



INTERNATIONAL CIVIL AVIATION ORGANIZATION
AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
SEVENTEENTH MEETING (APIRG/17)
 (2-6 August, 2010)

Agenda Item 4: Review and update of the list of deficiencies in the air navigation fields

4.1 Communications, Navigation and Surveillance (CNS)

REVIEW AND UPDATE OF THE LIST OF DEFICIENCIES IN THE CNS FIELDS

(Presented by the Secretariat)

SUMMARY
This working paper presents the deficiencies affecting aeronautical telecommunications in the AFI Region, for review and update by APIRG.
Action by the meeting is at paragraph 3.
References : [1] – Report of the CNS/SG/3 Meeting (Principal reference) [2] – Report of the CNS/SG/2 Meeting [3] – Report of the APIRG/16 Meeting [4] – Report of the ICAO Special AFI RAN Meeting (2008) (Doc 9930) [5] – Annex 10 to the Convention on International Civil Aviation <i>Note: References [1], [2], [3] and [4] can be downloaded from: http://www.icao.int.</i>
Related ICAO Strategic Objectives: A, D.

1. INTRODUCTION

- 1.1. The CNS/SG/3 Meeting reviewed the list of deficiencies affecting the operation of aeronautical telecommunications in the AFI Region as prepared by the Secretariat on receipt of information from States, relevant international organizations and reports of ICAO missions to States. The Secretariat has also carried out further coordination with States and international organizations to validate the information made available to CNS/SG/3 and collect additional information and validate the CNS implementation status.
- 1.2. **Appendices A, B, C and D** to this working paper contain a detailed list of AFTN, ATS/DS, AMS and ARNS deficiencies in AFI States, as compiled by the Secretariat. Due to the lack of timely feedback from States concerning changes in the status of implementation of the CNS infrastructure, the information provided in these appendices may not reflect the current situation in some cases.
- 1.3. CNS/SG/3 draft Conclusions/Decisions concerning the deficiencies in the CNS fields are contained in **WP/6A** submitted under Agenda Item 3.3 of this meeting.

2. DISCUSSION

2.1 Aeronautical Fixed Telecommunication Network (AFTN)

- 2.1.1 The meeting noted that in spite of the efforts undertaken by States/Organizations to replace the old VSAT nodes of AFISNET that were implemented over 20 years ago, some weaknesses remain, notably:

- Accra /Kano
- Brazzaville /Kinshasa circuits.

2.2 ATS/DS

2.2.1 The meeting noted a great improvement in the implementation of ATS/DS circuits. However, the following circuits were yet to be implemented:

- Luanda /Accra (in progress)
- Luanda /Atlantico
- Kigali/ Goma
- Bujumbura /Goma
- Kigali/ Bukavu
- Algiers/ Trípoli
- Ouagadougou/Niamtougou
- Nouadhibou/ Dakhla
- Dakar /Rochambeau
- Bangui/ Gbadolite.

2.2.2 The following circuits could be implemented using the interconnection between SADC/2 and AFISNET:

- Kinshasa /Brazzaville,
- Bangui/Gbadolite (AFISNET) and (RVA network).
- Algiers/Tripoli (AFISNET and NAFISAT)
- Ouagadougou/Niamtougou AFISNET.

2.2.3 The following circuits have been implemented but not activated due to non technical reasons:

- Addis Ababa /Asmara
- Kinshasa/ Kigali
- Bujumbura/ Kinshasa

2.2.4 The following circuits have been implemented but their performance is below expectation:

- Kinshasa /Brazzaville
- Kano /Accra
- Accra / Libreville
- Brazzaville / Accra
- Maiduguri /N`Djamena

2.3 Aeronautical Mobile Service (AMS)

2.3.1 The meeting noted that States and Organization undertook efforts to increase of their airspace VHF coverage. Ongoing VHF coverage enhancement projects status were presented to the meeting by DRC and Nigeria. However, there has been deterioration of the current service in the following FIRs:

- Brazzaville,
- N`Djamena,
- Luanda, and
- Kano.

2.4 Aeronautical Radio Navigation Service (ARNS)

2.4.1 The meeting noted that there has been any significant improvement in the service since the CNS/SG/2 meeting (2007).

2.5 Aeronautical Surveillance (AS)

2.5.1 The meeting noted the slow pace of implementation of AFI Aeronautical Surveillance Plan requirements for en – route operations as contained in the Air Navigation Plan.

