



**INTERNATIONAL CIVIL AVIATION ORGANIZATION  
FIFTEENTH MEETING OF THE  
AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP**

(Nairobi, 26 - 30 September 2005)

---

**Agenda Item 5.2: List of deficiencies in the air navigation field**

**REVIEW OF THE DEFICIENCIES IN THE CNS FIELD**

(Presented by the Secretariat)

**SUMMARY**

This paper discusses the latest lists of deficiencies affecting the aeronautical fixed service, aeronautical mobile service and radio navigation service in the AFI Region.

Action by the meeting is at paragraph 3.

References:

- CNS/SG/1 Report
- APIRG/14 Report

**1. Introduction**

1.1 The CNS/SG/1 Meeting made an in-depth analysis of the lists of deficiencies affecting the operation of the Aeronautical Fixed Service (AFS), the Aeronautical Mobile Service (AMS) and Aeronautical Radio navigation Service (ARNS) as updated by the Secretariat on receipt of information from States, relevant international organizations and reports of ICAO missions to States.

**2 Discussion**

**2.1 Review of deficiencies in the Aeronautical Fixed Service**

**2.1.1 AFTN**

2.1.1.1 The CNS/SG/1 reviewed and updated the list of deficiencies affecting AFTN circuits in the Region. One (1) main circuit (Brazzaville/Nairobi) and one (1) entry/exit circuit (Johannesburg/SAM) and 6 tributary circuits are not yet implemented.

2.1.1.2 The following main circuits, which are already implemented, do not meet the requirement for a minimum transmission speed of 1200 bps: Addis Ababa/Niamey, Addis Ababa/Nairobi, Cairo/Nairobi, and Nairobi/Johannesburg. Since the majority of tributary circuits have been upgraded to 1200 bps or more, there is a negative impact on the transit time of messages in the AFTN network.

2.1.1.4 The CNS/SG/1 meeting noted the remedial actions being pursued to eliminate these deficiencies:

- a) enhancing maintenance capabilities in identified areas where circuits availability and reliability were considered as critical issues, so as to prevent these circuits from unsafe degradation (e.g. some AFISNET circuits in the Gulf of Guinea);
- b) making use of VSAT technology. 8 AFTN circuits, of which 3 main circuits, would be implemented using VSAT networks: Brazzaville/Sao Tome, Bissau/Dakar (AFISNET), Johannesburg/Ezeiza (CAFSAT), Brazzaville/Luanda (SADC/2), Addis Ababa/Asmara, Addis Ababa/Khartoum, Brazzaville/Nairobi (NAFISAT). The implementation of the NAFISAT and SADC/2 will also permit the upgrading of the main AFTN circuits listed in para. 2.1.1.2 above;
- c) achieving interoperability between aeronautical VSAT networks in accordance with APIRG Conclusion 14/12, as a cost-effective means of interconnecting sites without adding antennae, optimizing bandwidth requirements and introducing more flexibility for new services.

2.1.1.5 The updated list of deficiencies in the AFTN field is shown at **Appendix A** to this working paper.

## **2.1.2 ATS/DS**

2.1.2.1 The CNS/SG/1 noted that 1 State has not implemented any of 3 required ATS/DS circuits. Out of a total of 227 ATS/DS circuits required in the AFI Plan, there are 37 non-implemented circuits, or 17.2% of the required circuits. It should be noted, with concern, that eleven (11) ATS/DS required between 12 ACC/FICs in the AFI Region are not implemented. Ten (10) of these circuits are expected to be implemented after the NAFISAT and SADC/2 become operational (2007). For the mean time, the CN/SG/1 meeting adopted a draft conclusion recommending the use of satellite telephone or the public switched telephone network (WP/5, Draft Conclusion 1/7 refers).

2.1.2.2 The CNS/SG/1 therefore updated the list of ATS/DS deficiencies in the AFI Region as shown in **Appendix B** to this working paper.

