INTERNATIONAL CIVIL AVIATION ORGANIZATION

INFORMAL COORDINATION MEETING ON THE AFI SATELLITE TELECOMMUNICATION NETWORK (AFISNET)

(Dakar, Senegal 27 – 28 May 2003)

Prepared by the ICAO Western and Central African (WACAF) Office

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HISTORY OF THE MEETING

1. INTRODUCTION

1.1 The Informal Coordination Meeting on AFISNET Network Sustainability was held in Dakar, Senegal from 27 to 28 May 2003.

2. ATTENDANCE

2.1 The meeting was attended by 20 delegates from Ghana, Nigeria, ASECNA, IATA and System Providers (Alcatel and Coris). The list of participants is at **Appendix A** to this part of the Report.

3. OPENING OF THE MEETING

3.1 Mr. A. Cheiffou, Regional Director, ICAO Western and Central African Office welcomed all participants to Dakar. He pointed out serious problems being experienced with AFISNET circuits since early 2003, which have reached such a level of concern that it might affect all other air navigation services and consequently air safety in the Region. Hence the need for a collective assessment of the current situation without any complacency, with a view to finding quick and appropriate remedial actions and solutions. In so doing, he therefore invited delegates to give priority to a cooperative approach and partnership opportunities, mindful of air navigation safety implications.

4. OFFICERS AND SECRETARIAT

4.1 Mr. A. Cheiffou, ICAO Regional Director chaired the meeting. Mr. Prosper Zo'o – Minto'o, Regional Officer Communications, Navigation and Surveillance (RO/CNS) of ICAO Western and Central Office, Dakar was the Secretary of the meeting. Mrs. Mary A. Obeng, Regional Officer Communications, Navigation and Surveillance (RO/CNS) of the same Office assisted him.

4.2 Mr. H.H. Cisse (RO/MET), Mr. K. Brou (RO/ATM) and Mr. G. Baldeh (RO/ATM) also addressed the meeting.

5. WORKING LANGUAGES

5.1 English and French were used as the meeting working languages and documentation was issued in these languages.

6. AGENDA

6.1 The Meeting adopted the following Agenda:

Agenda Item 1: Air Navigation Deficiencies

Agenda Item 2: Review of AFISNET performance

Agenda Item 3: Review of AFISNET Technical Support

Agenda Item 4: Cooperative approach to AFISNET Management and Partnership opportunities.

Agenda Item 5: Integration of AFISNET with Sub-regional Satellite Telecommunication Networks.

Agenda Item 6: Any other business

Implementation of an ATS/DS link between Lagos and Niamey.

7. LIST OF CONCLUSIONS

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8. APPENDICES

Agenda Item 1: Air Navigation Deficiencies

Under this Agenda Item, the meeting reviewed deficiencies affecting air traffic services, aeronautical information services, meteorological services and aeronautical communications in the Region. Deficiencies affecting aeronautical communications are shown at **Appendix B** to this Report. The following Conclusion was adopted:

CONCLUSION 1 : ELIMINATION OF IDENTIFIED DEFICIENCIES

THAT STATES AND ADMINISTRATIONS CONTINUE THEIR EFFORTS TO ELIMINATE CNS DEFICIENCIES AS SHOWN AT APPENDIX B TO THIS REPORT.

Agenda Item 2: Review of AFISNET performance

Under this Agenda Item, the meeting noted the importance of AFISNET network, which is the supporting infrastructure for four (4) AFTN main circuits, seventeen (17) AFTN tributary circuits, forty-four (44) ATS/DS circuits and nineteen (19) remote VHF air – ground communications. Its performance therefore has a great bearing on air navigation safety within the Region.

The meeting recognized the efforts made by AFISNET member administrations to implement, maintain and upgrade[1] the network and to maintain it to the best of their possibilities. Unfortunately, despite these efforts, the network still suffers from chronicle instability of circuits, as shown at **Appendix C** to this Report.

Accra: AFTN Main Centre and ATS Flight Information Centre

The minimum requirement of 97% availability was not met for the first quarter of 2003. There has not been any communication with Abidjan.

Brazzaville: AFTN Main Centre and ATS Flight Information Centre

Brazzaville Centre interfaces with both ASCNA Centres and non - ASECNA Centres (Accra, Kano and Lagos). This centre has been unstable since June 2002 till now; even its circuits with some ASECNA centres are below 97% (e.g. Douala, N'djamena, and Bangui). The availability of the circuits is worse for Accra and Kano. However the availability of the circuits Brazzaville/Dakar Brazzaville/Niamey was above 97%.

Dakar: AFTN Main Centre and ATS Flight Information Centre

Dakar Centre interfaces with ASECNA Centres and Roberts FIR (Conakry). This centre has been very stable between May and December 2002. Abidjan and Brazzaville circuits fall below 97%.

[1] Full AFISNET digitizing was completed in 2002, and AFTN main circuits and tributary circuits now meet the requirement for a minimum transmission speed of 1200 bps.

Kano: AFTN Tributary Centre and ATS Flight Information Centre

The minimum requirement of 97% availability was not met for the first quarter of 2003.

Niamey : AFTN Main Centre and ATS Flight Information Centre

Like Brazzaville Centre, Niamey Centre interfaces with both ASECNA and non-ASECNA centres. The circuits with ASECNA centres are performing very well, whilst the availability of the circuits with Accra and Kano is far below 97%.

