

INTERNATIONAL CIVIL AVIATION ORGANIZATION



REPORT OF THE THIRTEENTH MEETING OF THE AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)

(Sal, Cape Verde, 25 – 29 June 2001)

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LIST OF ABBREVIATIONS

ICAO abbreviations and acronyms are contained in ICAO PANS ABC (Doc 8400), the ICAO Lexicon (Doc 9294) and other relevant terminology material. The acronyms listed hereunder have been chosen from those which are specifically related to the activities of the APIRG and/or are most frequently found in this report in order to assist in its reading.

APIRG SUB-GROUPS AND OTHER REGIONAL BODIES

AOP/SG	-	Aerodrome Operational Planning Sub-group
MET/SG	-	Meteorological Sub-group
ATS/AIS/SAR/SG	-	Air Traffic Services/Aeronautical Information Services/Search and Rescue Sub-group
CNS/ATM/IC/SG	-	Communications, Navigation, Surveillance/Air Traffic Management/Implementation Coordination/Sub-Group
COM/SG	-	Communication Sub-group
FASID/TF	-	Facilities and Services Implementation Document Task Force
TF/TF	-	Traffic Forecasting Task Force
LIM/AFI (COM/ MET/RAC) RAN Meeting 1988	-	Limited Africa/Indian Ocean (COM/MET/RAC) Regional Air Navigation Meeting (Lomé, 12 - 27 April 1988)
AFI/7 RAN Meeting	-	Seventh AFI Regional Air Navigation Meeting (Abuja, 12 - 23 May 1997)

OTHER ABBREVIATIONS

ABAS	-	Aircraft -Based Augmentation System
ACAC	-	Arab Civil Aviation Commission
ACAS	-	Airborne Collision Avoidance System
ACI	-	Airport Council International
AFCAC	-	African Civil Aviation Commission
AFI/EUR	-	AFI/EUR informal interface meetings
AFRAA	-	African Airlines Association
AFTN	-	Aeronautical Fixed Service Telecommunication Network
AIC	-	Aeronautical Information Circular
AMBEX	-	AFI Meteorological Bulletin Exchange
ANP	-	Air Navigation Plan
ASECNA	-	Agency for the Safety of Air Navigation in Africa and Madagascar

BUFR	-	Binary Universal Form of Representation for Meteorological Information
EGNOS	-	European Geostationary Navigation Overlay System
FASID	-	Facilities and Services Implementation Document
GBAS	-	Ground-based augmentation system
GPS	-	Global Positioning System
GRIB	-	Processed data in the form of grid-point values expressed in binary form (gridded binary)
IATA	-	International Air Transport Association
IFALPA	-	International Federation of Airline Pilots Association
IFATCA	-	International Federation of Air Traffic Controllers' Association
IFPB	-	In-flight Pilot Broadcast
INMARSAT	-	International Maritime Satellite Organization
IOACG	-	Indian Ocean ATS Coordination Group
ITU	-	International Telecommunications Union
MSAW	-	Minimum Safe Altitude Warning
MSS	-	Mobile Satellite Service
PANAFTEL	-	Pan African Telecommunications Network
RAFC	-	Regional Area Forecast Centre
RGCS	-	Review of the General Concept for Separation Panel
RIMS	-	Reference and Integrity Monitoring System
RNAV	-	Area Navigation
RNP	-	Required Navigation Performance
RSP	-	Required Surveillance Performance
RTSP	-	Required Total System Performance
SADC	-	Southern Africa Development Community
SADIS	-	Satellite Distribution System for information relating to air navigation
SAT/6	-	The sixth informal meeting for the improvement of air traffic services over the South Atlantic (SAT/6 Meeting)
SAT/7	-	The seventh informal meeting for the improvement of air traffic services over the South Atlantic (SAT/7 Meeting)
SBAS	-	Satellite-based augmentation systems
SIGWX	-	Significant Weather
SITA	-	International Aeronautical Telecommunications Corporation
TCAS	-	Traffic Alert Collision Avoidance System
TCC	-	TAF Collection Centre
VSAT	-	Very Small Aperture Terminal
WAFC	-	World Area Forecast Centre
WAFS	-	World Area Forecast System
WRC	-	World Radiocommunication Conference

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PART I – HISTORY OF The meeting

PART I – HISTORY OF The meeting

1. VENUE AND DATE

1.1 The thirteenth meeting of the AFI Planning and Implementation Regional Group (APIRG/13) was held in the conference room of the Crioula Hotel in Santa Maria, Sal, Cape Verde from 25 to 29 June 2001, at the kind invitation of the Republic of Cape Verde.

2. OFFICERS AND SECRETARIAT

2.1 The meeting re-elected Mr. Mohamed Chérif of Tunisia as Chairman, Mr. George Elefteriou of Côte d'Ivoire as First Vice-Chairman and Mr. L. Phesele of Malawi as Second Vice-Chairman. Mr. Chérif chaired all the sessions of the meeting. Paragraph 1.1 under Agenda Item 1 also refers.

2.2 Mr. A. Cheiffou, ICAO Regional Director, Dakar, served as the Secretary of APIRG. The meeting was assisted by Mr. L. Mollel, ICAO Regional Director, Nairobi and the following Officers from the Cairo, Dakar and Nairobi Offices of ICAO:

Mr. H. H. Cisse	-	Regional Officer MET, Dakar
Mr. A. J. Kharuga	-	Regional Officer ATM, Nairobi
Mr. B. M. Sekwati	-	Regional Officer MET, Nairobi
Mr. L. W. Ndiwaita	-	Regional Officer AGA, Nairobi
Mr. D. Ramdoyal	-	Regional Officer ATM, Cairo
Mr. A. Sene	-	Regional Officer CNS, Nairobi
Mr. J. C. Waffo	-	Regional Officer AGA, Dakar
Mr. P. Zo'o Minto'o	-	Regional Officer CNS, Dakar
Mr. K. Brou	-	Regional Officer ATM, Dakar

2.3 Mr. Vladimir D. Zubkov, Chief, Regional Affairs Office and Mr. H. P. Pretorius, Regional Affairs Officer from ICAO Headquarters, Montreal attended all sessions and assisted the meeting.

2.4 The discussions were conducted in English and French and the meeting documentation was issued in both languages. Translation and simultaneous interpretation services were provided under the supervision of Mr. J. Belinga, Translator/Reviser, ICAO WACAF Office, Dakar. He was assisted by Mr. A. Otou-N'Guini, Translator, ICAO Headquarters, Montreal, Miss F. Jouve, Translator, ICAO Office, Paris, and Messrs. M. Diagne and A. Kane, freelance interpreters. Mrs. P. A. Boimond-Basse, Administrative Officer, Dakar assisted the meeting on administrative matters.

2.5 The meeting was opened by the Honourable Minister of Transport and Infrastructure of the Republic of Cape Verde, Mr. Jorge Lopes. On behalf on the Cape Verdeans and their Government, he welcomed the participants to the meeting and expressed appreciation for the large turn out of delegates. He also thanked ICAO for choosing his country to host the thirteenth meeting of APIRG. He highlighted the exceptional geographical position of Cape Verde, which is a hub for oceanic routes, therefore playing a key role in the transit and international overflights. In fact, Sal has been a strategic platform for refuelling and air traffic control in the South Atlantic area. The Honourable Minister pointed out the new challenges the African Civil Aviation has to face with the prospect of the liberalization of air transport market access, bearing in mind the decisions taken in Yamoussoukro in November 1999 and endorsed by Heads of State and Government of African States signatory to the Abuja Treaty in July 2000. He indicated that Cape Verde will continue to address issues relating to the liberalization of air transport and compliance with Standards and procedures of ICAO and build up an efficient safety oversight programme.

2.6 Before that, a welcome address was delivered by the Mayor of the City of Sal, Mr. Basilio Mosso Ramos, wishing the delegates a pleasant stay on the beautiful and friendly Island of Sal.

2.7 The Chairman of the Board of Directors of the Agency for Airports and Air Safety (ASA), Mr. Mario P. Lopes, also addressed the meeting and welcomed the participants. He gave an overview on the historical background of civil aviation in Cape Verde and the role played by ASA in the development of aviation infrastructure, human resources and international cooperation.

2.8 Mr. A. Cheiffou, Regional Director of the Western and Central African Office, Dakar, and Secretary of APIRG, welcomed the participants. He pointed out that Cape Verde was an appropriate location for the convening of this important meeting due to its long-standing role in the development of international civil aviation as far as aviation infrastructure and air traffic control are concerned, and also for its highly qualified human resources. He emphasized the role played by APIRG in planning and implementing air navigation systems in Africa. He pointed out that APIRG meetings are akin to small regional air navigation (RAN) meetings.

2.9 Mr. Cheiffou then reviewed progress achieved since APIRG/12 Meeting in the AGA, COM, CNS, ATM, MET, AIS and SAR fields. He concluded by advocating efficiency in the working methods through increased coordination among APIRG members, between ICAO Regional Offices and with international organizations concerned.

2.10 Speaking on the occasion, the Chairman of APIRG expressed his appreciation to the Cape Verdean Authorities for their kind hospitality. He stressed the importance of civil aviation for the economic and social development of African States and the role of APIRG in planning and implementing air navigation facilities.

3. ATTENDANCE

3.1 The meeting was attended by one hundred and seventy-three (173) participants from 43 States, including 26 States members of APIRG, 15 other States located in the AFI Region, the United Kingdom and the United States, as well as Observers from AFCAC, ASECNA, IATA, IFALPA, IFATCA and Roberts FIR.

3.2 The list of participants is given at Appendix A.

4. AGENDA

The meeting adopted the following agenda :

- Item 1: Election of Chairperson and Vice-Chairpersons
- Item 2: Action by the Air Navigation Commission (ANC) and Council on the APIRG/12 Meeting Report
- Item 3: Review and follow-up of APIRG/12 Conclusions and Decisions, including AFI/7 RAN Meeting outstanding recommendations
- Item 4: Air Navigation issues
 - 4.1 Aerodrome Operations
 - 4.2 Communications
 - 4.3 Air Traffic Management
 - 4.4 Aeronautical Meteorology
 - 4.5 CNS/ATM Planning/Implementation
 - 4.6 ANP/FASID
 - 4.7 Other related matters
- Item 5: Shortcomings and deficiencies in the Air Navigation field in the AFI Region
- Item 6: Human factors and manpower planning
- Item 7: Interregional coordination
- Item 8: CNS/ATM costs and benefits
- Item 9: Technical cooperation
- Item 10: Terms of Reference and working arrangements of APIRG
- Item 11: Any other business

5. **CONCLUSIONS AND DECISIONS**

5.1 APIRG records its actions in the form of conclusions and decisions with the following significance.

5.2 **Conclusions**

5.2.1 Conclusions deal with matters which, in accordance with the group's terms of reference, merit directly the attention of States or on which further action will be initiated by ICAO in accordance with established procedures.

5.3 **Decisions**

5.3.1 Decisions deal with matters of concern only to APIRG and its contributory bodies.

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PART II – REPORT ON AGENDA ITEMS

**AGENDA ITEM 1: ELECTION OF CHAIRPERSON
AND VICE CHAIRPERSONS**

Agenda Item 1: Election of Chairperson and Vice-Chairpersons

1.1 Further to paragraph 2.1 under Part I of this report, the meeting elected its bureau as follows:

- Mr. M. Cherif - Chairman (Tunisia)
- Mr. G. Elefteriou - First Vice-Chairman (Côte d'Ivoire)
- Mr. L. Z. Phesele - Second Vice-Chairman (Malawi)

**AGENDA ITEM 2: ACTIONS BY THE AIR NAVIGATION
COMMISSION (ANC) AND COUNCIL ON THE
APIRG/12 MEETING REPORT**

Agenda Item 2: Action by the Air Navigation Commission (ANC) and Council on the APIRG/12 Meeting report

2.1 Under this agenda item, the meeting noted the actions taken by the ICAO Air Navigation Commission (ANC) and Council on the report of APIRG/12 held in Tunis from 21 to 25 June 1999. The meeting noted that the ANC and Council had reviewed the APIRG/12 Report and took specific actions on certain conclusions as shown in Appendix B. The ANC expressed appreciation that the report contained important conclusions and steps to foster their implementation.

2.2 The meeting noted that among the APIRG/12 conclusions on which the Council had taken specific actions, were Conclusions 12/22 (ATC refresher courses), 12/51 (Completion of the draft AFI Basic ANP and FASID documents) and 12/56 (Institutional strategies for addressing shortcomings in the air navigation field at airports in the AFI Region). With regard to the publication of ACAS II regulations, the Council noted the conclusion and urged States to render it high priority.

2.3 The meeting noted with appreciation that all the available working papers, information papers, AFI Basic ANP and FASID, as well as the reference documents and reports of APIRG contributory bodies were placed by Headquarters on the ICAO web pages of the Regional Offices concerned in accordance with the established procedures well in advance of the meeting as per Conclusion 12/27 (Disseminating of aeronautical and other information).

**AGENDA ITEM 3: REVIEW AND FOLLOW-UP OF APIRG
CONCLUSIONS AND DECISIONS INCLUDING
AFI/7 RAN MEETING RECOMMENDATIONS**

Agenda Item 3: Review and follow-up of APIRG conclusions and decisions, including AFI/7 RAN Meeting outstanding recommendations

3.1 The meeting reviewed action taken on APIRG conclusions and decisions since its twelfth meeting. It noted those on which actions had been completed and reaffirmed those which are still valid and action on them is continuing. A summary of the actions taken in respect of those conclusions and decisions is at Appendix C.

3.2 The meeting also reviewed the outstanding actions on recommendations of the AFI/7 RAN Meeting (Abuja, 1997) referred to it at its eleventh meeting. It noted those on which actions had been completed and identified those which are still valid.

AGENDA ITEM 4 : AIR NAVIGATION ISSUES

Agenda Item 4.1: Review of the report of the Aerodrome Operational Planning Sub-Group (AOP/SG)**4.1.1 Introduction**

4.1.1.1 Under this agenda item, APIRG reviewed the report of the fourth meeting of the AOP Sub-Group held in Nairobi from 28 November to 1 December 2000. The progress made by the AOP/SG on the follow-up of the AFI/7 RAN meeting conclusions, in particular the development of the AFI Basic ANP and FASID, was noted. The group was advised of the review of the table of deficiencies and shortcomings in the AOP field, the implementation of the services in accordance with the ANP requirements and the Annex 14 Standards and Recommended Practices. In addition, the group considered the issue of the impact of the new larger aeroplanes and the human factors in the AOP field.

4.1.2 Planning of en-route alternate aerodrome

4.1.2.1 Pursuant to Conclusion 12/3 (Planning of en-route alternate aerodromes) in which the Secretariat was required to continue obtaining information on the en-route alternate aerodromes to meet the needs of extended range operations by twin engine aeroplanes (ETOPS), the group noted the information provided by Algeria and urged the Secretariat to continue to liaise with States in order to complete this task.

4.1.3 Table AOP

4.1.3.1 The AOP/SG continued the review of Table AOP in the accordance with AFI/7 RAN Conclusion 3/2 by incorporating additional amendments with respect to Algeria and Tunisia. The group also noted that the Secretariat maintained contacts with the Republic of South Africa in order to obtain more accurate information for the AOP Table. On the newly introduced column regarding GNSS aspects, the group acknowledged that information in this column will depend on the input from the work of the CNS/ATM Sub-Group.

4.1.4 Review of the list of shortcomings and deficiencies in the AOP field

4.1.4.1 The group once again noted the review of the list of deficiencies in the AOP field carried out by the AOP Sub-Group. Whilst reviewing the various ways in which information is collected, the group acknowledged that valuable information received from IATA, IFALPA and IFATCA needs validation by State Authorities. On the progress on the elimination of deficiencies which are considered to be impairing the safety of aircraft operations, the group concurred with the sub-group's view that institutional strategies for addressing deficiencies at airports in the AFI Region must be expeditiously implemented, and the efforts being pursued within the sub-regional groupings

such as ASECNA, SADC, East African Community (EAC) and the Roberts flight information region must be encouraged.

4.1.5 Follow-up of the AFI/7 RAN Meeting conclusions and recommendations

General

4.1.5.1 The group concurred with the comment made by the AOP Sub-Group that, although some progress has been made with respect to the implementation of the various AFI/7 RAN conclusions and recommendations, further concrete action was still needed.

Implementation of visual aids

4.1.5.2 The group reaffirmed its previous observation that the formation of autonomous authorities provides an environment where substantial improvement to the efficient collection and prudent use of revenue is realized, hence an increase in the allocation of resources for the implementation and maintenance of visual aids. The group was however of the opinion that this was not necessarily the appropriate solution for all States.

Aerodrome equipment, installation and services

4.1.5.3 The group acknowledged that, due to a number of reasons related to the scarcity of financial resources, States have not implemented fully and uniformly the requirements of Annex 14 provisions. The group also noted that, subsequent to the experiences gained in the implementation of the ICAO Universal Safety Oversight Programme, Annex 14 has been amended to introduce a requirement for the certification of aerodromes. To assist States in implementing this new requirement, ICAO had produced an “Aerodromes Certification Manual” on the basis of which both the WACAF and ESAF Regional Offices were making plans to hold workshops.

Rescue and fire fighting services (RFFS)

4.1.5.4 The group noted that many deficiencies still exist in the provision of RFFS at a number of airports in the region. Furthermore, the group acknowledged that many airports located close to large bodies of water did not have adequate facilities and staff was not adequately trained for rescue in water. The group recognized that, in accordance with Annex 6, operators cannot operate to airports where the required RFFS coverage is below the AFI ANP requirement. Accordingly, airlines might withdraw services at such airports with the associated political, social, economical and other consequences. The group reaffirmed the relevance of AFI/7 RAN Conclusion 4/6 and urged the States to implement it expeditiously.

Bird hazard reduction

4.1.5.5 The group was encouraged by the substantial efforts made to develop and maintain bird hazard reduction measures at a number of airports which were proving to be effective. The group felt that the success being witnessed was the result of the training provided to airport staff and therefore emphasized that the frequency of the ICAO workshops conducted by ICAO ESAF and WACAF Regional Offices be increased and that States be encouraged to host such workshops. The following conclusion was therefore developed:

CONCLUSION 13/1: BIRD HAZARD REDUCTION

THAT THE ICAO ESAF AND WACAF REGIONAL OFFICES HOLD WORKSHOPS ON BIRD HAZARD AT MORE REGULAR INTERVALS AND THAT STATES CONSIDER HOSTING SUCH WORKSHOPS.

4.1.6 Aerodrome emergency plans

4.1.6.1 The group noted that, in spite of the number of workshops that had been conducted by ICAO on this subject, serious deficiencies still exist as regards the implementation of this requirement. Where attempts have been made to develop such plans, they have not been followed up by full-scale and/or partial exercises and, where these have been done, the non-aviation agencies have not participated fully, even though it is realized that, for the plan to be effective, effective participation of all concerned agencies is essential. Often it has been noted that these non-aviation agencies are not adequately sensitized to the essential role they are expected to play. The group therefore urged ICAO to continue holding these workshops, preferably within States in order to also allow the participation of the non-aviation agencies. In addition, States were urged to organize local workshops to increase awareness among all agencies, including those off airports.