## **2.3 Review of deficiencies in the Aeronautical Mobile Service**

2.3.1 The CNS/SG/1 reviewed the implementation and performance of the aeronautical mobile service in the AFI Region, and noted the commendable efforts deployed by States to extend VHF coverage. It identified deficiencies still to be resolved in this field. The updated list of AMS deficiencies is shown at **Appendix C** to this working paper.

## **2.4 Aeronautical Radio Navigation Service**

2.4.1 The CNS/SG/1 noted that no significant progress was registered in the implementation of radio navigation aids. Thirty-eight (38) facilities required in the AFI Plan are still to be implemented - 19 of them being intended for en-route operations. It also pointed out situations where unimplemented or unserviceable ARNS facilities tend to be reported in the list of deficiencies on a nearly permanent basis. The updated list of AMS deficiencies is shown at **Appendix D** to this working paper.

**2.5 Progress in alleviation of deficiencies**

2.5.1 The following table gives an idea of the progress achieved in eliminating deficiencies in the CNS field since APIRG/11 (1998) and the projection until the next APIRG meeting..

APIRG Meetings	Number of Deficiencies			
	AFTN	ATS/DS	AMS	ARNS
<b>APIRG/11 (1998)</b>	31	59	19	75
<b>APIRG/12 (1999)</b>	20	45	14	64
<b>APIRG/13 (2001)</b>	14	53	14	60
<b>APIRG/14 (2003)</b>	11	50	9	42
<b>APIRG/15 (2005)</b>	8	28	7	38
<b>APIRG/16 (2007) (projection)</b>	2	16	5	33

2.5.2 It shows that, though States has made tangible efforts since APIRG/14, there is still a lot to be done in the alleviation of CNS deficiencies in the AFI Region.

2.5.3 The following draft conclusion is proposed for adoption by APIRG:

**Draft Conclusion 15/...: Elimination of deficiencies affecting CNS field**

**That:**

- a) **the efforts by States/organizations aimed at eliminating deficiencies affecting AFTN, ATS/DS and AMS are acknowledged;**
- b) **States/organizations concerned :**
  - i) **strengthen and coordinate their maintenance capabilities; and**
  - ii) **continue their efforts until complete elimination of the deficiencies affecting communications and navigation facilities listed in Appendix xx to the report.**

3. **Action by the Meeting**

3.1 The APIRG/15 Meeting is invited to:

- a) take note of the information contained in this working paper;
- b) acknowledge the efforts by States concerned aimed at eliminating deficiencies affecting AFTN, ATS/DS and AMS; and
- b) adopt the draft conclusion at para. 2.5.3.

-----

## *List of AFTN Deficiencies*

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
<i>Angola</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Luanda AFTN centre	Circuit Luanda/Brazzaville	1998	Not implemented	To implement VSAT	Angola, ASECNA		U
<i>Congo</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Brazzaville AFTN centre	Circuit Brazzaville/Luanda	1998	Not implemented	To implement VSAT	ASECNA, Angola		A
	AFTN Plan, AFI/7 Rec. 9/7	Brazzaville AFTN centre	Main circuit Brazzaville/Nairobi	1998	Not implemented	VSAT NAFISAT in project	ASECNA, Kenya	2007	U
	AFTN Plan, AFI/7 Rec. 9/7	Brazzaville AFTN centre	Circuit Brazzaville/Sao Tome	1998	Not implemented	VSAT to be installed at Sao Tome	ASECNA, Sao Tome & Principe		U
<i>Djibouti</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Djibouti AFTN centre	Circuit Djibouti/Addis Ababa	2005	Not implemented	Implement LTF circuit pending NAFISAT	Djibouti, Ethiopia		U
<i>Eritrea</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Asmara AFTN centre	Circuit Asmara/Addis Ababa	1998	The circuit has been disconnected	To be restored. NAFISAT	Eritrea, Ethiopia	2007	U
<i>Ethiopia</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Addis Ababa AFTN centre	Circuit Addis Ababa/Asmara	1998	This circuit has been disconnected	To be restored. NAFISAT	Ethiopia, Eritrea	2007	U
	AFTN Plan, AFI/7 Rec. 9/7	Addis Ababa AFTN centre	Circuit Addis Ababa/Khartoum	1996	Not implemented	VSAT NAFISAT in project	Ethiopia, Sudan	2007	A
	AFTN Plan, AFI/7 Rec. 9/7	Addis Ababa AFTN centre	Circuit Addis Ababa/Niamey operates at low speed	2003	Causes congestion and traffic delays	Upgrade to at least 1200 bps. NAFISAT	Ethiopia, ASECNA	2007	A