From the above analyses, the meeting noted that most of the problems mainly concern communications between centres from different administrative areas : *Accra* (GCAA/Ghana), *Abidjan, Brazzaville, Douala, Libreville, N'djamena and Niamey* (ASECNA), *Kano, Lagos and Maiduguri* (NAMA/Nigeria).

Following discussions, the meeting agreed on the need for a coordinated short-term enhancement programme for the restoration and stabilization of the network performance. The following Conclusion was adopted:

CONCLUSION 2: IMPLEMENTATION OF A SHORT TERM ENHANCEMENT PROGRAMME

THAT :

A) A SHORT-TERM ENHANCEMENT PROGRAMME BE FINALIZED BEFORE THE END OF JUNE 2003, AND IMPLEMENTED AT IDENTIFIED CRITICAL SITES IN ORDER TO RESTORE AFISNET PERFORMANCE AND EFFICIENCY; AND

B) THE TERMS OF REFERENCE OF THE SHORT-TERM ENHANCEMENT PROGRAMME REFERRED TO IN A) ABOVE BE AS PER APPENDIX D.

Agenda Item 3: Review of AFISNET technical support

The meeting analysed AFISNET technical support and identified some weaknesses in terms of maintenance organization, staffing, training needs, communication skills, coordination and communication procedures, back-up systems, power supply, maintenance tools, spare parts availability, performance assessment methodologies, technical assistance, etc.

The meeting also reviewed the report on the ASECNA/IATA joint mission of March 2003 to Accra, Kano, Lagos and Niamey, which confirmed the need for urgent corrective measures.

With respect to coordination between maintenance units, the meeting recommended the signing of formal letters of procedures as is the case between ATS units. The following Conclusion was adopted:

CONCLUSION 3: LETTERS OF PROCEDURES (LOPs) BETWEEN MAINTENANCE UNITS

THAT LETTERS OF PROCEDURES SHOULD BE DEVELOPED IN ORDER TO FORMALIZE COORDINATION BETWEEN MAINTENANCE UNITS IN THE REGION.

Agenda Item 4: Cooperative Approach to AFISNET Management and Partnership Opportunities.

The meeting acknowledged that AFISNET circuits had been operating satisfactorily for a decade during which its maintenance was covered by a Technical Assistance (TA) Contract with the European Union (EU). The EU TA Contract expired in 2001. Since then, despite the relentless efforts made by managing organizations (GCAA Ghana, NAMA/Nigeria and ASECNA), the network suffers from frequent failure of circuits and, as a consequence, coordination is very poor between ATS units, thus jeopardizing air navigation safety in the area concerned.

The meeting therefore confirmed the need for a collective short term enhancement programme to be implemented by AFISNET administrations/organizations under ICAO coordination and in cooperation with suppliers, with a view to restoring and stabilizing AFISNET nominal performance. It also confirmed the importance of a cooperative approach to AFISNET management as called for by the Network Management Committee at its 12th meeting (SNMC/12, Conclusion 12/10). In order to reflect new developments and concepts, the meeting discussed and adopted a new form of agreement for the Network Management Committee as shown at **Appendix E** to this Report. This form of agreement is subject to formal approval by the relevant authorities.

In addition, the meeting agreed on the necessity of a coordinated external audit of the network as recommended by SNMC/12 (Conclusion 12/9 refers).

The following Conclusions were adopted:

CONCLUSION 4: COOPERATIVE APPROACH TO AFISNET MANAGEMENT

THAT A COOPERATIVE APPROACH BE ADOPTED AMONG THE AFISNET MEMBERS IN ADDRESSING ISSUES RELATED TO THE NETWORK OPERATIONS, MAINTENANCE AND DEVELOPMENT.

CONCLUSION 5: MANAGEMENT COMMITTEE FORM OF AGREEMENT

THAT THE FORM OF AGREEMENT OF THE AFISNET MANAGEMENT COMMITTEE BE AMENDED TO REFLECT LAST DEVELOPMENTS AS PER APPENDIX E.

CONCLUSION 6 : NEED FOR A COORDINATED EXTERNAL AUDIT OF THE NETWORK

THAT AN EXTERNAL AUDIT OF THE NETWORK BE COORDINATED BETWEEN AFISNET MEMBER STATES AND ORGANIZATIONS, IN ACCORDANCE WITH SNMC CONCLUSION 12/9.

Agenda Item 5: Integration of aeronautical VSAT networks

Under this Agenda Item, the meeting recalled APIRG Conclusion 13/11 on the integration of existing/planned aeronautical VSAT networks as a means of achieving full implementation of communications requirements in the Region, and to facilitate interoperability. It also noted that Intelsat attended two important meetings held in the Region in 2002, and provided participants with useful guidance concerning the feasibility of the required integration of VSAT networks.

The meeting noted that Ghana, ASECNA and Roberts FIR have sent to Intelsat detailed information on their IBS carriers and bandwidths, for planning purposes, in view of the consolidation of aeronautical services. It therefore invited Nigeria (NAMA) to provide their data before 20 June 2003. The following Conclusion was adopted:

CONCLUSION 7: INTELSAT PLANNING REQUIREMENTS FOR THE CONSOLIDATION OF AERONAUTICAL SERVICES

THAT NIGERIA PROVIDE INTELSAT AND THE ICAO REGIONAL OFFICE WITH RELEVANT INFORMATION ON THEIR AERONAUTICAL VSAT STATIONS AND BANDWIDTH REQUIREMENTS NO LATER THAN 20 JUNE 2003.