4.1.7 Impact of new larger aeroplanes at aerodromes in the AFI Region

4.1.7.1 The group noted the work so far accomplished by ICAO on the subject, which culminated with the introduction of Amendment No. 3 to Annex 14, Vol. I, whose applicability became effective in November 1999 and which introduced a new aerodrome reference code "F" to cover aeroplanes with wing spans from 65 m to 80 m and an outer main gear wheel span from 14 m to 16 m. In addition to the specification on the physical characteristics, there is an introduction of the RFF Category 10 for such aeroplanes.

4.1.7.2 The group also noted that, with respect to the pavement strength, full-scale tests were still being carried out, even though the first indication is that these aeroplanes will not have significant impact requiring substantial investment.

4.1.7.3 The group noted that, despite ICAO work at the global level and studies being conducted by the EANPG Operations Group, there were some aspects specific to Africa which require an AFI regional solution and consequently developed the following conclusion:

CONCLUSION 13/2: NEW LARGER AEROPLANES TASK FORCE (NLA/TF)

THAT A NEW LARGER AEROPLANES TASK FORCE COMPRISING EXPERTS BE ESTABLISHED UNDER THE AEGIS OF THE AOP/SG TO EFFECTIVELY EVALUATE THE LIKELY IMPACT OF NLAS ON THE AERODROMES IN THE AFI REGION AND ADVISE STATES ON THE APPROPRIATE ACTION IN ORDER TO FACILITATE FORWARD PLANNING.

4.1.8 Human factors in the AOP field

4.1.8.1 The group acknowledged that, even with the increasing use of technologies, the human element was very important and that there will still be an indispensable interaction between humans and technology. It considered that there was a need for relevant authorities to develop and implement an elaborate training and retraining programme, supplemented by staff motivation schemes to ensure the retention of trained staff. Furthermore, it was emphasized that market-driven remuneration and scheme of service harmonized throughout the aviation sector should be implemented. The group subsequently adopted the following conclusion:

CONCLUSION 13/3: HUMAN FACTORS IN THE AOP FIELD

THAT:

- a) **STATES SHOULD ENSURE THAT THE NECESSARY RESOURCES ARE MADE AVAILABLE TO DEVELOP AND IMPLEMENT AN APPROPRIATE TRAINING AND RETRAINING PROGRAMME FOR ALL STAFF; AND**
- b) **STATES SHOULD ENSURE THAT THERE IS A UNIFORM POLICY ON THE MANAGEMENT OF AVIATION PERSONNEL (RECRUITMENT, TRAINING, WORK ENVIRONMENT AND CAREER DEVELOPMENT) TO ENSURE THE RETENTION OF THE STAFF ALREADY TRAINED.**

4.2 Review of the report of the fifth meeting of the Communications Sub-group (COM/SG/5)

4.2.1 Introduction

4.2.1.1 The APIRG reviewed the report of the fifth meeting of the Communications Sub-group, which was held in Dakar from 3 to 6 October 2000.

Aeronautical fixed services**Review of the performance and implementation of AFTN circuits of the AFI AFTN Plan and identification of shortcomings and deficiencies**

4.2.2 The meeting reviewed the implementation status of main and tributary circuits in the rationalized AFI AFTN plan, as shown in Appendix D to the report on this agenda item. The meeting acknowledged the efforts made by States for the actual implementation of this plan. It also noted that there are still serious shortcomings and deficiencies which call for urgent remedial action. After analysing the reasons that hamper the implementation and reliability of AFTN circuits in the AFI Region in the search for possible solutions, the meeting adopted the following conclusions:

CONCLUSION 13/4: AFI AFTN CIRCUITS AVAILABILITY**THAT STATES CONCERNED:**

- a) **TAKE REMEDIAL ACTION AS A MATTER OF HIGH PRIORITY, TO ELIMINATE DEFICIENCIES OF MAIN AFTN CIRCUITS;**
- b) **IMPLEMENT, AS A MATTER OF PRIORITY, THE REMAINING CIRCUITS BY 28 NOVEMBER 2002 (AIRAC DATE);**
- c) **IMPROVE AFTN CIRCUITS RELIABILITY TO OVER THE MINIMUM THRESHOLD OF 97%; AND**
- d) **PROVIDE REGIONAL OFFICES WITH MONTHLY AVAILABILITY DATA ON ALL MAIN AND TRIBUTARY CIRCUITS UNDER THEIR RESPONSIBILITY.**

CONCLUSION 13/5: BRAZZAVILLE/NAIROBI MAIN AFTN CIRCUIT**THAT:**

- a) **KENYA AND ASECNA IMPLEMENT THE MAIN BRAZZAVILLE/NAIROBI AFTN CIRCUIT AS SOON AS POSSIBLE; AND**
- b) **THE CONCERNED PARTIES HOLD A MEETING UNDER THE AUSPICES OF ICAO WITH A VIEW TO FINDING A FINAL AND LASTING SOLUTION TO THE MATTER.**

CONCLUSION 13/6: ALGER/NIAMEY MAIN AFTN CIRCUIT

THAT ALGERIA INSTALL AN AFISNET VSAT TERMINAL FOR THE MAIN ALGIERS COM CENTRE AS SOON AS POSSIBLE FOR THE PURPOSE OF UPGRADING THE RELIABILITY OF ALGER/NIAMEY MAIN CIRCUIT.

CONCLUSION 13/7: NAIROBI/JOHANNESBURG MAIN AFTN CIRCUIT**THAT :**

- a) **KENYA AND SOUTH AFRICA UPGRADE, AS A MATTER OF URGENCY, THE AVAILABILITY OF THE NAIROBI/JOHANNESBURG AFTN MAIN CIRCUIT UP TO A MINIMUM OF 97%; AND**
- b) **KENYA AND SOUTH AFRICA AGREE ON A BILATERAL TECHNICAL SOLUTION, INCLUDING AN INCREASE IN THE MODULATION RATE TO A MINIMUM OF 1200 BPS.**

CONCLUSION 13/8: DAKAR/JOHANNESBURG CIRCUIT**THAT:**

- a) **SENEGAL AND SOUTH AFRICA UPGRADE, AS A MATTER OF URGENCY, THE RELIABILITY OF THE DAKAR/JOHANNESBURG MAIN AFTN CIRCUIT; AND**
- b) **SOUTH AFRICA INTEGRATE TO CAFSAT NETWORK.**

4.2.3 South Africa informed the meeting of its participation in the CAFSAT network.

4.2.4 APIRG also noted that Brazzaville/Luanda and Dakar/Bissau tributary AFTN circuits were not yet implemented, and consequently urged States and organizations concerned to implement them.

Review of the configuration of the AFI AFTN network

4.2.5 The meeting discussed at length the merits and demerits of star/triangle configurations. It was agreed that it was necessary to stick to the current star configuration of the rationalized AFTN plan. Nevertheless, the meeting was of the view that the present AFTN configuration could be modified to include the existing reliable bilateral circuits which are not in the plan but which would meet the functionality of some of the circuits not yet implemented.

4.2.6 The meeting also agreed that Johannesburg, which is an AFTN main centre, should replace Mauritius as an entry/exit point between the AFI and ASIA/PAC Regions. Consequently, the following conclusion was adopted:

CONCLUSION 13/9: REVIEW OF THE CONFIGURATION OF THE AFI AFTN PLAN**THAT:**

- a) **JOHANNESBURG AFTN MAIN CENTRE BE AN AFI ENTRY/EXIT BETWEEN THE AFI AND ASIA/PAC REGIONS;**

- b) **THE FOLLOWING AFTN CIRCUIT BE DELETED FROM THE AFI AIR NAVIGATION PLAN: MAURITIUS/ASIA/PAC, BUJUMBURA/DAR-ES-SALAAM, KIGALI/DAR-ES-SALAAM;**
- c) **THE FOLLOWING MAIN AND TRIBUTARY AFTN CIRCUITS BETWEEN JOHANNESBURG AND THE FOLLOWING CENTRES BE INCLUDED IN THE AFI AIR NAVIGATION PLAN: DAKAR, BUJUMBURA, DARES-SALAAM, KIGALI, KINSHASA, LUANDA AND MAURITIUS; AND**
- d) **THE NETWORK CONFIGURATION CHART BE THAT SHOWN AT APPENDIX E TO THE REPORT.**

Note: The circuit Mauritius/ASIA/PAC should be kept operational until the implementation of the circuit Johannesburg/ASIA/PAC.

Review and harmonization of protocols in AFI main AFTN centres

4.2.7 The meeting was informed of the results of the survey conducted on the protocols used in the ten (10) AFI AFTN main centres, pursuant to AFI/7 Recommendation 9/6 aiming at defining a uniform system of interface control. It concluded that bit-oriented protocols should be adopted for the entire AFI Region, and accordingly formulated the following conclusion :

CONCLUSION 13/10: INTRODUCTION OF BIT-ORIENTED PROTOCOLS IN THE AFI REGION

THAT THE AFI MAIN AFTN CENTRES INTRODUCE, IN A GRADUAL MANNER, BIT-ORIENTED PROTOCOLS WITH A VIEW TO UPGRADING THE INTEGRITY OF DATA TRANSMISSION AND PAVING THE WAY TO MIGRATION TO THE AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN).

Formulation of proposals for the migration of the AFI AFTN to the ground element of the ATN

4.2.8 The meeting recalled that APIRG/12 had decided that the Communications Sub-group would continue with the follow-up of the introduction of the ATN in the AFI Region, and noted that the sub-group had consequently established the ATN Planning Task Force, which will develop the AFI ATN implementation plan. APIRG was of the view that the ATN Planning Task Force should also be tasked with the study and formulation of proposals for interoperability and integration of the existing AFI aeronautical satellite telecommunications network (AFISNET), the Central Atlantic FIRs satellite telecommunications network (CAFSAT) and the Southern Africa Development Community (SADC) satellite networks. In this respect, a proposal for a meeting between ICAO, INTELSAT and VSAT service providers and user organizations for international civil aviation was agreed. Guinea informed the meeting of its intention to become a member of the Communications Sub-group of the ATN Planning Task Force. The following conclusion was adopted:

CONCLUSION 13/11: VSAT NETWORKS INTEROPERABILITY/INTEGRATION

THAT A MEETING BE ORGANIZED BETWEEN ICAO, INTELSAT AND VSAT SERVICE PROVIDERS AND USER ORGANIZATIONS FOR INTERNATIONAL CIVIL AVIATION IN ORDER TO FIND OUT WAYS AND MEANS OF ACHIEVING INTEROPERABILITY AND INTEGRATION OF VSAT NETWORKS IN THE AFI REGION.

4.2.9 The meeting was of the view that the ATN is a complex system that introduces new notions which are not too familiar even to specialists in the AFI Region. Therefore, it was agreed that the first step should be an educational process to familiarize AFI specialists with these new notions and systems, and called upon the continuation of the ICAO educational process. The following conclusion was formulated:

CONCLUSION 13/12: SEMINARS ON THE AERONAUTICAL TELECOMMUNICATIONS NETWORK (ATN)

THAT ICAO CONTINUE TO ORGANIZE SEMINARS ON THE ATN IN THE AFI REGION.

Upgrading of the modulation rate for main AFTN circuits.

4.2.10 The meeting was informed that only 30% of AFI main circuits transmit at a minimum of 1200 baud, 20% are not implemented or are deficient, and the remaining 50% are transmitting at a slow speed of 50 baud. The meeting therefore recognized that APIRG Conclusion 12/13 was still valid.

Use of SITA network for AFTN traffic

4.2.11 The meeting recalled the discussions at APIRG/12 on the use of SITA which incurs financial charges to AFTN providers, which was not the case in the past. It was of the view that actual implementation of the AFI AFTN plan would resolve this problem, and therefore formulated the following conclusion:

CONCLUSION 13/13: USE OF SITA NETWORK FOR AFTN CIRCUITS REQUIREMENTS

THAT STATES RESORTING TO TEMPORARY SITA CIRCUITS ON A BILATERAL BASIS FOR AFTN PURPOSES IMPLEMENT AS SOON AS POSSIBLE THE AFTN CIRCUITS INCLUDED IN THE AIR NAVIGATION PLAN.

Note: As the SITA network is deemed to be effectively used by States as a back up system, charging problems should be negotiated through direct dialogue among the parties concerned.

Implementation of VSAT networks in the region

4.2.12 APIRG was informed of the developments in the use of VSAT technology being implemented in some parts in the AFI Region. It was noted that the SATCOM network for the Western and Central African Region was being extended progressively in the region and would henceforth be referred to as the AFI aeronautical telecommunications satellite network "AFISNET". Progress achieved in the implementation of the CAFSAT network was also noted, as was the need for its interconnection with AFI's existing VSAT networks.

Interconnection of ASECNA and SADC VSAT networks

4.2.13 The meeting noted that ASECNA and ATNS had not implemented APIRG Conclusion 12/10 on the interconnection of the ASECNA and SADC networks as a means to achieving a number of AFS circuits in the AFI Region, notably in areas of routing AR3, AR4, AR8 and AR10. It also noted that an agreement was reached between both parties for implementing an alternate solution consisting of implementation of the following VSAT terminals:

- a) Antananarivo: a SADC VSAT compatible terminal pointed to INTELSAT 604;
- b) Brazzaville: an AFISNET VSAT compatible terminal pointed to INTELSAT 707; and
- c) Johannesburg: an AFISNET VSAT compatible terminal pointed to INTELSAT 707.

4.2.14 The following conclusion was then adopted:

CONCLUSION 13/14: INTERCONNECTION BETWEEN VSAT NETWORKS – AFTN AND ATN/DS CONNECTIVITY

THAT ASECNA AND (ATNS) SOUTH AFRICA PROVIDE, AS A MATTER OF URGENCY, THE FOLLOWING VSAT TERMINALS:

- a) **ANTANANARIVO: A SADC VSAT COMPATIBLE TERMINAL POINTED TO INTELSAT 604;**
- b) **BRAZZAVILLE: AN AFISNET VSAT COMPATIBLE TERMINAL POINTED TO INTELSAT 707; AND**
- c) **JOHANNESBURG: AN AFISNET VSAT COMPATIBLE TERMINAL POINTED TO INTELSAT 707.**

Upgrading of AFS

4.2.15 The meeting was requested by several States and organizations to consider amendment proposals to the AFI rationalized AFTN plan by including direct circuits between tributary centres, in order to avoid long transmission delays (more than 5 minutes) inherent in the current configuration with several main intermediary centres. The meeting was of the opinion that an amendment to the rationalized AFTN plan was not necessary for this reason, and that concerned States wishing to do so could implement such direct circuits on a bilateral or multilateral basis by resorting to VSAT technology pursuant to AFI/7 Recommendations 9/2, 9/8 and 14/20.

Extension of the use of the satellite technology in the AFI Region

4.2.16 APIRG expressed concerns over the lack or limited use of the satellite technology (VSAT) aimed at enhancing aeronautical communications in the northeastern part of the AFI Region, including Chad, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Somalia, Sudan and Uganda. States concerned were thus encouraged to consider the use of this technology within the framework of a sub-regional network when deploying communications facilities. The Communications Sub-group was requested by APIRG to look into this matter. APIRG adopted the following conclusion:

CONCLUSION 13/15: EXTENSION OF THE USE OF SATELLITE TECHNOLOGY

THAT A VSAT NETWORK INVOLVING CHAD, DJIBOUTI, EGYPT, ERITREA, ETHIOPIA, KENYA, LIBYA, SOMALIA, SUDAN AND UGANDA BE ESTABLISHED TO CATER FOR AFS REQUIREMENTS.

Experience and expertise in implementation and maintenance of satellite telecommunication facilities

4.2.17 The meeting noted with satisfaction that, from its VSAT network of 35 stations, ASECNA had already gained significant experience and expertise in respect of the implementation, installation and maintenance of ground supporting aeronautical telecommunications. The meeting was of the opinion that such experience and expertise would be beneficial for many States in the region and therefore called for technical cooperation agreements accordingly. The following conclusion was consequently formulated:

CONCLUSION 13/16: NEED FOR TECHNICAL COOPERATION AGREEMENTS IN THE IMPLEMENTATION OF SATELLITE TELECOMMUNICATION FACILITIES WITHIN THE AFI REGION

THAT, TAKING INTO CONSIDERATION THE AMOUNT OF EXPERIENCE AND EXPERTISE BEING PROGRESSIVELY GAINED IN THE AFI REGION FROM SATELLITE TELECOMMUNICATION TECHNOLOGY, STATES SHOULD RESORT TO MULTIFORM TECHNICAL COOPERATION BILATERAL OR MULTILATERAL AGREEMENTS WHEN IMPLEMENTING AERONAUTICAL TELECOMMUNICATION

FACILITIES, NOTABLY IN RESPECT OF INSTALLATION AND MAINTENANCE OF GROUND EARTH STATIONS.**Implementation of ATS/DS circuits**

4.2.18 The meeting reviewed the implementation status of the AFI ATS/DS network and acknowledged the efforts made by States for the actual implementation of ATS/DS circuits. Nevertheless, it was noted that there are shortcomings and deficiencies which continue to affect the ATS/DS network and call for urgent remedial action. The meeting also observed that satisfying aeronautical communications requirements — including ATS/DS requirements — was a key element of a step-by-step approach to progressively improve air traffic control service in the AFI Region. The following conclusion was adopted:

CONCLUSION 13/17: IMPROVEMENT OF THE ATS/DS NETWORK

THAT, AS A MATTER OF PRIORITY, STATES IMPLEMENT AND IMPROVE ATS/DS CIRCUITS INCLUDED IN THE AIR NAVIGATION PLAN (ANP) WITHIN THE CONTEXT OF A STEP-BY-STEP APPROACH TO PROGRESSIVELY IMPROVE AIR TRAFFIC CONTROL SERVICE IN THE REGION.

Aeronautical mobile services**Implementation of 8.33 kHz VHF channel spacing in the EUR Region**

4.2.19 The meeting was apprised of the planned lateral and vertical expansion of the 8.33 kHz application area in order to fully satisfy operational requirements identified in the EUR Region. AFI States in the EUR/AFI interface area expressed concerns about difficulties likely to be encountered in the absence of adequate coordination procedures. APIRG therefore invited States concerned to monitor 8.33 KHz-related developments and inform the Secretariat of such difficulties, if any.

VHF frequency utilization plan

4.2.20 The meeting recalled AFI/7 Recommendation 9/11 (Actualization of the VHF frequency utilization plan) and that the AFI/7 RAN Meeting had introduced in the VHF aeronautical mobile service plan five (5) new services requiring frequency allotments: ACC-L, ACC-U, APP-H, FIS-L and FIS-U. It was also noted that assignments have been done using frequencies which are reserved worldwide.

4.2.21 The meeting then considered and adopted an updated VHF frequency utilization plan based on 25 kHz VHF channel spacing. The updated VHF utilization plan is shown at Appendix F to this report. The following conclusions were formulated:

CONCLUSION 13/18: INTRODUCTION OF 25 KHZ VHF CHANNEL SPACING IN THE AFI REGION

THAT VHF FREQUENCY ASSIGNMENT IN THE AFI REGION BE DONE ON THE BASIS OF 25 KHZ CHANNEL SPACING.

CONCLUSION 13/19: VHF FREQUENCY UTILIZATION PLAN

THAT THE VHF FREQUENCY UTILIZATION PLAN FOR THE AFI REGION BE THE PLAN SHOWN AT APPENDIX F TO THIS REPORT.

CONCLUSION 13/20: VHF FREQUENCY ASSIGNMENTS ON WORLDWIDE RESERVED FREQUENCIES

THAT STATES CONCERNED CEASE THE USE OF WORLDWIDE RESERVED FREQUENCIES (121.5 AND 123.5 MHZ) FOR SERVICES OTHER THAN THOSE PLANNED BY ICAO IN ANNEX 10.

