



INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI Planning and Implementation Regional Group Thirteenth Meeting (APIRG/13)

(Sal,Cape Verde, 25 - 29 June 2001)

Agenda Item 5.2: Shortcomings/Deficiencies in the CNS field

(Presented by the Secretariat)

SUMMARY
This paper discusses the latest lists of shortcomings/deficiencies affecting the Aeronautical Fixed Service, Aeronautical Mobile Service and Radio navigation Service.
Action by the meeting is at paragraph 3
References: COM/SG/5 Report APIRG/12 Report

1. Introduction

1.1 The COM/SG/5 Meeting made an in-depth analysis of the lists of shortcomings and deficiencies affecting the operation of the Aeronautical Fixed Service, the Aeronautical Mobile Service and Radionavigation aids as updated by the Secretariat on receipt of information from States, relevant International Organisations and Reports of ICAO missions to States.

2 Discussion

2.1 Review of shortcomings and deficiencies in the Aeronautical Fixed Service networks (AFTN & ATS/DS).

2.1.1 AFTN

2.1.1.1 All the 10 main centres are implemented and operational . However, some main circuits are not yet implemented. Those main circuits are as follows:

- Brazzaville/Johannesburg;
- Brazzaville/Nairobi; and
- Johannesburg/SAM

2.1.1.2 Other main circuits which are implemented but their reliability is still low, are the following main circuits:

Alger	- Niamey:
Nairobi	- Johannesburg
Dakar	- Johannesburg

2.1.1.3 The COM/SG/5 meeting formulated several Draft Conclusions regarding these circuits (APIRG/13 WP/5 refers).

2.1.1.4 A number of AFTN tributary circuits are also still not yet implemented. The updated list of shortcomings and deficiencies in the AFTN service is reflected as **Appendix A** to this working paper.

2.1.2 AT/DS

2.1.2.1 The COM/SG/5 meeting made an in- depth analysis of the status of implementation of the AT/DS plan and the list of shortcomings and deficiencies. The updated list of shortcomings and deficiencies is shown at **Appendix B** to this working paper.

2.3 Review of shortcomings and deficiencies in the aeronautical mobile service

2.3.1 The COM/SG/5 meeting reviewed the list of shortcomings and deficiencies affecting the operation of the aeronautical mobile service in the AFI Region as drawn up by APIRG/12 and proposed remedial actions. The updated list is at **Appendix C** to this working paper . Accordingly, the following Draft Conclusion was adopted:

Draft Conclusion 5/14: Shortcomings and deficiencies in the Aeronautical Mobile Service

That States as much as possible should provide adequate VHF coverage along AT/DS routes used by international air transport in accordance with AFI/7 Recommendation 5/12.

2.4 Radionavigation aids

2.4.1 The COM/SG/5 meeting reviewed the list of shortcomings and deficiencies affecting the operation of the radionavigation aids. The updated list of shortcomings and deficiencies is shown at **Appendix D** to this working paper.

2.4.2 Taking into account that ILS and VORs will be kept operational respectively until 2010 and 2005 at least, the COM/SG/5 meeting recommended States to take into account of the initial strategy for the introduction of GNSS in the AFI Region as endorsed by APIRG/12 meeting. The following draft conclusion was developed:

Draft Conclusion 5/19: Shortcomings and deficiencies in the Radionavigation service

That:

- a) States concerned take remedial action as a matter of high priority to overcome shortcomings and deficiencies affecting radionavigation service by 31 December 2001 shown at Appendix A to the report on Agenda Item 5; and
- b) when eliminating shortcomings and deficiencies affecting radionavigation service States take into account of the initial strategy for the implementation of GNSS in the AFI Region.

2.5 Progress in alleviation of shortcomings and deficiencies.

2.5.1 The following table gives an idea of the progress achieved in eliminating shortcomings in the CNS field since APIRG/11. Progress is very slow after APIRG/12.

	AFTN		ATS/DS		AMS		NAVAIDs	
	S	D	S	D	S	D	S	D
APIRG/11	21	10	29	30	10	9	55	20
APIRG/12	14	6	34	11	9	5	49	15
APIRG/13	12	2	49	4	8	6	42	16

2.5.2 The overall assessment is that little improvement has been achieved since APIRG/12. The main shortcomings are still the un-implemented AFTN main circuits and the ATS/DS circuits.