Agenda Item 6 : Any other business

Under this Agenda Item, the meeting urged NAMA and ASECNA to expedite the implementation of an ATS/DS link between Lagos and Niamey to support air traffic management on RNAV route UM114. The following Conclusion was adopted :

CONCLUSION 8: ATS/DS LINK BETWEEN LAGOS AND NIAMEY

THAT, IN ORDER TO SUPPORT AIR TRAFFIC MANAGEMENT ALONG RNAV ROUTE UM114, NAMA AND ASECNA EXPEDITE THE IMPLEMENTATION OF THE ATS/DS CIRCUIT BETWEEN LAGOS/NIAMEY NO LATER THAN 30 SEPTEMBER 2003.

List of Participants

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List of AFTN Deficiencies

State/Name	*Requirements*	*Facilities or Services*	*Description of Deficiency*	*Date first reported*	*Comments on Deficiency*	*Description of Corrective action*	*Executing Body*	*Target date for implement*	*Priority*
Congo									
	AFTN Plan, AFI Rec. 9/7	Brazzaville AFTN centre	Circuit Brazzaville/Luanda	1998	Not implemented	To implement VSAT	ASECNA, Angola		A
	AFTN Plan, AFI Rec. 9/7	Brazzaville AFTN centre	Main circuit Brazzaville/Nairobi	1998	Not implemented	Implementation through public data networks in discussion	ASECNA, Kenya		U
	AFTN Plan, AFI Rec. 9/7	Brazzaville AFTN centre	Circuit Brazzaville/Sao Tome	1998	Not implemented	VSAT to be installed at Sao Tome by Ghana CAA	ASECNA, Sao Tome & Principe, Ghana	2003	U
Equatorial Guinea									
	AFTN Plan, AFI Rec. 9/7	Malabo AFTN centre	Circuit Malabo/Bata	2001	Bata has no AFTN connection	VSAT planned	ASECNA	2003	U
Niger									
	AFTN Plan, AFI Rec. 9/7	Niamey AFTN centre	Main circuit Niamey/Algiers	1998	Disconnected	VSAT being implemented	ASECNA, Algeria	2002	U
Senegal									
	AFTN Plan, AFI Rec. 9/7	Dakar AFTN centre	Circuit Dakar/Bissau	1998	Not implemented	VSAT planned	ASECNA, Guinea Bissau		U

List of ATS/DS Deficiencies

State/Name	Requirements	Facilities or Services	Description of Deficiency	Date first reported	Comments on Deficiency	Description of Corrective action	Executing Body	Target date for implement	Priority
Burkina Faso									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Bobo Dioulasso	Circuit Bobo Dioulasso/Accra	1998	PSTN in use	VSAT planned by ASECNA	ASECNA, Ghana	2002	A
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Ouagadougou APP	Circuit Ouagadougou/Accra	1998	PSTN in use	To implement LTF circuit using existing VSATs in Accra and Ougadougou. Digitalization of VSAT in progress at Accra.	ASECNA, Ghana	2003	A
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Ouagadougou APP	Circuit Ouagadougou/Niamtougou	2002	Not implemented	VSAT planned by Ghana CAA at Niamtougou	ASECNA, Togo, Ghana		B
Cameroon									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Douala APP	Circuit Douala/Bata	1998	Not implemented	VSAT planned at Bata	ASECNA		A
Central African Republic									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Bangui APP	Circuit Bangui/Gbadolite	1998	Not implemented	Could be implemented via Brazzaville if a circuit Kinshasa/Gbadolite	ASECNA, DR Congo		A
Chad									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	N'Djamena APP/FIC	Circuit N'Djamena/Khartoum	1998	Not implemented	PSTN proposed by ASECNA.	ASECNA, Sudan		U
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	N'Djamena APP/FIC	Circuit N'Djamena/Tripoli	1998	Not implemented	PSTN and Satphone proposed by ASECNA	ASECNA, Libya		U

Congo

ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Brazzaville APP/FIC	Circuit Brazzaville/Khartoum	1998	Not implemented	VSAT AFISNET proposed by ASECNA	ASECNA, Sudan	U
ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Brazzaville APP/FIC	Circuit Brazzaville/Luanda	1998	PSTN used via Inmarsat phone	To implement LTF circuit	Angola, ASECNA	U
ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Brazzaville APP/FIC	Circuit Brazzaville/Sao Tome	1998	Not implemented	VSAT to be installed by Ghana CAA at Sao Tome	ASECNA, Sao Tome & Principe, Ghana 2003	U

Equatorial Guinea

ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Bata & Malabo APP	Circuit Bata/Malabo	2002	Not implemented	VSAT planned	ASECNA	U
ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Bata APP	Circuit Bata/Douala	1996	Not implemented	VSAT planned	ASECNA	A
ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Bata APP	Circuit Bata/Libreville	1996	Not implemented	VSAT planned	ASECNA	U