Survey on HF frequency congestion and VHF coverage in the AFI Region

4.2.22 The meeting was apprised of the results of the survey which was conducted by IATA and IFALPA on HF frequency congestion and VHF coverage in the AFI Region. It transpired that mobile communications have been significantly improved, though it was also recognized that shortcomings/deficiencies still exist in some areas of the AFI Region. The following conclusion was formulated:

CONCLUSION 13/21: CONGESTION OF HF FREQUENCIES IN THE AFI REGION

THAT, IN ORDER TO REDUCE CONGESTION, STATES SHOULD:

- a) **IMPLEMENT, AS A MATTER OF URGENCY, ATS/DS CIRCUITS IN THE AIR NAVIGATION PLAN (ANP);**
- b) **REFRAIN FROM USING AIR-GROUND HF FREQUENCIES FOR GROUND-GROUND COMMUNICATIONS; AND**
- c) **REQUEST AIR TRAFFIC SERVICES PERSONNEL TO USE AIR-GROUND VHF FREQUENCIES RATHER THAN HF FREQUENCIES TO OBTAIN INFORMATION SUCH AS *SOULS ON BOARD, ENDURANCE, TYPE OF AIRCRAFT AND REGISTRATION.***

Frequency assignments in the band 1559-1610 MHz (allocated to the RNSS)

4.2.23 The meeting reviewed the extent of fixed services assignments in the RNSS frequency band 1559-1610 MHz in some parts of the AFI Region. It noted that twelve (12) of the twenty-five

(25) States concerned had indicated that they do not assign frequencies in the 1559-1610 MHz band. The meeting therefore urged remaining States to reply as soon as possible.

4.2.24 APIRG noted that, following ITU WRC-2000, the national footnotes regarding GNSS in the radio regulations will, in the first stage, become secondary after 1 January 2005 (2010 in some countries), and that all footnotes should be suppressed after 1 January 2012. Therefore, States concerned were urged to take action for the early deletion of their footnotes, for instance at the ITU WRC-2003. The following conclusion was adopted:

CONCLUSION 13/22: TERMINATION OF THE USE OF THE BAND 1559-1610 MHZ BY FIXED SERVICES

CONSIDERING THAT SHARING THE BAND 1559-1610 MHZ ALLOCATED TO THE RNSS (INCLUDING GNSS) WITH THE FIXED SERVICES IS NOT FEASIBLE, STATES CONCERNED SHOULD COORDINATE WITH THE CORRESPONDING NATIONAL FREQUENCY MANAGEMENT AUTHORITY IN ORDER TO:

- a) **DETERMINE IF ANY FIXED SERVICE STATIONS OPERATE IN THE BAND 1559-1610 MHZ AND, IF SO, EITHER CEASE THEIR OPERATION OR RELOCATE THEM TO ANOTHER FIXED SERVICE BAND BEFORE GNSS-BASED OPERATIONS ARE APPROVED;**
- b) **ESTABLISH PLANS TO AVOID ANY FUTURE IMPLEMENTATION OF FIXED SERVICE STATIONS TO OPERATE IN THE BAND 1559-1610 MHZ; AND**
- c) **TAKE STEPS TO DELETE THE NATIONAL FOOTNOTES IN THIS BAND AT ITU WRC-2003.**

ICAO position for ITU WRCs

4.2.25 The meeting was apprised of the results of the ITU World Radiocommunication Conference (2000) (WRC-2000), which was held from 8 May to 2 June 2000 in Istanbul, Turkey. In general, the results fully satisfied the ICAO position as a result of ICAO's preparatory activities for the conference and the early awareness and involvement of Contracting States in the development of the ICAO position.

4.2.26 The meeting was also informed that ITU WRC-2000 had developed the agenda for WRC-2003, with several items concerning civil aviation. Considering the major factors that contributed to the success of the ICAO position at ITU WRC-2000, APIRG urged aeronautical administrations to support the ICAO position at ITU WRC-2003. The following conclusion was developed:

CONCLUSION 13/23: SUPPORT FOR ICAO'S POSITION AT ITU WRC-2003

THAT AFI STATES PURSUE THEIR EFFORTS TO PROMOTE AND DEFEND ICAO'S POSITION AT THE ITU WORLD RADIO CONFERENCE (WRC) 2003.

4.3 **Review of the report of the sixth meeting of ATS/AIS/SAR Sub-Group (ATS/AIS/SAR/SG/6)**

4.3.1 **Introduction**

4.3.1.1 APIRG reviewed the report of the sixth ATS/AIS/SAR Sub-Group meeting which was held in Dakar from 8 to 12 May 2000.

4.3.2 The meeting noted that the sub-group, taking into account its terms of reference and work programme, had identified some facilities and services which had not been implemented. It was therefore necessary to re-emphasize the need for States to take urgent action in order to address these non-implementation problems. Among these, major areas of concern were:

- a) the review of ATS airspace (including ATS route network) in order to respond to operational requirements;
- b) the identification of routes/route segments requiring realignment;
- c) the identification of routes which can be deleted from the ANP;
- d) update “Notes” in Table ATS-1;
- e) consideration of ATS interface routes with other regions;
- f) the identification of unimplemented routes and the establishment of target date(s) for their implementation;
- g) the provision of area control service in the region;
- h) the ATM requirements for aeronautical surveillance in the AFI Region; and
- i) the assignment of five-letter name-code designators to route intersections as emphasized by IFALPA.

4.3.3 **Review of the ATS route network/airspace organization in the AFI Region**

4.3.3.1 APIRG accordingly reviewed the conclusions emanating from the ATS/AIS/SAR Sub-Group relating to the above requirements. It was agreed that Table ATS-1 (Route Networks) will be included in the appropriate parts of the AFI Basic ANP and FASID in accordance with established procedures for the amendments to the basic ANP and FASID as approved by the ICAO Council. Furthermore, the group exceptionally included some additional ATS routes which were urgently required by the users and had been coordinated by the States concerned. The group also noted that action on some of the previous conclusions emanating from the AFI/7 RAN and APIRG/12 Meetings

concerning airspace management were still not completed and urged the parties concerned to explore ways and means of finding a durable solution in the spirit of the Chicago Convention. The meeting was informed that ATS route UM 114 has been implemented by Algeria and in relevant ASECNA FIRs and that only Nigeria needed to implement its route segment. Based on the foregoing, the following conclusions were developed:

CONCLUSION 13/24: UPDATE OF NOTES IN TABLE ATS-1 OF THE AFI ANP

THAT THE NOTES ON ATS ROUTES TABLE ATS-1 OF ICAO'S *AIR NAVIGATION PLAN — AFRICA-INDIAN OCEAN REGION* (DOC 7474) BE UPDATED AS SHOWN IN APPENDIX G TO THIS REPORT.

CONCLUSION 13/25: TARGET DATE FOR IMPLEMENTATION OF ATS ROUTES

THAT THE RELEVANT ICAO REGIONAL OFFICES INVITE STATES CONCERNED TO IMPLEMENT THE ROUTES SHOWN IN APPENDIX H TO THIS REPORT AS SOON AS POSSIBLE, AND IDEALLY NO LATER THAN 28 NOVEMBER 2002, AND ENSURE THAT IMPLEMENTATION IS CARRIED OUT IN A HARMONIZED MANNER.

CONCLUSION 13/26: COORDINATION MEETING BETWEEN ALGERIA, LIBYA AND TUNISIA

THAT THE PROPOSAL FOR THE DELETION OF ATS ROUTES/ ROUTE SEGMENTS OF UR 986 AND UG623 BE DISCUSSED WITHIN THE FRAMEWORK OF BILATERAL/MULTILATERAL MEETINGS TO BE ORGANIZED UNDER THE AEGIS OF ICAO, PURSUANT TO AFI/7 RAN MEETING CONCLUSION 5/9.

CONCLUSION 13/27: INFORMAL MEETING BETWEEN ALGERIA , MOROCCO AND SENEGAL

THAT AN INFORMAL COORDINATION MEETING BE ORGANIZED UNDER THE AEGIS OF ICAO BETWEEN ALGERIA, MOROCCO AND SENEGAL TO EXPLORE WAYS AND MEANS OF ADDRESSING PROBLEMS ASSOCIATED WITH AIRCRAFT STRAYING INTO ALGER FIR (PROHIBITED AREA P64) AT POINT "BULIS".

CONCLUSION 13/28: IMPLEMENTATION OF ATS ROUTE UM 114

THAT ALGERIA, NIGERIA, GHANA, ASECNA AND IATA MEET UNDER THE AUSPICES OF ICAO TO FINALIZE THE IMPLEMENTATION OF RNAV ROUTE UM 114.

CONCLUSION 13/29: AMENDMENT TO AFI ANP TABLE ATS-1

THAT THE AFI ANP TABLE ATS-1 BE AMENDED TO INCLUDE:

- a) **A REQUIREMENT FOR ATS ROUTES:**

- i) JOHANNESBURG – FRANCISTOWN – VICTORIA FALLS – LIVINGSTONE;
 - ii) MANDERA – TIKAT; AND
 - iii) EL OBEID – AVONO; AND
- b) EXTEND UR982 (LOME – SAO TOME).

Criteria for the establishment of ATS new routes

4.3.3.2 The meeting noted that there were no clearly defined criteria for the establishment of new ATS routes. The meeting decided that the ATS/AIS/SAR Sub-Group should develop such criteria and present them to APIRG for consideration and approval. In light of the foregoing, it was decided that:

DECISION 13/30: CRITERIA FOR THE ESTABLISHMENT OF NEW ATS ROUTES

THAT THE ATS/AIS/SAR SUB-GROUP DEVELOP CRITERIA FOR THE ESTABLISHMENT OF NEW ATS ROUTES IN THE AFI REGION.

4.3.4 Review of the provision of area control service

4.3.4.1 The meeting noted that various ICAO requirements and recommendations highlight the need for the provision of air traffic control service, particularly the Statement of Basic Operational Requirements and Planning Criteria – AFI Region. It noted that the AFI/7 RAN Meeting, in reviewing the status of implementation of air traffic control service in the AFI Region, under Recommendation 5/21, gave clear guidelines to States which were not able to ensure the provision of area control service on a twenty-four hour basis to all flights operating within their respective FIRs.

4.3.4.2 It was also noted with concern that one of the most serious shortcomings in the region in the field of air navigation was the lack of implementation of area control service. It was highlighted that poor communication facilities (ATS/DS, HF, VHF), unreliable navigational aids and inadequate numbers of controllers and training programmes were among the major contributing factors which prevented States from ensuring the provision of air traffic control service. The group consequently adopted the following conclusion:

CONCLUSION 13/31: IMPLEMENTATION OF THE AREA CONTROL SERVICE

THAT STATES, WHICH HAVE NOT YET DONE SO, IMPLEMENT AREA CONTROL SERVICE IN ACCORDANCE WITH THE PRIORITIES SET OUT IN APIRG/12 CONCLUSION 12/20, NOT LATER THAN 28 NOVEMBER 2002.

4.3.5 Allocation of ICAO five-letter name-code designators for the ATS route crossing points

4.3.5.1 APIRG recalled that the AFI/7 RAN Meeting had highlighted the need for all ATS route crossings to be allocated 5-letter name-code designators to allow both controllers and pilots to identify points of potential conflict and to be able to assess the time at which such points will be passed. The meeting was informed that work is in progress in the Nairobi Office and requested the Cairo, Dakar and Paris Offices to allocate five-letter name codes for the easy identification of ATS route crossings.

CONCLUSION 13/32: ALLOCATION OF ICAO FIVE-LETTER NAME-CODE DESIGNATORS FOR THE ATS ROUTE CROSSING POINTS

THAT:

- a) **STATES ALLOCATE FIVE LETTER NAME-CODE DESIGNATORS TO ALL ATS ROUTES CROSSING POINTS, WHERE SUCH POINTS ARE NOT MARKED BY NAVIGATION AIDS; AND**
- b) **WHILE ESTABLISHING SIGNIFICANT AND TRANSFER OF CONTROL AND COMMUNICATIONS POINTS, STATES FOLLOW THE GUIDING PRINCIPLES GOVERNING THE ESTABLISHMENT AND IDENTIFICATION OF SIGNIFICANT POINTS, TRANSFER OF CONTROL/COMMUNICATIONS POINTS AND ALLOCATION OF FIVE-LETTER NAME-CODE DESIGNATORS TO SUCH POINTS.**

4.3.6 Implementation of ACAS II in the AFI Region

4.3.6.1 The meeting noted that the ACAS Task Force Meeting was held in Nairobi, Kenya from 3 to 4 April 2000 pursuant to APIRG/12 Decision 12/1 and AFI/7 Recommendation 5/23. The mandatory carriage and operation of pressure-altitude reporting SSR transponders and ACAS II was effective 1 January 2000 in the AFI Region.

4.3.6.2 It was noted that an implementation strategy was developed, taking into account the difficulties experienced by the AFI States in meeting the effective date of 1 January 2000, in order to meet the deadline of 1 January 2003 so as to conform with the provision of Annex 6, Part 1, paragraph 6.18.1. It also considered the operating procedures in *Procedures for Air Navigation Services — Aircraft Operations* (Doc 8168, Volume I, Part VIII, paragraph 1.1.1) requiring pilots to operate SSR transponders.

4.3.6.3 The group noted the concerns of IATA regarding the need to publish an AIC on the implementation of ACAS II as soon as possible with a view to giving advance warning to operators. The need for adequate training for both air traffic controllers and pilots on the use of ACAS was emphasized. In view of the foregoing, the following conclusions were developed:

CONCLUSION 13/33: ACAS II TRANSITION PERIOD AND EXEMPTION PROCESS IN THE AFI REGION

THAT:

- a) **THE END OF THE TRANSITION PERIOD FOR THE MANDATORY CARRIAGE OF ACAS II BE FIXED TO 1 JANUARY 2003; AND**
- b) **AN ICAO REGIONAL OFFICE BE DESIGNATED TO COORDINATE THE ELEMENTS OF ACAS II EXEMPTIONS IN THE AFI REGION DURING THE TRANSITION.**

CONCLUSION 13/34: CARRIAGE AND OPERATION OF PRESSURE-ALTITUDE REPORTING SSR TRANSPONDERS

THAT THE AFI REGIONAL SUPPLEMENTARY PROCEDURES (DOC 7030) BE AMENDED TO INCLUDE THE FOLLOWING PROCEDURE:

“ALL AIRCRAFT INTENDING TO FLY IN AIRSPACE CLASSES B TO E CARRY AND OPERATE AN SSR PRESSURE-ALTITUDE REPORTING TRANSPONDER BY 1 JANUARY 2003”.

CONCLUSION 13/35: AIC ON THE USE OF SSR TRANSPONDERS

THAT ICAO INVITE STATES TO PUBLISH THE SPECIMEN AIC INDICATED AT APPENDIX I TO THIS REPORT ON THE USE OF PRESSURE-ALTITUDE REPORTING SSR TRANSPONDERS AS SOON AS THE RELEVANT AMENDMENT TO THE *REGIONAL SUPPLEMENTARY PROCEDURES* (DOC 7030) IS APPROVED BY THE COUNCIL OF ICAO.

CONCLUSION 13/36: TRAINING OF PILOTS AND AIR TRAFFIC CONTROLLERS ON THE USE OF ACAS

THAT STATES TAKE APPROPRIATE ACTION IN ORDER TO PROVIDE THE NECESSARY TRAINING TO PILOTS AND AIR TRAFFIC CONTROLLERS ON THE USE OF ACAS PROCEDURES.

CONCLUSION 13/37: PUBLICATION OF ACAS AND SSR TRANSPONDER REQUIREMENTS IN NATIONAL LEGISLATION

THAT ICAO INVITE STATES, THAT HAVE NOT DONE SO, TO PUBLISH IN THEIR NATIONAL LEGISLATION THE APPROPRIATE GUIDANCE MATERIAL FOR ENFORCEMENT OF AWARENESS ON ACAS II AND PRESSURE-ALTITUDE REPORTING SSR TRANSPONDERS REQUIREMENTS AS SOON AS POSSIBLE, BUT NOT LATER THAN 1 JANUARY 2002.

CONCLUSION 13/38: PUBLICATION OF A DRAFT AIC ON ACAS II IMPLEMENTATION

THAT ICAO URGE AFI STATES, WHICH HAVE NOT DONE SO, TO PUBLISH AS SOON AS POSSIBLE, BUT NO LATER THAN AIRAC DATE OF 13 DECEMBER 2001, THE AIC ON ACAS II IMPLEMENTATION AS INDICATED IN APPENDIX J TO THIS REPORT.

CONCLUSION 13/39: PROCEDURES ON THE USE OF ACAS II

THAT ICAO GIVE PRIORITY TO THE DEVELOPMENT OF PROCEDURES ON THE USE OF ACAS II.

4.3.7 Review of the Report of the first meeting of the Airspace Management Task Force (ASM/TF)

4.3.7.1 The meeting noted that an ASM Task Force meeting was held in Nairobi, Kenya (9 – 10 April 2000) pursuant to APIRG/12 Decision 12/24.

4.3.7.2 The following subjects were addressed and the deficiencies pointed out in the region by IFALPA and IATA were the guiding principles for the first ASM meeting:

- a) review of ATS airspaces (ATS routes, TMA and CTR) organization;
- b) the implementation of WGS-84 coordinates;
- c) the establishment and identification of significant reporting points;
- d) the provision of air traffic control in upper airspaces;
- e) training of air traffic controllers;
- f) the uniform application of ATS proficiency assessment and standard auditing procedures; and
- g) reduction of longitudinal separation.

4.3.7.3 The meeting agreed that the ASM Task Force is a dynamic forum through which implementation should be addressed and was of the view that it had not fully completed its tasks, hence there was a need for its continuation. In view of the foregoing, the meeting formulated the following conclusions:

CONCLUSION 13/40: REVIEW OF AIRSPACE ORGANIZATION

THAT STATES BE URGED TO TAKE PROMPT ACTION ON THE PROPOSED CHANGES TO THE AIRSPACE ORGANIZATION INDICATED AT APPENDIX K TO THIS REPORT.

CONCLUSION 13/41: PROVISION OF AIR TRAFFIC SERVICES IN THE UPPER AIRSPACE

THAT, IN ORDER TO IMPROVE THE PROVISION OF AIR TRAFFIC SERVICES IN THE UPPER AIRSPACE, AIR TRAFFIC SERVICES BE PROVIDED, WHERE APPLICABLE, BY THE ACC/FIC RESPONSIBLE FOR THAT FIR.