APIRG/15 – APPENDIX A – WP/11

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	AFTN Plan, AFI/7 Rec. 9/7	Addis Ababa AFTN centre	Circuit Addis Ababa/Djibouti	2005	Not implemented	Implement LTF circuit pending NAFISAT	Ethiopia, Djibouti		U
<i>Guinea Bissau</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Bissau AFTN centre	Circuit Bissau/Dakar	1998	Not implemented	VSAT planned	ASECNA, Guinea Bissau		U
<i>Kenya</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Nairobi AFTN centre	Main circuit Nairobi/Brazzaville	1998	Not implemented	VSAT NAFISAT in project	Kenya, ASECNA	2007	U
	AFTN Plan, AFI/7 Rec. 9/7	Nairobi AFTN centre	Nairobi/Cairo circuit operates at low speed	2002	Causes congestion and traffic delays	Upgrade to at least 1200 bps. NAFISAT	Kenya, Egypt	2007	A
	AFTN Plan, AFI/7 Rec. 9/7	Nairobi AFTN centre	Nairobi/Johannesburg circuit operates at low speed	2002	Causes congestion and traffic delays	Upgrade to at least 1200 bps. NAFISAT	Kenya, South Africa	2007	A
	AFTN Plan, AFI/7 Rec. 9/7	Nairobi AFTN centre	Nairobi/Mumbai circuit operates at low speed	2002	Causes congestion and traffic delays	Upgrade to at least 1200 bps	Kenya, India		A
<i>Niger</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Niamey AFTN centre	Main circuit Niamey/Addis Ababa operates at low speed	2003	Causes congestion and traffic delays	Upgrade to at least 1200 bps. NAFISAT	ASECNA, Ethiopia	2007	A
<i>Sao Tome &amp; Principe</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Sao Tome AFTN centre	Circuit Sao Tome/Brazzaville	1998	Not implemented	VSAT to be installed at Sao Tome	Sao Tome & Principe, ASECNA		U
<i>Senegal</i>									
	AFTN Plan, AFI/7 Rec. 9/7	Dakar AFTN centre	Circuit Dakar/Bissau	1998	Not implemented	VSAT planned	ASECNA, Guinea Bissau		U
<i>South Africa</i>									

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	AFTN Plan, AFI/7 Rec. 9/7	Johannesburg AFTN centre	Inter-regional circuit Johannesburg/SAM (Buenos Aires)	1996	Not implemented	CAFSAT VSAT implemented in Johannesburg	South Africa, Argentina	2005	U
<i>Sudan</i>	AFTN Plan, AFI/7 Rec. 9/7	Khartoum AFTN centre	Circuit Khartoum/Addis Ababa	1996	Not implemented	VSAT NAFISAT in project	Ethiopia, Sudan	2007	A

## *List of Deficiencies – ATS/DS*

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
<i>Algeria</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Algiers ACC-FIC	Circuit Algiers/Tripoli			Implement LTF circuit	Algeria, Libya		U
<i>Angola</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Luanda FIC	Circuit Luanda/Accra	1998	Inmarsat phone used from Luanda. Inmarsat Phone also available in Accra	VSAT under consideration	Angola, Ghana		U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Luanda FIC	Circuit Luanda/Atlantico	1998	Not implemented	Implement circuit	Angola, Brazil		A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Luanda FIC	Circuit Luanda/Brazzaville	1998	PSTN used via Inmarsat	To implement LTF circuit	Angola, ASECNA		A
<i>Botswana</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Francistown TWR	Circuit Francistown/Bulaway	2002	Not implemented	Implement facility	Botswana, Zimbabwe		A
<i>Burkina Faso</i>									
	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		A
<i>Burundi</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bujumbura APP	Circuit Bujumbura/Goma	1998	Not implemented		Burundi, DR Congo		A