Gabon

ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Libreville ACC	Circuit Libreville/Bata	1996	Not implemented	VSAT planned at Bata	ASECNA	U
ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Libreville ACC	Circuit Libreville/Sao Tome	1996	Not implemented	VSAT to be installed by Ghana CAA at Sao Tome	ASECNA, Sao Tome & Principe, Ghana 2003	U

Ghana

ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Accra APP/FIC	Circuit Accra/Bobo Dioulasso	1998	PSTN in use	VSAT planned at Bobo Dioulasso	Ghana, ASECNA	A
ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Accra APP/FIC	Circuit Accra/Lome	2002		VSAT planned	Ghana, ASECNA 2003	U
ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Accra APP/FIC	Circuit Acrra/Luanda	1998	Inmarsat phone used fromLuanda. Inmarsat also available in Accra	VSAT under consideration	Ghana, Angola	U
ATS Direct Speech	Accra APP/FIC	Circuit	2002	Not implemented	VSAT planned at	Ghana, Togo	B

	Circuits Plan, AFI/7 Rec.9/9		Accra/Niamtougou			Niamtougou by Ghana CAA			
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Accra APP/FIC	Circuit Accra/Ougadougou	1998	PSTN in use	Implement LTF circuit using existing VSATs in Accra and Ouagadougou	Ghana, ASECNA	2003	A
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Accra APP/FIC	Circuit Accra/Sao Tome	1996	Not implemented	VSAT planned at Sao Tome by Ghana CAA	Ghana, Sao Tome & Principe	2003	U
Guinea									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Conakry APP	Circuit Conakry/Bissau	1996	Not implemented	Implement LTF circuit	Guinea, Guinea Bissau		U
Mali									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Bamako APP	Circuit Bamako/Gao	1996	Not implemented	Implement LTF circuit	Mali		B
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Bamako APP	Circuit Bamako/Mopti	1996	Not implemented	Implement LTF circuit	Mali		B
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Gao APP	Circuit Gao/Mopti	2002	Not implemented	Implement LTF circuit	Mali		B
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Gao APP	Circuit Gao/Niamey	1996	Not implemented	Implement LTF circuit	Mali, ASECNA		B
Niger									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Niamey ACC/FIC	Circuit Niamey/Algiers	1998	To be implemented	VSAT being considered at Algiers	ASECNA, Algeria	2002	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	niamey ACC/FIC	Circuit Niamey/Gao	2002	Not implemented	Implement LTF circuit	ASECNA, Mali		B
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Niamey ACC/FIC	Circuit Niamey/Tripoli	1998	Not implemented	Implement LTF circuit	ASECNA, Libya		U
Senegal									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Dakar ACC/FIC	Circuit Dakar/Algiers	1998	PSTN in use	VSAT planned	ASECNA, Algeria	2002	A
	ATS Direct Speech	Dakar ACC/FIC	Circuit Dakar/Bissau	1998	Not implemented	VSAT being	ASECNA, Guinea		U

Circuits Plan, AFI/7 Rec.9/9	considered	Bissau

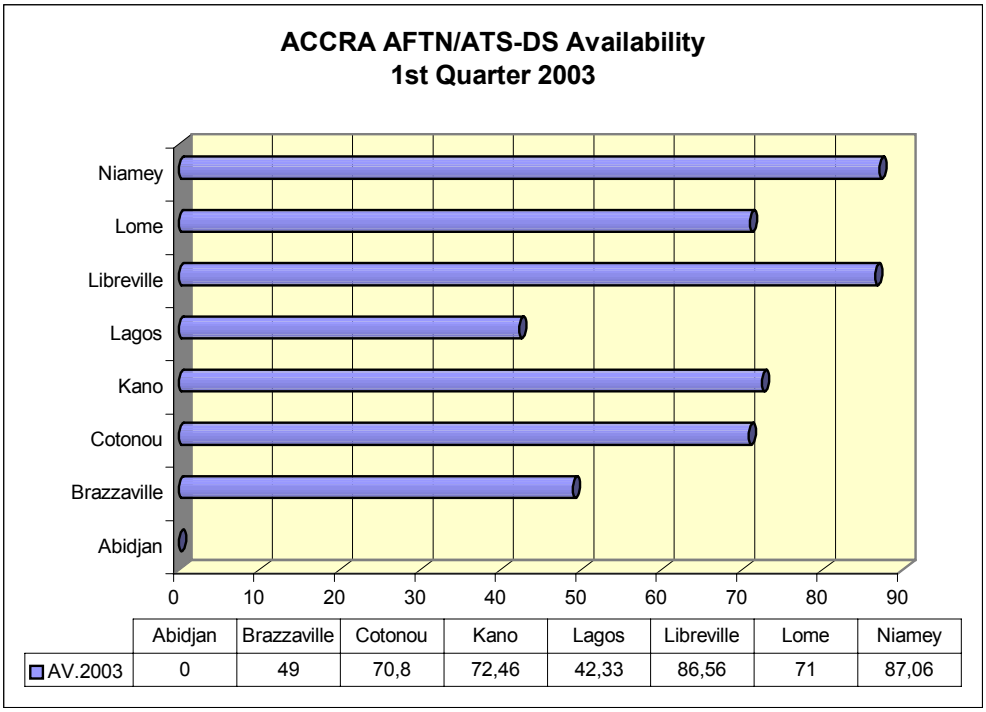
State/Name	Requirements	Facilities or Services	Description of Deficiency	Date first	Comments on Deficiency	Description of Corrective action	Executing Body	Target date for	Priority
Togo									
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Lome APP	Circuit Lome/Accra	2002	Unreliable		ASECNA, Ghana	2003	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Lome APP	Circuit Lome/Niamtougou	2002	Not implemented	VSAT planned at Niamtougou by Ghana CAA	Togo, Ghana		B
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Niamtougou TWR	Circuit Niamtougou/Accra	1996	Not implemented	VSAT planned at Niamtougou by Ghana CAA	Togo, Ghana		B
	ATS Direct Speech Circuits Plan, AFI/7 Rec.9/9	Niamtougou TWR	Circuit Niamtougou/Ouagadougou	2002	Not implemented	VSAT planned at Niamtougou by Ghana CAA	Togo, ASECNA, Ghana		B

