



INTERNATIONAL CIVIL AVIATION ORGANIZATION  
AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP  
EIGHTEENTH MEETING (APIRG/18)  
(Kampala, Uganda, 27-30 March 2012)

**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 APIRG/1 Meeting [2] – Report of the ICAO Special AFI RAN Meeting (2008) (Doc 9930) <i>Note: References [1] and [2] can be downloaded from: <a href="http://www.icao.int">http://www.icao.int</a>.</i>
<b>Related ICAO Strategic Objective: C.</b>

**1. INTRODUCTION**

1.1. The CNS/SG/4 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/4 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. States are invited to provide updated information to the Secretariat, as necessary.

**2. DISCUSSION**

**2.1 Aeronautical Fixed Telecommunication Network (AFTN) (Appendix A refers)**

2.1.1 CNS/SG/4 noted the efforts made by States to improve AFTN connectivity within the AFI Region through AFISNET, CAFSAT, NAFISAT and SADC VSAT/2 satellite networks. However, the following circuits were not operational:

- Addis Ababa/Asmara
- Addis Ababa/Djibouti

**2.2 ATS/DS (Appendix B refers)**

2.2.1 CNS/SG/4 noted significant 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
- Dakar /Rochambeau
- Bangui/ Gbadolite.

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

- Kinshasa /Brazzaville (implementation in progress),
- Bangui/Gbadolite (AFISNET) and (DRC network).
- Algiers/Tripoli (AFISNET and NAFISAT)
- Ouagadougou/Niamtougou (AFISNET).

2.2.3 The following circuits are not yet operational:

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

## **2.3 Aeronautical Mobile Service (AMS) (Appendix C refers)**

2.3.1 The meeting acknowledged States efforts to increase of their airspace VHF coverage. Significant progress was noted in the implementation of controller-pilot data link communications (CPDLC) as part of the AFI Air Navigation Plan for en-route operations. CPDLC procedures were operational/planned in Algiers, Antananarivo, Brazzaville, Casablanca, Dakar, Dakar Oceanic, Johannesburg, Canarias, Luanda, Mauritius, Mogadishu, Ndjamena, Niamey, Sal Oceanic, and Seychelles FIRs. Non-implementation of CPDLC requirements by States is not reflected in the attached list of deficiencies.

## **2.4 Aeronautical Radio Navigation Service (ARNS) (Appendix B refers)**

2.4.1 The meeting noted that there has been little improvement in the service since the CNS/SG/4 meeting (2010).

## **2.5 Aeronautical Surveillance (AS)**

2.5.1 The meeting noted significant progress in the implementation of automatic dependent surveillance (ADS) as part of AFI Air Navigation Plan requirements for en – route operations. ADS procedures were operational or planned in Algiers, Antananarivo, Brazzaville, Casablanca, Dakar, Dakar Oceanic, Johannesburg, Canarias, Luanda, Mauritius, Mogadishu, Ndjamena, Niamey, Sal Oceanic, and Seychelles FIRs. Non-implementation of aeronautical surveillance requirements (SSR, ADS-C) by States is not reflected in the attached list of deficiencies.

## **3. ACTION BY APIRG**

3.1 The meeting is invited to:

- a) Note the information contained in this working paper;

- b) Acknowledge the efforts made 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 address identified CNS deficiencies in a timely manner.

— 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>Eritrea</i>									
	AFTN Plan, AFI Rec. 9/7	Asmara AFTN centre	Circuit Asmara/Addis Ababa	2008	NAFISAT circuit is not operational	To be restored	Eritrea, Ethiopia	31/12/2012	U
<i>Ethiopia</i>									
	AFTN Plan, AFI Rec. 9/7	Addis Ababa AFTN centre	Circuit Addis Ababa/Asmara	2008	NAFISAT circuit is not operational	To be restored	Ethiopia, Eritrea	31/12/2012	U