3. Action by the Meeting

3.1 The APIRG/13 Meeting is invited to:

- a) take note of the information contained in this working paper and,
- b) adopt the Draft Conclusions.

AFTN Shortcomings and deficiencies

Identification		Shortcomings/deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of complete	Priority
1	2	3	4	5	6	7	8	9	10
Rationalized AFTN Plan AFI/7 Rec.9/7	Algeria Niger	Main circuit Alger/ Niamey	10/2/98	D	Unreliable	VSAT being implemented	Algeria ASECNA	31/12/2000	U
	Angola Congo	Circuit Brazzaville/Luanda	10/2/98	S		Implement the circuit	Angola ASECNA		A
	CONGO South Africa	Main circuit Brazzaville/ Johannesburg	10/2/98	S	All traffic to/from Southern Africa is hindered	The two States have agreed to interconnect the ASECNA and SADC VSAT networks	ASECNA South Africa	Satellite circuit OP 9600 bps since July 99 Dakar/Johannesburg	U
	Ethiopia Djibouti	Circuit Addis-Ababa/Djibouti	25/5/97	D	To be improved	To implement LTT circuit	Ethiopia Djibouti	Both States are discussing implementation of an LTT upgrade	A
	Ethiopia Eritrea	Circuit Addis-Ababa/Asmara	25/8/98	S	To be restored	The circuit has been discontinued	Eritrea Ethiopia		
	Ethiopia Sudan	Circuit Addis-Ababa/Khartoum	7/6/96	S			Ethiopia Sudan		A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of complete	Priority
1	2	3	4	5	6	7	8	9	10
Rationalized AFTN Plan AFI/7 Rec.9/7	Gambia Senegal	Circuit Banjul/ Dakar	1/11/00	D		Unserviceable LTT circuit	ASECNA Gambia		A
	Guinea Bissau Senegal	Circuit Dakar/ Bissau	10/2/98	S		To implement LTT circuit	ASECNA Guinea Bissau		A
	Madagascar South Africa	Circuit Antananarivo/ Johannesburg	7/6/96	S	-	VSAT being implemented	ASECNA South Africa	Planned in short term	A
	Madagascar Comoros	Circuit Antananarivo/ Dzaoudzi	7/6/96	S	-	To implement LTT circuit	ASECNA Comoros	Planned in mid term	A
	Burundi Tanzania	Circuit Bujumbura/ Dar-es-salaam	7/6/96	S	VSAT being considered. VSAT OP in Tanzania	VSAT being implemented	Burundi Tanzania		U
	Rwanda Tanzania	Circuit Kigali/ Dar-es-salaam	7/6/96	S	VSAT being considered. VSAT OP in Tanzania	Implement VSAT at Kigali	Rwanda (Tanzania for coordination)		U
	Kenya Congo	Circuit Brazzaville/ Nairobi	25/11/98	S		To implement VSAT	ASECNA Kenya		
	Kenya Somalia	Circuit Nairobi/ Mogadishu	7/6/96	S	SITA OP between FICs		Kenya Somalia	-	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of complete	Priority
1	2	3	4	5	6	7	8	9	10
	South Africa SAM (Argentina)	Circuit Johannesburg/ Buenos Aires	7/6/96	S			South Africa Argentina		A

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1	2	3	4	5	6	7	8	9	10
ATS Direct Speech Circuits Plan, AFI/7 Rec 9/9	Algeria Libya	Circuit Algiers/Tripoli	10/2/98	S		To implement LTF circuit	Algeria Libya		
	Algeria Niger	Circuit Algiers/Niamey	10/2/98	D	To be improved	To be improved	Algeria Niger	VSAT planned	U
	Algeria Senegal	Circuit Algiers/Dakar	1/4/98	S	To be improved	Project VSAT planned	Algeria ASECNA	VSAT to be implemented	A
	Angola Brasilia	Circuit Luanda/ Brasilia	“	S		To implement the circuit.	Angola Brazilia		
	Angola Congo	Circuit Luanda/Brazzaville	"	S	PSTN used via INMARSAT	To implement LTF circuit	Angola ASECNA	"	U
	Angola Ghana	Circuit Luanda/Accra	"	S	Inmarsat phone used from Luanda. Inmarsat also available in Accra.	To implement LTF circuit.	Angola Ghana	"	U
	Burkina Faso/ Ghana	Circuit Ouagadougou/ Accra Bobodioulasso/Accra	“	S S	PSTN in use		Ghana ASECNA Ghana Burkina Faso		A A