List of AMS Deficiencies

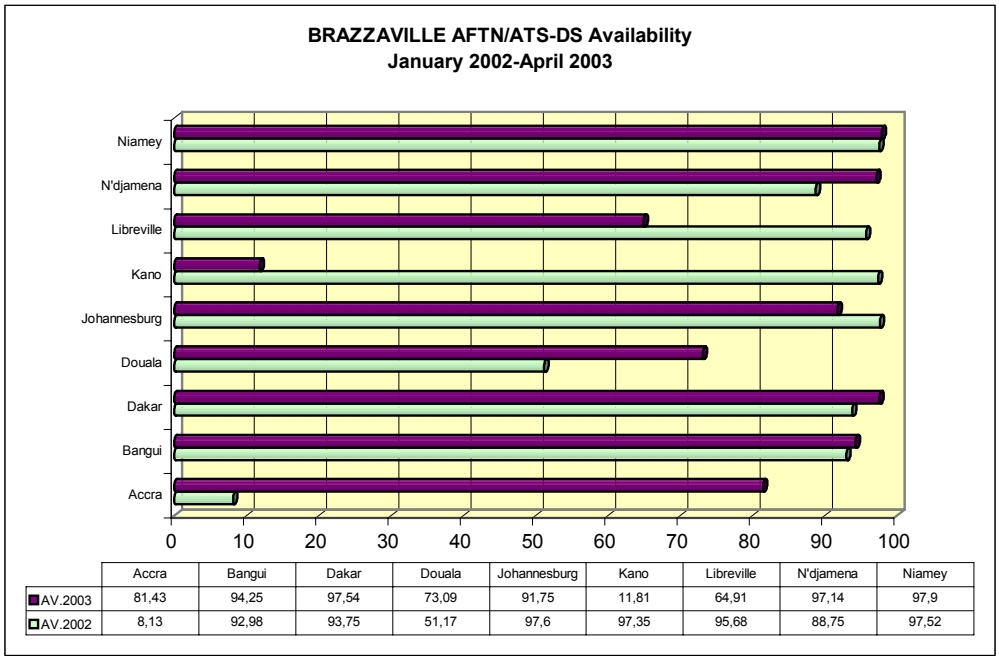
State/Name	Requirements	Facilities or Services	Description of Deficiency	Date first reported	Comments on Deficiency	Description of Corrective action	Executing Body	Target date for implement	Priority
Congo									
	AMS AFI/7 Rec. 9/12	Brazzaville ACC	Inadequate VHF coverage of busy ATS routes	1998		ER VHF installation in progress	ASECNA		U
Nigeria									
	AMS AFI/7 Rec. 9/12	Lagos TWR	No back-up radio ATS routes	1998		To implement back-up radio	Nigeria	28/11/2002	U