APIRG/15 – APPENDIX B – WP/11

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bujumbura APP	Circuit Bujumbura/Kinshasa	1998	Not implemented	VSAT implemented at Bujumbura and Kinshasa	Burundi, DR Congo		A
<i>Cameroon</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Douala APP	Circuit Douala/Bata	1998	Not implemented	VSAT planned at Bata	ASECNA		A
<i>Chad</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	N'Djamena APP/FIC	Circuit N'Djamena/Khartoum	1998	Not implemented	VSAT NAFISAT. PSTN proposed by ASECNA.	ASECNA, Sudan	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	N'Djamena APP/FIC	Circuit N'Djamena/Tripoli	1998	Not implemented	VSAT NAFISAT. PSTN and Satphone proposed by ASECNA	ASECNA, Libya	2007	U
<i>Congo</i>									
	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	2007	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 VSAT	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 at Sao Tome	ASECNA, Sao Tome & Principe	2005	U
<i>Dem. Rep. of Congo</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Goma APP	Circuit Goma/Bujumbura	1998	Not implemented		DR Congo, Burundi		A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Goma APP	Circuit Goma/Kigali	1998	Not implemented		DR Congo, Rwanda		A

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kinshasa FIC	Circuit Kinshasa/Bujumbura	2002	Not implemented	VSAT implemented both centres	DR Congo, Burundi		A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kinshasa FIC	Circuit Kinshasa/Entebbe	1996	Not implemented	VSAT SADC2 and NAFISAT in project	DR Congo, Uganda	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kinshasa FIC	Circuit Kinshasa/Khartoum	1996	Inmarsat phone available at	VSAT NAFISAT in project	DR Congo, Sudan	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kinshasa FIC	Circuit Kinshasa/Kigali	1996	Not implemented	VSAT operational in Kinshasa and in Kigali	DR Congo, Rwanda		A
<i>Egypt</i>	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Cairo ACC	Circuit Cairo/Khartoum	1996	Not implemented	LTF circuit via PTTs proposed by Egypt until VSAT NAFISAT implemented.	Egypt, Sudan	2007	U
<i>Equatorial Guinea</i>	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bata & Malabo APP	Circuit Bata/Malabo	2002	Not implemented	VSAT planned	ASECNA		A
	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		A
<i>Eritrea</i>	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Asmara ACC	Circuit Asmara/AddisAbaba	1998	This circuit has been disconnected	To be restored. NAFISAT	Eritrea, Ethiopia	2007	U

*Ethiopia*

APIRG/15 – APPENDIX B – WP/11

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Addis Ababa ACC/FIC	Circuit Addis Ababa/Asmara	1998	This circuit has been disconnected	To be restored. NAFISAT	Ethiopia, Eritrea	2007	U
<i>Gabon</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Libreville ACC	Circuit Libreville/Bata	1996	Not implemented	VSAT planned at Bata	ASECNA		A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Libreville ACC	Circuit Libreville/Sao Tome	1996	Not implemented	VSAT to be installed by Sao Tome	ASECNA, Sao Tome & Principe	2005	A
<i>Gambia</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Banjul APP	Circuit Banjul/Bissau	1996	Not implemented	VSAT being considered	Gambia/Guinea Bissau		A
<i>Ghana</i>									
	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/Luanda	1998	Inmarsat phone used from Luanda. Inmarsat also available in Accra	VSAT under consideration	Ghana, Angola		U
<i>Guinea</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Conakry APP	Circuit Conakry/Bissau	1996	Not implemented	Implement LTF circuit	Guinea, Guinea Bissau		A
<i>Guinea Bissau</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bissau APP	Circuit Bissau/Banjul	1996	Not implemented	VSAT being considered	Gambia, Guinea Bissau		A

