



WORKING PAPER

**SPECIAL AFRICA-INDIAN OCEAN (AFI)
REGIONAL AIR NAVIGATION (RAN) MEETING**

Durban, South Africa, 24 to 29 November 2008

Agenda Item 6: Development of a set of comprehensive work programmes in the air navigation field, aimed at improving efficiency of the air navigation system (Efficiency Committee)

AERONAUTICAL FIXED SERVICE IMPLEMENTATION STATUS IN ASECNA.

(Presented by Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Equatorial Guinea, France, Gabon, Guinea-Bissau, Madagascar, Mali, Mauritania, Niger, Senegal, Togo, ASECNA Member States)

SUMMARY

This paper gives a progress report on the implementation of rationalized AFS Plan in the ASECNA area. It calls for the required cooperative actions to be undertaken in order to implement the remaining ATS/DS circuits and to take into account the bilateral AFS implemented circuits.

Action by the meeting is in paragraph 3.

1. INTRODUCTION

1.1 The elimination of the shortcomings and deficiencies in the field of aeronautical telecommunications in AFI Region and in particular that dealing with the aeronautical fixed service (AFS) links, became an essential challenge for the implementation of the area control service, specified in APIRG/13 Conclusion 13/31.

1.2 In this context, the effective implementation of the AFTN and ATS/DS circuits can be done only in a cooperative/proactive approach and by the adequate use of reliable links.

1.3 According to the AFI/7 RAN Recommendations 5/23 and 9/2, relating to the use of very small aperture terminal (VSAT) technology for the implementation and improvement of the aeronautical fixed service (AFS) circuits, ASECNA carried on and expedited its VSAT installation stations schedule, in order to eliminate the noted shortcomings and deficiencies.

2. DISCUSSION

2.1 The AFI maps (**Appendixes I and II** summary the planned AFS (AFTN ATS/DS) circuits reviewed by APIRG 15 (Doc: 7474 FASID) while **Appendix III** describes the status of implementation of the physical links supporting AFTN, ATS/DS and GTS circuits.

2.2 It can be noted that all the links are based on satellite telecommunications technology and therefore implemented via AFISNET, CAFSAT, and NAFISAT/SADC networks in the frame of a close fruitful cooperative process in AFI.

2.3 Implementation of rationalized AFS

2.3.1 AFTN circuits implementation status

2.3.1.1 Appendix IV highlights that:

- a) all the **AFI 48 planned AFTN circuits**, are fully carried out (100% realization rate) through the SATCOM facilities; and
- b) about **52 bilateral circuits** have been implemented to satisfy the routing table in contingency context.

2.3.1.2 These bilateral circuits are currently serviceable and take into account the flexibility due to emerging technologies.

2.3.2 ATS/DS circuits implementation status

2.3.2.1 Appendix V points out that:

- a) for **124 AFI Plan required circuits**, in ASECNA area, **118 circuits** are implemented for a realization rate of about **95%**;
- b) about **28 bilateral circuits** have been achieved in order to satisfy ATC requirements taking into account the real flow of air traffic and the airspace topology; and
- c) most of the **5 remaining non-implemented circuits** are in the step of technical discussions between the involved parties and will be implemented very soon.

2.3.2.2 In the other hand, alternative means are provided to ATC so that flights coordination are operated between neighbouring centres.

2.3.3 GTS circuits implementation status

2.3.3.1 ASECNA AFS network also supports **WMO AR1** planned GTS circuits to transmit and receive meteorological messages for both aeronautical and **WAFS** usage.

2.3.3.2 **Appendix VI** shows that for **59 required circuits**, 42 are fully implemented.

2.3.3.3 As all the meteorological correspondents in AR1 are not always located with ANSP it remains difficult to achieve some meteorological links and circuits.

2.3.3.4 However ASECNA is involved in the WMO new project named **WIS** (WMO Information System) aimed to modernize GTS circuits in AFI Region.

