



APIRG /13- IP/31

INTERNATIONAL CIVIL AVIATION ORGANISATION
AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
THIRTEENTH MEETING (APIRG/13)
(Sal, Cape Verde, 25 - 29 June 2001)

Agenda Item 5 : Shortcomings and deficiencies in the Air Navigation field
in the AFI Region

African and Indian Ocean Satellite Network(AFISNET) presentation

(Information Paper presented by ASECNA, NAMA and GCAA)

SUMMARY

This Information Paper makes a presentation of the satellite network in Central and Western Africa (SATCOM network) and informs the International Aeronautical Community of its new designation.

I - INTRODUCTION:

During the ninth meeting in Accra of the Satellite Network Management Committee(SNMC), the Members, noting the current deployment of the network, agreed to name the SATCOM network (in the beginning AEROSATEL):

AFISNET(African and Indian Ocean Satellite Network)

- network initiated by ICAO and dedicated to Civil Aviation
- suitable and available support for the elimination of the shortcomings and deficiencies in the aeronautical communications field
- essential support for the implementation of new CNS/ATM systems

II- NETWORK PRESENTATION

Its Asset

- ✓ the widest supranational aeronautical network in the world
- ✓ the aeronautical network which has the greatest number of earth stations
- ✓ the diversity of the techniques, protocols used and available services
- ✓ autonomous network
- ✓ its positioning as ATN subnetwork
- ✓ its network Management Committee

- ✓ **The widest supranational aeronautical network in the world**
 - Present in twenty two countries (see map in appendix)
- ✓ **the aeronautical network which has the greatest number of earth stations**
 - implemented around two INTELSAT satellites:
 - IS 601 @325.5East (IBS et FASTCOM)

- IS 707 @359East (FASTCOM)
- Fifty two earth stations (diagram in appendix)
 - Four B type stations :11 m diameter antenna
 - Fourteen F2 type stations : 7.30 m diameter antenna
 - Thirty four F1 type stations : 4,60 or 3,70 m diameter antenna
- ✓ **the diversity of the techniques, protocols used and available services**
 - possible transmission modes
 - MCPC (Multiple Channel Per Carrier)
 - SCPC (Single Channel Per Carrier)
 - operation modes
 - IBS(network topology in IBS in appendix)
 - FASTCOM(network topology in FASTCOM in appendix)
 - used protocols
 - data : X.25; Frame Relay; Asynchronous (V24); TCP/IP.
 - voice: over Frame Relay.
 - available services
 - Aeronautical Fixed Service: AFTN; ATS/DS and GTS
 - Aeronautical Mobile Service: remote VHF.
 - AA C(Aeronautical Administrative Communications)
 - Aeronautical INTRANET
 - Remote maintenance
 - Audioconference
- ✓ **autonomous network**
 - exclusively managed, operated and maintained by the members; Organisations providing air navigation services. Each member for its home communications, can extend the network in its area of responsibility ((for example: ASECNA, NAMA, ROBERTS FIR , MAURICIUS and GCAA(GHANA CIVIL AVIATION AUTHORITY))
- ✓ **its positioning as ATN subnetwork**
 - X.25 network implementation
 - VHF stations implementation equipped with D8PSK modulation
 - Interoperability between aeronautical fixed network and Aeronautical Mobile Network
 - Link digitalisation
 - AFTN interoperability with CAFSAT and SADC networks
- ✓ **its Network Management Committee**

Its objectives, notably :

 - network extension
 - interconnection with other African networks
 - periodic review of network (status and required performances)

- co-operation , in various fields, between network centres
- ✓ Its functioning :
 - founding members: **ICAO, GCAA, NAMA(FAAN), ASECNA, Project Co-ordinator(SERCO- IAL)**
 - observers: **ALCATEL, ALENIA, EU**
 - two annual meetings
 - free participation