List of Navaids Deficiencies

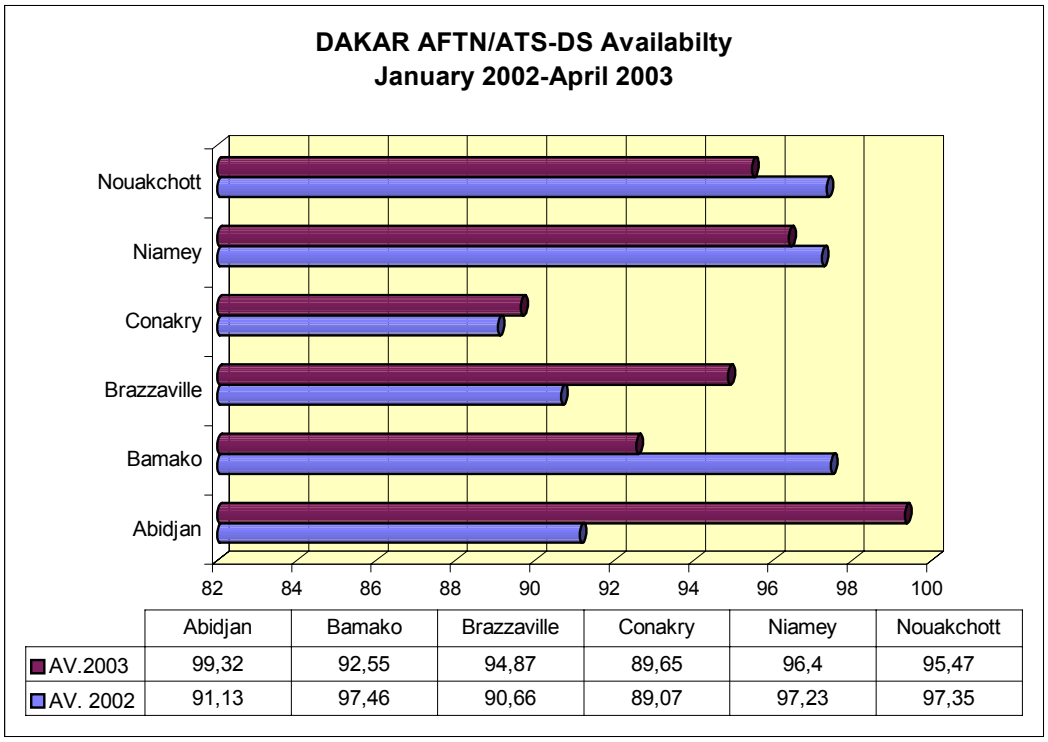
StateName	*Requirements*	*Facilities or Services*	*Description of Deficiency*	*Date first reported*	*Comments on Deficiency*	*Description of Corrective action*	*Executing Body*	*Target date for implement*	*Priority*
Cameroon									
	Navaids AFI/7, Rec. 10/4	Foumban	VOR	1998	Not implemented	Implement facility	Cameroon		U
	Navaids AFI/7, Rec. 10/4	Maroua	VOR	1998	Not implemented	Implement facility	Cameroon		U
Equatorial Guinea									
	Navaids AFI/7, Rec. 10/4	Malabo	ILS RWY 05	2001	Equipment at site	To implement	ASECNA		U
Guinea									
	Navaids AFI/7, Rec. 10/4	Kankan	VOR	1998	Not implemented	Implement facility	Guinea		A
	Navaids AFI/7, Rec. 10/4	Labe	VOR	1998	Not implemented	Implement facility	Guinea		A
	Navaids AFI/7, Rec. 10/4	Nzerekore	VOR	1998	Not implemented	Implement facility	Guinea		A
Liberia									
	Navaids AFI/7, Rec. 10/4	Robertsfield	ILS 04	1998	Not implemented	Implement facility	Liberia		A
Mali									
	Navaids AFI/7, Rec. 10/4	Tessalit	VOR	1998	Not implemented	Implement facility	Mali, ASECNA		U
Sao Tome & Principe									
	Navaids AFI/7, Rec. 10/4	Sao Tome	ILS 01	1998	Not implemented	Implement facility	Sao Tome & Principe		A
Sierra Leone									
	Navaids AFI/7, Rec. 10/4	Freetown/Lungi	ILS	1999	Unserviceable	To repair	Sierra Leone	28/11/2002	U
	Navaids AFI/7, Rec. 10/4	Freetown/Lungi	VOR/DME	1999	Unserviceable	To repair	Sierra Leone	28/11/2002	U



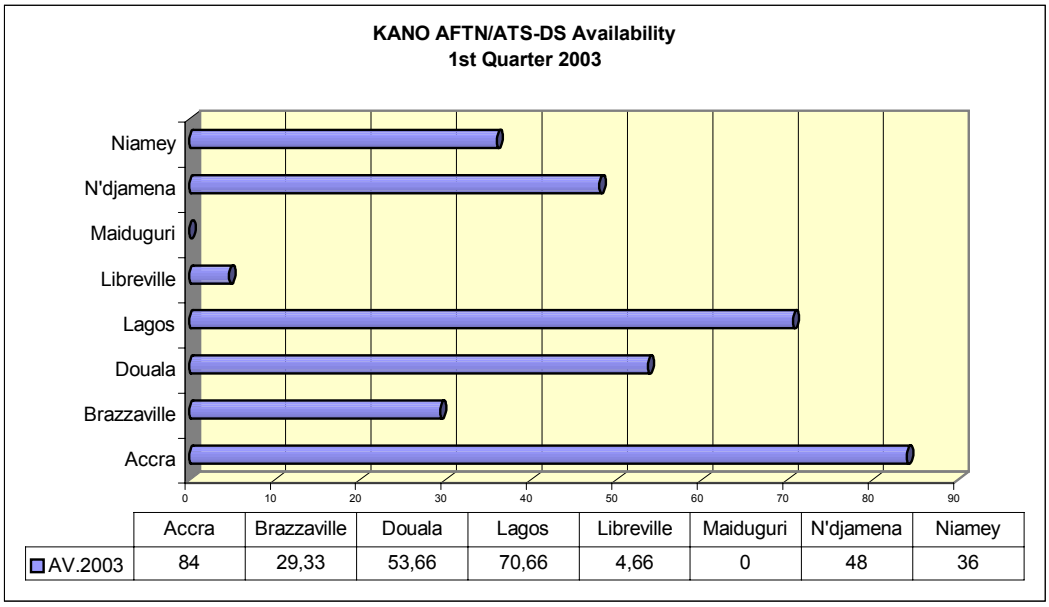
	Abidjan	Brazzaville	Cotonou	Kano	Lagos	Libreville	Lome	Niamey
AV.2003	0	49	70,8	72,46	42,33	86,56	71	87,06