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1	2	3	4	5	6	7	8	9	10
ATS Direct Speech Circuits Plan, AFI/7 Rec 9/9	Burundi Tanzania	Circuit Bujumbura/Da-es-salaam	"	S	"	VSAT being implemented.	Burundi Tanzania Kenya	"	U
	Burundi D.R of Congo	Circuit Bujumbura/ Goma	1/4/98	S		To implement LTF circuit	Burundi D.R of Congo		U
	Cameroon/ Congo	Circuit Douala/ Brazzaville	"	S		To implement a VSAT	ASECNA		U
	Cameroon Equatorial Guinea	Circuit Douala/Bata	"	S		To implement LTF circuit	ASECNA Equatorial Guinea		U
	Cameroon/ Gabon	Circuit Douala/ Libreville	"	D		To be improved	ASECNA		U
	Cameroon/ Nigeria	Circuit Douala/ Kano	"	S		To implement LTF circuit	ASECNA		U
	Cameroon/ Chad	Circuit Garoua/ N'Djamena	"	S		To implement LTF circuit	ASECNA		U
	Central African Republic	Circuit Bangui/ Gbadolite	"	S		To implement LTF circuit	R.C.A D.R.C		U
	Chad/Niger	Circuit N'Djamena/ Niamey	"	D		To be improved	ASECNA		U

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1	2	3	4	5	6	7	8	9	10
ATS Direct Speech Circuits Plan, AFI/7 Rec 9/9	Chad/Nigeria	Circuit N'Djamena/ Maidouguri	“	D		To be improved	ASECNA		U
	Chad Sudan	Circuit N'Djamena/ Khartoum	“	S		To implement LTF	ASECNA Sudan		U
	Congo Ghana	Circuit Brazzaville Accra	10/2/98	S			ASECNA Ghana		U
	Congo/Nigeria	Circuit Brazzaville/ Kano	“	S			ASECNA Nigeria		U
	Congo Sao Tome	Circuit Brazzaville/ Sao Tome	10/2/98	S		VSAT to be installed	ASECNA Sao Tome		U
	Congo / Sudan	Circuit Brazzaville/ Khartoum	“	S		VSAT to be installed	Brazzaville Sudan		U
	Côte d'Ivoire Libéria	Circuit Abidjan/ Robertsfield	“	S			ASECNA Libéria		U
	Djibouti Eritrea	Circuit Djibouti/Asmara	7/6/96	D	To be improved	To implement LTF circuit	Djibouti Eritrea		U
	Djibouti Somalia	Circuit Djibouti/ Hargheisa	“	S		To implement LTF circuit	Djibouti Somalia		U
	D.R of Congo Zambia	Circuit: Lubumbashi/Ndola	23/5/97	S	- -	" "	D.R of Congo Zambia		A

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Requirements	States/facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
ATS Direct Speech Circuits Plan, AFI/7 Rec 9/9	Egypt Sudan	Circuit Cairo/Khartoum	7/6/96	S	-	To implement LTF circuit	Egypt Sudan		U
	Equatorial Guinea Gabon	Circuit Bata/Libreville Circuit Malabo/Libreville	“ “	S S		“ “	ASECNA Equatorial Guinea		U
	Eritrea Ethiopia	Asmara/Addis Ababa		S	The circuit has been disconnected	To restore the circuit	Eritrea Ethiopia		U
	Ethiopia Djibouti	Circuit Dire Dawa/ Djibouti	“	S		To implement LTF circuit	Ethiopia Djibouti		U
	Kenya Tanzania	Circuit Mombasa/ Dar-es-salaam Mombasa/ Kilimanjaro	7/6/96	S		To implement the circuits.	Kenya Tanzania		U
			“	S				U	
	Ghana Togo	Accra/Lome Accra/Niamtougou	“ “	S S		Inmarsat phone in use	Ghana ASECNA		AU
	Ghana Sao Tome	Circuit Accra/ Sao Tome	“	S	VSAT planned	To implement LTF circuit	Ghana Sao Tome		U
	Gabon Sao Tome	Circuit Libreville/ Sao Tome	“	S		To implement the circuit	Gabon Sao Tome		U
Guinea-Bissau Gambia	Circuit Bissau/ Banjul	“	S		To implement the circuit	Bissau Gambia			

