



INTERNATIONAL CIVIL AVIATION ORGANIZATION

WESTERN AND CENTRAL AFRICAN OFFICE

Monrovia, Liberia, 23 - 25 June 2009

Agenda Item 6 and 8:

Submission by AFISNET Administration/Organizations of basic parameters for all managed IBS links

AFISNET STATUS AND PERFORMANCES

(Presented by ASECNA)

Agenda Item 6 & 8 : - Submission by AFISNET Administration/Organizations of basic parameters for all managed IBS links
 - AFISNET modernisation and integration with the others regional networks in AFI

SUMMARY

This paper gives a progress report on the modernisation of the network undertaken by ASECNA and invite the SNMC States/Organization to harmonize with regard to a common improvement

1. Introduction

The historical AEROSATEL network initiated by ICAO and founded by European Union has been established as meshed satellite network based on IBS technology. It performed very well but at the moment, the SNMC members experience spare parts and maintenance problems on the IBS modules.

2. Discussion

The initial IBS provided since the beginning of the network record now problems of spare parts and maintenance with high repairing cost. In ASECNA area they have been gradually replaced by new generation module notably Comstream and DATUM modems including in the same module the functionalities of the interfacing, coding, decoding, modulation and demodulation. This upgrade has improved notably the availability and the reliability of the circuits. The same modems have been used to restore the old IBS links trough dedicated 19.2 Kb/s between Nigeria, Ghana and ASECNA. The status of implementation is as per appendix A.

However the initial IBS links bandwidth will not be used when the migration will be completed and the different members could request for its conversion into a lease band proportionally to their own bandwidth.

At the base band level, the static multiplexer has been gradually migrated onto Micom digital voice /data multiplexer. This evolution in the base band allowed to dispose of more accesses and to introduce IP protocol.

Nowadays the Mometec multiplexor is being introduced gradually and supports ATM-Frame Relay-IP-ISDN-X25. Interconnection between AFISNET and NAFISAT and SADC-2 is mainly based on this multiplexor.

Regarding the IBS links, AFISNET members experience sometimes interferences problems or fluctuations of the level of carriers.

In order to take advantage of the flexibility to use the satellite bandwidth, L-band equipments have replaced the FI equipments on most of the sites.

Today a full IP network is being implemented to support the administrative communications through skywan modems.

3. Action by the meeting

The meeting is invited to:

- Take note of the information provided above;
- To note the evolution undertaken by ASECNA in order to modernize the network
- Encourage the state/Organizations to harmonize to migrate gradually their equipment taking in account the available technologies
- Request States/organizations to coordinate to lease with INTELSAT for the conversion of IBS initial bandwidth into lease band to be affected to each SNMC member pending its quota part

APPENDIX A

NETWORK IBS							
SATELLITE 10.02 359° EST 5890 MHz							
Earth Stations	Carriers TX	IF 140 Mhz		SHF TX	Earth stations	Carriers RX	Observations
		Channel	Frq IF				
101 KANO KAN-02B	AN-2 A	986	126,1850	5876,1850	LIBREVILLE	AN-37A	Replaced by SHF = 5874.7550 Mhz (change Modem IBS by Modem DATUM).
	B				BRAZZAVILLE	AN-41A	Replaced by SHF = 5874.0350 Mhz (change Modem IBS by Modem DATUM).
	AN-3 A	989	126,2525	5876,2525	DOUALA	AN-33A	Replaced by SHF = 5873.9450 Mhz (change Modem IBS by Modem DATUM).
	B				N'DJAMENA	AN-48A	Replaced by SHF = 5886.5714 Mhz (change Modem IBS by Modem DATUM).
	AN-4 B	992	126,3200	5876,3200	NIAMEY	AN-52A	Replaced by SHF = 5874.3350 Mhz (change Modem IBS by Modem DATUM).
	102 LAGOS LAG-02F2	AN-11 B	1007	126,6575	5876,6575	LIBREVILLE	AN-37B
AN-12 B		1010	126,7250	5876,7250	DOUALA	AN-33B	Replaced by SHF = 5874.2750 Mhz (change Modem IBS by Modem DATUM).
105 MAIDIGURI MAI-	AN-23 A	1061	127,8725	5877,8725	N'DJAMENA	AN-50B	Replaced by SHF = 5892.7920 Mhz (change Modem IBS by Modem DATUM).
	B						
109 ACCRA ACA - 02F2	AN-31 A	1022	126,9950	5876,9950	LIBREVILLE	AN-38A	Replaced by SHF = 5873.8850 Mhz (change Modem IBS by Modem DATUM).
	B				NIAMEY	AN-53A	Replaced by SHF = 5874.2150 Mhz (change Modem IBS by Modem DATUM).
	AN-32 A	1075	128,1875	5878,1875	ABIDJAN	AN-65B	Replaced by SHF = 5874.4550 Mhz (change Modem IBS by Modem DATUM).
	B				BRAZZAVILLE	AN-45A	Replaced by SHF = 5874.6050 Mhz (change Modem IBS by Modem DATUM).
110 DOUALA DAL - 02 F2	AN-33 A	1101	128,7725	5878,7725	KANO	AN-3A	Replaced by SHF = 5873.4950 Mhz (change Modem IBS by Modem DATUM).
	B				LAGOS	AN-12A	Replaced by SHF = 5873.6450 Mhz (change Modem IBS by Modem DATUM).
	AN34- A	1025	127,0625	5877,0625	BRAZZAVILLE	AN-50A	Emitted carrier
	B				ACCRA	AN-39A	Emitted carrier
	AN-35 A	1028	127,1300	5877,1300	BRAZZAVILLE	AN-42B	Unissued carrier
	B				LIBRE	LIBRE	
	AN-36 A	977	125,9825	5875,9825	N'DJAMENA	AN-51A	Emitted carrier
	B				LIBREVILLE	LIBRE	Emitted carrier
111 LIBREVILLE LIB - 02 F2	AN-37 A	1098	128,7050	5878,7050	KANO	AN-2A	Replaced by SHF = 5873.5250 Mhz (change Modem IBS by Modem DATUM).
	B				LAGOS	AN-11B	Replaced by SHF = 5873.6750 Mhz (change Modem IBS by Modem DATUM).
	AN38- A	1031	127,1975	5877,1975	BRAZZAVILLE	AN-42A	Emitted carrier only to Brazzaville
	B				ACCRA		Replaced by SHF = 5873.0150 Mhz (change Modem IBS by Modem DATUM).
	AN-39 A	1034	127,2650	5877,2650	DOUALA	AN-34B	127.2650 emitted to Douala only and recuperier 128.705 used to Dakar
	B				DAKAR	AN-61B	