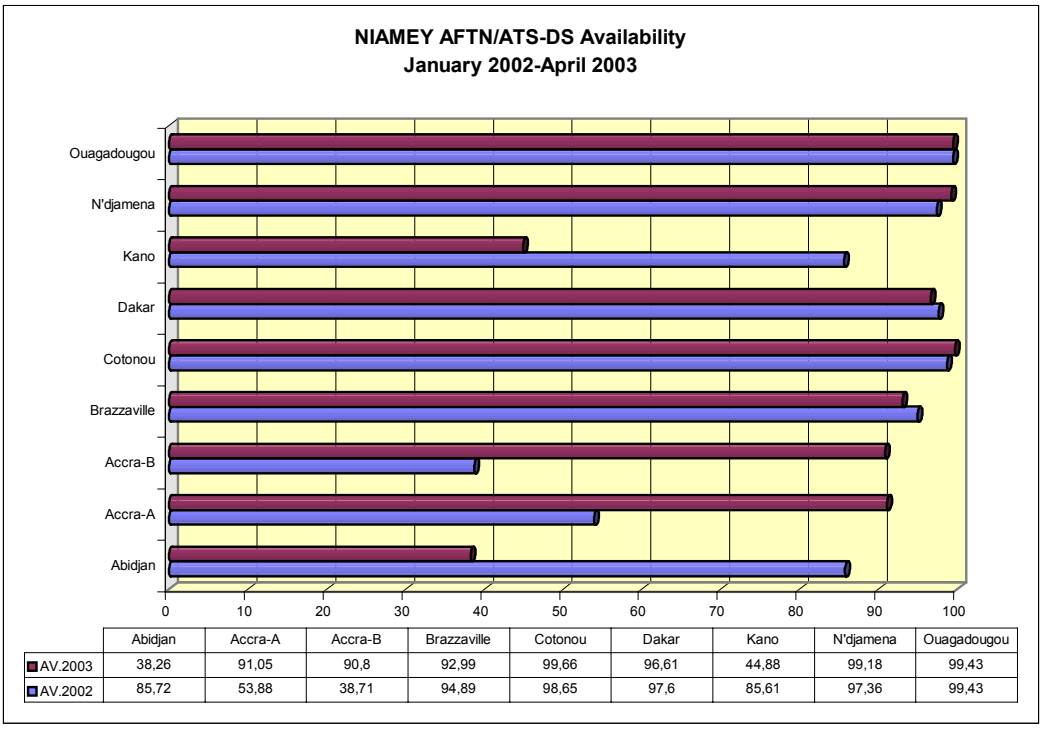
	Accra	Bangui	Dakar	Douala	Johannesburg	Kano	Libreville	N'djamena	Niamey
AV.2003	81,43	94,25	97,54	73,09	91,75	11,81	64,91	97,14	97,9
AV.2002	8,13	92,98	93,75	51,17	97,6	97,35	95,68	88,75	97,52



	Abidjan	Bamako	Brazzaville	Conakry	Niamey	Nouakchott
AV.2003	99,32	92,55	94,87	89,65	96,4	95,47
AV. 2002	91,13	97,46	90,66	89,07	97,23	97,35



	Accra	Brazzaville	Douala	Lagos	Libreville	Maiduguri	N'djamena	Niamey
AV.2003	84	29,33	53,66	70,66	4,66	0	48	36



	Abidjan	Accra-A	Accra-B	Brazzaville	Cotonou	Dakar	Kano	N'djamena	Ouagadougou
AV.2003	38,26	91,05	90,8	92,99	99,66	96,61	44,88	99,18	99,43
AV.2002	85,72	53,88	38,71	94,89	98,65	97,6	85,61	97,36	99,43

AFI SATELLITE TELECOMMUNICATION NETWORK (AFISNET)

SHORT TERM ENHANCEMENT PROGRAMME (STEP)

1. TERMS OF REFERENCE

- **Objective**:
  - To study and implement corrective measures aimed to restore, maintain and monitor the network performance (availability, transmission speed, transit times, stability)
  - To improve the quality of aeronautical fixed services (AFS)
  - To consolidate the aeronautical mobile service (AMS) extended VHF supporting infrastructure
  - To achieve full internal and external connectivity in compliance with AFS requirements in the Air Navigation Plan (ANP)
  - To ensure the network sustainability
  - To enhance air navigation safety in the Region

- **Duration**: Six (6) months

2. WORK PROGRAMME

The ***Short-Term Enhancement Programme*** (STEP) activities include the following:

- Identification of nodes and links of most concern
- Definition of site requirements, including maintenance organization, staffing, training needs, coordination procedures, back-up systems, maintenance tools, spare parts, etc.
- Identification of funding mechanisms and mobilization of resources
- Implementation of correctives measures
- Implementation of ANP links between ATS/COM centres in the network area and with adjacent ATS/COM centres
- Co-ordination with neighbouring States and the network suppliers
- Establishment of harmonized procedures and methodologies for the network maintenance, monitoring, quality management and performance assessment
- Proposals for the network optimization.

3. PROGRAMME MANAGEMENT TEAM

The Programme is managed by a Team composed of one representative of each member of the Network Management Committee, under ICAO coordination.

In its capacity as Coordinator, ICAO will liaise with the Network Providers, relevant Organizations and System Providers as necessary for carrying out the ***Short-Term Enhancement Programme*** activities, and to keep the Network Management Committee informed of developments as they occur.

Working arrangements

The Programme Management Team will work through correspondence, prior to meetings and missions.

