazzaville (FCCC)	Yes	TBD	Pandzou Giscard

2.4 For AIDC link, it was noted the necessity to establish direct circuits between the centers and the preference to implement this service over AMHS. The meeting identified AIDC links to be implemented during year 2019 in Table 2 below:

Table I: Implementation of AIDC

Centre 1	Centre 2	Capability AIDC	Comments
Accra (DGAA)	Abidjan (DIII)	Yes	On trials to be finalized
	Brazzaville (FCCC)	Yes	
	Lomé (DXXX)	Yes	
	Niamey (DRRR)	Yes	
	Ouagadougou (DFFF)	Yes	
Brazzaville (FCCC)	Accra (DGAA)	Yes	
	Kano (DNKN)	Yes	
	Khartoum (HSSS)	Yes	Operational but to be improved through a direct link
	Kinshasa (FZAA)	TBD	
	Luanda (FNLU)	Yes	
Niamey (DRRR)	Accra (DGAA)	Yes	
	Alger (DAAA)	Yes	
	Kano (DNKN)	Yes	
	Khartoum (HSSS)	Yes	
	Lagos (DNMM)	Yes	

2.5 The meeting encouraged SNMC members to reinforce the cooperation amongst neighbors and plan for an effective implementation of AMHS and AIDC.

The following conclusion was formulated.

Conclusion 26/05: Implementation of AMHS and AIDC through AFISNET

That;

In order to improve Aeronautical Fixed Service and to comply with the AFI regional Air Navigation Plan (AFI ANP), SNMC ANSPs increase their cooperation in planning and continuously implementing the AMHS AIDC and links identified respectively in Tables 1 and 2 attached to this report.

2.6 The meeting discussed issues on missing Flight Plans. In this regards ASECNA presented (WP03F) to the meeting a comprehensive collection of statistics on missing Flight Plans.

The study pointed out that majority of missing FPL not received at ASECNA centers are related to the overflights. The study also noted that UTA of Lomé (DXXXZQZX) and APP of Cotonou (DBBBZRZX) are missed on the list of recipients of aircraft FPL overflying the ACCRA FIR and many FPLs from Conakry (GUCY) are not received in Abidjan;

2.7 The study identified the main causes of missing Flight Plans amongst which the omission of AFTN addresses of some organisms in charge of air traffic control, the ignorance of air space management of some FIRs resulting in wrong application of routing procedures, technical failure of communication systems including, delayed restart of defective AFTN circuits due to the absence of focal point for coordination.

2.8 The meeting examined the remedial solutions proposed including but not limited to:

- Exchanges of data on missing flight plans between concerned centers in accordance with Conclusion 17/42 of APIRG17th;
- Establishment of coordination tools and procedures to investigate punctually and systematically on the causes of the missing FPL;

- Regular check and update of the routing table of each center to take into account new AFTN circuits;
- Elaboration of a contact list of technical personnel per center to enable a quick restart of defective circuits;
- Maintenance of awareness of local operation staff in charge of Flight Plan to respect Flight Plans routing procedures in accordance with Conclusion 18/18 of APIRG 18.

2.9 The meeting moreover identified specific actions to be conducted in order to clear out some outstanding missing flight plans. As an example it was suggested for UTAs of Lomé and Cotonou, that Accra Centre create and publish a collective address (PDAI) including the AFTN addresses of these UTAs and those of Accra, to be used by aircraft overflying the Accra FIR.

2.10 The meeting also noted that a strong communication should be undertaken towards users in order to increase the awareness of the existence of collective addressing, confirming the necessity to stimulate the effective work of the local groups tasked to investigate on the missing flight Plans.

The following conclusion was formulated:

Conclusion 26/06: Mitigation of missing Flight Plans

That;

- a) **SNMC ANSPs increase/improve the activities of their Local Groups established with the aim to conduct remedial actions to mitigate the missing Flight plans;**
- b) **ASECNA provide assistance to members as need may be**

2.11 The meeting discussed issues related to the assessment and monitoring of AFISNET Performance. In this regard French DSNA provided the meeting (**WP3C**) with its experience and views on AFISNET Performance Monitoring.

The meeting agreed that, in order to have a comprehensive status of the performance of AFISNET components this performance should be assessed based on the four levels identified by the SNMC.

The following decision was formulated:

Decision 26/07: Assessment and Monitoring of the performance of AFISNET

That;

In order to identify the faulty components of AFISNET links, the performance of the network should continue to be monitored from end to end through the assessment of the four Levels, identified by the SNMC.

