



INTERNATIONAL CIVIL AVIATION ORGANIZATION
WESTERN AND CENTRAL AFRICAN OFFICE

Nineteenth Meeting of the AFI Satellite Network Management Committee (SNMC/19)
(Accra, Ghana 14-18 November 2011)

Agenda Item 5: Review of the Report of the joint technical Team

(Presented by ASECNA)

SUMMARY

This working paper draws the attention of the meeting on implementation of the recommendations from the Joint Technical Evaluation and calls the AFISNET members to expedite the implementation of the AFISNET audit

Reference: SNMC 18 report

Action by the meeting in paragraph 3

1. Introduction

According to SNMC conclusions 16/07 and 17/02 and the SP RAN AFI/8 recommendations 6/18 and 6/19 AFISNET States/Organizations established a joint technical team tasked to conduct a technical evaluation and Re-engineering of AFISNET. The current paper aims to follow up the implementation of the recommendation of the JTE report.

2. Discussion

The SNMC/18 meeting, (1-4 June 2010, Ouagadougou, Burkina Faso), by decision 18/01 adopted the report of Joint Technical Evaluation and Re-engineering. The report contains 15 recommendations whose follow up and implementation are required to continuously improve AFISNET performances.

These recommendations are reported in annex, for the progress report actions from AFISNET members aimed to implement them.

3. Action Required

The meeting is invited:

- a) To encourage AFISNET States/Organizations to consider, monitor and implement the conclusions of the Joint Technical Evaluation and Re-engineering as continuous improvement of the network;
- b) To call AFISNET States/Organizations to expedite the implementation of the AFISNET audit

Appendix

RECOMMENDATIONS OF THE JOINT TECHNICAL EVALUATION TEAM

The joint technical evaluation exercise was conducted on the framework of the agreed templates adopted by all members present in the Dakar meeting.

The teams are pleased to bring to ICAO that, they were well received in all the stations visited; technical staffs were extremely willing to readily make available required information/data. Overall, all the stations visited are robust and are working normally. However, since aeronautical services require the utmost from each telecommunication node, the team is recommending the following:

1.1 UPGRADE OF THE AMSS

The States/Organizations should upgrade and synchronize their Messages Switching Systems in order to be fully compliant with ICAO standard as they are almost reaching the end of their span life in order to provide reliable statistics tools to assess rightly the performances of the network.

1.2 ELIMINATING OF THE AFTN AND ATS/DS CIRCUITS DEFICIENCIES

As a matter of emergency, the States/Organizations should improve the availability of the AFTN circuit performing less than 97% and restore the faulty circuits identified during the evaluation particularly: Kano/Accra, Brazzaville/Kinshasa, Brazzaville/Luanda, Accra/Brazzaville, Accra/Ouagadougou, Accra/Libreville, Libreville/Kano, etc.

1.3 UPGRADE OF THE VCSS

As soon as possible the States/Organizations unless it is done, should upgrade their VCSS in order to improve the availability of the ATS/DS links.

They should coordinated and take into account the interface problems when implementing new systems in order to solve the problem of compatibility and interoperability

1.4 MAINTENANCE OF REMOTE VHF STATIONS

The States/Organization should improve the maintenance procedure of remote VHF to reduce the unavailability of the remote VHF stations and should expedite the implementation of the news remote VHF stations to provide a good coverage of the airspace

1.5 MAINTENANCE AND OPERATIONAL PROCEDURES BETWEEN ADJACENT CENTERS

Standard Operational and maintenance Procedures should be established and applied between the adjacent centers in order to minimize the impact of coordination on the performances of the network; the manual of procedures or agreement letters of procedures should be concluded between the adjacent centers.

1.6 REDUNDANCY AND MIGRATION OF THE MULTIPLEXERS

In order to improve the reliability all the satellite links, the States/Organizations should plan the migration of current multiplexers as they are reaching the end of their span life and are no more manufactured; so they should agree to choose robust multiplexers which allow the dynamic routing for the management of the service channels and adopt the redundancy 1+1 of the multiplexers in their project

1.7 REDUNDANCY OF THE MODEMS

In order to enhance the reliability of the links, States/Organizations should insure the redundancy N+1 of satellite modems, and should coordinate for the technology choices in order to avoid incompatibility/interoperability problem before implementing new satellite links; Administrations/Organization should promote the usage of satellite modem in L band (wide spectrum) during the implementation of new satellite links.

1.8 SPARE PARTS AVAILABILITY

Spare parts should be made readily available at all stations and the means used to transport spares from one node to the other should be greatly improved in order to shorten down time of aeronautical services.

1.9 TEST EQUIPMENTS

Administrations/Organization should make the necessary arrangements in order to calibrate all the test equipments.

1.10 PLANNING OF THE SSPA /ACU/MU REPLACEMENT

Administrations/Organization should plan the progressive replacement of the SSPA and the ACU and MU as they are reaching the end of their span life.

1.11 UP/DOWN CONVERTER

Administrations/Organization shall provide their earth stations with the active adding amplifiers and splitter equipped with many inputs (12 or 24 inputs) in order to relieve the modems used.

1.12 SUPERVISION

Administrations/Organization shall equip their earth stations with the global supervision system of each functional component of the earth station for the purpose of the remote control maintenance operations.

1.13 HUMAN FACTORS

States/Organizations have to put in place specific training regarding all the aspect of the satellite communications including AFTN, ATS/DS and remote VHF.

1.14 APPLICATION OF SAFETY CASE IN THE IMPLEMENTATION OF NEW ATM CHANGES

With new ATM changes (installation of new equipments) states/organizations should ensure the maintenance of the air traffic services provision and to demonstrate through a safety assessment, that the safety of any significant change to the ATM systems will

meet acceptable levels as required in ICAO Annex 11 in order to guarantee at least the same level of service before ATM changes.

1.15 IMPLEMENTATION OF THE FUTURE AFISNET CFMU

By taking into account:

- the current communications services in accordance with air navigation plan for the AFI region (AFTN, OPMET, AAC) supported by the AFISNET;
- the future services which will be progressively supported by the current network (AFISNET) (AMHS, GNSS and augmentation data transmission, Computer-to-computer data exchanges (ICC) between ATS Flight Data Processing Systems (FDPS), Air/ground data link applications (ADS/CPDLC, ADS-B, DFIS, VDL...);
- loss of operational messages between AMSS of adjacent operational centres;
- the erroneous operational statistics provided by the AMSS of the operational centres due by software conception default which respect ICAO practices and standard;
- great delays of putting back in service the AFTN links due to technical aspects of coordination between ANSP;

States/Organizations should envisage and anticipate the implementation of the future AFISNET CFMU by step, with many levels in order to handle all the operational aeronautical data which will contribute to the safety of air navigation.

- Level 1: integrated system able to process flight plans, OPMET, environment datas, airways and aerodrome cartography, SID procedures, STAR procedures coming from all the ANSP AMSS in order to solve all the problems address on top before forwarding those datas to the corresponding ANSP AMSS.
 - Level 2: integrated system of processing future ATM services (AMHS, GNSS and augmentation data, ICC between ATS FDPS, ADS-B data sharing, DFIS, VDL, ..)