3. ACTION BY APIRG

3.1 The meeting is invited to:

- a) Note the information contained in this working paper;
 - b) Acknowledge the efforts by States concerned aimed at eliminating deficiencies affecting AFTN, ATS/DS, ARNS and AMS services;
 - c) Review and update the list of CNS deficiencies provided in **Appendices A, B, C and D** as required;
- and
- d)** Urge the States concerned to pursue their efforts to solve the reported deficiencies that continue to affect the CNS component of the Air Navigation Infrastructure in the AFI Region.

— E N D —

Appendix A

LIST OF DEFICIENCIES IN THE AIR NAVIGATION FIELDS

AFTN

<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 implementation</i>	<i>Priority</i>
<i>Algeria</i>									
	AFTN Plan, AFI Rec. 9/7	Algiers AFTN Centre	Main circuit Algiers/Niamey	1998	implemented	VSAT implemented in Algiers	Algeria, ASECNA		U
<i>Angola</i>									
	AFTN Plan, AFI Rec. 9/7	Luanda AFTN centre	Circuit Luanda/Brazzaville	1998	implemented	Interconnection between AFISNET and SADC/2 VSAT	Angola, ASECNA		U
<i>Burundi</i>									
	AFTN Plan, AFI Rec. 9/7	Bujumbura AFTN Centre	Circuit Bujumbura/Johannesburg	2002	implemented	SADFC/2 VSAT installed in Bujumbura	Burundi, South Africa		U
<i>Comoros</i>									
	AFTN Plan, AFI Rec. 9/7	Dzaoudzi AFTN centre	Circuit Dzaoudzi/Antananarivo	1996	implemented	AFISNET VSAT Installed in Dzaoudzi	Comoros, ASECNA		A
<i>Congo</i>									
	AFTN Plan, AFI Rec. 9/7	Brazzaville AFTN centre	Circuit Brazzaville/Luanda	1998	implemented	Interconnection between AFISNET and SADC/2 VSAT	ASECNA, Angola		A
	AFTN Plan, AFI Rec. 9/7	Brazzaville AFTN centre	Main circuit Brazzaville/Johannesburg	1998	implemented	interconnection between the AFISNET and SADC/2 VSATs	ASECNA, South Africa		U
	AFTN Plan, AFI Rec. 9/7	Brazzaville AFTN centre	Main circuit Brazzaville/Nairobi	1998	implemented	Interconnection between AFIQSNET and NAFISAT	ASECNA, Kenya		U
	AFTN Plan, AFI Rec. 9/7	Brazzaville AFTN centre	Circuit Brazzaville/Sao Tome	1998	Implemented	AFISNET VSAT installed in Sao Tome by ASECNA	ASECNA, Sao Tome & Principe		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 implementation</i>	<i>Priority</i>
	AFTN Plan, AFI Rec. 9/7	Nairobi AFTN centre	Main circuit Nairobi/Brazzaville	1998	Implemented .	Interconnection between AFIQSNET and NAFISAT	Kenya, ASECNA		U
<i>Madagascar</i>									
	AFTN Plan, AFI Rec. 9/7	Antananarivo AFTN centre	Circuit Antananarivo/Dzaoudzi	1996	implemented	AFISNET VSAT Installed in Dzaoudzi	ASECNA, Comoros		A
	AFTN Plan, AFI Rec. 9/7	Antananarivo AFTN centre	Circuit Antananarivo/Johannesburg	2002	implemented	Interconnection VSAT ASECNA & SADC	ASECNA, South Africa		U
<i>Niger</i>									
	AFTN Plan, AFI Rec. 9/7	Niamey AFTN centre	Main circuit Niamey/Algiers	1998	implemented	VSAT implemented in Algiers	ASECNA, Algeria	2002	U
<i>Rwanda</i>									
	AFTN Plan, AFI Rec. 9/7	Kigali AFTN centre	Circuit Kigali/Johannesburg	2002	implemented	SADC/VSAT installed in Kigali	Rwanda, South Africa		U
<i>Sao Tome & Principe</i>									
	AFTN Plan, AFI Rec. 9/7	Sao Tome AFTN centre	Circuit Sao Tome/Brazzaville	1998	Implemented	AFISNET VSAT installed in Sao Tome by ASECNA	Sao Tome & Principe, ASECNA		U
<i>Senegal</i>									
	AFTN Plan, AFI Rec. 9/7	Dakar AFTN centre	Circuit Dakar/Bissau	1998	implemented	VSAT installed in Bissau	ASECNA, Guinea Bissau		U
<i>South Africa</i>									
	AFTN Plan, AFI Rec. 9/7	Johannesburg AFTN centre	Main circuit Johannesburg/Brazzaville	1998	implemented	interconnection between the AFISNET and SADC/2 VSATs	South Africa, ASECNA		U
	AFTN Plan, AFI Rec. 9/7	Johannesburg AFTN	Inter-regional circuit Johannesburg/SAM	1996	Not implemented	Implement LTT circuit	South Africa, Argentina		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 implementation</i>	<i>Priority</i>
		centre	(Buenos Aires)						
	AFTN Plan, AFI Rec. 9/7	Johannesburg AFTN centre	Inter-regional circuit Johannesburg/ASIA/PAC (Australia)	2002	Not implemented	Implement LTT circuit	South Africa, Australia		U
	AFTN Plan, AFI Rec. 9/7	Johannesburg AFTN centre	Circuit Johannesburg/Antananarivo	2002	implemented	Interconnection VSAT ASECNA & SADC	South Africa, ASECNA		U
	AFTN Plan, AFI Rec. 9/7	Johannesburg AFTN centre	Circuit Johannesburg/Bujumbura	2002	implemented	SADFC/2 VSAT installed in Bujumbura	South Africa, Burundi		U
	AFTN Plan, AFI Rec. 9/7	Johannesburg AFTN centre	Circuit Johannesburg/Kigali	2002	implemented	SADC/VSAT installed in Kigali	South Africa, Rwanda		U
<i>Sudan</i>									
	AFTN Plan, AFI Rec. 9/7	Khartoum AFTN centre	Circuit Khartoum/Addis Ababa	1996	implemented	NAFISAT VSATs project completed	Ethiopia, Sudan		A

