



INTERNATIONAL CIVIL AVIATION ORGANIZATION
AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
SECOND MEETING OF THE COMMUNICATIONS, NAVIGATION AND
SURVEILLANCE SUB-GROUP (CNS/SG/2)

(Dakar, 22-25 May 2007)

Agenda Item 5: Aeronautical Radio Navigation Service

5.1 Review of the implementation status and performance of the aeronautical radio navigation service, and identification of deficiencies and remedial action .

(Presented by the Secretariat)

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| SUMMARY |
| This paper examines the status of implementation of ARNS facilities in the AFI Region and identifies deficiencies and corrective measures for their elimination. |
| Action to be taken is at paragraph 3. |
| References: <ul style="list-style-type: none">• APIRG/15 Report• Input from States |

1. Introduction

1.1 . This paper reviews the current status of ARNS and related deficiencies in the AFI Region. The information in this paper is from ARNS deficiency report from APIRG/15 and updated information from States.

2. Discussion

2.1. **Appendix A** to this paper contains the updated list of the deficiencies affecting the aeronautical radio navigation service in the Region. It shows that 42 navigational aids required in the AFI ANP have not yet been implemented, whereas 11 installed facilities are to be repaired.

2.2 Table below provides the number of deficiencies for each type of navigational aid:

| NAVAIDS | Number of deficiencies | | |
|---------|------------------------|-----------|-------|
| | To implement | To repair | Total |

| | | | |
|---------------------|------------------|------------------|------------------|
| VOR | 16 | 1 | 17 |
| VOR/DME | 17 | 5 | 22 |
| DME | 1 | 2 | 3 |
| ILS | 7 | 3 | 10 |
| <i>Total</i> | <i>42</i> | <i>11</i> | <i>52</i> |

2.3 It shows that radionavigation deficiencies are 20.51% of the reported CNS deficiencies .

3. Action by the CNS Sub-group

3.1 The CNS Sub-group is invited to:

- a) Take note of the information provided in this paper;
- b) Review and update **Appendix A** (as required);
- c) Urge States concerned to endeavor to implement any available remedial solutions as soon as possible;
- d) Formulate any conclusion aimed at improving ARNS efficiency in the AFI Region.

Deficiencies affecting 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 implementation</i> | <i>Priority</i> |
|---------------------------|---------------------------|-------------------------------|----------------------------------|----------------------------|-------------------------------|---|-----------------------|---------------------------------------|-----------------|
| <i>Angola</i> | | | | | | | | | |
| | Nav aids AFI/7, Rec. 10/4 | Cuito Cuanavale | VOR/DME | 1998 | | Implement facility | ENANA | 2001 | U |
| | Nav aids AFI/7, Rec. 10/4 | Huambo | VOR/DME | 1998 | | To repair | ENANA | 2001 | A |
| | Nav aids AFI/7, Rec. 10/4 | Kuito | VOR/DME | 1998 | | Implement facility | ENANA | 2001 | A |
| | Nav aids AFI/7, Rec. 10/4 | Saurimo | VOR/DME | 1998 | | Implement facility | ENANA | 2001 | U |
| <i>Cameroon</i> | | | | | | | | | |
| | Nav aids AFI/7, Rec. 10/4 | Bafoussam | VOR/DME | 1998 | Not implemented | Implement facility | Cameroon | | U |
| | Nav aids AFI/7, Rec. 10/4 | Maroua | VOR | 1998 | Not implemented | Implement facility | Cameroon | | U |
| <i>Cote d'Ivoire</i> | | | | | | | | | |
| | Nav aids AF/7 Rec. 10/4 | Bouake | ILS 21 | 1997 | Unserviceable | To repair | Cote d'Ivoire | | A |
| | Nav aids Rec.10/4 | Bouake | DME | 2001 | Unserviceable | To repair | Cote d'Ivoire | | A |
| <i>Dem. Rep. of Congo</i> | | | | | | | | | |
| | Nav aids AFI/7, Rec. 10/4 | Kalemie | VOR/DME | 1998 | Unserviceable | To repair | DR Congo | | U |
| | Nav aids AFI/7, Rec. 10/4 | Kindu | VOR | 1998 | Unserviceable | To repair | DR Congo | | U |
| | Nav aids AFI/7, Rec. 10/4 | Kisangani | VOR/DME | 1998 | Unserviceable | To repair | DR Congo | | A |
| | Nav aids AFI/7 Rec. 10/4 | Lubumbashi | DME | 1998 | unserviceable | To repair | DR Congo | | A |
| <i>Djibouti</i> | | | | | | | | | |
| | Naviads AF/7 Rec. 10/4 | Djibouti | VOR/DME | 2002 | Not implemented | Implement Facility | Djibouti | | U |
| <i>Guinea Equatorial</i> | | | | | | | | | |
| | Nav aids AF/7 Rec. 10/4 | Malabo | VOR/DME | 2001 | Not implemented | implement facility | ASECNA | | U |
| | Nav aids Rec. 10/4 | Malabo | ILS | 2001 | Not implemented | implement facility | ASECNA | | U |

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 |
| Nav aids AF/7 Rec. 10/4 | Eldoret | DVOR/DME | 2005 | unserviceable | Implement Facility | Kenya | A |
| Naviads Rec. 10/4 | Garissa | DVOR/DME | 2005 | Unserviceable | Implement facility | Kenya | A |