2.4 AFS performances evaluation

2.4.1 AFS performances are described in the paper dealing with AFISNET status.

2.4.2 While for AFTN there are suitable guidelines to evaluate the circuits' performances, it remains a lack of a pertinent methodology for ATS/DS evaluation.

2.4.3 This situation conducted sometime to unbalanced results regularly point out by operating centres.

2.4.4 For AFTN the current precision of 20 minutes based on the "CH" signal concurrencies could be improved because of the opportunity offered now by the technology guiding the messages automatic switching systems.

2.4.5 More detailed performances could be presented if needed.

3. ACTION BY THE MEETING

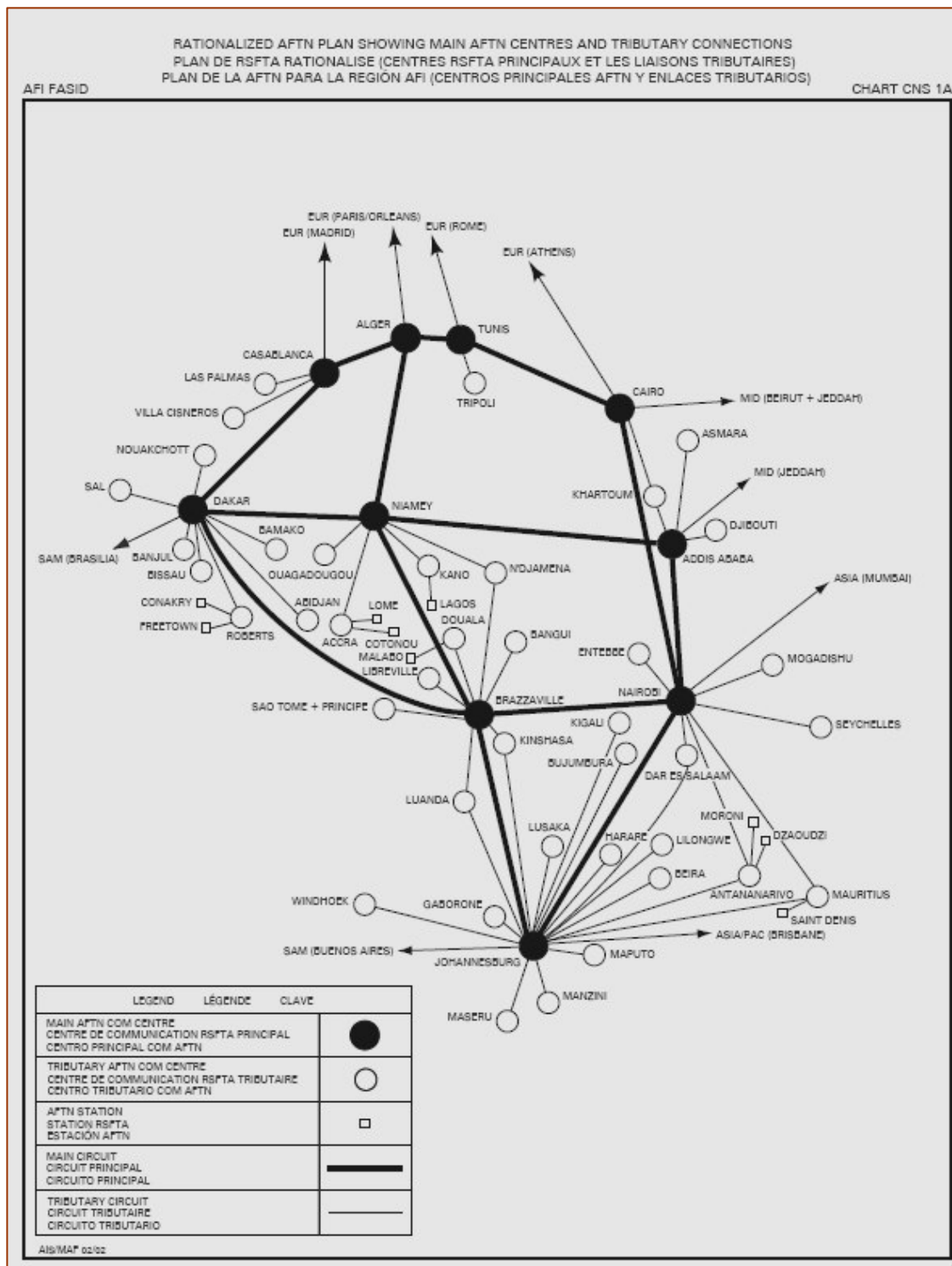
3.1 The meeting is invited to:

- a) note the realization rate for the AFS (ATS/DS & AFTN) AFI plan circuits implemented in the ASECA area, which is a question of vital importance for the air navigation service;
- b) take into account the bilateral AFS circuits implemented to satisfy the real day to day ATC requirement for ATM;
- c) encourage States/Organizations to pursue their efforts to cancel the lack of communications by achieving the remaining ATS/DS circuits;
- d) call the appropriate ICAO instruments to find the suitable methodology of measurement of the performances of ATS/DS; and
- e) take the suitable decisions/conclusions with regard to the information provided above.

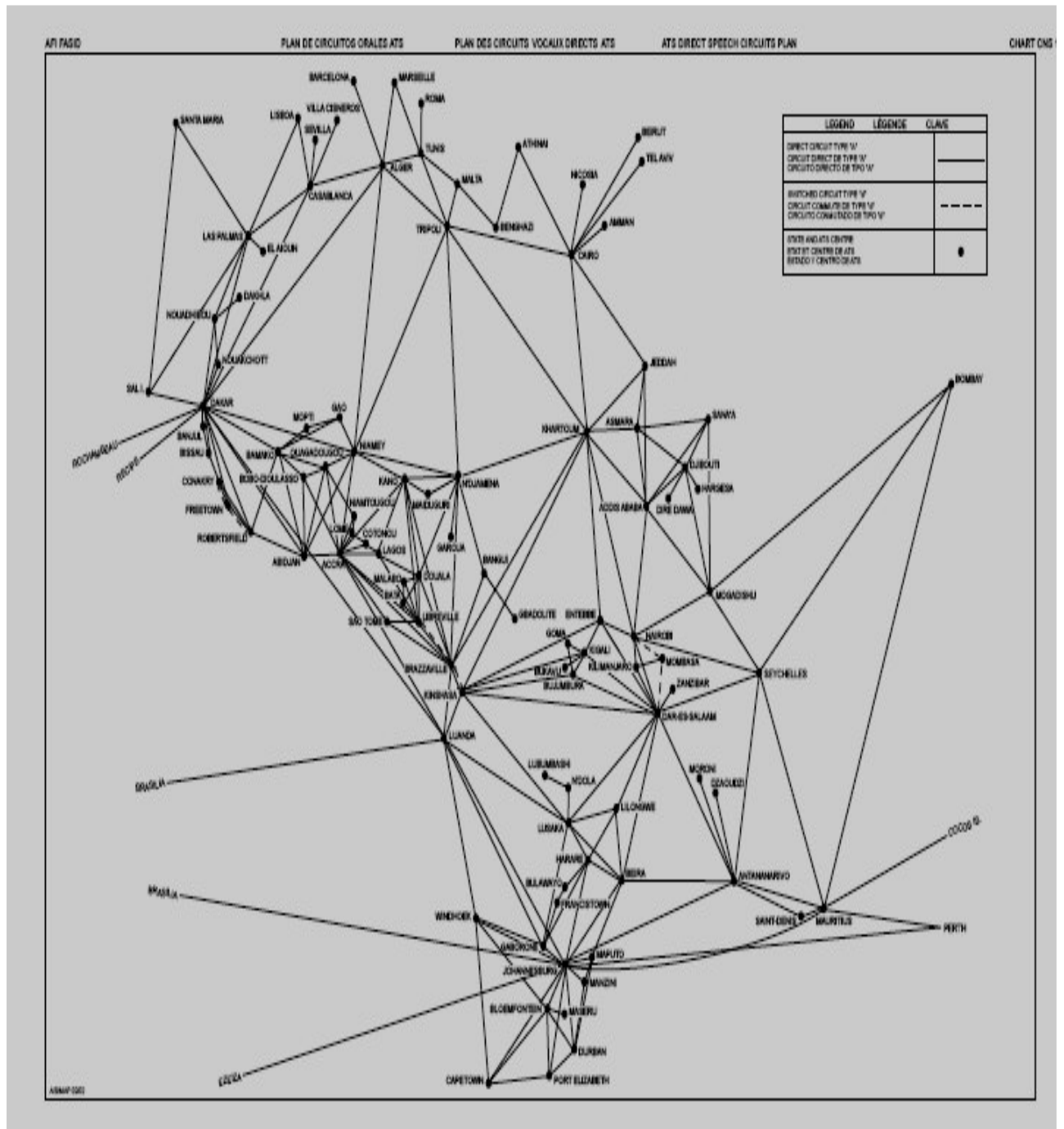
— — — — —

APPENDIX

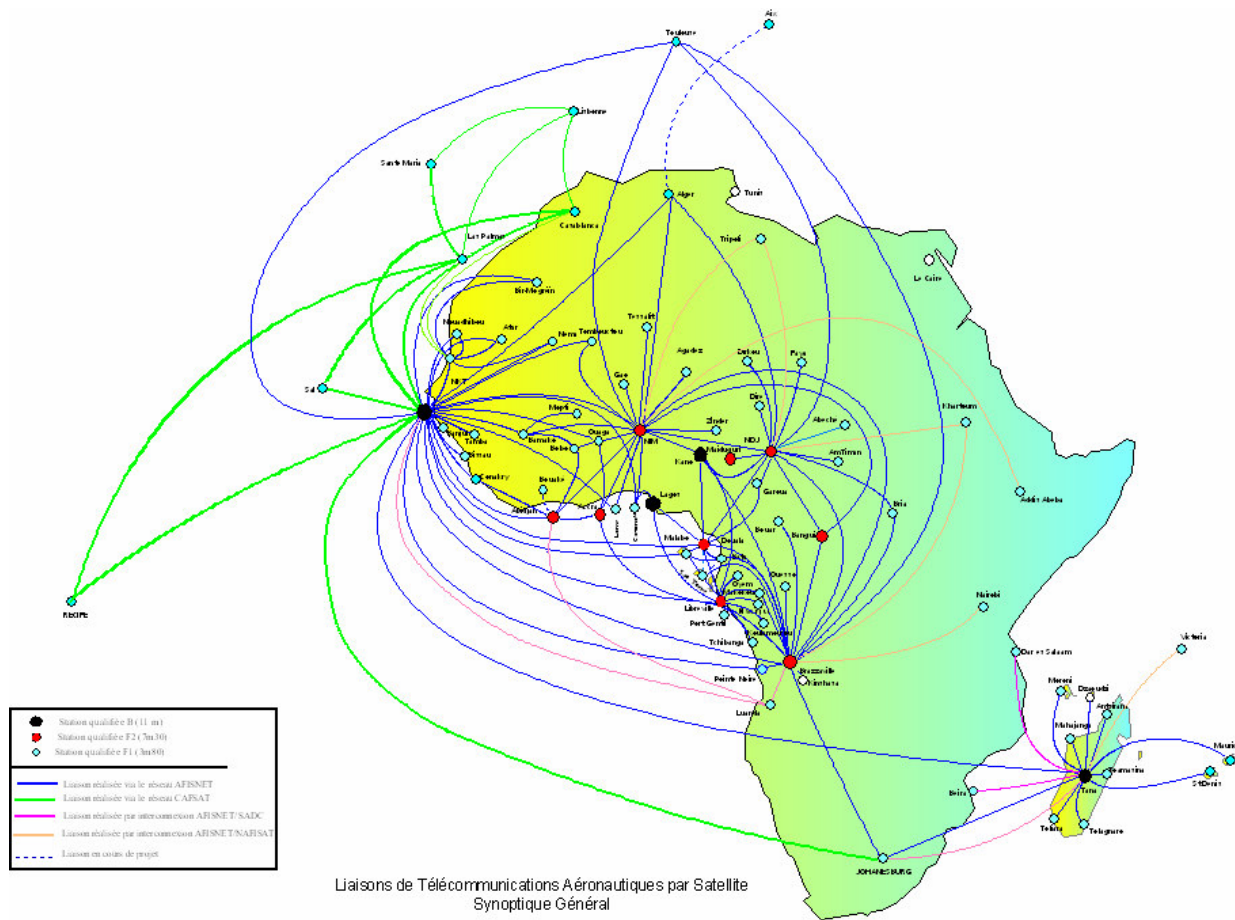
Appendix I – AFI AFTN Implementing Plan Map