## 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
<b>Algeria</b>	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Algiers ACC-FIC	Circuit Algiers/Tripoli	1998	Not implemented	Implement LTF circuit	Algeria, Libya	31/12/2012	U
<b>Burundi</b>	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	31/12/2012	A
<b>Dem. Rep. of Congo</b>	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Bukavu TWR	Circuit Bukavu/Kigali	1996	Not implemented		DR Congo, Rwanda	31/12/2012	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	31/12/2012	A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Goma APP	Circuit Goma/Bujumbura	1998	Not implemented		DR Congo, Burundi	31/12/2012	A
	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Goma APP	Circuit Goma/Kigali	1998	Not implemented		DR Congo, Rwanda	31/12/2012	A
<b>Eritrea</b>	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	31/12/2012	U
<b>Ethiopia</b>	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	31/12/2012	U
<b>Rwanda</b>	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Kigali ACC	Kigali/Kinshasa		Unserviceable	To be restored SADC//2	Rwanda, DR Congo	31/12/2012	A
<b>Somalia</b>	ATS Direct Speech Circuits Plan, AFI/7 Rec. 9/9	Hargeisa APP	Circuit Hargeisa/Djibouti	1998	Not implemented	Implement LTF circuit	Somalia, Djibouti	31/12/2012	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
<b>Angola</b>	Nav aids AFI/7, Rec. 10/4	Huambo	VOR/DME	1998	Not implemented	Implement facility	ENANA	31/12/2012	A
	Nav aids AFI/7, Rec. 10/4	Kuito	VOR/DME	1998	Not implemented	Implement facility	ENANA	31/12/2012	A
	Nav aids AFI/7, Rec. 10/4	Luena	VOR/DME	1998	Not implemented	Implement facility	ENANA	31/12/2012	U
	Nav aids AFI/7, Rec. 10/4	Saurimo	VOR/DME	1998	Not implemented	Implement facility	ENANA	31/12/2012	U
<b>Cameroon</b>	Nav aids AFI/7, Rec. 10/4	Maroua	VOR	1998	Not implemented	Implement facility	Cameroon	31/12/2012	A
<b>Guinea</b>	Nav aids, AFI/7 Rec. 10/4	Kankan	VOR	1998	Not implemented	Implement facility	Guinea	31/12/2012	A
	Nav aids AFI/7 Rec. 10/4	Labe	VOR	1998	Not implemented	Implement facility	Guinea	31/12/2012	A
	Nav aids AFI/7 Rec. 10/4	Nzerekore	VOR	1998	Not implemented	Implement facility	Guinea	31/12/2012	A
<b>Kenya</b>	Nav aids AFI/7 Rec. 10/4	Mandera	VOR/DME	1998	Not implemented	Implement facility	Kenya	31/12/2012	U
<b>Lesotho</b>	Nav aids AFI/7 Rec. 10/4	Maseru	VOR/DME	2002	Not implemented	Implement facility	Lesotho	31/12/2012	U
<b>Liberia</b>	Nav aids AFI/7 Rec. 10/4	Robertsfield	ILS 04	1998	Not implemented	Implement facility	Liberia	31/12/2012	U
<b>Libya</b>	Nav aids AFI/7 Rec. 10/4	Sarir	VOR/DME	1998	Not implemented	Implement facility	Libya	31/12/2012	U
<b>Madagascar</b>	Nav aids AFI/7 Rec. 10/4	Antsiranana	VOR	1998	Not implemented	Implement facility	Madagascar	31/12/2012	U
	Nav aids AFI/7 Rec. 10/4	Maintirano	VOR	2002	Not implemented	Implement facility	Madagascar	31/12/2012	U
<b>Sao Tome &amp; Principe</b>	Nav aids AFI/7 Rec. 10/4	Morondava	VOR	1998	Not implemented	Implement facility	Madagascar	31/12/2012	U
	Nav aids AFI/7 Rec. 10/4	Sainte Marie	VOR	1998	Not implemented	Implement facility	Madagascar	31/12/2012	A
	Nav aids AFI/7 Rec. 10/4	Sao Tome	ILS 11	1998	Not implemented	Implement facility	Sao Tome & Principe	31/12/2012	A
<b>Sierra Leone</b>	Nav aids AFI/7 Rec. 10/4	Freetown/ Lungi	ILS 30	1999	Unserviceable	To repair	Sierra Leone	31/12/2012	U

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
	Nav aids AFI/7 Rec. 10/4	Freetown/ Lungi	VOR/DME	1999	Unserviceable	To repair	Sierra Leone	31/12/2012	U
<b>Somalia</b>	Nav aids AFI/7 Rec. 10/4	Hargeisa	VOR/DME	1998	Not implemented	Implement facility	Somalia	31/12/2012	U
	Nav aids AFI/7 Rec. 10/4	Mogadishu	VOR/DME	1998	Not implemented	Implement facility	Somalia	31/12/2012	U
<b>Sudan</b>	Nav aids AFI/7 Rec. 10/4	Geneina	VOR	1998	Not implemented	Implement facility	Sudan	31/12/2012	U
	Nav aids AFI/7 Rec. 10/4	Karina	VOR/DME	1998	Not implemented	Implement facility	Sudan	31/12/2012	U
<b>Tanzania</b>	Nav aids AFI/7 Rec. 10/4	Dodoma	VOR/DME	1998	Not implemented	Implement facility	Tanzania	31/12/2012	U
	Nav aids AFI/7 Rec. 10/4	Mbeya	VOR/DME	1998	Not implemented	Implement facility	Tanzania	31/12/2012	U
<b>Zambia</b>	Nav aids AFI/7 Rec. 10/4	Mongu	VOR	1998	Not implemented	Under installation	Zambia	31/12/2012	U
	Nav aids AFI/7 Rec. 10/4	Solwezi	VOR	1998	Not implemented	Implement facility	Zambia	31/12/2012	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	31/12/2012	U
	AMS AFI/7 Rec. 9/12	Luanda FIC	HF poor quality and unavailable in oceanic area	2004	Improve facilities	Install adequate equipment	ENANA	31/12/2012	U
Dem. Rep. of Congo	AMS AFI/7 Rec. 9/12	Kinshasa FIR	Inadequate VHF coverage of busy ATS routes	1998	Improve facilities	Extension of VHF coverage in progress	DR Congo	31/12/2012	U
Libya	AMS AFI/7 Rec. 9/12	Tripoli FIR	Inadequate VHF coverage of busy ATS routes	2004	Implement remote VHF stations		Libya	31/12/2012	U
Malawi	AMS AFI/7 Rec. 9/12	FIR Lilongwe	VHF coverage incomplete	2001	Install additional VHF relay stations at Muzuzu and Zomba	Extension of VHF coverage in progress. Equipment in place	Malawi	31/12/2012	U
Nigeria	AMS AFI/7 Rec 9/12	Kano FIR	Inadequate VHF Coverage	2009	Improve facilities	Extension of VHF coverage in progress	NAMA	31/12/2012	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	31/12/2012	U