2.12 The meeting noted that despite the various conclusions/decision on the matter, SNMC members are not using the Performance Data Collection Forms (**PDCF**) to report on AFISNET performance. It was agreed to take benefit of the future modernization and re-engineering of AFISNET to require the automation of the collection and development of performance statistics data through the Performance Data Collection Form (**PDCF**).

The following conclusion was formulated:

Conclusion 26/08: Automation of the collection and development of performance statistics data through the Performance Data Collection Form (PDCF)

That;

- a) **When finalizing the technical specification for AFISNET re-engineering and modernization, the Joint Technical Team (JTE) include in the requirements the automation of the collection and development of performance statistics data through the Performance Data Collection Form (PDCF).**

- b) **The statistics developed for each level (1 to 4) will be subject to regular analysis exchange amongst members in view for remedial action to be conducted**

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

3.1 The meeting was updated on the development of the Technical Specifications for AFISNET re-engineering and modernization. ASECNA recalled (**WP10**) the five (05) steps of the process already achieved for the re-engineering and modernization of AFISNET:

- The European Union evaluation mission of the AFISNET project,
- The Short Term Enhancement Program (STEP) implementation,
- The Internal evaluation of AFISNET by a Joint Technical evaluation team (JTE) set up by SNMC,
- The External audit of AFISNET carried out by ADP-I with the support of JTE and the coordination of ICAO,
- The Development of the technical specifications for the re-engineering and modernization of AFISNET.

3.2 The meeting was also provided (**WP11**) with the outcome of the Joint Technical Team (**JTE**) coordination meeting held in Cotonou, Benin from 31 October to 02 November 2018 at the kind invitation of ASECNA. This meeting reviewed and updated the Draft Technical specifications document for the AFISNET Re-engineering and Modernization identified the processes and procedures to be applied in order to expedite the implementation of the project and updated the project implementation action plan.

3.3 Based on the proposal of the Cotonou meeting, SNMC/26 tasked the JTE who completed the technical specifications for the AFISNET Re-engineering and modernization document. The meeting endorsed the work of the JTE and approved the technical specifications and planning for AFISNET re-engineering and modernization.

The following Decision was formulated:

Decision 26/09: *Approval of the technical specifications and planning for AFISNET re-engineering and modernization*

That;

- a) **The report of the JTE coordination meeting in Cotonou is adopted as presented in Appendix E.**
- b) **The technical specifications and the planning for AFISNET re-engineering and modernization reviewed by the JTE coordination meeting in Cotonou is approved as updated by the SNMC Core members during SNMC/26.**

First session of the AFISNET Board coordination meeting

3.4 The Secretariat reported to the meeting (**WP 04**) the outcome of the AFISNET Board meetings. The first meeting of the AFISNET Board was held on 6th April 2018 in the premises of ASECNA HAQs in Dakar, Senegal. This meeting was preceded by a Technical meeting of the SNMC Joint Technical Team (JTE) for AFISNET modernization and re-engineering meeting which reviewed and updated the draft Memorandum of Cooperation (**MoC**) for the Share Use of Air Navigation Services and/or Systems and Assistance, together with its relevant annexes.

3.5 It was indicated that the AFISNET SNMC Board was briefed on the background on AFISNET re-engineering and modernization project. The project scheme was presented to the meeting as well as the draft MoCs and their Annexes consisting on technical agreement for the improvement of Air navigation service through by the four ANSPs operating AFISNET.

3.5 SNMC/26 was informed that its Board signed the main MoC with the objective to bring together the various agreements for the pooling of different services and/or facilities owned and/or operated by the parties. The MoC thus establishes a framework for collaboration based on the principle of equity, mutual compensation and mutual benefit, enabling cooperation between the parties concerning the air navigation services.

3.6 Moreover, the agreement was reported aimed at improving interoperability of CNS/ATM systems and harmonize operational and technical procedures in the Flight Information Regions (FIR) where the parties are responsible for the provision of air traffic services in order to ensure safety and efficiency in air traffic management.

3.7 SNMC/26 was provided with the Board of the SNMC signed Six (06) Annexes to the MoC with the purposes to set up a framework of cooperation between ASECNA, GCAA, NAMA AND ROBERTS FIR signed to complement the basic agreement and addressing the following:

- Exchange of ATS messages
- Exchange of FPLN messages
- Shared use of radio stations
- Network Interconnection
- Shared use of Surveillance Data
- Voice Communication
- Aeronautical Information data exchange

The updated Form of Agreement of the SNMC approved and signed by the Board meeting was also presented to the meeting.