Appendix II – AFI ATS/DS Implementing Plan Map



Appendix III – Physical Links for AS (AFTN & ATS/DS) by ASECNA



Appendix IV – AFI AFTN Plan Implementation Status in ASECNA

COUNTRY	COM CENTER	REQUIRED CIRCUITS		IMPLEMENTED CIRCUITS		NON IMPLEMENTED CIRCUITS	BILATERAL IMPLEMENTED CIRCUITS		NEW CIRCUITS TO BE IMPLEMENTED
BENIN	COTONOU	2	ACCRA, LAGOS	2	100%		2	NIAMEY - LOME	
BURKINA	OUAGA	1	NIAMEY	1	100%		3	ACCRA-BAMAKO-BOBO DIOULASSO	
CAMEROUN	DOUALA	2	BRAZZAVILLE - MALABO	2	100%		6	KANO LIBREVILLE LAGOS GAROUA NDJAMENA YAOUNDE	
CENTRAFRIQUE	BANGUI	1	BRAZZA	1	100%		1	NDJAMENA	
COMORES	MORONI	1	TANA	1	100%				DZAOUDZI
CONGO	BRAZZAVILLE	11	BANGUI DAKAR DOUALA JOBURG KINSHASA LIBREVILLE LUANDA NDJAMENA NAIROBI NIAMEY SAO TOME	11	100%		4	ACCRA KANO POINTE NOIRE MALABO	
COTE D'IVOIRE	ABIDJAN	1	DAKAR	1	100%		4	NIAMEY ACCRA BAMAKO- LOME	
GABON	LIBREVILLE	1	BRAZZAVILLE	1	100%		7	DAKAR KANO LAGOS ACCRA DOUALA MWENGUE PORT GENTIL	
GUINEE BISSAU	BISSAU	1	DAKAR	1	100%				ABIDJAN
GUINEE EQUAT.	MALABO	1	DOUALA	1	100%		2	BRAZZAVILLE-BATA	
MADAGASCAR	IVATO	4	DZAOUDZI JOBURG MORONI PLAISANCE	4	100%		2	DAKAR ST-DENIS	
MALI	BAMAKO	1	DAKAR	1	100%		4	OUAGADOUGOU ABIDJAN NIAMEY, NOUAKCHOTT	
MAURITANIE	NOUAKCHOTT	1	DAKAR	1	100%		4	NOUADHIBOU, LAS PALMAS, CASABLANCA, BAMAKO	ALGER
NIGER	NIAMEY	8	ACCRA ADDIS ALGER BRAZZA DAKAR KANO NDJAMENA OUAGA	8	100%		3	ABIDJAN COTONOU LOME	
SENEGAL	DAKAR	12	ABIDJAN BAMAKO BANJUL BISSAU BRAZZA CASA CONAKRY JOBURG NIAMEY NOUAKCHOTT RIO SAL	12	100%		3	LAS PALMAS LIBREVILLE TANA	
TCHAD	NDJAMENA	2	BRAZZAVILLE NIAMEY	2	100%		4	BANGUI KANO MAIDUGURI DOUALA, GAROUA, KARTOUM	
TOGO	LOME	1	ACCRA	1	100%		3	NIAMEY COTONOU ABIDJAN	