4. EXPECTED RESULTS AND PERFORMANCE INDICATORS

- Increased availability of AFS circuits and AMS extended VHF radio coverage
- Improved co-ordination between ATS units managing major air traffic flows in the Region
- Improved quality of services
- Enhanced ground/ground communications in preparation for the migration to the aeronautical telecommunication network (ATN)

AFISNET SHORT TERM ENHANCEMENT PROGRAMME – SITE REQUIREMENTS

Requirements / Sites	Ghana	Nigeria			ASECNA						Roberts FIR
	Accra	Lagos	Kano	Maiduguri	Abidjan	Brazzaville	Douala	Libreville	N'djamena	Niamey	Roberts Intl Airport
Human resources											
• **Staffing**											
• **Training**											
• **Expertise**											
• **Exchange of Personnel**											
Equipment Maintenance/ Acquisition											
• **Maintenance instruments (acquisition, calibration)**											
• **Terminal equipment** • **RF equipment**											
• **Base band equipment**											
• **RF equipment**											
• **Coordination**											
Interfaces											
Spare parts											
Back up systems											
Settings											
Transmission protocols											
System commissioning											
Power supply											
Technical assistance											
Other requirements											

AFI SATELLITE NETWORK MANAGEMENT COMMITTEE

F O R M O F A G R E E M E N T

Definitions

AFISNET :

AFI Satellite Telecommunication Network

Network Providers:

Entities appointed by the AFISNET participating States responsible for organizing funding, acquisition, installation, and cost recovery of the AFISNET network.

Participating State:

A State that has agreed to the installation, maintenance, cost recovery , and operation of a AFISNET terminal in its territory.

Management Committee:

A body constituted by representatives from each ATS Authority of each Participating State and from their Network Providers.

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AFI SATELLITE TELECOMMUNICATION NETWORK (AFISNET)

FORM OF AGREEMENT

OBJECT

1. The object of the AFI Satellite Telecommunication Network (AFISNET) is to provide support for ATS communications between the participating States in the AFI Region and with entry-exit points in adjacent networks or in neighbouring Regions.

2. Communications supported or to be supported include the following:

a) ATS Direct Speech (ATS/DS) between adjacent FIRs; and

b) Aeronautical Fixed Telecommunications Network (AFTN), eventually offering a smooth migrating support to the Aeronautical Telecommunications Network (ATN);

c) Support for remote VHF voice;

d) GNSS augmentation data transmission.

e) Aeronautical Administrative support;

f) Operational meteorological data exchanges;

g) Operational Aeronautical Information Services exchanges.

h) Computer-to-computer data exchanges between ATS Flight Data Processing Systems (FDPS); and

i) Air/ground data link (VHF or SSR Extended Squitter - ES1090).

MANAGEMENT STRUCTURE

3. The AFISNET is the property of the participating States.

MANAGEMENT COMMITTEE

4. The Network is managed by the AFISNET Network Management Committee. This is constituted by representatives of the Network Providers and from the ATS Authority of each participating State and the ICAO Regional Office. ICAO is the Coordinator of the Management Committee. The composition of the Network Management Committee is shown at Appendix to this Agreement.

5. Airspace Users and representatives from the Industry will attend meetings of the Management Committee as Observers.

6. The functions of the Management Committee are:

a. To approve improvement plans and development plans;

b. To decide on the type and levels of service to be provided, including network performance levels, namely reliability and availability;

c. To decide on network performance assessment and monitoring methodologies; and

d. To promote and to approve cooperation arrangements between members aiming at establishing joint mechanisms for the network operations, maintenance, operation, and audit as required.

7. The Management Committee will at least meet once a year.

8. In its capacity as Coordinator of the Management Committee, ICAO will liaise with the Network Providers and relevant Organizations as necessary for carrying out Management Committee decisions, and to keep the Management Committee informed of developments as they occur.

NETWORK PROVIDERS

9. The Network is funded, installed and maintained by the Network Providers, on behalf of the participating States under the supervision of the Management Committee.

NETWORK OPERATION

10. The Network is operated on a daily basis by the ATS provider organizations of the participating Sates.

NETWORK MAINTENANCE

11. The Network Providers are responsible to ensure that network performance levels in line as defined are met. Maintenance response times will be paramount to ensuring that strict parameters are met. Network maintenance will therefore be organized on a decentralized manner along the following lines:

a. A preventive maintenance programme will be prepared by the Network Providers for implementation by each ATS Authority and the Network Providers

b. Corrective maintenance will normally be carried-out by qualified personnel of the operating agencies, trained and certified by the Network Providers.

c. The Network Providers will support the local certified technicians in case of difficulty. Support will normally be by remote means, but on-site support will be provided when necessary;

d. A set of consumables and spares will be available at selected locations. These will be replenished as used.

e. The Management Committee will be informed of the costs of spares and maintenance-related costs incurred by the Network Providers, for monitoring purposes.

COST RECOVERY

12. AFISNET costs are the responsibility of the participating States and Organizations. These costs are assigned to the airspace users in accordance with established procedures.

NETWORK MANAGEMENT COMMITTEE MEMBERSHIP

MEMBERS	SIGNATURE	DATE
GHANA		
NIGERIA		
ASECNA		
ROBERTS FIR		
ICAO		