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bissau APP	Circuit Bissau/Conakry	1996	Not implemented	Implement LTF circuit	Guinea, Guinea Bissau		A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bissau APP	Circuit Bissau/Dakar	1996	Not implemented	VSAT being considered	ASECNA, Guinea Bissau		U
<i>Libya</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Tripoli ACC/FIC	Circuit Tripoli/Algiers	1998	Not implemented	Implement LTF circuit. Algiers to contact PTT Libya.	Libya, Algeria		U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Tripoli ACC/FIC	Circuit Tripoli/Khartoum	1998	Not implemented	VSAT NAFISAT in project.	Libya, Sudan	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Tripoli ACC/FIC	Circuit Tripoli/Niamey	1998	Not implemented	VSAT NAFISAT in project	Libya, ASECNA	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Tripoli ACC/FIC	Circuit Tripoli/N'Djamena	1998	Not implemented	VSAT NAFISAT in project. PSTN and Satphone proposed by ASECNA	Libya, ASECNA	2007	U
<i>Niger</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Niamey ACC/FIC	Circuit Niamey/Tripoli	1998	Not implemented	VSAT NAFISAT in project	ASECNA, Libya	2007	U
<i>Rwanda</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kigali APP	Circuit Kigali/Goma	1996	Not implemented		Rwanda, DR Congo		A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kigali APP	Circuit Kigali/Kinshasa	1996	Not implemented	VSAT operational in Kinshasa and in Kigali	Rwanda, DR Congo		A

*Sao Tome & Principe*

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Sao Tome TWR	Circuit Sao Tome/Brazzaville	1998	Not implemented	VSAT to be installed at Sao Tome	Sao Tome & Principe, ASECNA	2005	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Sao Tome TWR	Circuit Sao Tome/Libreville	1998	Not implemented	VSAT to be installed at Sao Tome	Sao Tome & Principe, ASECNA	2005	A
<i>Senegal</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Dakar ACC/FIC	Circuit Dakar/Bissau	1998	Not implemented	VSAT being considered	ASECNA, Guinea Bissau		U
<i>South Africa</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Johannesburg ACC/FIC	Circuit Johannesburg/Ezeiza	1998	Not implemented	CAFSAT VSAT implemented in Johannesburg.	South Africa, Argentina	2005	U
<i>Sudan</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Khartoum FIC	Circuit Khartoum/Brazzaville	1996	Not implemented	VSAT AFISNET proposed by ASECNA	Sudan, ASECNA	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Khartoum FIC	Circuit Khartoum/Cairo	1996	Not implemented	LTF circuit via PTTs proposed by Egypt until implementation of VSAT NAFISAT	Egypt, Sudan	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Khartoum FIC	Circuit Khartoum/Jeddah	1996	Not implemented	VSAT NAFISAT in project	Sudan, Saudi Arabia	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Khartoum FIC	Circuit Khartoum/Kinshasa	1996	Not implemented	VSAT NAFISAT in project	Sudan, DR Congo	2007	U
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Khartoum FIC	Circuit Khartoum/N'djamena	1996	Not implemented	VSAT NAFISAT in project. PSTN proposed by ASECNA	Sudan, ASECNA	2007	U

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Khartoum FIC	Circuit Khartoum/Tripoli	1996	Not implemented	VSAT NAFISAT in project	Sudan, Libya	2007	U
<i>Uganda</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Entebbe FIC	Circuit Entebbe/Kinshasa	1996	Not implemented	VSAT SADC2 and NAFISAT in project	DR Congo, Uganda	2007	U
<i>Zimbabwe</i>									
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bulawayo TWR	Circuit Bulawayo/Francistow	2002	Not implemented	Implement facility	Zimbabwe, Botswana		A