TOTAL

48

48

100%

52

Appendix V - AFI ATS/DS Plan Implementation Status in ASECNA

COUNTRY	COM CENTER	REQUIRED CIRCUITS		IMPLEMENTED CIRCUITS		NON IMPLEMENTED CIRCUITS	BILATERAL IMPLEMENTED CIRCUITS		NEW CIRCUITS TO BE IMPLEMENTED
BENIN	COTONOU	3	ACCRA - LAGOS - LOME	3	100%		2	NIAMEY- LOME	OUAGADOUGOU
BURKINA	OUAGA	6	ABIDJAN ACCRA BAMAKO BOBO NIAMEY NIAMTOUGOU	5	83%	NIAMTOUGOU			LOME-COTONOU
	BOBO	4	ABIDJAN ACCRA BAMAKO OUAGA	4	100%				
CAMEROUN	DOUALA	7	BATA BRAZZA KANO LAGOS LIBREVILLE MALABO NDJAMENA	7	100%		1	YAOUNDE	BANGUI
CENTRAFRIQUE	BANGUI	3	BRAZZA GBADOLITE NDJAMENA	2	67%	GBADOLITE			DOUALA
COMORES	MORONI	1	TANA	1	100%		4		DAR ES SALAM-BEIRA- DZAOUZDI-SEYCHELLES
CONGO	BRAZZAVILLE	10	ACCRA BANGUI DOUALA KANO KHARTOUM KINSHASA LIBREVILLE LUANDA NDJAMENA SAO TOME	10	100%				BATA-MALABO
COTE D'IVOIRE	ABIDJAN	7	ACCRA BAMAKO BOBO DAKAR NIAMEY OUAGA CONAKRY	7	100%		4	BISSAU-LUANDA- NOUAKCHOTT- BOUAKE	
GABON	LIBREVILLE	8	ACCRA BATA BRAZZA DOUALA KANO LAGOS MALABO SAO TOME	8	100%		2	MWENGUE- PORT GENTIL	
GUINEE EQUAT.	MALABO	3	BATA DOUALA LIBREVILLE	3	100%				SAO TOME
	BATA	3	DOUALA LIBREVILLE MALABO	3	100%				
GUINEE BISSAU	BISSAU	3	BANJUL CONAKRY DAKAR	3	100%		1	ABIDJAN	
MADAGASCAR	IVATO	8	BEIRA DAR ES SALAM DZAOUZDI JOBURG PLAISANCE MORONI SAINT DENIS SEYCHELLES	8	100%		2	MAHAJANGA, TOAMASINA	
MALI	BAMAKO	7	ABIDJAN BOBO DAKAR GAO MOPTI OUAGADOUGOU CONAKRY	7	100%		2	NIAMEY-NOUKCHOTT	
	GAO	3	BAMAKO MOPTI NIAMEY	3	100%				
	MOPTI	2	GAO BAMAKO	2	100%				