112 BRAZZA BRZ-01F2	AN-41 A	1095	127,6375	5878,6375	KANO	AN-2B	Replaced by SHF = 5873.7650 Mhz (change Modem IBS by Modem DATUM).
	B				DAKAR	AN-61A	Emitted carrier
	AN42- A	1037	127,3325	5877,3325	DOUALA	AN-35A	Emitted carrier
	B				LIBREVILLE	AN-38B	
	AN-43 A	1040	127,4	5877,4000	BANGUI	AN-46A	Emitted carrier only to Bangui
	B				NDJAMENA	AN-49B	
	AN44- A	1043	127,4675	5877,4675	NIAMEY	AN-54	Emitted carrier
AN45- A	1064	127,94	5877,9400	ACCRA	AN-32B	Replaced by SHF = 5873.1350 Mhz (change Modem IBS by Modem DATUM).	
B				BANGUI	AN-47B	Emitted carrier to Ndjamena	
113 BANGUI BAN - 01F2	AN-46 A	1046	127,535	5877,5350	BRAZZAVILLE	AN-43A	Emitted carrier only to Brazzaville
	B				N'DJAMENA	AN-49A	
	AN47- A	974	125,915	5875,9150	NIAMEY	AN-55B	Emitted carrier only to Ndjamena
	B				BRAZZAVILLE	AN-45A	
114 N'DJAMENA NDJ - 01F2	AN-48 A	1092	128,5700	5878,5700	KANO	AN-3B	Replaced by SHF = 5886.5421 Mhz (change Modem IBS by Modem DATUM).
	B				BANGUI	AN-46B	Emitted carrier only to Bangui
	AN49- A	1049	127,6025	5877,6025	BRAZZAVILLE	AN-43B	
	B				DOUALA	AN-34A	Emitted carrier only to Brazzaville
	AN-50 A	1052	127,6700	5877,6700	MAIDIGURI	AN-23A	Replaced by SHF = 5886.0023 Mhz (change Modem IBS by Modem DATUM).
	B				DOUALA	AN-36A	Emitted carrier only to Douala
AN51- A	980	126,0500	5876,0500	DOUALA	AN-55A		
B				NIAMEY			

115 NIAMEY NIA - 04F2	AN-52 A	1089	128,5025	5878,5025	KANO	AN-4B	Replaced by SHF = 5873.7350 Mhz (change Modem IBS by Modem DATUM).
	B				LAGOS	AN-12B	Replaced by SHF = 5872.3250 Mhz (change Modem IBS by Modem DATUM).
	AN40- A	1067	128,0075	5878,0075	DAKAR	AN-62	Emitted carrier
	AN-53 A	1055	127,7375	5877,7375	ACCRA	AN-31B	5873.0750 Mhz (change Modem IBS by Modem DATUM).
	B				ABIDJAN	AN-65A	Emitted carrier only to Abidjan
	AN-54	1058	127,8050	5877,8050	BRAZZA	AN-44	Emitted carrier
	AN55- A	983	126,1175	5876,1175	BANGUI	AN-51B	Emitted carrier
B					AN-47A		
116 DAKAR DKR-01B	AN-59	968	125,7800	5875,7800	ABIDJAN	AN-64	Emitted carrier
	AN-61 A	965	125,7125	5875,7125	BRAZZA	AN-41B	Recuperer 128.5025 to emit towards Brazzaville
	B				LIBREVILLE	AN-39B	125.7125 :Unissued carrier
	AN-62	971	125,8475	5875,8475	NIAMEY	AN-40	Emitted carrier
AN-63	961	125,6225	5875,6225	CONAKRY	AN-67	Emitted carrier	
117 ABIDJAN ABJ-05F2	AN-64	1086	128,4350	5878,4350	DAKAR	AN-59	Emitted carrier
	AN-65 A	1078	128,2550	5878,2550	NIAMEY	AN-53B	Emitted carrier only to Niamey
	B				ACCRA	AN-32A	Replaced by SHF = 5874.4250 Mhz (change Modem IBS by Modem DATUM).
AN-66	956	125,5100	5875,5100	CONAKRY	AN-68	Emitted carrier	
CONAKRY CNK-03F1	AN-67	1082	128,3450	5878,3450	DAKAR	AN-63	Emitted carrier
	AN-68	1071	128,0975	5878,0975	ABIDJAN	AN-66	Emitted carrier