Second session of the AFISNET Board coordination meeting

3.8 The second meeting of the AFISNET Board coordination meeting was held in Montreal Canada on Friday 12nd October 2018 at ICAO Headquarters in Montreal on the sidelines of ICAO's 13th Air Navigation Conference.

3.9 SNMC/26 noted that the meeting analyzed the three options for financing the re-engineering of the AFISNET Network, as proposed by the SNMC:

- **Common funding source.**
In this scenario, donors or funders consider the project as a sub-regional Aeronautical Telecommunication Project.
- **Common funding with direct mobilization resources by ANSPs**
In this case, each ANSPs will mobilize and bring its own resources for the funding based on the cost estimation for its contributing nodes to be modernized. This Scenario is similar to the one used to fund the Audit.
- **Prefunding the total cost of the project by one or more ANSP in a cost recovery basis.**
This scenario requires a Memorandum of Understanding to include in the project and schedule for reimbursement of the prefund.

3.10 The meeting was also informed that, taking into account the need to have a synchronized implementation schedule, the Administrators of the AFISNET network decided as follows:

- In the absence of financing from ECOWAS, ASECNA will lead the Team to seek for possible options of financing or even fully pre-finance the reengineering of the network, pursuant to Article 5 of the MoU signed between the various parties on 06 April 2018 in Dakar;

- In the case that ASECNA fully finances the Project, GCAA, NAMA and ROBERTS FIR shall refund their respective portions of the financing according to an agreed repayment schedule, subject to approval of their respective Board or supervising Ministry as may apply;
- A joint Team composed of experts from the four Air Navigation Services Providers (ASECNA, GCAA, NAMA, and ROBERTS FIR) will be set up to conduct the re-engineering activities, in accordance with Article 6 of the MoU signed between the various parties on 6 April 2018 in Dakar;

3.11 The Meeting also emphasized the need for strong collaboration on the various stages of the Project including but not limited to, tender specifications, project management and the general administration of the Project and decided that a Technical Team should update the Technical and financial details of the Project in the framework of SNMC for the perusal of the various DGs.

3.12 The representative of the ECOWAS Commission expressed the agreement of the Commission to support the initiative of the AFISNET Board toward a joint project for the reengineering of the network. It was therefore agreed that a preparatory JTE meeting will be convened early February 2019 and the stakeholders were tasked to properly prepare this meeting.

The following conclusion was formulated:

Conclusion 26/10: Follow up meeting of SNMC Board with the ECOWAS Commission

That;

As a matter of urgency for the mobilization of funding of AFISNET re-engineering and modernization,

- a) **The follow up meeting of AFISNET Directors Generals with the ECOWAS Commission agreed by Decision 1 of the AFISNET Board meeting in Montreal, should be convened in Abuja, Nigeria on early February 2019;**
- b) **The meeting will be preceded by a technical preparatory coordination meeting between the ECOWAS Department of Transport and the SNMC Joint Technical Team for AFISNET Re-engineering;**
- c) **The SNMC current Coordinator (ASECNA), with the assistance of NAMA and the Secretariat undertake the concertation with members and with ECOWAS for an appropriate date of the meeting taking, due account of the availability of the Board members and ECOWAS Decision Makers.**

3.13 The meeting specially took a decision tasking ASECNA, NAMA and the Secretariat to liaise with the ECOWAS Department of transport for practical preparatory organization of the meeting (NAMA) and the development of project document to be presented for discussion by the Board and ECOWAS.

The following decision was formulated:

Decision 26/11: Preparation of the Follow up meeting of SNMC Board with the ECOWAS Commission

That;

In preparation of the follow up meeting of AFISNET Directors Generals with the ECOWAS Commission,

- a) **NAMA, with the assistance of the Secretariat, is tasked to locally coordinate with ECOWAS Department of transport, the practical preparatory organization of the meeting;**
- b) **ASECNA, with the assistance of the Secretariat is tasked to develop the project document to be presented for discussion by the Board and ECOWAS;**

3.14 The meeting was briefed on the agreement of the second Board meeting on the funding mechanisms and noted the need to share information on how SNMC Administrations/Organizations carry out the Call for Tenders processes and procedures in order to take advantage of the best practices since the Board agreed that:

- In the absence of financing from ECOWAS, ASECNA will lead the Team to seek for possible options of financing or even fully pre-finance the reengineering of the network, pursuant to Article 5 of the MOU signed between the various parties on 06 April 2018 in Dakar.
- In the case that ASECNA fully finances the Project, GCAA, NAMA and ROBERTS FIR shall refund their respective portions of the financing according to an agreed repayment schedule, subject to approval of their respective Board or supervising Ministry as may apply.
- A joint Team composed of experts from the four Air Navigation Services Providers (ASECNA, GCAA, NAMA, and ROBERTS FIR) will be set up to conduct the re-engineering activities, in accordance with Article 6 of the MOU signed between the various parties on 6 April 2018 in Dakar