MAURITANIE	NOUAKCHOTT	2	DAKAR NOUADHIBOU	2	100%		4	BAMAKO-ABIDJAN LAS PALMAS CASABLANCA	ALGER
	NOUADHIBOU	4	DAKAR LAS PALMAS NOUAKCHOTT DAKHLA	3	75%	DAKHLA			
NIGER	NIAMEY	9	ABIDJAN ACCRA ALGER DAKAR GAO KANO NDJAMENA OUAGA TRIPOLI	9	100%		3	BAMAKO LAGOS ZINDER	LOME-COTONOU-OUAGA
SENEGAL	DAKAR	15	ABIDJAN ALGER BAMAKO BANJUL BISSAU CASA ROBERTSFIELD FREETOWN LAS PALMAS NIAMEY NOUADHIBOU NOUAKCHOTT SAL RECIFE ROCHAMBEAU	13	86%	ROCHAMBEAU FREETOWN	1	LUANDA	
TCHAD	NDJAMENA	9	BANGUI BRAZZA DOUALA GAROUA KANO KHARTOUM MAIDUGURI NIAMEY TRIPOLI	9	100%		2	ALGER- SAHR	
TOGO	LOME	3	ACCRA COTONOU NIAMTOUGOU	3	100%				OUAGADOUGOU-NIAMEY
	NIAMTOUGOU	3	ACCRA LOME OUAGADOUGOU	2	67%	OUAGADOUGOU			
TOTAL		124		118	95%		28		

Appendix VI - WMO AR1 GTS Plan Implementation Status in ASECNA

COUNTRY	CENTRE	REQUIRED CIRCUITS		IMPLEMENTED CIRCUITS		NON IMPLEMENTED CIRCUITS	BILATERAL CIRCUITS	IMPLEMENTED
SENEGAL	DAKAR	21	ALGER MONROVIA FREETOWN BANJUL CONAKRY BISSAU LAGOS LAS-PALMAS ASCENSION ST.HELENA CASABLANCA WESTERN SAHARA MONROVIA BRAZZAVILLE SAL TOULOUSE NOUAKCHOTT BAMAKO NIAMEY TANA	9	43%	MONROVIA FREETOWN CONAKRY LAGOS ASCENSION ST.HELENA WESTERN SAHARA	1	LIBREVILLE
NIGER	NIAMEY	10	ALGER NAIROBI BRAZZAVILLE NDJAMENA LAGOS COTONOU LOME ACCRA OUAGA DAKAR	9	90%	NAIROBI	2	BANGUI
CONGO	BRAZZAVILLE	9	KINSHASA BANGUI NIAMEY NDJAMENA DOUALA LIBREVILLE DAKAR SAO TOME MALABO	7	78%	MALABO	1	
TCHAD	NDJAMENA	2	NIAMEY BRAZZAVILLE	2	100%		2	BANGUI DOUALA
MADAGASCAR	IVATO	3	DAKAR MORONI ST DENIS	2	67%	MORONI		
CAMEROUB	DOUALA	2	BRAZZAVILLE MALABO	2	100%		2	LIBREVILLE NDJAMENA
COTE D'IVOIRE	ABIDJAN	1	DAKAR	1	100%			
MALI	BAMAKO	1	DAKAR	1	100%			
MAURITANIE	NOUAKCHOTT	1	DAKAR	1	100%			
BENIN	COTONOU	2	NIAMEY LAGOS	2	100%		1	LOME
BURKINA	OUAGADOUGOU	1	NIAMEY	1	100%			
CENTRAFRIQUE	BANGUI	1	BRAZZAVILLE	1	100%		2	NIAMEY NDJAMENA
GABON	LIBREVILLE	1	BRAZZAVILLE	1	100%		2	DAKAR DOUALA
GUINEE EQUATORIALE	MALABO	1	BRAZZAVILLE	1	100%		1	BRAZZAVILLE
TOGO	LOME	1	NIAMEY	1	100%		1	COTONOU
COMORES	MORONI	1	MADAGASCAR			MORONI	1	
GUINEE BISSAU	BISSAU	1	DAKAR	1	100%			
TOTAL		52		42	72%		15	