CONCLUSION 13/42: IMPLEMENTATION OF WORLD GEODETIC REFERENCE DATUM – 1984 (WGS-84) IN THE AFI REGION

THAT:

- a) **STATES, WHICH HAVE NOT DONE SO, BE INVITED TO EXPEDITE ACTION IN ORDER TO IMPLEMENT THE WGS-84 COORDINATES IN THE REGION;**
- b) **ICAO BE INVITED TO ASSIST IN THE TRANSFORMATION OF THE COORDINATES OF THE FIR BOUNDARY POINTS IN THE AFI REGION.**

CONCLUSION 13/43: IMPLEMENTATION OF 10-MINUTE LONGITUDINAL SEPARATION

THAT:

- a) **THOSE STATES THAT HAVE NOT IMPLEMENTED 10-MINUTE LONGITUDINAL SEPARATION MINIMA BY 23 MARCH 2000, AS CALLED FOR BY APRIG/12 RECOMMENDATION 12/44, BE REMINDED OF THE PREREQUISITES FOR ENSURING THE SAFE IMPLEMENTATION OF THIS REQUIREMENT; AND**
- b) **ONCE THE PREREQUISITES REFERRED TO IN A) ABOVE HAVE BEEN MET, INCLUSION OF THE NON-IMPLEMENTATION OF 10-MINUTE LONGITUDINAL SEPARATION MINIMA IN THE LIST OF SHORTCOMINGS/DEFICIENCIES AS DEFINED BY ICAO BE CONSIDERED.**

4.3.8 AIS automation

4.3.8.1 The meeting noted that, in order to develop an AFI Region integrated and automated AIS system, a meeting of the AIS Task Force was organized in Dakar from 3 to 5 May 2000. It was recalled that, pursuant to AFI/7 RAN Meeting Recommendation 12/39 concerning the development of a cohesive AFI Region air navigation plan on AIS automation, the terms of reference were to develop a cohesive, air navigation plan taking into account the provisions of the AFI ANP as well as the method of application provided in the associated FASID.

4.3.8.2 It was noted that the task force had reviewed, as a first step, the status of implementation of ICAO requirements in the AIS/MAP fields. The need to take appropriate measures to eliminate deficiencies which have been reported in the AFI Region was emphasized.

4.3.8.3 The major problems in the fields of AIS/MAP affecting the region are summarized as follows:

- a) some States have not yet produced their AIPs using the new format;
- b) some States do not update their AIPs regularly;
- c) some States do not follow the AIRAC cycle date in accordance with the provisions of Annex 15, Chapter 6 (Para. 6.1.1);
- d) some States do not follow the standard NOTAM format indicated at Appendix 6 to Annex 15 for the issuance of a NOTAM;
- e) most States have not produced the mandatory aeronautical charts in accordance with the provisions of Annex 11, Chapter 4 (paragraph 4.1.3);
- f) the need for training and qualification of AIS/MAP personnel;
- g) the delays in the distribution of aeronautical information (AIP amendments, AIP supplements, AICs, etc.); and
- h) the non-implementation of WGS-84 coordinates.

4.3.8.4 The meeting accordingly endorsed the following conclusions of the AIS Automation Task Force as recommended by the Sub-Group:

CONCLUSION 13/44: AIS AUTOMATION STRATEGY

THAT:

STATES BE URGED TO ACHIEVE AUTOMATION OF THE VARIOUS COMPONENTS OF THE INTEGRATED AIS SYSTEM AND PROCEED WITH AUTOMATION IN ACCORDANCE WITH THE FOLLOWING PHASES:

- a) **AUTOMATION OF AERONAUTICAL INFORMATION OF TEMPORARY NATURE (NOTAM/PIBs AND AIP SUPPLEMENTS); and**
- b) **AUTOMATION OF OTHER ELEMENTS OF THE INTEGRATED AERONAUTICAL INFORMATION PACKAGE (AIP, AIP AMENDMENTS, AICs, ETC.)**

CONCLUSION 13/45: AIS RATIONALIZATION AND ESTABLISHMENT OF REGIONAL AIS SYSTEM CENTRES (RASC) AND NATIONAL AIS SYSTEM CENTRES (NASC) IN THE AFI REGION

THAT:

- a) **THE RATIONALIZATION OF AIS IN THE AFI REGION AND THE ESTABLISHMENT OF REGIONAL AIS SYSTEM CENTRES (RASCs) AND NATIONAL AIS SYSTEM CENTRES (NASCs) BE CARRIED OUT IN ORDER TO UPGRADE THE EFFICIENCY AND QUALITY OF THE AERONAUTICAL INFORMATION AND ITS DISSEMINATION IN ACCORDANCE WITH AFI/7 RAN MEETING REC 12/39. TO ACHIEVE THIS, STATES SHOULD BE URGED TO COMPLETE THE QUESTIONNAIRE AT APPENDIX L TO THE REPORT WITH A VIEW TO COLLECTING INFORMATION TO BE USED FOR THE DEVELOPMENT OF THE TOPOLOGY (NUMBER AND LOCATIONs OF RASCs), WHICH WILL BE PROPOSED FOR THE AFI REGION; AND**
- b) **ONCE THE TOPOLOGY HAS BEEN APPROVED, A PHASED IMPLEMENTATION PLAN BE DEVELOPED FOR THE ESTABLISHMENT OF AN INTEGRATED REGIONAL AUTOMATION AIS SYSTEM IN THE AFI REGION.**

Note 1: The RASC choice should take into account, inter alia, the existing facilities in the States and existing networks in the region, as well as some technical criteria. (A preliminary list of these criteria is shown at Appendix L1 to the Report. The number of RASC should, as far as possible, be kept to a minimum.

Note 2: States' attention is drawn to the level of commitment required to develop this implementation plan.

AIS automation activities in the AFI Region

ASECNA

4.3.8.5 The meeting noted the efforts being expended by ASECNA towards the gradual introduction of automation in the AIS/MAP fields within ASECNA's 16 member States and, in particular, within the Dakar and Niamey FIRs. The approach and methodology being used were explained and the need to harmonize equipment and procedures was emphasized.

Spain

4.3.8.6 The meeting was also apprised of the evolutionary introduction of automation in the AIS/MAP fields in Spain, as well as of the use of the Internet for the dissemination of AIS data.

Tunisia

4.3.8.7 It was noted that Tunisia had already implemented an electronic AIP which is also available on CD-ROM and will shortly be posted on a web site. The action being initiated in order to achieve ISO-9001 certification in early 2003 was noted.

CONCLUSION 13/46: INTRA- AND INTERREGIONAL COOPERATION IN THE AIS/MAP FIELD

THAT THE VARIOUS EXPERIENCES IN THE STATES OF THE AFI REGION AND ADJACENT REGIONS IN THE FIELD OF AIS/MAP AUTOMATION BE TAKEN INTO ACCOUNT IN ANY REGIONAL APPROACH TO AUTOMATION.

CONCLUSION 13/47: DEVELOPMENT OF AN INTERNATIONAL STANDARDIZED MODEL FOR THE EXCHANGE OF ELECTRONIC AERONAUTICAL INFORMATION/DATA

THAT ICAO EXPEDITE THE ADOPTION OF AN INTERNATIONAL STANDARDIZED MODEL FOR THE EXCHANGE OF ELECTRONIC AERONAUTICAL INFORMATION/DATA.

CONCLUSION 13/48: DISSEMINATION OF AIS DATA

THAT:

- a) **SADIS BE USED FOR THE BROADCAST OF AERONAUTICAL CHARTS AND AIP SUPPLEMENTS; AND**
- b) **USE OF THE INTERNET BE CONSIDERED.**

CONCLUSION 13/49: AIP IN ITS NEW FORMAT AND WORLD AERONAUTICAL CHART (WAC) 1:1 000 000 - ICAO

THAT THE ATTENTION OF STATES CONCERNED BE DRAWN TO THE FACT THAT, AS CERTAIN STATES WHICH HAD PREVIOUSLY BEEN RESPONSIBLE FOR PRODUCING THE RELEVANT SHEETS OF THE WORLD AERONAUTICAL CHART OF ICAO AT 1:1 000 000 ARE NO LONGER ABLE TO CONTINUE PRODUCING THE FOLLOWING SHEETS :

2344-45, 2420-21, 2422, 2451, 2454-55, 2536-37, 2423, 2454-55, 2536-37, 2570, 2574, 2658, 2659-60, 2663, 2664, 2667, 2688, 2691, 2692, 2693, 2694, 2695, 2696-97, 2697, 2780-81, 2781-82, 2784-85, 2785-86, 2812-13, 2813-14, 2814-15, 2816-17, 2905, 2906-07, 2935, 2936, 3052, 3155-56, 3173-74, 3278, 3297,

CONSULTATION BE INITIATED WITH THOSE STATES WHICH HAVE BEEN PRODUCING THE ABOVE SHEETS WITH A VIEW TO IDENTIFYING THE STATES WHICH COULD BE WILLING TO PRODUCE THEIR OWN SHEETS AND/OR ASSISTING OTHER STATES IN THIS CONNEXION.

Note: When operational or chart production considerations indicate that operation requirements cannot be satisfied by Aeronautical Chart - ICAO 1:500 000 or Aeronautical Air Navigation Chart - ICAO Small Scale, either of these charts may be made available instead with the basic 1:1 000 000 Chart.

CONCLUSION 13/50: PROMULGATION OF COORDINATES BASED ON THE WGS-84 SYSTEM

THAT :

- a) **ICAO ASSIST STATES IN THEIR EFFORTS TO IDENTIFY GEOGRAPHICAL COORDINATES WHOSE GEODESIC SURVEYS HAVE ALREADY BEEN CONDUCTED AND WHICH DID NOT MEET THE SPECIFICATIONS IN ANNEXES 11 AND 14 IN RESPECT OF ACCURACY AND INTEGRITY AND CONDUCT THE RECONVERSION OF EXISTING COORDINATES INTO THOSE BASED ON THE REFERENCE GEODESIC SYSTEM WGS-84, AND DETERMINE WHAT IS REMAINING FOR THE PUBLICATION OF THESE COORDINATES; AND**
- b) **ICAO BE REQUESTED TO ASSIST, WHERE NECESSARY, STATES HAVING DIFFICULTIES IN PUBLISHING THEIR COORDINATES WHOSE SURVEYS HAVE ALREADY BEEN CONDUCTED.**

4.3.8.8 Language for publication of integrated aeronautical information package

4.3.8.8.1 APIRG noted that the provision of NOTAM information is an essential element in the overall data information a pilot requires in the execution of his job. In many countries, NOTAMs are issued in languages other than English, which does not allow all pilots to have a proper awareness of the operational situation. APIRG recalled that languages used in NOTAMs are dealt with in ICAO's Annex 15 — *Aeronautical Information Services*, Chapter 3, Recommendation 3.6.1 which provides: "Each element of the integrated aeronautical information package for international distribution should include an English text for those parts expressed in plain language". The meeting therefore formulated the following conclusion:

CONCLUSION 13/51: PUBLICATION IN PLAIN LANGUAGE OF NOTAMS ISSUED IN LANGUAGES OTHER THAN ENGLISH

THAT, WHEN ISSUING NOTAMS IN LANGUAGES OTHER THAN ENGLISH, STATES ENSURE THAT EACH ELEMENT OF THE INTEGRATED AERONAUTICAL INFORMATION PACKAGE FOR INTERNATIONAL DISTRIBUTION INCLUDES AN ENGLISH TEXT FOR THOSE PARTS EXPRESSED IN PLAIN LANGUAGE.

4.3.8.8.2 However, the APIRG noted that this is a Recommendation and not a Standard and, given the seriousness of the issue, adopted the following conclusion:

CONCLUSION 13/52: ANNEX 15, RECOMMENDATION 3.6.1

THAT ICAO CONSIDER AN AMENDMENT TO ANNEX 15 TO CHANGE RECOMMENDATION 3.6.1 INTO A STANDARD.

4.3.8.9 Implementation of WGS -84 in the AFI Region

4.3.8.9.1 The meeting was informed of the WGS-84 requirements and the reporting method for the implementation of WGS-84. It was pointed out that a review carried out by ICAO indicates that the format of reporting was inadequate and it was not clear to what level the different States have implemented WGS-84. The status of WGS-84 implementation and its impact on the introduction of the global navigation satellite system (GNSS) was highlighted. The need for a standard format to be used by all States for reporting WGS-84 implementation and the development of national WGS-84 implementation to be able to establish strategies, planning and timetables that would lead to effective implementation of WGS-84 was emphasized. Based on the foregoing, the meeting formulated the following conclusion:

CONCLUSION 13/53: ADOPTION OF A UNIFORM METHODOLOGY FOR THE REPORTING OF WGS-84 IMPLEMENTATION

THAT THE TABLE INDICATED AT APPENDIX M BE ADOPTED AS THE UNIFORM FORMAT FOR REPORTING WGS-84 IMPLEMENTATION BY STATES.

4.3.8.10 The meeting also noted the approach being proposed by ASECNA for the verification of the accuracy of geodetic reference datum in the AFI Region. The need to set up a geodetic reference network with a view to achieving a common referencing of aeronautical installations and radio navigational aids was emphasized.

CONCLUSION 13/54: IMPLEMENTATION OF WORLD GEODETIC REFERENCE DATUM (WGS-84) IN THE AFI REGION

THAT:

- a) **STATES, WHICH HAVE NOT DONE SO, BE INVITED TO EXPEDITE ACTION IN ORDER TO IMPLEMENT THE WGS-84 COORDINATES IN THE REGION; AND**
- b) **ICAO BE INVITED TO ASSIST IN THE TRANSFORMATION OF THE COORDINATES OF THE FIR BOUNDARY POINTS IN THE AFI REGION.**

4.3.9 Review of the implementation of ICAO requirements in the Search and Rescue (SAR) field

4.3.9.1 The meeting noted the review carried out by the sub-group concerning the status of implementation of all ICAO provisions relating to search and rescue services. It was noted with

concern that most of these provisions have remained unimplemented and the meeting was of the view that States should be sensitized to the urgent need to take prompt action and, furthermore, sustained that assistance should be provided by ICAO in order to improve the provision of search and rescue services in the region.

4.3.9.2 The meeting also noted the concerns expressed by the African Civil Aviation Commission (AFCAC) regarding the implementation of ICAO requirements in the SAR field in the AFI Region and was apprised of a proposal for the development of specific technical cooperation projects with a view to assisting States in eliminating the shortcomings and deficiencies which have been noted. The meeting supported the initiative of AFCAC on the matter and encouraged States to participate in the project.

4.3.9.3 The meeting recognized the following needs in the field of search and rescue in the AFI Region:

- a) the need for cooperation between States in order to promote a more effective and economic utilization of SAR facilities;
- b) the need to train of SAR personnel;
- c) the need to carry out search and rescue exercises;
- d) the need to implement local user terminals/mission control centres (LUTs/MCCs) in the AFI Region, at locations that would take maximum advantage of satellite coverage to receive distress signals;
- e) the need to publish, in their respective AIPs, ELT registration information which could be shared with other rescue coordination centres (RCCs) of other States;
- f) the need to provide a SAR point of contact (SPOC); and
- g) the need for appropriate SAR agreements and legislation.

4.3.9.4 The meeting noted with appreciation that Algeria has implemented an MCC in Ouargla, in Southern Algeria, and that States within the coverage area of the MCC wishing to receive COSPAS-SARSAT* data should get in touch with the Secretariat of COSPAS-SARSAT in London. The meeting also noted that the LUT/MCC station in South Africa has already been implemented at Cape Town. Several States gave information relating to their status of implementation of SAR requirements while others provided their future plans.

* COSPAS = Space system for search of vessels in distress
SARSAT = Search and rescue satellite-aided tracking

4.3.9.5 The meeting highlighted the need for ICAO to organize search and rescue seminars in the region. To this effect, it was pointed out that one seminar was organized in Nigeria from 7 to 9 December 1999. The meeting agreed that ICAO should assist States through special implementation projects (SIPs) and missions in order to promote the implementation of SAR provisions. The meeting was also concerned about the lack of adequate facilities for aeronautical marine SAR. In this regard, it was the opinion of the meeting that those States concerned should be urged to promote the existing ICAO/International Maritime Organization (IMO) protocols to specifically address these issues. Based on the foregoing, the following conclusions were developed:

CONCLUSION 13/55: PROVISION OF SEARCH AND RESCUE SERVICES

THAT:

- a) **THE SECRETARIAT FOLLOW, THROUGH MISSIONS, THE IMPLEMENTATION OF SAR PROVISIONS WITHIN THE AFI REGION AND KEEP APIRG APPRISED OF DEVELOPMENTS;**
- b) **STATES ACCORD HIGH PRIORITY TO THE IMPLEMENTATION OF ICAO PROVISIONS IN RESPECT OF SEARCH AND RESCUE SERVICES;**
- c) **ICAO ASSIST STATES THROUGH SPECIAL IMPLEMENTATION PROJECTS (SIPS) IN ORDER TO PROMOTE THE IMPLEMENTATION OF SAR PROVISIONS; AND**
- d) **STATES CONCERNED IN MARITIME SAR PROMOTE THE EXISTING ICAO/IMO PROTOCOLS IN ORDER TO ENHANCE EFFICIENCY IN THE AERONAUTICAL MARITIME SAR.**

CONCLUSION 13/56: SEARCH AND RESCUE PROJECT INITIATED BY AFCAC

THAT STATES, IN COOPERATION WITH ICAO, BE ENCOURAGED TO PARTICIPATE IN THE PROJECT INITIATED BY AFCAC FOR THE IMPROVEMENT OF SEARCH AND RESCUE SERVICES IN THE AFI REGION.

CONCLUSION 13/57: NEED FOR COOPERATION AGREEMENTS ON THE USE OF COSPAS-SARSAT

THAT STATES WITHIN THE COVERAGE OF MCCs IMPLEMENTED IN THE AFI REGION (ALGERIA, SOUTH AFRICA) CONCLUDE COOPERATION AGREEMENTS WITH THE COSPAS-SARSAT ORGANIZATION AND HOST STATES IN ORDER TO ALLOW THEM TO RECEIVE DATA FROM THE COSPAS-SARSAT SYSTEM.

4.3.9.6 The meeting was also apprised of the status of implementation of SAR provisions within search and rescue regions (SRRs), including facilities available for search and rescue operations. The need for the elaboration of SAR agreements was emphasized.

4.3.10 Consideration of the operational implications of the introduction of ICAO CNS/ATM systems in the AFI Region

4.3.10.1 The meeting noted that the ATM operational requirements in the AFI CNS/ATM Plan (Doc 003) were adequate for operations in the AFI Region.

4.3.10.2 The meeting was of the view that there was an urgent need to expedite action for the planning and evolutionary implementation of RVSM and RNAV/RNP in the region in order to meet the target date identified in the AFI CNS/ATM Implementation Plan. The meeting, however, noted that some measures have been taken by States. It also noted the efforts made by ASECNA in VHF coverage extension and implementation of area control service in Antananarivo, Brazzaville, Dakar and N'Djamena FIRs, and that all ASECNA FIRs will be covered by April 2002. Based on the foregoing, the meeting adopted the following decision:

DECISION 13/58: ESTABLISHMENT OF A TASK FORCE ON RVSM AND RNAV/RNP IMPLEMENTATION

THAT AN APIRG TASK FORCE DEDICATED TO RVSM AND RNAV/RNP IMPLEMENTATION BE ESTABLISHED, WITH THE TERMS OF REFERENCE SHOWN AT APPENDIX Z7 TO THIS REPORT.

COMPOSITION: ALGERIA, CAPE VERDE, EGYPT, ETHIOPIA, KENYA, MOROCCO, NIGERIA, SOUTH AFRICA, SENEGAL, SPAIN (RAPPORTEUR), TUNISIA, ASECNA, IATA AND IFALPA.

NOTE 1: THE TASK FORCE SHOULD MAINTAIN CLOSE COORDINATION WITH THE ATS/AIS/SAR/SG ASM TASK FORCE, AND ITS TERMS OF REFERENCE SHOULD BE HARMONIZED WITH THOSE OF THE ASM TASK FORCE.

NOTE 2: SATMA AND EUROCONTROL SHOULD BE INVITED TO ASSIST THE TASK FORCE.