## *List of Deficiencies - AMS*

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
<i>Angola</i>									
	AMS AFI/7 Rec. 9/12	Luanda ACC	Inadequate VHF coverage of busy ATS routes	1998	Implement remote VHF stations	5 VHF stations to be installed	ENANA		U
	AMS AFI/7 Rec. 9/12	Luanda FIC	HF poor quality and unavailable in oceanic area	2004	Improve facilities	Install adequate equipment	ENANA		U
<i>Dem. Rep. of Congo</i>									
	AMS AFI/7 Rec. 9/12	Kinshasa FIR	Inadequate VHF coverage of busy ATS routes	1998		Extension of VHF coverage in	DR Congo	2006	U
	AMS AFI/7 Rec. 9/12	Kinshasa FIR	HF poor quality. Selcal not available	1998	FIC Kinshasa operational April 2005	New equipment being installed at Kinshasa, Kisangani and Lubumbashi	DR Congo	2006	U
<i>Libya</i>									
	AMS AFI/7 Rec. 9/12	Tripoli FIR	Inadequate VHF coverage of busy ATS routes	2004	Implement remote VHF stations		Libya		U
<i>Malawi</i>									
	AMS AFI/7 Rec. 9/12	FIR Lilongwe	VHF coverage incomplete	2001	Install additional VHF relay stations at Muzuzu and Zomba.	Extension VHF coverage in progress. Equipment in place.	Malawi	2003	U

*Somalia*

APIRG/15 – APPENDIX C -WP/11

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	AMS AFI/7 Rec. 9/12	Mogadishu ACC	Lack of VHF coverage of busy ATS routes	1998		Install VHF relays	Somalia		U

## *List of Deficiencies - ARNS*

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
<i>Angola</i>									
	Nav aids AFI/7, Rec. 10/4	Cuito Cuanavale	VOR/DME	1998	Not implemented	Implement facility	ENANA		U
	Nav aids AFI/7, Rec. 10/4	Huambo	VOR/DME	1998	Not implemented	Implement facility	ENANA		A
	Nav aids AFI/7, Rec. 10/4	Kuito	VOR/DME	1998	Not implemented	Implement facility	ENANA		A
	Nav aids AFI/7, Rec. 10/4	Saurimo	VOR/DME	1998	Not implemented	Implement facility	ENANA		U
<i>Cameroon</i>									
	Nav aids AFI/7, Rec. 10/4	Foumban	VOR	1998	Not implemented	Amend AFI Plan to replace facility with Bafoussam VOR/DME	Cameroon		U
	Nav aids AFI/7, Rec. 10/4	Maroua	VOR	1998	Not implemented	Implement facility	Cameroon		A
<i>Dem. Rep. of Congo</i>									
	Nav aids AFI/7, Rec. 10/4	Kalemie	VOR/DME	1998	Unserviceable	New equipment to be installed	DR Congo	2005	U
	Nav aids AFI/7, Rec. 10/4	Kindu	VOR	1998	Unserviceable	New equipment to be installed	DR Congo	2005	U
	Nav aids AFI/7, Rec. 10/4	Kisangani	VOR/DME	1998	Unserviceable	New equipment being installed	DR Congo	2005	A
<i>Gabon</i>									
	Nav aids, AFI/7 Rec. 10/4	Port Gentil	ILS RWY 21	2001	Equipment at site	Installation in progress	ASECNA		U