Appendix B

LIST OF DEFICIENCIES IN THE AIR NAVIGATION FIELDS

ATS DIRECT SPEECH

State Name	Requirements	Facilities or Services	Description of Deficiency	Date first reported	Comments on Deficiency	Description of Corrective action	Executing Body	Target date for implementation	Priority
Algeria	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Algiers ACC-FIC	Circuit Algiers/Tripoli	1998		Implement LTF circuit	Algeria, Libya		U
Burundi	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bujumbura APP	Circuit/ Bujumbura/Kinshasa	1998	Not operational	VSAT implemented at Bujumbura and Kinshasa	Burundi, DR Congo		A
Dem. Rep. of Congo	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bukavu TWR	Circuit Bukavu/Kigali	1996	Not implemented		DR Congo, Rwanda		A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kinshasa	Circuit Brazzaville/Kinshasa		unserviceable	Interconnection between AFISNET and SADC/2	DRC ASECNA	End of year 2010	A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Gbadolite TWR	Circuit Gbadolite/Bangui	2002	Not implemented	Could be implemented by interconnection between Bangu AFISNET and G'Badolite RVA domestic VSATs.	DR Congo, ASECNA	End of year 2010	A
	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
Eritrea	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Asmara ACC	Circuit Asmara/ Addis Ababa	1998	The circuit has been disconnected	To be restored. NAFISAT	Eritrea, Ethiopia		U
Ethiopia	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Addis Ababa ACC/FIC	Circuit Addis Ababa/ Asmara	1998	The circuit has been disconnected	To be restored. NAFISAT	Ethiopia, Eritrea		U
Ghana	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Accra ACC	Circuit Accra/Kano	2009	Unserviceable	To be restored AFISNET	Ghana Nigeria		A
Congo	ATS Direct Speech Circuits Plan, AFI/7	Brazzaville ACC	Circuit Accra/Brazzaville		Unserviceable	To be restored AFISNET	GHANA ASECNA	End of year 2010	A

State Name	Requirements	Facilities or Services	Description of Deficiency	Date first reported	Comments on Deficiency	Description of Corrective action	Executing Body	Target date for implementation	Priority
	Rec. 9/9								
Rwanda	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kigali ACC	Kigali/Kinshasa		Unserviceable	To be restored SADC//2	Rwanda, DR Congo		A
Somalia	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Hargeisa APP	Circuit Hargeisa/Djibouti	1998	Not implemented	Implement LTF circuit	Somalia, Djibouti		A