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Requirements	States/facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
ATS Direct Speech Circuits Plan, AFI/7 Rec 9/9	Guinea-Bissau Guinea	Circuit Bissau/ Conakry	“	S		To implement the circuit	Guinea- Bissau Guinea		U
	Guinea-Bissau Senegal	Circuit Bissau/ Dakar	“	S		To implement the circuit	Guinea- Bissau Senegal		
	Guinea Senegal	Circuit Roberts FIR/Dakar	20/11/98	Đ		VSAT operational since 1999			A
	Libya Sudan	Circuit Tripoli/Khartoum	"	S		To implement LTF circuit	Libya Sudan	"	U
	Madagascar Mozambique	Circuit Antananarivo/Beira	"	S	VSAT to be implemented	Interconnection VSAT SADC&ASECNA	ASECNA Mozambique	Planned in mid term	U
	Libya Niger	Tripoli/Niamey	35069	S			ASECNA Libya		A
	Libya Chad	Tripoli/N'Djamena	35069	S			ASECNA Libya		A
	Madagascar Tanzania	Circuit Antananarivo/ Dar-es-Salaam	7/6/96	S		Interconnection ASECNA & SADC VSAT	ASECNA Tanzania	Planned in mid term	U
	Mali/Mali Mali/Niger	Circuit Bamako/Gao Circuit Gao/ Niamey Circuit Bamako/Mopti	“ “ “	S S S		To implement these circuits			B B B

Identification		Shortcomings/deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
ATS Direct Speech Circuits Plan, AFI/7 Rec 9/9	Mauritania Spain	Circuit Nouadhibou/ Las Palmas	7/6/96	S		VSAT being considered	ASECNA Spain		U
	Nigeria/Gabon	Circuit Lagos Libreville	"	S		VSAT being considered	ASECNA		U
	Rwanda D.R. Congo	Circuit Kigali/Bukavu	7/6/96	S		"	D.R. Congo Rwanda		U
		Kigali/Goma	"	S		VSAT SADC being considered in Rwanda. It is already operational in D.R.Congo			
		Kigali/Kinshasa	"	S					
	Rwanda Tanzania	Circuit Kigali/ Dar-es-Salaam	7/6/96	S			To implement VSAT	Rwanda Tanzania	
	Rwanda Uganda	Circuit Kigali/Entebbe	"	S		To implement VSAT	Rwanda Uganda		U
	Seychelles Tanzania	Circuit Seychelles/Dar-es- Salaam	"	S		To implement LTF circuit	Seychelles Tanzania		U
	South Africa Madagascar	Circuit Johannesburg/ Antananarivo	7/6/96	S		Interconnection VSAT SADC & ASECNA	South Africa ASECNA	Planned in short term	U
Sudan Uganda	Circuit Khartoum/Entebbe	7/6/96	S	---	VSAT being considered	Sudan Uganda		U	

Identification		Shortcomings/deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
ATS Direct Speech Circuits Plan, AFI/7 Rec 9/9	Sudan Saudia Arabia	Circuit Khartoum/Jeddah	7/6/96	S		To implement LTF circuit	Sudan Saudia Arabia		U
	Sudan D.R of Congo	Circuit Khartoum/Kinshasa	7/6/96	S		To implement LTF circuit	Sudan D.R of Congo		U
	Uganda D.R. Congo	Circuit Entebbe/Kinshasa	“	S		VSAT being considered	D.R. Congo Uganda		U

Shortcomings/Deficiencies in the Aeronautical Mobile Service

Identification		Shortcomings and deficiencies				Corrective action			
Requirements	States/ facilities	Description	Date first reported	Implementat ion Status S,D*	Comments	Description	Executing body	Date of complete	Priority for action**
1	2	3	4	5	6	7	8	9	10

Notes:

* implementation status; i.e. S = shortcoming
 D = deficiency

** Priority for action to remedy the shortcoming is based on the following safety assessments:

“U” priority = **Urgent** requirements having a **direct** impact on **safety** and requiring **immediate** corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

“A” priority = **Top priority** requirements **necessary** for air navigation **safety**.

Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

“B” priority = **Intermediate** requirements **necessary** for air navigation **regularity and efficiency**

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

Identification		Shortcomings/Deficiencies				Corrective action			
Requirements	States/Facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
AFI/7, Rec. 9/12	ANGOLA Luanda ACC	Inadequate VHF coverage of busy ATS routes	02/02/98	S		Implement remote VHF	ENANA	5VHF stations to be installed by end of 2001	U
	CENTRAL AFR. REP: Bangui/Mpoko	FIS/E	02/02/98	S		Implement remote VHF	ASECNA		A
	CONGO Brazzaville ACC	ACC/F/NW	02/02/98	S		ER VHF installation in progress	ASECNA	2002	U
	Brazzaville	ACC/T/NE	02/02/98	S		“	”		U
	D.R. OF CONGO Kinshasa FIR	Inadequate VHF coverage of busy ATS routes	1/4/98	S	Install remote VHF	Extend VHF to all upper routes	RVA		
	Kinshasa FIR	HF poor quality Selcal not available	1/4/98	D S		Improve Installations	RVA		
	ETHIOPIA	Poor VHF	1/9/99	D		Improve or extend VHF	Ethiopia		
	KENYA	Poor reception	1/9/99	D	No back-up radio	Tower and approach	Kenya		
	LIBERIA	Inadequate VHF	1/9/99	D	Only tower frequency operation		Liberia		
	NAMIBIA Windhoek FIR	Inadequate VHF coverage	1/4/98	D	Additional VHF relay stations	Extend VHF coverage	Namibia		U
NIGERIA Kano ACC	VHF coverage not adequate	02/02/98	S		VHF extension in progress	Nigeria		U	

Identification		Shortcomings/Deficiencies				Corrective action			
Requirements	States/Facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
	NIGERIA Lagos/Murtala Muhammed	Tower VHF; Approach VHF	1/9/99	D	No back-up radio Congestion	VHF extension in progress	Nigeria		U
	SENEGAL Dakar ACC	VHF extension incomplete	1/4/98	D		Remote VHF in test	ASECNA		A
	SOMALIA/SOMALIE Mogadishu ACC	ACC/U	02/02/98	S			Somalia		U
	SUDAN Khartoum FIR	Inadequate VHF coverage of busy routes	1/4/98	D		VSAT remotes envisaged	Sudan		U
	ZIMBABWE Harare	VHF not adequate	1/9/99	D	Low power		Zimbabwe		

Identification		Shortcomings/Deficiencies				Corrective action			
Requirements	States/Facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
AFI/7, Rec. 10/4	Angola /Cuito Cuanavale	VOR/DME	15/01/98	S		Implement facility	Angola		U
	Angola/Huambo	VOR/DME	15/01/98	D		To repair	“	2001	A
	Angola/Kuito	VOR/DME	15/01/98	S		Implement facility	“	2001	A
	Angola/Luena	VOR/DME	15/01/98	S		Implement	”	2001	U
	Angola/Saurimo	VOR/DME	15/01/98	S		“	”	2001	U
	Cameroon /Foumban	VOR	15/01/98	S		Implement facility	Cameroon		U
	Cameroon/Maroua	VOR	15/01/98	S		“	Cameroon		A
	Côte d’Ivoire /Bouake	ILS 21	1/1/97	D		To repair	Côte d’Ivoire		A
	Dem. Rep. of Congo /Kalemie	VOR/DME	15/1/98	D		To repair	D.R. Congo		U
	Dem. Rep. of Congo/Kindu	VOR	15/01/98	S		Implement facility	“		U
	Dem. Rep. of Congo/Kinshasa	DME	15/1/98	D		To repair	“		A
	Dem. Rep. of Congo/Kisangani	VOR/DME	15/01/98	D		“	”		A

Identification		Shortcomings/Deficiencies				Corrective action			
Requirements	States/Facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
	Dem. Rep. of Congo/Lubumbashi	DME	15/1/98	D	Flight calibration not done	“	D.R. Congo		A
	Gambia /Banjul	DME	15/01/98	D	Unserviceable	To repair	Gambia		U
	Guinea /Kankan	VOR	15/01/98	S		Implement facility	Guinea		A
	Guinea/Labe	VOR	15/01/98	S		Implement facility	“		A
	Guinea/Nzerekore	VOR	15/01/98	S		“	”		A
	Guinea Bissau	ILS	1/10/99	D	Intermittent		Guinea Bissau		A
	Kenya /Mandera	VOR/DME	15/01/98	S		Implement facility	Kenya		U
	Kenya/Nairobi	All nav aids frequently not available VOR/DME*	1/4/98	⊖	VOR MV, GV, TV Not calibrated	Improve maintenance and power supply	Kenya		⊖
	Kenya/Mombasa	VOR/DME unreliable	1/4/98	⊖		——“	Kenya		⊖