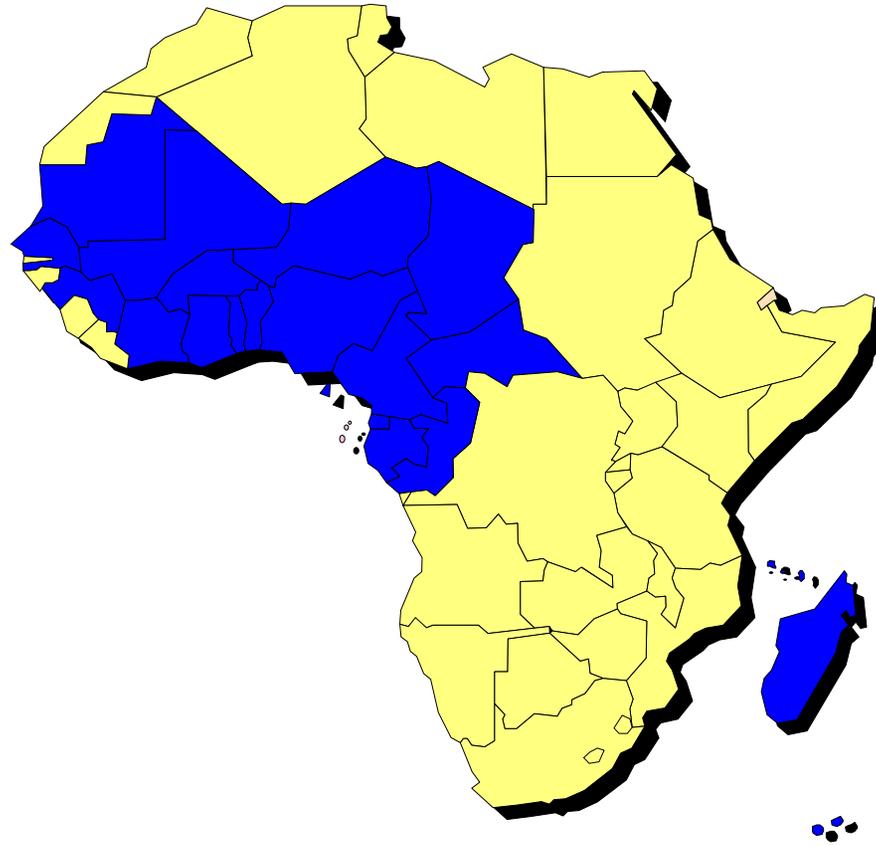
II - Conclusion

The meeting is invited to:

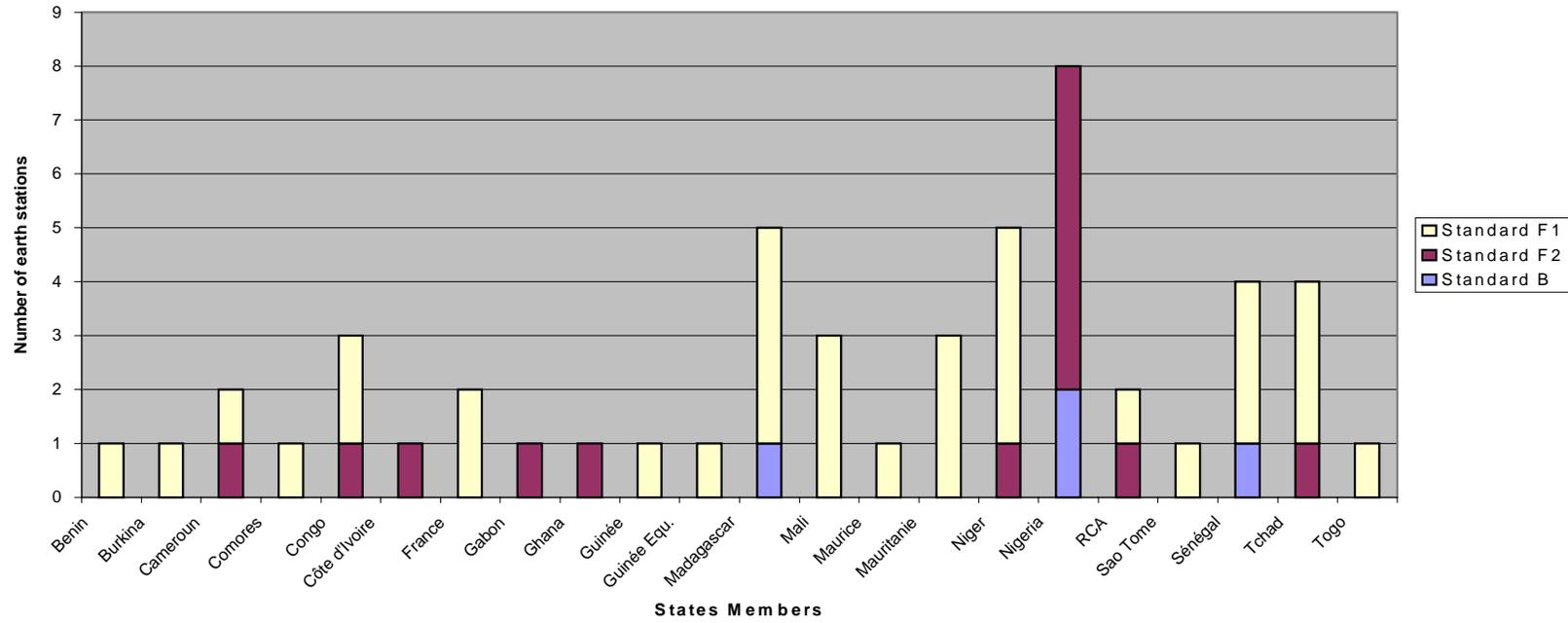
- take note of the above mentioned information
- encourage SNMC members to consolidate their efforts, assuming seamless communications in AFI Region