Appendix C

LIST OF DEFICIENCIES IN THE AIR NAVIGATION FIELDS ARNS

State Name	Requirements	Facilities or Services	Description of Deficiency	Date first reported	Comments on Deficiency	Description of Corrective action	Executing Body	Target date for implementation	Priority
Angola	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	Luena	VOR/DME	1998	Not implemented	Implement facility	ENANA		U
	Nav aids AFI/7, Rec. 10/4	Saurimo	VOR/DME	1998	Not implemented	Implement facility	ENANA		U
Cameroon	Nav aids AFI/7, Rec. 10/4	Maroua	VOR	1998	Not implemented	Implement facility	Cameroon		A
Guinea	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
Kenya	Nav aids AFI/7 Rec. 10/4	Mandera	VOR/DME	1998	Not implemented	Implement facility	Kenya		U
Lesotho	Nav aids AFI/7 Rec. 10/4	Maseru	VOR/DME	2002	Not implemented	To implement	Lesotho		U
Liberia	Nav aids AFI/7 Rec. 10/4	Robertsfield	ILS 04	1998	Not implemented	Implement facility	Liberia		U
Libya	Nav aids AFI/7 Rec. 10/4	Sarir	VOR/DME	1998	Not implemented	Implement facility	Libya		U
Madagascar	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

State Name	Requirements	Facilities or Services	Description of Deficiency	Date first reported	Comments on Deficiency	Description of Corrective action	Executing Body	Target date for implementation	Priority
	10/4 Nav aids AFI/7 Rec. 10/4	Toliara	VOR	1998	Not implemented	Implement facility	Madagascar		U
Sao Tome & Principe	Nav aids AFI/7 Rec. 10/4	Sao Tome	ILS 11	1998	Not implemented	Implement facility	Sao Tome & Principe		A
Sierra Leone	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
Somalia	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
Sudan	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
Tanzania	Nav aids AFI/7 Rec. 10/4	Dodoma	VOR/DME	1998	Not implemented	Implement facility	Tanzania	31/12/2005	U
	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
Zambia	Nav aids AFI/7 Rec. 10/4	Mongu	VOR	1998	Not implemented	Under installation	Zambia	30/12/2005	U
	Nav aids AFI/7 Rec. 10/4	Solwezi	VOR	1998	Not implemented	Sourcing for funds	Zambia	Dec.w 2006	U

Appendix D

LIST OF DEFICIENCIES IN THE AIR NAVIGATION FIELDS AMS

State Name	Requirements	Facilities or Services	Description of Deficiency	Date first reported	Comments on Deficiency	Description of Corrective action	Executing Body	Target date for implementation	Priority
Angola	AMS AFI/7 Rec. 9/12	Luanda FIC	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
Congo	AMS AFI/7 Rec. 9/12	Brazzaville FIC	Inadequate VHF Coverage	2009	Improve facilities	Extension VHF coverage in progress	ASECNA	2011	U
Chad	AMS AFI/7 Rec 9/12	N Djamena FIR	Inadequate VHF Coverage	2009	Improve facilities	Extension VHF coverage in progress	ASECNA	2011	U
Dem. Rep. of Congo	AMS AFI/7 Rec. 9/12	Kinshasa FIR	Inadequate VHF coverage of busy ATS routes	1998	Improve facilities	Extension VHF coverage in progress	DR Congo	2011	U
	AMS AFI/7 Rec. 9/12	Kinshasa FIR	HF poor quality Selcal not available	1998	FIC Kinshasa OP> April 2005	New installed equipment to be restored	DR Congo	2011	U
Libya	AMS AFI/7 Rec. 9/12	Kinshasa FIR	Inadequate VHF coverage of busy ATS routes	2004	Implement remote VHF stations		Libya		U
Malawi	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		U
Nigeria	AMS AFI/7 Rec 9/12	Kano FIR	Inadequate VHF Coverage	2009	Improve facilities	Extension VHF coverage in progress	NAMA	2011	U
Somalia	AMS AFI/7 Rec. 9/12	Mogadishu ACC	Lack of VHF coverage of busy ATS ROUTES	1998	Implement remote VHF stations	Install VHF relays	Somalia		U