Identification		Shortcomings/Deficiencies				Corrective action			
Requirements	States/Facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
	Lesotho /Maseru	VOR/DME	15/01/98	D	OP on one unit	To repair	Lesotho		A
		ILS unreliable	15/01/98	D		“	“		A
	Liberia /Robertsfield	ILS 04	15/01/98	S		Implement facility	Liberia		A
	Libya /Benghazi	ILS 33L	15/01/98	S		Implement facility	Libya		A
	Libya/Sarir	VOR/DME	15/01/98	S		“	”		U
	Libya/Tripoli	ILS 09	15/01/98	S		“	”		A
	Madagascar /Antsiranana	VOR	15/1/98	D		To repair	Madagascar		U
	Madagascar/Morondava	VOR	15/01/98	S		Implement facility	Madagascar		A
	Madagascar/Nosy-Be/Fascene	ILS 23	15/01/98	S		“	”		A
	Madagascar/Nosy-Be/Fascene	VOR/DME	15/01/98	D		To repair	Madagascar		A
	Madagascar/Sainte Marie	VOR	15/01/98	S		Implement facility	“		A
	Madagascar/Tolagnaro	VOR/DME	15/01/98	S		“	”		U

Identification		Shortcomings/Deficiencies				Corrective action			
Requirements	States/Facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
	Madagascar/Toliara	VOR	15/01/98	S		“	”		U
	Mali/Kayes	VOR	15/01/98	S		Implement facility	Mali		U
	Mali/Kidal	VOR	15/01/98	S		“	”		A
	Mali/Nioro	VOR	15/01/98	S		“	”		A
	Mali/Tessalit	VOR	15/01/98	S		“	”		U
	Mali/Tombouctou	ILS 07	15/01/98	S		“	”		A
	Nigeria/Ilorin	ILS 05	15/01/98	S		Implement facility	Nigeria	2001	A
	Nigeria/Kano	ILS/DME VORDME	01/02/00	D	facilities not calibrated			2001	A
	Nigeria/Port Harcourt	ILS	01/10/99	D	Unserviceable		Nigeria	2000	A
	Sao Tome/Sao Tome	ILS 01	15/01/98	S		Implement facility	Sao Tome		A
	Sierra Leone Freetown/Lungi	ILS VOR/DME	01/01/99 01/01/99	D D	Unserviceable		Sierra Leone		A A
	Somalia/Hargeisa	VOR/DME	15/01/98	S		Implement facility	Somalia		U

Identification		Shortcomings/Deficiencies				Corrective action			
Requirements	States/Facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
	Somalia/Mogadishu	VOR/DME	15/01/98	S		“	”		U
	Sudan /Juba	ILS 13	15/01/98	S		Implement facility	Sudan		A
	Sudan/Juba	VOR/DME	15/01/98	S		“	”		U
	Sudan/Malakal	VOR/DME	15/01/98	S		“	”		U
	Sudan/Port Sudan	ILS 36	15/01/98	S		“	”		A
	Tanzania /Dar es Salaam	VOR/DME ILS RW 905	09/99	D	6° error	Repair in progress. DME being replaced. DVOR/DME contract signed	Tanzania	1999	U
	Tanzania/Dodoma	VOR/DME	15/01/98	S		Implement facility	Tanzania		U
	Tanzania/Kilimanjaro	ILS 09	15/01/98	S		“	”		A
	Tanzania/Kilimanjaro	VOR/DME	01/10/99	D	No flight check	“	“		
	Dar-Es-Salaam	DME	01/09/99	D	Unserviceable		Tanzania		A

Identification		Shortcomings/Deficiencies				Corrective action			
Requirements	States/Facilities	Description	Date first reported	Implementation status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
	Tanzania/Mbeya	VOR/DME	15/01/98	S		“	”		U
	Tanzania/Mwanza	DME	15/01/98	S		DME being installed	”	1998	U
	Tanzania/Zanzibar	VOR/DME	15/01/98	S		Implement facility	Tanzania		A
	Zambia /Kaoma	VOR	15/01/98	S		Implement facility	Zambia		U
	Zambia/Livingstone	ILS 10	15/01/98	S		“	”		A
	Zambia/Ndola	ILS 10L	15/01/98	S		Implement facility	Zambia		A
	Zambia/West Two	VOR	15/01/98	S		“	”		U