Lesotho

| | | | | | | | |
|------------------------------|--------|---------|------|-----------------|--------------|---------|---|
| Nav aids AFI/7, Rec. 10/4 | Maseru | VOR/DME | 2002 | Not implemented | To implement | Lesotho | U |
| Nav aids AF/7 Rec.10/4 | Maseru | ILS | 2002 | Not implemented | To implement | Lesotho | U |

Liberia

| | | | | | | | |
|-----------------------|--------------|-----|------|---------------|-----------|---------|---|
| Nav aids Rec. 10/4 | Robertsfield | ILS | 1998 | Unserviceable | To repair | Liberia | A |
|-----------------------|--------------|-----|------|---------------|-----------|---------|---|

Libya

| | | | | | | | |
|----------------------|----------|---------|------|-----------------|--------------------|-------|---|
| Nav aids Rec 10/4 | Benghazi | ILS | 1998 | Not implemented | Implement facility | Libya | U |
| Nav aids Rec.10/4 | Sarir | VOR/DME | 1998 | Not implemented | Implement facility | Libya | A |
| Nav aids | Tripoli | ILS 09 | 1998 | Not implemented | Implement facility | Libya | 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 implementation</i> | <i>Priority</i> |
|--------------------------------|---------------------------|-------------------------------|----------------------------------|----------------------------|-------------------------------|---|-----------------------|---------------------------------------|-----------------|
| <i>Madagascar</i> | | | | | | | | | |
| | Nav aids AFI/7, Rec. 10/4 | Antsiranana | VOR | 1998 | Unserviceable | To repair | Madagascar | | U |
| | Nav aids AFI/7, Rec. 10/4 | Maintirano | VOR | 2002 | Unserviceable | To repair | 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 | Nosy-Be/Fascene | VOR/DME | 1998 | Unserviceable | To repair | Madagascar | | A |
| | Nav aids AF/7 Rec. 10/4 | Nosy-Be/Fasce | ILS 23 | 1998 | Not implemented | Implement facility | Madagascar | | A |
| | Nav aids AFI/7, Rec. 10/4 | Sainte Marie | VOR | 1998 | Not implemented | Implement facility | Madagascar | | A |
| | Nav aids AF/7 Rec. 10/4 | Tolagnaro | VOR | 1998 | Not implemented | Implement Facility | Madagascar | | U |
| | Nav aids AFI/7, | Toliara | VOR | 1998 | Not implemented | Implement facility | Madagascar | | U |
| <i>Mali</i> | | | | | | | | | |
| | Nav aids AF/7 Rec. 10/4 | Kayes | VOR | 1998 | Not implemented | Implement facility | Mali | | U |
| | Nav aids AF/7 Rec.10/4 | Kidal | VOR | 1998 | Not implemented | Implement facility | Mali | | A |
| | Nav aids AF/7 Rec. 10/4 | Nioro | VOR | 1998 | Not implemented | Implement facility | Mali, | | A |
| | Nav aids AFI/7, Rec. 10/4 | Tessalit | VOR | 1998 | Not implemented | Implement facility | Mali, ASECNA | | U |
| | Nav aids Rec. 10/4 | Tombouctou | ILS 07 | 1998 | Not implemented | Implement facility | Mali | | A |
| <i>Sao Tome & Principe</i> | | | | | | | | | |
| | Nav aids AFI/7, Rec. 10/4 | Sao Tome | ILS 01 | 1998 | Not implemented | Implement facility | Sao Tome & Principe | | A |
| <i>Sierra Leone</i> | | | | | | | | | |
| | Nav aids AFI/7, Rec. 10/4 | Freetown/Lungi | ILS | 1999 | Unserviceable | To repair | Sierra Leone | 28/11/2002 | U |
| | Nav aids AFI/7, Rec. 10/4 | Freetown/Lungi | VOR/DME | 1999 | Unserviceable | To repair | Sierra Leone | 28/11/2002 | 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> |
|------------------|---------------------------|-------------------------------|----------------------------------|----------------------------|-------------------------------|---|-----------------------|---------------------------------------|-----------------|
| <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 | Juba | ILS 13 | 1998 | Not implemented | Implement facility | Sudan | | A |
| | Nav aids AFI/7, Rec. 10/4 | Juba | VOR/DME | 1998 | Not implemented | Implement facility | Sudan | | U |
| | Nav aids AFI/7, Rec.10/4 | Malakal | VOR/DME | 1998 | Not implemented | Implement facility | Sudan | | U |
| | Nav aids AFI/7 Rec.10/4 | Port Sudan | ILS 36 | 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 | | U |
| | Nav aids AFI/7 Rec. 10/4 | Kilimanjaro | ILS 09 | 1998 | Not implemented | Implement facility | Tanzania | | A |
| | Nav aids AFI/7 Rec. 10/4 | Mbeya | VOR/DME | 1998 | Not implemented | Implement facility | Tanzania | | U |
| | Nav aids AFI/7 Rec. 10/4 | Mwanza | DME | 1998 | Not implemented | Implement facility | Tanzania | | U |
| <i>Zambia</i> | | | | | | | | | |
| | Nav aids AFI/7 Rec. 10/4 | Kaoma | VOR | 1998 | Not implemented | Implement facility | Zambia | | U |
| | Nav aids AFI/7 Rec. 10/4 | Livingstone | ILS 10 | 1998 | Not implemented | Implement facility | Zambia | | A |
| | Nav aids AFI/7 Rec. 10/4 | Solwezi | VOR | 1998 | Not implemented | Implement facility | Zambia | | U |