CONCLUSION 13/59: IMPLEMENTATION OF RNP/5 IN THE AFI REGION

THAT VHF COVERAGE BE IMPROVED IN THE ALGIERS, BRAZZAVILLE DAKAR, KHARTOUM, KINSHASA, LUANDA, N'DJAMENA, NIAMEY AND TRIPOLI FIRS TO FACILITATE EARLY INTRODUCTION OF RNP 5.

4.3.10.3 The group noted that a meeting was held between Libya and adjacent States in N'djamena (27 – 28 November 2000), with a view to addressing ATS coordination procedures and communication problems. It was noted, however, that all adjacent States did not attend the meeting. It was agreed that regular interface meetings would be organized under the aegis of ICAO in order to assist in resolving some persisting coordination problems in the area. The meeting accordingly developed the following conclusion:

CONCLUSION 13/60: COORDINATION MEETING BETWEEN LIBYA AND ADJACENT STATES

THAT REGULAR INTERFACE MEETINGS BE ORGANIZED UNDER THE AEGIS OF ICAO, BETWEEN LIBYA AND ADJACENT STATES, IN ORDER TO ADDRESS ISSUES RELATING TO ATS COORDINATION PROCEDURES AND COMMUNICATIONS.

4.3.11 Review of ATS/AIS/SAR Sub-group's future work programme

4.3.11.1 The group approved, with minor amendments, the ATS/AIS/SAR Sub-group's terms of reference and work programme.

4.3.11.2 The group assigned the tasks relating to the planning and implementation of RNAV/RNP and RVSM to the newly created task force. The ATS/AIS/SAR and the CNS/ATM Sub-groups will, however, continue to monitor the implementation process.

4.4 Review of the report of the fifth meeting of the Meteorology Sub-group (MET/SG/5)

4.4.1 Introduction

4.4.1.1 Under this agenda item, the APIRG reviewed the report of the MET/SG/5, which was held in Dakar from 23 to 25 October 2000.

4.4.2 Review of conclusions and decisions of APIRG in the MET field

4.4.2.1 The meeting agreed that priority on follow-up action should be given to conclusions and decisions dealing with operation of the AMBEX scheme and the world area forecast system (WAFS). The following decision was formulated:

DECISION 13/61: FOLLOW-UP ACTION ON CONCLUSIONS AND DECISIONS OF APIRG IN THE MET FIELD

THAT EMPHASIS BE LAID, AS A MATTER OF URGENCY, ON THE FOLLOW-UP TO CONCLUSIONS AND DECISIONS RELATING TO THE OPERATION OF THE AMBEX SCHEME AND THE WAFS.

4.4.3 WAFS in the AFI Region

4.4.3.1 The meeting, in considering the AFI transition plan and procedures towards the WAFS final phase, recognized the need for emphasis on the training part of the plan, in particular the use of GRIB and BUFR codes. The following decision and conclusion were formulated:

DECISION 13/62: TASK FORCE FOR THE USE OF GRIB AND BUFR CODES

THAT A TASK FORCE, WHOSE TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION ARE GIVEN AT APPENDIX N, BE SET UP TO ASSIST AFI SADIS USERS TO REAP FULL AND PROPER USE OF GRIB AND BUFR CODES.

CONCLUSION 13/63 TRAINING ON THE USE OF GRIB AND BUFR CODES

THAT ICAO, IN CONSULTATION WITH WMO AND THE WAFC PROVIDER STATE, ORGANIZE TRAINING SEMINARS ON THE USE OF GRIB AND BUFR CODES FOR AFI STATES, AS REQUIRED.

4.4.3.2 The meeting also discussed the possibility of establishing regional maintenance centres for the SADIS system within the AFI Region. It was indicated that this question is being addressed by the SADIS Operations Group (SADISOPSG).

4.4.3.3 In view of the provisions contained in Amendment 72 to Annex 3 concerning WINTEM messages, the meeting agreed to the deletion of these messages from the AFI ANP/FASID. The following conclusion was formulated:

CONCLUSION 13/64: DELETION OF WINTEM MESSAGES FROM THE AFI ANP/FASID DOCUMENTS

THAT REFERENCE TO WINTEM MESSAGES IN THE AFI ANP/FASID BE DELETED.

4.4.3.3 The meeting also discussed the question of a medium-level significant weather (SIGWX) chart which has not yet been developed by WAFC London for the AFI Region. It was emphasized that, although flights using the medium-level chart existed in the region, they did not meet the MET BORPC as stated in the AFI Basic ANP. It was therefore stated that States concerned could provide this MET information as their national requirement.

4.4.4 AFI Meteorological Bulletins Exchange (AMBEX)

4.4.4.1 In order to improve OPMET exchanges in the region, the meeting approved the inclusion of METARs in the AMBEX exchanges and the establishment of two OPMET data banks located at TCCs hosting a two-way SADIS VSAT, namely Dakar and Johannesburg. Nairobi would also be considered in due course. The meeting agreed to an amendment of the AMBEX Handbook to reflect changes relating to Amendment 72 to Annex 3 on code name METAR/SPECI and TAF. The following decision and conclusions were formulated:

DECISION 13/65: AMENDMENT OF THE AMBEX HANDBOOK TO REFLECT CODE NAME METAR/SPECI AND TAF

THAT THE AMBEX HANDBOOK BE AMENDED TO REFLECT CHANGES RELATING TO AMENDMENT 72 OF ANNEX 3 ON CODE NAME METAR/SPECI AND TAF

CONCLUSION 13/66: INCLUSION OF METAR EXCHANGE IN THE AMBEX SCHEME

THAT THE REQUIREMENT FOR METAR EXCHANGE BE INCLUDED IN THE AMBEX SCHEME.

CONCLUSION 13/67: OPMET DATA BANKS AT PRETORIA AND DAKAR

THAT TWO OPMET DATA BANKS BE ESTABLISHED AT DAKAR AND PRETORIA TO SERVE THE AFI REGION.

4.4.5 Provision of tropical cyclone and volcanic ash advisories for the AFI Region

4.4.5.1 The meeting noted the progress and status of implementation of tropical cyclone advisory centres (La Reunion) and volcanic ash advisory centre (VAAC), Toulouse, both designated to serve the AFI Region. The meeting also noted that the centres are operating satisfactorily; however, there was a need for better communications between volcano observatories and area control centres (ACCs), meteorological watch offices (MWOs) and VAAC, Toulouse. The following conclusion was formulated:

CONCLUSION 13/68: BETTER COMMUNICATIONS FOR VOLCANO OBSERVATORIES

THAT STATES CONCERNED MAKE EFFORTS TO ESTABLISH RELIABLE COMMUNICATION LINKS BETWEEN THEIR VOLCANO OBSERVATORIES AND METEOROLOGICAL WATCH OFFICES (MWOs) AND AREA CONTROL CENTRES (ACCs).

4.5 Review of the report of the CNS/ATM/IC/SG/3 Meeting

4.5.1 Under this agenda item, the APIRG reviewed the progress achieved by the implementation coordination groups established in areas of routing (AR), AR1, AR2, AR4, AR5, AR6, AR7, AR9 and AR10 of the CNS/ATM plan.

4.5.2 The meeting noted that, in AR1 (EUR/South Atlantic), intensive work was being carried out for the implementation of RNP 10 in a 50 NM lateral route spacing environment by September 2001 and RVSM by 24 January 2002, pending the conclusive results of the safety assessment being carried out by Spain and the South Atlantic Monitoring Agency (SATMA) and the approval by ICAO of the amendment to the *Regional Supplementary Procedures* (Doc 7030).

4.5.3 With regard to AR4 (EUR/Southern Africa), the meeting noted that significant progress was achieved with the implementation of fixed RNAV routes in FIRs Algiers, Brazzaville, N'Djamena and Niamey. It was noted that FIR Johannesburg plans to implement the fixed RNAV routes in July 2001, and FIRs Gaborone and Luanda, after coordination, would implement later during 2001. Regarding the extension of VHF coverage and the provision of ATC, plans and implementation activities are underway in FIRs Brazzaville, N'Djamena and Niamey for their progressive implementation from April 2001 to April 2002. The meeting was updated on plans to provide SSR and ADS/CPDLC-based surveillance in N'Djamena FIR.

4.5.4 Regarding AR10 (Indian Ocean area), the meeting noted that, in order to accommodate the introduction of flexible tracks between Johannesburg and Singapore, there was a necessity to extend the limits of the existing Indian Ocean random routing area (IORRA). A draft AIP Supplement had been published by States concerned and became effective on 17 May 2001.

4.5.5 The meeting was informed that the Third EUR/AFI Interface Meeting, held in Paris from 14 to 16 February 2001, had reviewed developments in Europe concerning the implementation of RVSM, ACAS and 8.33 kHz VHF channel spacing. Regarding ACAS, the EUR/AFI Interface Meeting urged States concerned to promulgate national ACAS policies since no exemptions would be applicable in the EUR Region after 31 March 2001.

4.5.6 APIRG was informed that the EUR/AFI Interface Meeting, which had so far acted as the ICG for AR7 (coastal area of Northern Africa), had called for the establishment of an implementation coordination group specifically dedicated to the implementation of CNS/ATM systems in area of routing 7 (AR7). Following discussions, the meeting agreed to adopt a conclusion to the effect that the EUR/AFI Interface Meeting should be entrusted with the functions of the ICG for AR7. The meeting also agreed that, given the affinities between the Iberian Peninsula and the EUR/SAM corridor, the implementation of CNS/ATM systems within AR6 (Iberian Peninsula/Canary Islands) should be coordinated by the SAT Group informal meetings.

4.5.7 In discussing the role of ICG Coordinators, the meeting agreed that implementation of APIRG Conclusion 12/45 (National CNS/ATM bodies, focal points of contact and ICG Coordinators) was a prerequisite before the ICG Coordinators could start their functions. It was agreed that ICAO, pending full implementation of Conclusion 12/45, would coordinate ICG activities in lieu of the ICG Coordinators.

4.5.8 The meeting discussed ways to foster CNS/ATM systems implementation in the AFI Region. It was agreed to adopt a step-by-step approach, giving priority to full implementation of VHF coverage, AFTN and ATS/DS circuits, area control service and 10-minute longitudinal separation. It was also agreed to provide early benefits to long-haul operators which are adequately certified or approved in adjacent regions by initially allocating them dedicated/segregated airspace without penalizing regional and domestic operators.

4.5.9 Taking into account the above discussions and information, the meeting adopted the following conclusions:

CONCLUSION 13/69: IMPLEMENTATION OF THE WORLD GEODETIC REFERENCE SYSTEM (1984)

THAT STATES IMPLEMENT, AS A MATTER OF URGENCY, WGS-84 AIRSPACE COORDINATES TO ENABLE THE USE OF GNSS AS A PRIMARY MEANS OF EN-ROUTE NAVIGATION.

CONCLUSION 13/70: COORDINATION BETWEEN ATS PROVIDERS AND USERS IN THE IMPLEMENTATION OF CNS/ATM SYSTEMS

THAT ATS PROVIDERS AND USERS COORDINATE BEFORE ANY DECISION TO IMPLEMENT CNS/ATM SYSTEMS WHICH HAVE A BEARING ON EQUIPAGE IS TAKEN.

CONCLUSION 13/71: AMENDMENT TO AFI SUPPS (DOC 7030)

THAT THE AFI SUPPS (DOC 7030) BE AMENDED AS FOLLOWS:

- a) **REDUCTION OF LONGITUDINAL SEPARATION MINIMA FROM 20 MINUTES TO 10 MINUTES;**
- b) **REDUCTION OF LATERAL SEPARATION FROM 100 NM (AS IS THE CASE IN THE EUR/SAM CORRIDOR) TO 50 NM (IN RNP 10 ENVIRONMENT), AND EVENTUALLY TO 25 OR 30 NM AS APPROPRIATE (IN RNP 5 ENVIRONMENT); AND**
- c) **INTRODUCTION OF LONGITUDINAL RNAV/RNP SEPARATION MINIMA OF 10 MINUTES AND/OR 80 NM RNAV DERIVED DISTANCE IN SELECTED AIRSPACES.**

CONCLUSION 13/72: STEP-BY-STEP APPROACH TO CNS/ATM SYSTEMS IMPLEMENTATION

THAT, IN THE IMPLEMENTATION OF THE NEW CNS/ATM SYSTEMS IN THE REGION, A STEP-BY-STEP APPROACH BE ADOPTED, STARTING WITH THE ATM OBJECTIVES WHICH CAN BE ACHIEVED IN THE SHORT TERM WITH MINIMUM CNS REQUIREMENTS OR AT RELATIVELY LOW COST. IN THIS REGARD, THE FOLLOWING ATM OBJECTIVES AND CNS REQUIREMENTS SHOULD BE GIVEN PRIORITY OVER THE EMERGING CONCEPTS:

- a) **VHF COVERAGE;**
- b) **ACAS;**
- c) **ATS/DS AND AFTN CIRCUITS;**
- d) **AREA CONTROL SERVICE; AND**
- e) **10-MINUTE LONGITUDINAL SEPARATION.**

CONCLUSION 13/73: EARLY BENEFITS TO APPROVED/CERTIFIED OPERATIONS

THAT, TAKING INTO ACCOUNT THE EQUIPAGE APPROVAL OF TRANSCONTINENTAL OPERATORS, EARLY BENEFITS BE GIVEN TO SUCH OPERATORS AS SOON AS POSSIBLE BY INITIALLY ALLOCATING THEM DEDICATED/SEGREGATED AIRSPACE, WITHOUT PENALIZING REGIONAL AND DOMESTIC OPERATIONS.

CONCLUSION 13/74: ESTABLISHMENT OF NATIONAL CNS/ATM BODIES AND DESIGNATION OF FOCAL POINTS OF CONTACT

THAT, AS A MATTER OF URGENCY, STATES WHICH HAVE NOT DONE SO BE REQUESTED TO IMPLEMENT APIRG CONCLUSION 12/45 ON THE ESTABLISHMENT OF NATIONAL CNS/ATM BODIES AND THE DESIGNATION OF FOCAL POINTS OF CONTACT, AND NOTIFY ICAO REGIONAL OFFICES OF THE ACTION TAKEN IN THIS RESPECT. IN SO DOING, THEY SHOULD REFER TO GUIDANCE PROVIDED BY ICAO (*NATIONAL PLAN FOR CNS/ATM SYSTEMS* (Circ 278)).

CONCLUSION 13/75: IMPLEMENTATION OF CNS/ATM SYSTEMS WITHIN AR6 AND AR7

THAT:

- a) **THE IMPLEMENTATION OF CNS/ATM SYSTEMS WITHIN AR6 BE COORDINATED BY THE SAT INFORMAL GROUP MEETINGS; AND**
- b) **THE IMPLEMENTATION OF CNS/ATM SYSTEMS WITHIN AR7 BE COORDINATED BY THE AFI/EUR INTERFACE MEETINGS.**

CONCLUSION 13/76: PROMULGATION OF NATIONAL AIRBORNE COLLISION AVOIDANCE SYSTEM (ACAS) POLICIES

THAT EACH AFI/EUR INTERFACE STATE PROMULGATE WITHOUT DELAY AN AIC CLEARLY STATING ITS NATIONAL ACAS II EXEMPTION POLICY, INCLUDING MINIMUM EQUIPMENT LIST (MEL) EXEMPTION.

Development of the surveillance plan for the AFI Region

4.5.10 APIRG recalled that, at its twelfth meeting, it had reviewed a draft aeronautical surveillance plan (ASP) for the AFI Region pursuant to AFI/7 RAN Recommendation 11/1. It had then requested that it be further circulated to States for comments. The meeting noted that the CNS/ATM/IC/SG, at its third meeting, had developed the surveillance plan only for en-route requirements. It was agreed that surveillance requirements in TMAs needed to be reconfirmed with the results of the study on categorization of TMAs and aerodromes.

4.5.11 The meeting agreed to adopt a first issue of the aeronautical surveillance plan as developed by the CNS/ATM/IC Sub-group; it is comprised of a table of surveillance systems and of a table of ATS automation systems. The following conclusions were adopted:

CONCLUSION 13/77: DATA FOR THE CATEGORIZATION OF TMAs AND AERODROMES

THAT STATES BE URGED TO PROVIDE, AS SOON AS POSSIBLE, THE DATA SHOWN AT APPENDIX O TO THIS REPORT, IN ORDER TO FACILITATE WORK ON THE CATEGORIZATION OF TMAs AND AERODROMES.

CONCLUSION 13/78: EN-ROUTE (FIR) AERONAUTICAL SURVEILLANCE PLAN FOR THE AFI REGION**THAT:**

- a) **THE FIRST ISSUE OF THE AERONAUTICAL SURVEILLANCE PLAN (ASP) FOR THE AFI REGION COMPRISE THE EN-ROUTE AERONAUTICAL SURVEILLANCE SYSTEMS TABLE AT APPENDIX P AND OF THE ATS AUTOMATION SYSTEMS TABLE AT APPENDIX Q; AND**
- b) **THE ASP BE INCLUDED IN THE AFI FASID.**

GNSS implementation matters*AFI GNSS test bed*

4.5.12 The APIRG was briefed on activities relating to the implementation of the GNSS test bed in the AFI Region. The meeting was informed that the AFI-EUR GNSS Test Bed Working Group had been established for the preparation of the test bed activities, and that it had held its first meeting in mid-May 2001. The AFI and EUR partners had developed a preliminary work plan for the implementation of Phase I of the AFI GNSS strategy. Among the urgent tasks is the preparation of a project document to be submitted to the European Commission for the funding of the test bed.

4.5.13 The APIRG was advised that, in order to enhance the usefulness and impact of GNSS test bed, activities should be extended to other modes of transport in the AFI Region. Furthermore, with regard to trials in the AFI Region, the meeting identified the need to seek the participation of States and navigation service providers for the provision of test-bed resources (on-site facilities and services, flight calibration, design of GNSS-based approach procedures at locations where tests would be conducted, communications services, etc.).

4.5.14 In view of the above, the meeting adopted the following conclusions:

CONCLUSION 13/79: AFI/EUR GNSS TEST BED WORKING GROUP**THAT:**

- a) **SOUTH AFRICA AND ASECNA BE THE REPRESENTATIVES OF THE AFI GNSS STUDY GROUP IN THE AFI/EUR GNSS TEST BED WORKING GROUP; AND**
- b) **STATES OR NAVIGATION SERVICES PROVIDERS, WISHING TO SUPPORT GNSS TEST BED ACTIVITIES, BE INVITED TO JOIN THE AFI/EUR GNSS TEST BED WORKING GROUP.**

CONCLUSION 13/80: AFI TEST BED PROJECT DOCUMENT

THAT SOUTH AFRICA AND ASECNA PREPARE A DRAFT AFI TEST BED PROJECT DOCUMENT TO BE SUBMITTED BY ASECNA TO THE EUROPEAN COMMISSION FOR FUNDING.