Conclusion 26/12: AFISNET Re-engineering project funding

That;

- a) The ECOWAS Commission be encouraged by SNMC members to continue to seek for the mobilization of financial resources to enable the diligent effective implementation of AFISNET re-engineering and modernization project**
- b) Meanwhile, ASECNA is encouraged to continue seeking and planning for an alternative prefunding solution in accordance with Decision 3 of the SNMC Board Meeting in Montreal, October 2018**

Agenda Item 4: Interconnection and interoperability of systems through AFISNET and its neighboring networks (CAFSAT, NAFISAT, SADC2)

4.1 GCAA shared with the meeting (**WP09**) the coordination technical actions conducted with ATNS ASECNA and ENANA (Angola) to resolve the unserviceability of the Accra- Luanda ATS/DS link experienced during the most part of 2017. It was reported that diagnostics carried out by GCAA, ASECNA, ENANA and ATNS indicated the occurrence of interference on the Accra-Luanda Link due to a shift in the operating frequency on the link. It was reported that after the frequency modification, the link was restored to service in January, 2018 and has since been working satisfactorily.

4.2 The meeting was informed by ATNS (**WP05**) on the performance of the NAFISAT and SADC network in relation to the interconnectivity with the AFISNET network and the progress made in respect of the upgrade and its improved futures of the NAFISAT and SADC VSAT Network and certain implications that have been identified. In this regard ATNS recalled the meeting that the specification and design of the NAFISAT and SADC2 network provide continued connectivity with AFISNET and provision was made for the retention of the current technical interface solution with the AFISNET network (8 AFTN and 9 ATS/DS links to the AFISNET sites, were not upgraded to ensure continuity of services until the AFISNET network is upgraded).

4.3 ATNS reported that challenges experienced with interconnection between Luanda and Accra were resolved and all services have been restored and are operational. Currently no space segment (level 1 and 2) challenges have been recorded between the SADC 2, NAFISAT and AFISNET networks. There are however still challenges on the services in the multiplexer and end-user equipment (level 3 and 4) experienced with sites interconnecting with Brazzaville, Niamey and N'Djamena.

4.4 ASECNA informed the meeting (**WP08**) on the undertaken and on-going actions in coordination with neighbors. It was noted that in order to ensure the continuation of the services between the VSAT networks and restore the availabilities of the services to recommended levels, ATNS and ASECNA agreed in the early April 2018, to address the obsolescence of the multiplexers (MEMOTEC CX series) by replacing them with the MEMOTEC Net Performer devices (Level 3) and keep Datum Modem (PSM or M7) devices (Level 2). ASECNA reported to have launched an internal process to purchase the whole equipment with an implementation action plan (Installation, test and commissioning) that will be shared very soon with ATNS by December 2018.

4.5 ASECNA also updated the meeting on the interconnection process between AFISNET and the CAFSAT Network and summarized the various services implemented in the table below:

Table of Service implemented on AFISNET Node in CAR/SAM centers

Node I	Node II	Planned Services	Observations
Dakar	Cayenne	ATS/DS, AIDC	Fully operational since august 2015(ATS/DS)
	Piarco		
Dakar	Recife	ATS/DS AMHS AIDC	ATS/DS implemented, AMHS and AIDC ongoing
Abidjan		ATS/DS, AIDC	ATS/DS implemented between Abidjan and Recife. Implementation of AIDC on going, Backup for REDDIG-2 VSAT link Backup for REDDIG-2 VSAT link
Las Palmas			
Cayenne			
Piarco			

4.6 The meeting applauded these initiative and encouraged that the AFISNET reengineering and modernization project maintain/improve the interconnectivity/interoperability of AFISNET with its neighboring networks in order to ensure service continuity and seamlessness across the networks.

The following conclusion was formulated:

Conclusion 26/13: Interconnection and interoperability of AFISNET with its neighboring networks

That,

When conducting the reengineering of AFISNET SNMC members endeavor to maintain/improve the interconnection/Interoperability of AFISNET with its neighboring networks in order to ensure service continuity across the networks.

Agenda Item 5: Status of implementation of the Outcomes of APIRG 21st Meeting

5.1 The Secretariat reported to the meeting (**WP06**) the status of implementation of the outcome of APIRG 21st meeting with focus on the AFI Regional Projects, which may have an impact on AFISNET infrastructure, AFISNET operation and maintenance.