APIRG/15 – APPENDIX D – WP/11

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
<i>Guinea</i>									
	Nav aids AFI/7, Rec. 10/4	Kankan	VOR	1998	Not implemented	Implement facility	Guinea		A
	Nav aids AFI/7, Rec. 10/4	Labe	VOR	1998	Not implemented	Implement facility	Guinea		A
	Nav aids AFI/7, Rec. 10/4	Nzerekore	VOR	1998	Not implemented	Implement facility	Guinea		A
<i>Kenya</i>									
	Nav aids AFI/7, Rec. 10/4	Mandera	VOR/DME	1998	Not implemented	Implement facility	Kenya		U
<i>Lesotho</i>									
	Nav aids AFI/7, Rec. 10/4	Maseru	VOR/DME	2002	Not implemented	To implement	Lesotho		U
<i>Liberia</i>									
	Nav aids AFI/7, Rec. 10/4	Robertsfield	ILS 04	1998	Not implemented	Implement facility	Liberia		U
<i>Libya</i>									
	Nav aids AFI/7, Rec. 10/4	Sarir	VOR/DME	1998	Not implemented	Implement facility	Libya		U
<i>Madagascar</i>									
	Nav aids AFI/7, Rec. 10/4	Antsiranana	VOR	1998	Not implemented	Implement facility	Madagascar		U
	Nav aids AFI/7, Rec. 10/4	Maintirano	VOR	2002	Not implemented	Implement facility	Madagascar		U
	Nav aids AFI/7, Rec. 10/4	Morondava	VOR	1998	Not implemented	Implement facility	Madagascar		U
	Nav aids AFI/7, Rec. 10/4	Sainte Marie	VOR	1998	Not implemented	Implement facility	Madagascar		A

APIRG/15 – APPENDIX D – WP/11

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	Nav aids AFI/7, Rec. 10/4	Toliara	VOR	1998	Not implemented	Implement facility	Madagascar		U
<i>Mali</i>									
	Nav aids AFI/7, Rec. 10/4	Tessalit	VOR	1998	Not implemented	Implement facility	Mali, ASECNA		U
<i>Sao Tome &amp; Principe</i>									
	Nav aids AFI/7, Rec. 10/4	Sao Tome	ILS 11	1998	Not implemented	Implement facility	Sao Tome & Principe		A
<i>Sierra Leone</i>									
	Nav aids AFI/7, Rec. 10/4	Freetown/Lungi	ILS 30	1999	Unserviceable	To repair	Sierra Leone		U
	Nav aids AFI/7, Rec. 10/4	Freetown/Lungi	VOR/DME	1999	Unserviceable	To repair	Sierra Leone		U
<i>Somalia</i>									
	Nav aids AFI/7, Rec. 10/4	Hargeisa	VOR/DME	1998	Not implemented	Implement facility	Somalia		U
	Nav aids AFI/7, Rec. 10/4	Mogadishu	VOR/DME	1998	Not implemented	Implement facility	Somalia		U
<i>Sudan</i>									
	Nav aids AFI/7, Rec. 10/4	Geneina	VOR	1998	Not implemented	Implement facility	Sudan		U
	Nav aids AFI/7, Rec. 10/4	Juba	ILS 13	1998	Not implemented	Implement facility	Sudan		A
	Nav aids AFI/7, Rec. 10/4	Karina	VOR/DME	1998	Not implemented	Implement facility	Sudan		U
<i>Tanzania</i>									
	Nav aids AFI/7, Rec. 10/4	Dodoma	VOR/DME	1998	Not implemented	Implement facility	Tanzania	31/12/2005	U

APIRG/15 – APPENDIX D – WP/11

<i>StateName</i>	<i>Requirements</i>	<i>Facilities or Services</i>	<i>Description of Deficiency</i>	<i>Date first reported</i>	<i>Comments on Deficiency</i>	<i>Description of Corrective action</i>	<i>Executing Body</i>	<i>Target date for implement</i>	<i>Priority</i>
	Nav aids AFI/7, Rec. 10/4	Mbeya	VOR/DME	1998	Not implemented	Implement facility	Tanzania	June 2006	U
	Nav aids AFI/7, Rec. 10/4	Mwanza	DME	1998	Not implemented	Implement facility	Tanzania	June 2005	U
	Nav aids AFI/7, Rec. 10/4	Zanzibar	VOR/DME	1998	Not implemented	Implement facility	Tanzania	June 2006	A
<i>Zambia</i>									
	Nav aids AFI/7, Rec. 10/4	Mongu	VOR	1998	Not implemented	Implement facility	Zambia		U
	Nav aids AFI/7, Rec. 10/4	Solwezi	VOR	1998	Not implemented	Implement facility	Zambia		U