CONCLUSION 13/81: INVOLVEMENT OF MULTI-MODAL TRANSPORT ORGANIZATIONS IN THE AFI GNSS TEST BED TRIALS

THAT CONTACTS BE ESTABLISHED WITH MULTI-MODAL TRANSPORT ORGANIZATIONS IN THE AFI REGION FOR THEIR PARTICIPATION IN THE AFI GNSS TEST BED TRIALS, AS FOLLOWS:

- a) **ICAO WITH THE INTERNATIONAL MARITIME ORGANIZATION (IMO) AND THE ECONOMIC COMMISSION FOR AFRICA (ECA)**
- b) **ATNS WITH THE SOUTH AFRICAN SAR ORGANIZATION (SASAR); AND**
- c) **ASECNA WITH THE ECONOMIC COMMUNITY OF WEST AFRICAN STATES (ECOWAS) AND CEMAC.**

CONCLUSION 13/82: CONTACTS WITH FLIGHT CALIBRATION ORGANIZATIONS

THAT ICAO CONTACT THE OPERATORS OF FLIGHT CALIBRATION AIRCRAFT IN THE AFI REGION FOR THEIR PARTICIPATION IN THE AFI GNSS TEST BED TRIALS.

CONCLUSION 13/83: ASSISTANCE WITH GNSS PROCEDURES DESIGN

THAT ICAO CONTACT THE FOLLOWING ORGANIZATIONS TO ASSIST IN DESIGNING GNSS-BASED APPROACH PROCEDURES (NPA, APV-1, APV-2) AT LOCATIONS WHERE TRIALS WILL BE CONDUCTED: EUROCONTROL, FAA, FRENCH DGCA, ASECNA, ATNS, DUTCH RLD.

Documentation on criteria for State approval of aircraft operations using GNSS

4.5.15 The meeting recalled that the AFI/7 RAN Meeting had adopted Conclusion 13/5, which, *inter alia*, requested that APIRG “develop criteria for the approval of aircraft operations using GNSS, giving consideration to the needs of all phases of flight, for en-route navigation in oceanic areas and continental areas and for terminal area navigation”. This task has been assigned to the CNS/ATM/IC Group for follow-up.

4.5.16 The meeting recognized that, in order to implement GNSS, it will be necessary for all States in the AFI Region to introduce any legislative and/or regulatory changes which may be needed in order to authorize the use of GNSS as a means of navigation within their airspace. There could be considerable variation in the nature of the amendments required, depending on the structure

of the legislation and regulations in each State. For example, amendments could possibly be required to legislation or regulations relating to:

- a) navigation of aircraft;
- b) requirements for flight under IFR;
- c) operations at night by VFR aircraft; and
- d) operations by VFR aircraft on top of cloud.

4.5.17 This list is presented only as an example. Each State will have to make its own assessment of the areas where changes are needed.

Airworthiness and operational approval

4.5.18 The meeting was aware that development and implementation of procedures for airworthiness and operational approval of GNSS is a State's responsibility. It was noted that there is no ICAO guidance material available for these approval procedures.

4.5.19 There are a number of airworthiness and operational approval examples available from States which have already implemented GNSS procedures.

4.5.20 The meeting agreed that some of these documents could be made available to States. It was agreed that States would be provided with the Internet address of the bulky documents and be invited to request from the originators those available in hard copy form. The meeting was informed that the FAA documents N8110.60, AC NO.20-130 and TSO-C129A could serve States as reference documentation for studies or criteria on approving aircraft operations using GNSS. It was also agreed that the European Commission's manual for the validation of GNSS in civil aviation (MUSST) should be available on the ICAO web site. In discussing the main impediments to AFI States in authorizing the use of GNSS, the group identified the lack of expertise in GNSS airworthiness and operational approval.

Update of the AFI GNSS strategy

4.5.21 The meeting was aware that the augmentation systems being developed (EGNOS and WAAS) would not achieve the requirements for sole-means navigation. Furthermore, both systems were experiencing delays in their implementation schedules. WAAS was expected to be operational in 2003 over the continental US and EGNOS would be available in late 2003 over the ECAC area. In addition, Europe was developing a civil satellite navigation constellation — Galileo — which would be available in the ECAC area around 2008, at the earliest, and about 2010 in the AFI Region.

4.5.22 In view of the above developments, the meeting undertook a review and update of the AFI GNSS strategy. A three-phase approach was agreed:

Phase I (up to 2004)

- GNSS as a primary means of en-route navigation
- GNSS as a supplemental means for TMA
- GNSS for non-precision approaches (NPA)
- Implementation of a test bed (up to 2003)
- Implementation and validation of SBAS to be operational at the end of Phase I (2004). This will allow APV-I to be available at the beginning of Phase II.

Phase II (from 2005 to 2011)

- APV-I, 20 m vertical accuracy available over the AFI Region
- GNSS sole-means for en-route navigation
- Decommissioning of en-route navaids
- GNSS sole means for terminal areas
- Decommissioning of terminal navaids (VOR/DME and NDB)
- ILS maintained at airports
- Development of long-term GNSS

Phase III (2012 onwards)

- Two GNSS constellations are available
- GNSS sole means from en-route to CAT-I landing
- Decommissioning of ILS Cat I
- CAT II/III requirements implemented by GBAS or SBAS.

4.5.23 The meeting formulated amendments to the AFI GNSS strategy and the following conclusion was adopted:

CONCLUSION 13/84: AFI GNSS STRATEGY

THAT THE AFI GNSS STRATEGY BE AMENDED AS SHOWN IN APPENDIX R TO THIS REPORT.

Review and update of the AFI CNS/ATM Implementation Plan

4.5.24 The meeting reviewed proposals to amend the *AFI CNS/ATM Implementation Plan* (Doc 003). These proposals concerned RVSM and RNP. It was agreed that initial implementation of RVSM should be between FL 350 and FL 390 in the AFI Region, in order to provide more economic flight profiles to transcontinental operators. It was also agreed that RNP 5 should initially be introduced above FL 350. The following conclusions and decision were adopted:

CONCLUSION 13/85: INITIAL IMPLEMENTATION OF RVSM IN THE AFI REGION

THAT RVSM BE IMPLEMENTED IN THE AFI REGION CONCURRENTLY WITH OR SOON AFTER ITS IMPLEMENTATION IN THE EUR REGION, AND INITIALLY BETWEEN FL 350 AND FL 390.

CONCLUSION 13/86: SEMINARS/WORKSHOPS ON RVSM AND RNAV/RNP

THAT ICAO, AS WELL AS STATES AND INTERNATIONAL ORGANIZATIONS IN A POSITION TO DO SO, ORGANIZE SEMINARS/WORKSHOPS ON RVSM AND RNAV/RNP IN THE AFI REGION.

Amendment to Doc 003

4.5.25 The meeting adopted amendments to the *AFI CNS/ATM Implementation Plan* (Doc 003) and developed the following conclusion.

CONCLUSION 13/87: AMENDMENT OF THE AFI CNS/ATM IMPLEMENTATION PLAN (DOC 003)

THAT THE AFI CNS/ATM IMPLEMENTATION PLAN (DOC 003) BE AMENDED AS SHOWN AT APPENDIX S TO THIS REPORT.

Related matters

4.5.26 The meeting was briefed on the WGS-84 maintenance procedures used by ASECNA Member States in order to ensure the integrity of the WGS-84 infrastructure. In this regard, it was noted that the interconnection of the various WGS-84 reference networks in the AFI Region would be beneficial. The following conclusion was adopted:

CONCLUSION 13/88: INTEGRITY OF WGS-84 INFRASTRUCTURE

THAT STATES CONCERNED:

- a) **ESTABLISH MAINTENANCE PROCEDURES IN ORDER TO ENSURE THE INTEGRITY OF THE WGS-84 GROUND INFRASTRUCTURE; AND**
- b) **CONSIDER THE INTERCONNECTION OF THE VARIOUS WGS-84 GROUND REFERENCE NETWORKS IN THE AFI REGION.**

4.5.27 APIRG was informed of plans to implement ADS/CPDLC in a number of States. Particular interest was shown in tests being conducted by Cape Verde and Spain to share ADS data. The meeting encouraged States to cooperate in this manner and adopted the following conclusion:

CONCLUSION 13/89: SHARING OF ADS DATA

THAT STATES, IN A POSITION TO DO SO, BE ENCOURAGED TO SHARE ADS DATA FOR MUTUAL BENEFIT.

GNSS implementation activities in the Southern African Development Community (SADC) Region

4.5.28 APIRG noted that the Southern African Development Community (SADC) Civil Aviation Committee (CAC) had endorsed a proposed IATA GNSS procedures project for States in the SADC Region. The meeting was informed that the major objective of this project is to achieve harmonized GNSS procedures in the SADC States by the end of 2001, significantly improving the effective use of airspace and providing safety, operational and economic benefits.

EGNOS test bed in Spain

4.5.29 Spain informed the meeting of the installation and testing of three reference stations as part of the development of the EGNOS system test bed. APIRG noted the offer to re-use the same stations in the AFI EGNOS test bed and the implementation of Phase I of the AFI GNSS strategy.

GNSS procedures and ADS/CPDLC implementation in ASECNA States and Cape Verde

4.5.30 Senegal informed the meeting of the design, testing and publication of GNSS-based STARs and non-precision approach procedures for Dakar Airport. The meeting noted that similar work was being extended to other airports in ASECNA Member States.

4.5.31 The meeting was informed that ADS/CPDLC was implemented in Antananarivo FIR and that plans were underway for their installation in Dakar, Dakar Oceanic and Sal FIRs.

Radar surveillance in Accra FIR

4.5.32 Ghana informed the meeting of the implementation of its radar surveillance project which would cover the continental part of Accra FIR. It was noted that proper coordination will be carried out with all of the FIR's member States.

Agenda Item 4.6: AFI Basic ANP and FASID

4.6.1 Under this agenda item, the meeting recalled that the APIRG ANP and FASID Task Force was formed by Decision 11/3 of the APIRG/11 Meeting to convert the Africa-Indian Ocean

Region Air Navigation Plan into the AFI Basic ANP and FASID documents. This task force held its first meeting in Tunis on 18 – 19 June 1999 and draft AFI Basic ANP and FASID publications were prepared. APIRG/12 Conclusion 12/51 instructed the Secretariat to complete the draft AFI Basic ANP with the twenty-seventh edition of the *Air Navigation Plan — Africa-Indian Ocean Region* (Doc 7474), taking the decisions of the AFI/7 RAN meeting and the reports of APIRG/11 and 12 into account. APIRG/12 was also of the view that the *AFI CNS/ATM Implementation Plan* (Doc 003) should be incorporated into the relevant parts of the AFI Basic ANP and FASID documents in an evolutionary manner and adopted Conclusion 12/52 in this regard.

4.6.2 The meeting noted another related development: the Third Caribbean/South American Regional Air Navigation Meeting (CAR/SAM/3, 5 – 15 October 1999) which took place in Buenos Aires and further developed the Basic ANP and FASID and introduced new tables as a result of experience gained. The new tables of the FASID are being developed by the APIRG Sub-groups as part of their respective work programmes. As these tasks mature, the FASID will be amended according to approved amendment procedures.

4.6.3 APIRG expressed its satisfaction with the AFI Basic ANP and FASID as presented and congratulated the Secretariat on the completion of the task. The meeting noted with satisfaction that the timely availability of the document in both English and French contributed to the success of the meeting and thanked the Secretary General of ICAO for the assistance rendered. It was pointed out that the availability of the documents, reference material and the Basic ANP and FASID on the ICAO web site allowed the States to study the documents well in advance. With this in mind, the meeting requested ICAO to make all the documents of PIRG and Sub-group meetings available on the ICAO web site in a timely manner prior to the meetings.

4.6.4 The meeting noted that the AFI Basic ANP and FASID are living documents and, with the delays encountered with the formal editing of air navigation plans of the other regions in mind, APIRG requested ICAO to make the documents available in a working format. This would allow the substance of the ANP and FASID to be used for dynamic implementation processes while editing and other related steps are proceeding.

4.6.5 The APIRG endorsed the AFI Basic ANP and FASID and adopted the following conclusions:

CONCLUSION 13/90: AFI BASIC ANP AND FASID DOCUMENTS

THAT:

- a) **THE AFI BASIC ANP AND FASID, AS COMPLETED IN TERMS OF APIRG CONCLUSION 12/51 AND ENDORSED BY APIRG/13, BE CIRCULATED TO THE RELEVANT STATES WHO DID NOT ATTEND THE MEETING FOR COMMENTS;**
- b) **ICAO BE REQUESTED TO POST ALL WORKING PAPERS, INFORMATION PAPERS AND RELEVANT REFERENCE MATERIAL FOR ALL THE PIRGS AND SUB-GROUP MEETINGS ON THE ICAO WEB SITE;**

- c) **ICAO BE REQUESTED TO MAKE THE AFI BASIC ANP AND FASID AVAILABLE AFTER APPROPRIATE APPROVAL FOR USE AND IMPLEMENTATION WHILE THE FORMAL EDITING PROCESS IN ENGLISH AND FRENCH IS COMPLETED; AND**
- d) **STATES, WHO HAVE NOT YET DONE SO, EXPEDITE THE IMPLEMENTATION OF MEANS TO ACCESS THE INTERNET.**

4.7 **Air navigation safety board**

4.7.1 The meeting was presented with a proposal to establish an AFI air navigation safety board aiming at managing identified shortcomings and deficiencies which could adversely affect aviation safety with the objective of eliminating them.

4.7.2 The meeting recognized the need to establish such a body empowered with the capability of finding appropriate solutions to eliminate such shortcomings and deficiencies. However, the opinion was expressed that it was premature at this stage to establish such a board as the framework for its establishment, in particular with regard to the financing of its operations, had not clearly been defined. In addition, it was stressed that the terms of reference and composition would need to be further refined. Therefore, the establishment of this body should be postponed until APIRG/14 to allow for better analysis and study of the proposal. Consequently, the meeting developed the following conclusion:

CONCLUSION 13/91: ESTABLISHMENT OF AN AVIATION SAFETY BOARD

THAT, RECOGNIZING THE NEED TO ESTABLISH AN AVIATION SAFETY BOARD AS A WAY OF ENHANCING THE REDUCTION OF SHORTCOMINGS AND DEFICIENCIES IN THE AFI REGION, ICAO:

- a) **IN CONSULTATION WITH STATES AND INTERNATIONAL ORGANIZATIONS, REVIEW THE PROPOSAL FOR THE ESTABLISHMENT OF THE AVIATION SAFETY BOARD TO FACILITATE ITS FURTHER CONSIDERATION BY APIRG/14; AND**
- b) **URGE ALL STATES TO EMPLOY ALL MEANS POSSIBLE TO ENHANCE THE REDUCTION OF SHORTCOMINGS AND DEFICIENCIES IN THEIR AREAS OF RESPONSIBILITY.**

**AGENDA ITEM 5: SHORTCOMINGS AND DEFICIENCIES IN THE AIR
NAVIGATION FIELD IN THE AFI REGION**

Agenda Item 5: Shortcomings and deficiencies in the Air Navigation field in the AFI Region

5.1 Under this agenda item, APIRG reviewed the list of shortcomings and deficiencies developed by its sub-groups based on the uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies, which had been approved by the Council of ICAO on 23 June 1998. The meeting greatly appreciated contributions received from users (IATA, IFALPA) in this connection. The meeting formulated the following conclusions:

CONCLUSION 13/92: SHORTCOMINGS AND DEFICIENCIES IN THE AERONAUTICAL FIXED SERVICES

THAT STATES CONCERNED ADDRESS, AS A MATTER OF URGENCY AND IN ANY CASE NO LATER THAN 28 NOVEMBER 2002, SHORTCOMINGS AND DEFICIENCIES AFFECTING AFS CIRCUITS (AFTN AND ATS/DS) AS SHOWN AT APPENDIX U TO THIS REPORT.

CONCLUSION 13/93: SHORTCOMINGS AND DEFICIENCIES IN THE AERONAUTICAL MOBILE SERVICE

THAT STATES PROVIDE AS MUCH AS POSSIBLE ADEQUATE VHF COVERAGE ALONG ATS ROUTES USED BY INTERNATIONAL AIR TRANSPORT IN ACCORDANCE WITH AFI/7 RECOMMENDATION 5/12.

CONCLUSION 13/94: 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 SHOWN AT APPENDIX U TO THIS REPORT BY 28 NOVEMBER 2002; AND**
- b) WHEN ELIMINATING SHORTCOMINGS AND DEFICIENCIES AFFECTING RADIONAVIGATION SERVICE, STATES TAKE INTO ACCOUNT THE CURRENT STRATEGY FOR THE IMPLEMENTATION OF GNSS IN THE AFI REGION ADOPTED BY APIRG.**

CONCLUSION 13/95: ELIMINATION OF SHORTCOMINGS AND DEFICIENCIES IN THE AIS/MAP FIELD

THAT, AS A FIRST STEP TOWARDS THE DEVELOPMENT AND INTRODUCTION OF AUTOMATED PROCESSES WITHIN THEIR AERONAUTICAL INFORMATION SERVICES (AIS) INFRASTRUCTURE IN THE REGION, STATES BE INVITED TO TAKE URGENT REMEDIAL ACTIONS AIMED AT THE ELIMINATION OF SHORTCOMINGS AND DEFICIENCIES WHICH HAVE BEEN REPORTED IN THE AIS/ MAP FIELD IN ACCORDANCE WITH AFI/7 RAN MEETING RECOMMENDATION 12/30.

5.2 The meeting agreed that the critical shortcomings and deficiencies should be identified separately and brought to the attention of the ICAO's Air Navigation Commission and Council for immediate action. These shortcomings and deficiencies are reflected at appendices to this report as follows :

AOP	Appendix T
COM/CNS	Appendix U
ATS/AIS/SAR	Appendix V
MET	Appendix W

5.3 It was suggested and agreed that the format of the list of shortcomings and deficiencies should be presented in the alphabetical order of the States, with inclusion of data enumerating each air navigation field one after the other under the same State. The following conclusion was formulated:

CONCLUSION 13/96: FORMAT OF LIST OF SHORTCOMINGS AND DEFICIENCIES

THAT THE CURRENT FORMAT OF THE LIST OF SHORTCOMINGS AND DEFICIENCIES BE AMENDED TO SHOW UNDER EACH STATE, DATA OF EACH AIR NAVIGATION FIELD.

**AGENDA ITEM 6 : HUMAN FACTORS AND HUMAN RESOURCES
PLANNING**

Agenda Item 6: Human factors and planning of human resources

6.1 The meeting recalled that the Twelfth Africa-India Ocean Planning and Implementation Regional Group Meeting (APIRG/12) had concluded “that the Secretariat expedite the development of a new part to the AFI Basic ANP and FASID dealing with human factors and manpower planning requirements”. With this in mind, the Air Navigation Commission agreed that the matter would be addressed in the context of an ANC task.

6.2 The meeting noted that the objective of the ANC task is to develop a model for human resource planning and training for use at the regional level, as well as supporting guidance material, and to analyse the changes to civil aviation job profiles as a result of new systems and the consequential human resource planning and training requirements. This will enable the ANC to assess whether all or portions of the output of the regional human resource and training planning process should be incorporated into the regional air navigation plans (ANPs).

6.3 It was also recognized that subregional training planning was an effective means to meet the training needs of many States. It was then agreed that a contributory body of APIRG should examine human resource planning and training issues as they relate to the implementation of all elements in the AFI regional air navigation plan. Such a body should ensure that the human resource development capabilities in the AFI Region are compatible with the plans to implement facilities and services and that States involve their civil aviation training and human resource planning professionals, even if they do not normally attend the activities of APIRG.