5.2 In this regard it was reported that the APIRG/21st meeting the APIRG Infrastructure and Information Management Sub-Group (**APIRG IIM/SG**) second meeting held from 09 to 11 July 2018 in Dakar commended the reports on the work successfully carried out under the coordination of committed Project Team Coordinators namely, **South Africa** (coordinating **COM Project 3**), **ASECNA** on behalf of **Togo** (coordinating **COM Project 4**), **Cote d'Ivoire** (coordinating **COM Project 5**) and **Ghana** (coordinating **SUR Project**). The meeting encouraged the other Project Teams Coordinators to take example of best practices from these well-coordinated IIM Projects.

5.3 The issues related to the mechanisms and opportunities of funding IIM Projects discussed by IIMSG/2 were brought to the attention of the SNMC meeting. Moreover, the mobilization of resources to fund regional project, was outlined as a challenge that may seriously jeopardize the effective implementation of the APIRG Project Approach Concept, if tangible and sustainable funding solutions are not found was considered by SNMC/26.

5.4 SNMC/26 meeting also considered the outcome of IIM/SG/2 recommending that the projects description should be updated to include costs estimation in order to make it visible to potential funders/donors and encouraging the APIRG APCC to assist, with the support of RECs and AFCAC, in the efforts for effective funding for the implementation of the IIM projects.

The following conclusion was formulated:

Conclusion 26/14: Consideration of Regional APIRG Project by SNMC

That;

In order to ensure a harmonized implementation, SNMC members consider the regional planning and implementation mechanisms defined by the APIRG Project Approach in the conduct of the AFISNET re-engineering project.

Agenda Item 6: Evolutions on Satellite Communication Technology;

6.1 Under this agenda item the meeting was briefed by the industry on the trends in communication related technologies.

6.2 **FREQUENTIS**, a communication systems supplier, updated the meeting with a presentation addressing requirements emanating from new ATM Concepts (SWIM, ASBU, CDM, etc.), new ATC Center Models (Contingency, Dynamic Sectorization), new IT concepts (Centralization, Data exchange), Centralized Monitoring.

It results from these requirements a need for a brokering network capacity between ATM-specific applications & non-ATM specialized backbone.

6.2 **ENGIE INEO**, an aeronautical communication, electronics and energy systems supplier, presented to the meeting its various reference on technologies related to satellite communication in particular its involvement to the AFISNET, NAFISAT, SADC, REDDIG VSAT Networks dedicated to regional Air Traffic Control provision.

6.3 The meeting commended the two presentations and encouraged the Secretariat to continue the liaison with the industry in order to keep SNMC members well aware of the technology trend.

Agenda Item 7: Preparation of the ITU World Radio Communication Conference 2019 (WRC-19)

7.1 Under this agenda item the Secretariat presented to the meeting the ICAO Position for the ITU World Radio Communication Conference to be held in Egypt in November 2019 (**ITU WRC-19**). The attention of the meeting was reminded on the stakes and challenges on this future WRC-19 and their impact on the safe operation of AFISNET Frequency band.

7.2 The meeting overviewed the mechanisms and stakeholders involved in the preparation of WRC at the national, sub regional and international levels and agreed that the support to the ICAO Position should be reinforced by a tight liaison with stakeholders and mainly CAAs and National Authority of Regulation of Telecommunication.

The following conclusion was formulated:

Conclusion 26/15: Preparation of the ITU World Radio Communication Conference 2019 (WRC-19)

That;

- a) **SNMC Administrations reinforce their support to the ICAO position for the ITU World Radiocommunication Conference scheduled to take place on November 2019**

- b) **In this regard, they will summarize and share with stakeholders and mainly the Authority of Regulation of Telecommunication issues encountered in the operation of aeronautical spectrum and regularly attend the national preparatory meetings.**

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.

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

The following decision was formulated:

Decision 26/16: 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 F and may be further amended as necessary.

Agenda Item 9: Review of the Draft Conclusions/Decisions of SNMC/26

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 SNMC coordinator until next SNMC 27 meeting to be hosted by **GCAA**.

Agenda Item 10: Any other business

10.1 Under this agenda item the meeting discussed issues related to the organization of the meeting of the SNMC Board with ECOWAS and remembered ASECNA, NAMA and the Secretariat to liaise with the ECOWAS Commission and coordinate the effective holding of this important meeting.

10.2 The meeting recalled the rotation process adopted for hosting SNMC meetings. In this regard the **GCAA** is the member who will host the next SNM/27 meeting during year 2019. The Secretariat was tasked to update the table as attached at **Appendix G** to this report.