ANNEXE

AFISNET STATE MEMBERS



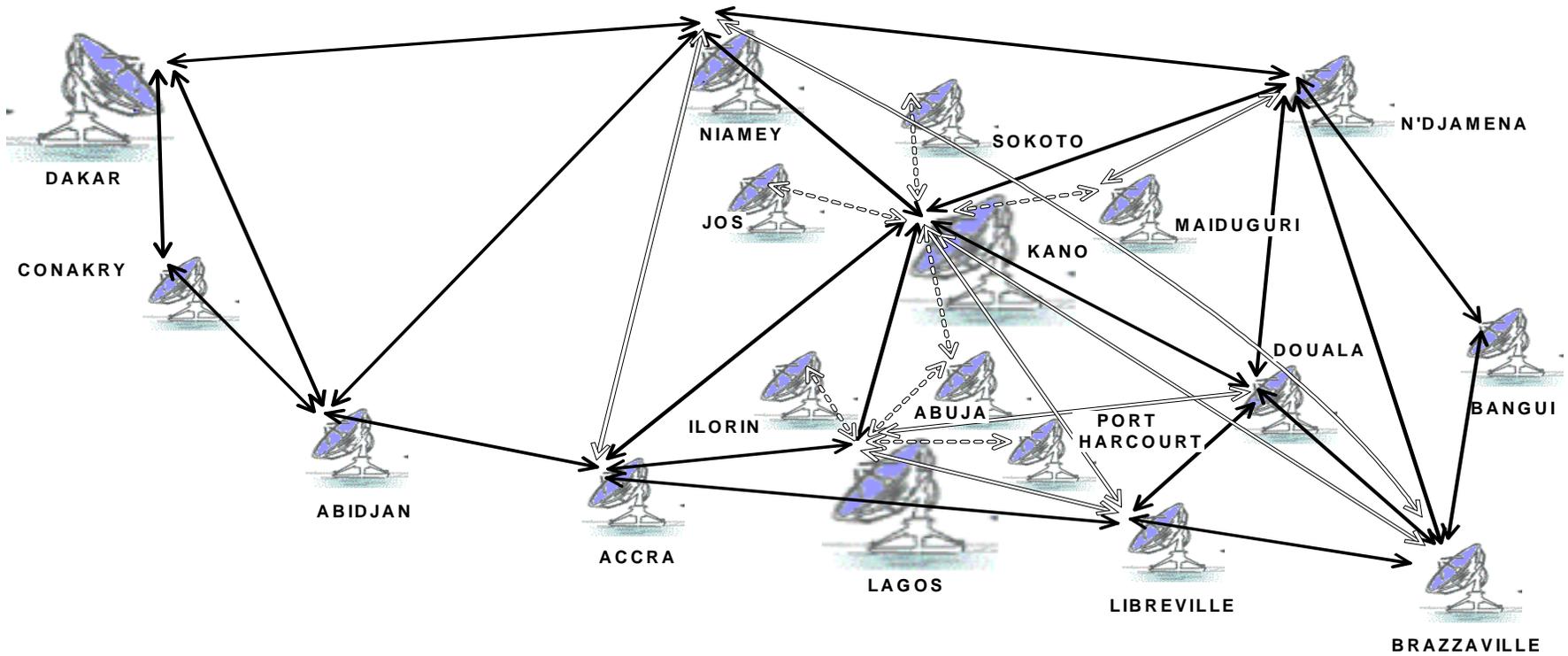
AFISNET Earth Stations



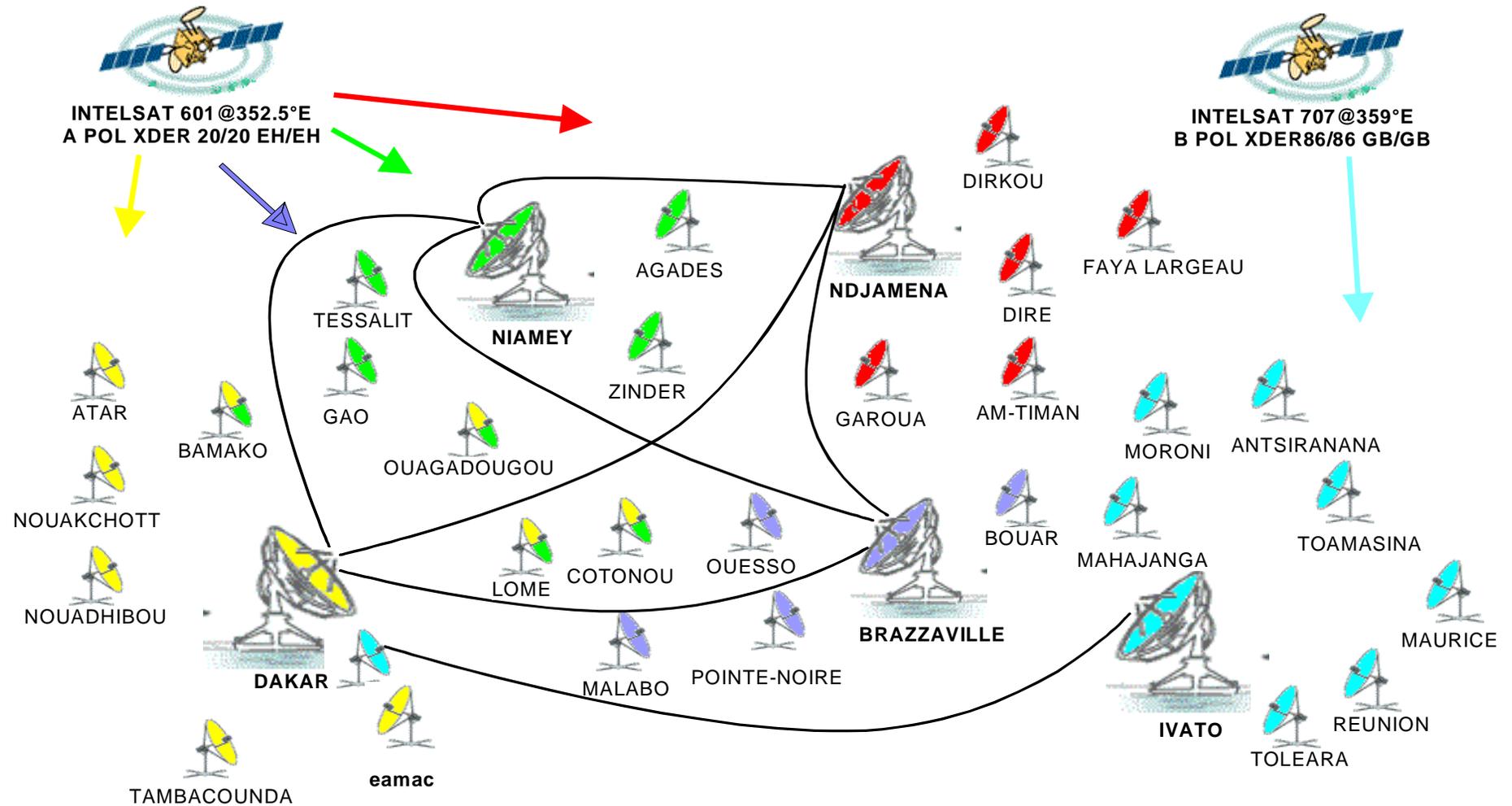
NETWORK TOPOLOGY IN IBS MODE



INTELSAT 601 @ 325.5°E
SE ZONE (B POL) 105/105 XDER 9



NETWORK TOPOLOGY IN FASTCOM MODE



Remarque: - Les couleurs des antennes indiquent le(s) Hub(s) de rattachement des VSAT

AFTN INTEROPERABILITY WITH CAFSATNETWORK