6.4 Pending the creation and the functioning of the appropriate body, the meeting called for an ICAO project aimed at addressing human resource and training planning issues and ensuring that the human resource development capabilities within the region are compatible with plans for implementing air navigation facilities and services concerned. The meeting then formulated the following conclusions:

CONCLUSION 13/97: ESTABLISHMENT OF AN APPROPRIATE BODY TO FACILITATE REGIONAL HUMAN RESOURCE/TRAINING PLANNING IN THE AFI REGION

THAT AN APPROPRIATE BODY BE ESTABLISHED TO FACILITATE REGIONAL AND SUBREGIONAL TRAINING PLANNING, INCLUDING HUMAN RESOURCES.

NOTE: THE ESTABLISHMENT OF THIS BODY WILL BE FINALIZED AT APIRG/14.

CONCLUSION 13/98 NEED FOR AN ICAO PROJECT ON HUMAN RESOURCE AND TRAINING PLANNING FOR THE AFI REGION

THAT:

- a) **ICAO DEVELOP A PROJECT IN ORDER TO ASSIST THE AFI REGION IN FORMULATING A REGIONAL HUMAN RESOURCE AND TRAINING PROGRAMME, BASED ON IDENTIFIED REGIONAL TRAINING CAPABILITIES;**
- b) **STATES IN THE REGION CONDUCT PRELIMINARY SURVEYS OF THEIR FACILITIES AS SOON AS POSSIBLE, AND BE READY TO PROVIDE AN ASSESSMENT OF THEIR SITUATION AS WELL AS THEIR INPUTS TO THE ICAO PROJECT; AND**
- c) **ICAO CONDUCT QUALITY ASSURANCE ASSESSMENTS OF ALL APPROVED TRAINING INSTITUTIONS TO DETERMINE THEIR SUITABILITY FOR THE CONTINUOUS LISTING AS ICAO RECOMMENDED CENTRES IN THE TRAINING DIRECTORY.**

AGENDA ITEM 7: INTERREGIONAL COORDINATION

Agenda 7 : Interregional coordination**Agenda Item 7.1 Results of the fourth meeting of the ALLPIRG/Advisory Group, and follow-up actions to be taken by APIRG**

7.1.1 APIRG was informed of the fourth meeting of the ALLPIRG/Advisory Group (ALLPIRG/4) which was held at ICAO Headquarters in Montreal from 6 to 8 February 2001 to review the progress of implementation of the ICAO CNS/ATM systems and to advise the ICAO Council on related matters as appropriate. The meeting noted that ALLPIRG had focussed its attention on interregional matters and had developed sixteen conclusions enveloping a wide range of issues.

7.1.2 The meeting noted that the Council of ICAO, on 8 June 2001 during the sixth meeting of its 163rd Session, taking into account the comments of the Air Navigation Commission, approved the report of ALLPIRG/4. APIRG noted that the Council, in confirming ICAO's role in the follow-up to conclusions, called upon all planning and implementation regional groups (PIRGs) to initiate follow-up action on specific conclusions, as detailed in Appendix X to this report.

7.1.3 In reviewing Appendix X to this report, APIRG noted with satisfaction Conclusion 4/12 (EUROCONTROL planning and implementation methods) and appreciated that steps have been taken to issue appropriate invitations for EUROCONTROL's attendance at PIRG meetings, and that they will be renewed for APIRG/14.

7.1.4 APIRG noted with appreciation that, in implementing ALLPIRG Conclusion 4/13, all tabular material from the AFI plan relating to facilities and services were already posted on ICAO's web site. In relation to ALLPIRG Conclusion 4/14 (Expansion of the Universal Safety Oversight Audit Programme), APIRG stressed that all efforts should be maintained to expand the Safety Audit Programme to include Annexes 11 and 14.

7.1.5 APIRG noted with appreciation an executive summary of the current situation and major developments in the different regions pertaining to planning and implementation of air navigation facilities in order to facilitate the AFI planning and coordination process. The meeting was of the view that the information on the activities of ICAO's other planning and implementation regional groups is a very useful planning tool and should continue to be included in the future.

7.1.6 The meeting noted the proposed single definition of shortcomings and deficiencies (ALLPIRG Conclusion 4/11).

7.1.7 The meeting accordingly formulated the following conclusion:

CONCLUSION 13/99: FOLLOW-UP ACTION ON ALLPIRG/4 CONCLUSIONS

THAT THE NECESSARY FOLLOW-UP ACTIONS IN APPENDIX X TO THIS REPORT BE TAKEN BY AFI STATES.

7.2 Other regional activities

7.2.1 Under this agenda item, the meeting was apprised of the activities of the following interregional coordination activities which were carried out in the region since APIRG/12:

- a) informal SAT coordination meetings;
- b) AFI/EUR interface meetings;
- c) AFI/MID interface meeting;
- d) AFI/ASIA/Pacific coordination meetings; and
- e) interregional coordination between Algeria and adjacent States.

Informal SAT coordination meetings

7.2.2 The meeting noted that, within the framework of informal SAT coordination meetings, the plan for the evolutionary implementation of RNP 10/50 NM lateral spacing and RVSM within the EUR/SAM corridor was being processed. The meeting recalled that APIRG had charged the SAT Group with the responsibility for the implementation of CNS/ATM within areas of routing AR1 and AR2.

AFI/EUR interface meetings

7.2.3 The meeting noted the activities of the AFI/EUR interface meeting since the APIRG/12 Meeting. It was noted that the harmonization of AFI and EUR route networks, the status of implementation of ATS routes and the review of operational letters of agreement were addressed by the Fourth AFI/EUR Interface Meeting, which was held in Paris, France from 14 to 16 February 2001.

AFI/MID interface meeting

7.2.4 The meeting was apprised of the convening of the First AFI/MID Interface Meeting (Chad, N'djamena, 27 – 28 November 2000). It was noted that coordination and communication

problems at interface areas were addressed. The need for the participation of all States in the interface areas between the MID and AFI Regions was emphasized.

AFI/ASIA/Pacific interface meeting

7.2.5 The meeting was also apprised of activities in the Indian Ocean interface areas and, in particular, the extension of Indian Ocean random routing areas (IORRA).

Interregional coordination between Algeria and adjacent States

7.2.6 The meeting was also informed of other interregional activities between Algeria and its neighbouring States with a view to improving the provision of air traffic services in the region. Letters of agreement for the evolutionary implementation of RVSM were signed between Alger and other adjacent ACCs. An informal meeting was also held in Dakar on 12 and 13 December 2000 to review some interface problems.

AGENDA ITEM 8 : CNS/ATM COSTS AND BENEFITS

Agenda Item 8: CNS/ATM costs and benefits**8.1 Traffic forecasting activities**

8.1.1 APIRG noted the activities of the Traffic Forecasting Task Force (AFI-TF/TF) and was informed that the inaugural meeting discussed air navigation systems planning requirements in general and specifically for the AFI Region, as well as the relationship between the various APIRG sub-groups and traffic forecasting activities. Various factors affecting traffic demand in general and those particularly relevant to the AFI Region were debated. Forecasting methodologies and data requirements and sources were explored. The grouping of States was reviewed for forecasting purposes, taking into account the area routings as identified in *AFI CNS/ATM Implementation Plan* (AFI Doc 003).

8.2 Business case development for the implementation of CNS/ATM systems

8.2.1 The meeting noted that a multi-disciplinary project team has been established within the Secretariat and that the team has met several times during the last few months to discuss the overall concept, outline and methodologies of business case development. Ultimately, this work will be published in an ICAO circular as guidance material for States to conduct their own studies to justify the investment requirements individually or collectively by sub-regions or regions.

AGENDA ITEM 9 : TECHNICAL COOPERATION

Agenda Item 9: Technical Co-operation Programme

9.1 The meeting noted with satisfaction that the Technical Co-operation Programme in Africa in 2000 had provided support to 19 States in various fields of civil aviation. From the region, a total of 15 persons received training in institutions in Africa or overseas, and equipment worth about US\$260 000, was procured by ICAO for civil aviation administrations. The remainder of ICAO's technical cooperation activities related to the provision of expert services. APIRG was informed that the projects implemented within the Technical Co-operation Programme covered subjects as diverse as feasibility studies for the creation of autonomous civil aviation authorities, the development of airport services, and the operation of a flight information centre. The total programme value was about US\$4.3 million. APIRG was informed that the scope of the Technical Co-operation Programme in Africa is very low in comparison with the needs identified in the region.

9.2 The meeting noted that, in view of the current serious shortcomings (lack of human and material resources, statutory instruments not updated, non-existent cooperation agreements, etc.), it is essential that a regional or continental approach be adopted in order to allow the African States to meet their obligations.

**AGENDA ITEM 10 : TERMS OF REFERENCE AND WORKING
ARRANGEMENTS OF APIRG**

Agenda Item 10 : Terms of reference and working arrangements of the APIRG

10.1 The meeting noted that the APIRG Procedural Handbook has been reviewed and updated by the Secretariat. It was also noted that further adjustment or amendments will be introduced as appropriate to improve the document.

10.2 The terms of reference, work programmes and compositions of the APIRG subsidiary bodies are given at the appendices as follows:

AOP	Appendix Y
COM	Appendix Z
ATS/AIS/SAR	Appendix Z1
MET	Appendix Z2
CNS/ATM	Appendix Z3
TF/TF	Appendix Z4
RVSM/RNAV/RNP	Appendix Z5

10.3 Membership of APIRG and its subsidiary bodies

10.3.1 The group was informed that an application had been received by the Secretary of APIRG from Cape Verde to be a member of the group. The following conclusion was adopted:

CONCLUSION 13/100: MEMBERSHIP OF APIRG

THAT THE ICAO COUNCIL APPROVE THE APPLICATION OF CAPE VERDE FOR MEMBERSHIP IN APIRG.

DECISION 13/101: MEMBERSHIP TO APIRG SUBSIDIARY BODIES

THAT :

THE MEMBERSHIP OF APIRG SUBSIDIARY BODIES BE EXPANDED TO INCLUDE EXPERTS FROM STATES AND INTERNATIONAL ORGANIZATIONS AS FOLLOWS:

- a) **AOP/SG : ERITREA;**
- b) **COM/SG : ERITREA, GHANA;**
- c) **ATS/AIS/SAR/SG : ERITREA;**
- d) **MET/SG : ERITREA, GABON, GHANA, MADAGASCAR AND SOUTH AFRICA; AND**
- e) **CNS/ATM/IC/SG : ERITREA.**

AGENDA ITEM 11 : ANY OTHER BUSINESS

Agenda Item 11: Any other business

11.1 Under this agenda item, the meeting took note of the tentative meeting schedules of APIRG and its subsidiary bodies as outlined at Appendix Z6, it being understood that firm dates will be advised to respective members in a timely manner.

11.2 The meeting expressed appreciation for the Secretariat's initiative to have all APIRG/13 documentation posted to ICAO's web site. This allowed the dissemination of substantial information on the meeting and contributed to the large turn out of delegates.

11.3 It was emphasized that APIRG members should strictly follow the procedures as contained in the APIRG Procedural Handbook, in particular with regard to the timely submission of information papers and working papers. The following conclusion was formulated:

**CONCLUSION 13/102: SUBMISSION OF INFORMATION PAPERS AND WORKING PAPERS TO
APIRG**

**THAT STATES AND INTERNATIONAL ORGANIZATIONS MAKE THE NECESSARY
EFFORTS TO SUBMIT THEIR INFORMATION PAPERS AND WORKING PAPERS TO
APIRG IN ACCORDANCE WITH THE ESTABLISHED PROCEDURES, AND IN ANY
CASE BEFORE THE SET DEADLINE.**

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Appendix A

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**APIRG/12 CONCLUSIONS/DECISIONS CONSIDERED FOR SPECIFIC ACTION
BY THE AIR NAVIGATION COMMISSION AND/OR COUNCIL**

Report Reference		Action by Council/ANC	Proposed Action
Concl./Dec. No.	Page		
Decision 12/1	3-2	ANC	<p>Carriage and operation of pressure altitude reporting transponders and ACAS II</p> <p>Noted the conclusion and requested APIRG to accord it high priority.</p>
12/2	3-2	ANC	<p>Publication of ACAS II regulations</p> <p>Noted the conclusion and urged States to accord it high priority.</p>
12/5	4-2	C	<p>Implementation of visual aids</p> <p>Noted the conclusion as well as its relation with the AFI/7 Recommendation 14/3 and requested the Secretary General to continue to assist AFI States for the resolution of resource problems.</p>
12/6	4-3	C	<p>Aerodrome emergency planning</p> <p>Noted the conclusion and requested the Secretary General to accord high priority to ICAO's role in parts d) and e) of the recommendation.</p>
12/8, 12/9, 12/11, 12/12, 12/13, 12/15, 12/16 and 12/17	4-5 to 4-10	C	<p>Conclusions related to the improvement of aeronautical fixed and mobile communication services</p> <p>Noted the conclusions, urged States concerned to follow them up with utmost effort and requested APIRG to report the result of States' follow-up.</p>

Report Reference		Action by Council/ANC	Proposed Action
Concl./Dec. No.	Page		
Conclusion 12/10	4-6	C	VSAT networks interconnection Noted the conclusion and requested the Secretary General to bring it to the attention of ASECNA and South Africa.
12/19	4-11	C	Implementation of ATS routes Noted the conclusion and, with regard to part b), requested the Secretary General to assist States as necessary.
12/20	4-11	C	Provision of area control service Noted the conclusion and urged States to expedite the implementation of area control service in view of its effect on safety.
12/21	4-12	C	Reporting and investigation of ATS incidents Noted the conclusion and urged States to follow it up actively to improve the quality of ATS in the region.
12/22	4-12	C	ATC refresher courses Noted the conclusion and urged States to follow it up actively to improve the quality of ATS in the region.
12/23	4-12	C	Uniform application of ATS proficiency assessment and standard auditing procedures Noted the conclusion and urged States to follow it up actively to improve the quality of ATS in the region.

Report Reference		Action by Council/ANC	Proposed Action
Concl./Dec. No.	Page		
12/27	4-15	ANC	<p>Dissemination of AIS products</p> <p>a) Noted the conclusion and its relation to APANPIRG Conclusion 10/21 concerning WAFS products and OPMET data;</p> <p>b) emphasized the need that States improve their AFTN; and</p> <p>c) requested the Secretariat to propose, under ANC Task No. AIS-9806, a policy for the use of the Internet as an alternative or interim means of disseminating aeronautical and other information.</p>
12/30	4-15	C	<p>Provision of search and rescue services</p> <p>Noted the conclusion and urged States to increase their efforts for the implementation of SAR services.</p>
Decision 12/37	4-17	ANC	<p>Collection/dissemination of AIS information on SADIS</p> <p>Noted the decision and that the result of the study will be coordinated with other ICAO Regions.</p>
12/38	4-18	C	<p>Technical and financial commitments to SADIS</p> <p>Noted the conclusion and that, as a follow-up to Council action on EANPG/40 Conclusion 40/29, the Secretary General had invited States receiving the SADIS broadcast and not yet participating in the SADIS voluntary cost recovery scheme, to consider doing so.</p>

Report Reference		Action by Council/ANC	Proposed Action
Concl./Dec. No.	Page		
12/41	4-19	ANC	<p>Year 2000 (Y2K) computer problem</p> <p>Noted the solution proposed by APIRG and that the Secretariat was taking it into account in relation with the ICAO action on the Y2K problem.</p>
12/42	4-19	C	<p>Cost recovery for aeronautical meteorological services provided to aviation</p> <p>Noted the conclusion and requested the Secretary General to bring it to the attention of States.</p>
12/48	4-23	C	<p>Funding arrangement for the AFI EGNOS test bed</p> <p>Noted the conclusion as well as its relation to AFI/7 Recommendation 13/4 and requested the Secretary General to keep AFI States informed about the results of the arrangement.</p>
12/50	4-25	C	<p>Alignment of the procedures for the amendment of the FASID</p> <p>Noted the conclusion and requested the Secretary General to present specific proposals on the subject.</p>
12/51	4-25	C	<p>Completion of the draft AFI Basic ANP and FASID documents</p> <p>Noted the conclusion and requested the Secretary General to arrange for completion and publication of the documents as a matter of priority.</p>

Report Reference		Action by Council/ANC	Proposed Action
Concl./Dec. No.	Page		
12/53	4-25	ANC	<p>Development of a new part for the basic ANP and FASID documents dealing with human factors and manpower training</p> <p>Noted the conclusion and that this matter would be addressed in the context of ANC Task No. PEL-9601.</p>
12/56	5-1	C	<p>Institutional strategies for addressing shortcomings in the air navigation field at airports in the AFI Region</p> <p>Noted the conclusion, urged States concerned to take it into active consideration and requested the Secretary General to report the result through APIRG.</p>
12/57	5-1	C	<p>Coordinated approach to solve persistent problems</p> <p>Noted the conclusion and requested the Secretary General to pursue it actively and report the result through APIRG.</p>
12/58	5-1	C	<p>Integrated sub-regional approach to the removal of shortcomings and deficiencies</p> <p>Noted the conclusion and requested the Secretary General to bring it to the attention of States and report the result through APIRG.</p>
12/61	6-1	C	<p>Membership of the APIRG</p> <p>Approved the conclusion.</p>

FOLLOW-UP ACTION ON APIRG/11 AND APIRG/12 CONCLUSIONS AND DECISIONS

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 11/1	<p>Regular follow-up of the results of AFI/7 RAN meeting and report to APIRG</p> <p>That the ICAO Regional Offices serving the AFI Region regularly monitor the implementation of the outcome of AFI/7 report by States through mission to States and correspondence and provide regular reports to APIRG meetings.</p>	Continuous
Conc. 11/2	<p>Review of States' civil aviation establishments</p> <p>That ICAO Regional Offices serving the AFI Region continue their efforts to assist AFI States to review their civil aviation establishments making use of AFI/7 recommendations 14/3 (institutional strategies for addressing shortcomings in the airports and air navigation systems of the AFI Region) and 14/6 (guidelines on the establishment and provision of multinational facilities or services) with a view to deciding whether any improvements could be made to their resources and capabilities in order to better cope with the obligations they have to implement the various elements of the AFI ANP.</p>	Continuous
Dec. 11/5	<p>Proposal for AFI EGNOS test bed</p> <p>That APIRG :</p> <ul style="list-style-type: none"> a) accept the initiative for an EGNOS test bed in the AFI Region to conduct operational trials and demonstrations on SBAS; b) task the CNS/ATM/IC/SG to coordinate, as appropriate, the trials and demonstrations with the European GNSS secretariat, the AFI States to be involved for the ground elements and to document the results for consideration by APIRG/12; and c) accept any initiative by other SBAS providers to conduct similar trials and demonstrations with the AFI Region under similar arrangements as in b). 	<p>Continuous. APIRG/13 - WP/8B refers</p> <p>An AFI/EUR GNSS Working Group ha been established. Held its first meeting in May 2001.</p>

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 11/6	<p>Facilitation of the AFI SBAS trials and demonstrations</p> <p>That:</p> <p>a) AFI States concerned with the AFI SBAS trials and demonstrations , facilitate to the extent practicable the importation, installation and operation of the ground elements;</p> <p>b) African airlines make arrangements to participate in the trials.</p>	Continuous. AFI States, African Airlines (AFRAA) informed accordingly
Dec. 11/12	<p>Information to APIRG and ICAO subsidiary bodies on developments in the new ICAO CNS/ATM systems and other air navigation fields</p> <p>That the secretariat should regularly inform the APIRG and its subsidiary bodies of technical and operational developments in the new ICAO CNS/ATM systems and other air navigation fields dealing with their terms of reference as well as of relevant developments within other planning and implementation regional groups.</p>	Continuous. Reports of relevant subgroups of APIRG refer
Conc. 11/13	<p>Implementation of Minimum Safe Altitude Warning (MSAW) system</p> <p>That in view of the recognized potential for the enhancement of flight safety of the MSAW system:</p> <p>S States having automatic safety alert capability should, as soon as possible, utilize the features of the system;</p> <p>S States intending to install automated radar terminal system ensure that the system is fully exploited and capable of ensuring the MSAW service;</p> <p>S APIRG monitor the progress of implementation of MSAW in the AFI Region.</p>	<p>Continuous. Renewed follow-up on State letter AN 11/1-1.24-97/91dated 12 December 1997</p> <p>Included in Aeronautical Surveillance Plan. APIRG/13 WP/8A refers.s</p>

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/2	<p>Publication of ACAS II regulations</p> <p>That States which have not published their regulations for ACAS II should do so as a matter of urgency</p>	State letter was sent out based on the material on Dec 12/1 above. Some States have implemented this requirement. - Continuous.
Conc. 12/3	<p>Planning of en-route alternate aerodromes</p> <p>That additional consultations with States by the ICAO secretariat continue in order to obtain information related to the en-route alternate aerodromes to meet the needs of extended range operations by twin engine aeroplanes (ETOPS)</p>	Continuing. Little progress.
Conc. 12/5	<p>Implementation of visual aids</p> <p>That States ensure adequate resources are made available so that the required visual aids are implemented adequately in accordance with Annex 14, Volume I Standards and Recommended Practices (SARPS)</p>	Continuing. Improvements observed due to institutional strategies adopted.

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/6	<p>Aerodromes emergency planning</p> <p>That:</p> <p>a) States establish emergency plans for all international aerodromes commensurate with the type of operation at those aerodromes and inform the respective ICAO Office;</p> <p>b) States conduct exercises at intervals called for in Annex 14, Volume I, (two years for a full scale exercise and one year for a partial exercise) and submit reports to the respective ICAO Office;</p> <p>c) States keep the emergency plans under constant review in accordance with specifications in Annex 14, Volume I;</p> <p>d) ICAO Regional Offices continue to assist States in the establishment of their aerodrome emergency plans; and</p> <p>e) ICAO continue to organize aerodrome emergency planning workshops at Regional Offices but also within States or groups of States when requested.</p>	<p>Continuing.</p> <p>Continuing.</p> <p>Continuing.</p> <p>Regional Offices have assisted when requested.</p> <p>Several workshops have been conducted. Dar-es-Salaam - Banjul 2000</p>
Conc. 12/8	<p>Alger/Niamey main AFTN circuit</p> <p>That States concerned:</p> <p>a) improve the availability of the Alger/Niamey main AFTN circuit urgently; and</p> <p>b) agree on a bilateral technical solution including upgrading the modulation rate to a minimum of 1200 bps.</p>	<p>No change. VSAT solution envisaged.</p>

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/9	<p>Brazzaville/Nairobi main AFTN circuit</p> <p>That Kenya and ASECNA implement as a matter of urgency a satellite AFTN circuit Brazzaville/Nairobi.</p>	Not yet implemented.
Conc. 12/10	<p>That ASECNA and South Africa provide as a matter of urgency</p> <p>a) At Brazzaville: an SADC VSAT compatible terminal pointed to INTELSAT Satellite 604</p> <p>b) At Johannesburg:</p> <p>i) A SATCOM ASECNA VSAT terminal pointed to INTELSAT Satellite 70 ; and</p> <p>ii) A new SADC VSAT terminal for ATS/DS circuits.</p> <p><i>Note: 1) With the above, implementation of the following AFS requirements will be facilitated:</i></p> <p><i>AFTN: Brazzaville/Johannesburg and Antananarivo/Johannesburg:</i></p> <p><i>ATS/DS: 1) Brazzaville /Luanda and potentially Brazzaville/Kinshasa.</i></p> <p><i>2) Connectivity with Indian Ocean Zone : Antananarivo/Beira, Antananarivo/Dar Es Salaam and Antananarivo/Mauritius</i></p>	Not implemented. Negotiations still going on between the two parties.
Conc. 12/11	<p>Interconnectivity between VSAT networks</p> <p>That entities responsible for the operation of sub-regional VSAT networks be urged to ensure that interconnection between networks are implemented expeditiously so that the benefits of such networks are explored to the full and major shortcomings in the provision of fixed service are eliminated.</p>	Continuous. AFI/7 RAN Rec. 14/20 refers.

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/12	<p>AFI AFTN circuits availability</p> <p>That states concerned:</p> <p>a) take remedial action as a matter of high priority to overcome deficiencies of main AFTN circuits;</p> <p>b) implement as a matter of priority the remaining circuits by 30 march 2000.</p> <p>c) improve AFTN circuits reliability above the threshold of 97%; and</p> <p>d) provide Regional Offices with monthly availability data on all main and tributary circuits under their responsibility.</p>	<p>Continuous. APIRG/13 WP/5 refers.</p> <p>Very few States provide information on availability of AFTN circuits.</p>
Conc. 12/13	<p>Upgrading the data rate for main AFTN circuits</p> <p>That the data rate for all the main AFTN circuits in the AFI region be upgraded to a minimum of 1200 bps as soon as possible.</p>	<p>On-going. APIRG/13, WP/5 refers.</p> <p>7 circuits implemented. 17 circuits to be implemented.</p>
Conc. 12/14	<p>Bujumbura/goma AFTN circuit</p> <p>That Bujumbura/Goma AFTN circuit be included in the rationalized AFTN plan for the AFI region.</p>	<p>Amendment proposal circulated.</p> <p>No reply received from main parties.</p>

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/15	<p>Implementation of the ATS/DS circuits plan</p> <p>That :</p> <p>a) States concerned implement as a matter of priority the remaining ATS/DS circuits by 30 march 2000, taking into account AFI7 recommendation 9/8;</p> <p>b) Alternative satellite telephone dial up systems be provided to ATS units where dedicated ATS/DS circuits are not implemented or operating with deficiency; and</p> <p>c) Communications via portable satellite telephones be systematically recorded.</p>	<p>a) Continuous. Little progress achieved. APIRG/13 WP/11 refers.</p> <p>b) Implemented in a number of FIRs.</p>
Conc. 12/16	<p>VHF coverage extension in the AFI Region</p> <p>That States conclude agreements for hosting on their national territory remote VHF facilities operated by adjacent States.</p>	<p>Continuous. Implemented in ASECNA States.</p>
Conc. 12/17	<p>Availability of en route VHF facilities</p> <p>That States collect statistics on availability of en route VHF facilities in January, April, July and October of each year and communicate the results to the ICAO Regional Offices concerned.</p>	<p>Very difficult to implement by States. Should be cancelled.</p>
Conc. 12/18	<p>Amendment to the AFI anp (Doc. 7474) - Table ATS 1</p> <p>That ATS routes indicated at Appendix E to the report of APIRG/12 Meeting on Agenda Item 4 be included in Table ATS 1 of the AFI Air Navigation Plan (Doc 7474)</p>	<p>Table ATS 1 was amended to include these routes and new route designators assigned accordingly. States advised of these new designators and requested to implement. Action completed.</p>

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/19	<p>Implementation of ATS routes</p> <p>That :</p> <p>a) States that have not already done so, implement the ATS routes indicated at Appendix F of the report of APIRG/12 meeting on agenda item 4, as soon as possible but not later than 2 December 1999;</p> <p>b) whenever necessary, implementation of ATS routes passing through contiguous FIRS be discussed within the framework of informal consultations and meetings with adjacent States or Organizations concerned in order to coordinate calculations, procedures and simultaneous implementation dates.</p>	As above
Conc. 12/20	<p>Provision of area control service</p> <p>That the States which have not done so, implement as soon as possible, but not later than 1 January 2000 area control service</p>	As above
Conc. 12/21	<p>Reporting and investigation of ATS incidents</p> <p>That States which have not done so, expedite the implementation of provisions relating to the reporting and investigation of ATS incidents as advocated by AFI/7 RAN meeting recommendation 5/26.</p>	A State letter was sent out on the subject. Subject was considered by ATS/AIS/SAR SG. Result - refer APIRG/13 - WP/6. - Continuous.
Conc. 12/22	<p>ATC refresher courses</p> <p>That States give priority to the proficiency of air traffic controllers by conducting refresher courses.</p>	A State letter was sent out on the subject. Subject was considered by ATS/AIS/SAR/SG/6 (cf. Conc. 6/48).. Result - refer APIRG/13 - WP/6. - Continuous.
Conc. 12/23	<p>Uniform application of ATS proficiency assessment and standard auditing procedures</p> <p>That States which have not done so, introduce as soon as possible the ATS proficiency assessment and auditing procedures using the guidelines at Appendix G to APIRG/12 report on agenda item 4.</p>	A State letter was sent out on the subject. Subject was considered by ATS/AIS/SAR/SG/6 (cf. Conc. 6/50).. Result - refer APIRG/13 - WP/6. - Continuous.

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/25	<p>Distribution of critical AIS information</p> <p>That the ICAO Regional Offices concerned pursue the follow-up action on implementation of the AFI/7 RAN Meeting Recommendations 12/4 (Publication of the AIP in the new format) and 12/23 (preflight information service), conclusions 12/9 (activation of designated areas) and 12/10 (use of trigger NOTAM).</p>	<p>State letter sent out. Issue revisited and ATS/AIS/SAR SG/6. Outcome is contained in APIRG/13 - WP/6. - Continuous.</p>
Conc. 12/26	<p>Responsibility for the production of chart ICAO 1:100 000</p> <p>That the ICAO Regional Offices concerned:</p> <p>a) call the attention of the States concerned to the fact that those States which have the responsibility for the production of the relevant sheets of the world aeronautical chart - ICAO 1: 1 000 000 are no longer in a position to continue the production of the following sheets: 2344-45, 2420-21, 2422, 2451, 2454-55, 2536-37, 2423, 2454-55, 2536-37, 2570, 2574, 2658, 2659-60, 2660, 2662, 2663, 2664, 2691, 2692, 2693, 2694, 2695, 2696-97, 2697, 2780-81, 2781-82, 2784-85, 2785-86, 2812-13, 2813-14, 2814-15, 2816-17, 2817-18, 2905, 2906-07, 2935, 2936, 3052, 3155-56, 3173-74, 3278, 3297.</p> <p>b) initiate consultations with States covered by the above-mentioned sheets with a view to identifying those States that could accept to produce their own sheets and/or provide assistance to other States in this respect.</p>	<p>State letter sent out. Issue revisited and ATS/AIS/SAR SG/6. Outcome is contained in APIRG/13 - WP/6. - Continuous.</p>
Conc. 12/27	<p>Dissemination of AIS products</p> <p>That given the difficulties experienced in the dissemination of AIS products due to AFTN deficiencies, States use additional means of communication such as internet (TCP/IP) to make available the relevant AIS products.</p>	<p>State letter sent out. Issue revisited and ATS/AIS/SAR SG/6. Outcome is contained in APIRG/13 - WP/6. - Continuous.</p>

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/28	<p>Implementation of WGS-84</p> <p>That States which have not done so, expedite the implementation of WGS-84 within their FIRS in accordance with ICAO provisions.</p>	<p>State letter sent out. Issue revisited and ATS/AIS/SAR SG/6. Outcome is contained in APIRG/13 - WP/6. - Continuous.</p>
Dec. 12/29	<p>The AIS Automation Task Force</p> <p>That the AIS Task Force established pursuant to APIRG/10 decision 10/16 expedite their work and report to the ATS/AIS/SAR/SG/6 Meeting.</p>	<p>The AIS Automation TF met in April 2000. Report considered by ATS/AIS/SAR SG/6. Result contained in APIRG/13 - WP/6. - Continuous.</p>
Conc. 12/30	<p>Provision of search and rescue services</p> <p>That States accord high priority for the implementation of ICAO provisions in respect of search and rescue services.</p>	<p>State letter sent out. Follow-up ATS/AIS/SAR SG/6. Result contained in APIRG/13 - WP. - SAR Seminar conducted November 2000. Continuous.</p>
Conc. 12/34	<p>Feedback on SIGWX charts to London WAFC</p> <p>That States receiving SIGWX from WAFC London provide feedback on a timely manner to the WAFC on their findings on the accuracy of the SIGWX test charts received.</p>	<p>Continuing</p>
Conc. 12/39	<p>OPMET data bank for the AFI Region</p> <p>That, in order to improve exchanges, ICAO study the possibility of establishing one or two OPMET data bank(s) in the AFI Region preferably where two-way SADIS VSAT are located.</p>	<p>Continuing, APIRG/13-WP/7 refers</p>
Conc. 12/40	<p>Training in the preparation and issuance of volcanic ash advisories and SIGMETs</p> <p>That, States concerned should conduct regular exercises in cooperation with their VAAC at their meteorological watch offices (MWOs) on the preparation and issuance of volcanic ash advisories and SIGMETs in order to keep their aeronautical meteorological forecasters current with the procedures.</p>	<p>Continuing</p>

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/42	<p>Cost recovery for aeronautical meteorological services provided to aviation</p> <p>That, States having difficulties in cost recovery of their meteorological services provided to aviation, make adequate institutional arrangements to ensure that meteorological services benefit from these charges. The funds should then be used to improve aeronautical meteorological services.</p>	Continuing
Conc. 12/44	<p>Longitudinal separation</p> <p>That States take all necessary steps so that uniform 10 minute longitudinal separation minima be applied at the AIRAC date of 23 March 2000.</p>	Continuing pending elimination of outstanding shortcomings/deficiencies.

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/45	<p>National CNS/ATM bodies, focal points of contact and ICG coordinators</p> <p>That :</p> <ul style="list-style-type: none"> a) State air navigation service providers, which have not yet done so, establish a national CNS/ATM body; b) the head of this body be designated as the focal point of contact for purposes of coordination with the relevant ICG coordinators; c) if a State is elected as ICG coordinator of one of the 10 areas of routing in the AFI region, the national focal point of contact referred to in (b) above be designated as the ICG coordinator or appoints a suitable person to act as area of routing coordinator; and d) ICAO provide to States and international organizations concerned with the list of coordinators and their contacts. <p><i>Note: The terms of reference of the ICG Coordinators are as follows: The ICG coordinator will be responsible to initiate and coordinate actions required to carry out implementation as mentioned in the worksheets among all concerned; facilitate the elimination of shortcomings and deficiencies as noted in the ICG meetings; report to the CNS/ATM sub-group on progress and eventual constraints being experienced, or on any other matters of concern; and to assist States as required.</i></p>	On going. APIRG/13-WP/8 refers.
Conc. 12/48	<p>Funding arrangement for the AFI EGNOS test bed</p> <p>That ASECNA continue the existing arrangements with the European Union to ensure, on behalf of the AFI Region, funding of the AFI EGNOS test bed.</p>	On going. APIRG/13-WP8B refers.

Conc./ Dec. No.	Title &Text	Follow-up Action
Dec. 12/49	<p>Future work of the AFI GNSS Study Group</p> <p>That the AFI GNSS Study Group be tasked with the following:</p> <p>Continue to carry out all the activities associated with the implementation of the AFI GNSS test bed and any other Test Bed proposal concerning the AFI Region; and</p> <p>Develop and refine the implementation plan for the AFI GNSS including associated institutional issues.</p>	On going. APIRG/13-WP/8B refers.
Conc. 12/51	<p>Completion of the draft AFI Basic ANP and FASID documents</p> <p>That:</p> <p>a) the Secretariat will complete the draft AFI Basic ANP and FASID documents with due consideration to the 27th edition of doc 7474 and the reports of APIRG/11 and 12 Meetings;</p> <p>b) the final draft AFI basic ANP and FASID documents will be sent to states and international organizations concerned for comments according to the established procedure for the amendment of the basic ANP and FASID.</p>	Continuing
Conc. 12/52	<p>Inclusion of the contents of the AFI CNS/ATM Implementation Plan (Doc. 003) in the AFI BASIC ANP and FASID</p> <p>That the secretariat will ensure that the contents of the AFI CNS/ATM Implementation Plan (Doc. 003) be incorporated in the relevant parts of the AFI Basic ANP and FASID documents in an evolutionary manner.</p>	On going. Surveillance Plan submitted to APIRG/13 for inclusion into FASID.

Conc./ Dec. No.	Title &Text	Follow-up Action
Conc. 12/53:	<p>Development of a new part for Basic ANP and FASID documents dealing with human factors and manpower planning</p> <p>That the secretariat expedites the development of a new part to the AFI Basic ANP and FASID dealing with Human Factors and Manpower Planning requirements.</p>	Continuing
Conc. 12/54	<p>CNS and ATM facilities in AOP tables</p> <p>That in order to facilitate the consultations of FASID, the requirements in the AOP tables concerning CNS and ATM be also included in Parts IV and V of the FASID as appropriate.</p>	Continuing.
Conc. 12/57	<p>Coordinated approach to solve persistent problems</p> <p>That where there are obvious persistent problems ICAO coordinate with the users, IATA and IFALPA, and the State or group of States concerned to develop an appropriate strategy for removal of the shortcomings and deficiencies</p>	Continuing
Conc. 12/58	<p>Integrated sub-regional approach to the removal of shortcomings and deficiencies</p> <p>That States consider the use of sub-regional groupings where they exist to collectively deal with removal of shortcomings.</p>	Continuing
Dec. 12/66	<p>Implementation of RVSM</p> <p>That the planning and evolutionary implementation of RVSM in the AFI region be carried out and the problems associated with the implementation of RVSM in Europe and other AFI interface areas be considered within the framework of the implementation co-ordination groups (ICGs) or APIRG sub-groups as appropriate.</p>	Continuing

**Status of implementation of the rationalized AFTN circuits/Etat de mise en oeuvre des circuits
du RSFTA rationalisé**

Explanation of the table
Explication du tableau

Col. N°	Explanations
1	Terminal I and Terminal II. Each circuit appears once in the Table./ <i>Terminal I et Terminal II. Chaque circuit n'apparaît qu'une fois dans le Tableau</i>
2	Category of circuit/ <i>Catégorie de circuit:</i> M - main circuit/ <i>circuit principal</i> T - tributary circuit/ <i>circuit tributaire</i> S - AFTN station circuit/ <i>circuit de station RSFTA</i>
3 and 8	Circuit type/ <i>Type de circuit:</i> NIL - not implemented/ <i>Non mis en oeuvre</i> LTT/A - landline teletypewriter, analogue (eg cable, microwave/ <i>circuit télétype terrestre, analogue (i.e. câble, faisceau hertzien)</i>) LTT/D - landline teletypewriter, digital (eg cable, microwave/ <i>circuit télétype terrestre, numérique (i.e. câble, faisceau hertzien)</i>) LDD/A - landline data circuit, analogue (eg cable, microwave/ <i>circuit de données terrestre, analogue (i.e. câble, faisceau hertzien)</i>) LDD/D - landline data circuit, digital (eg cable, microwave/ <i>circuit de données terrestre, numérique (i.e. câble, faisceau hertzien)</i>) RTT - radio teletype circuit (HF)/ <i>circuit radiotélétype (HF)</i> SAT/A/D - satellite circuit /a digital or/d digital/ <i>circuit par satellite /a analogue ou /d numérique</i>
4 and 9	Circuit modulation rate/ <i>Rapidité de modulation du circuit</i>
5 and 10	Circuit Protocol/ <i>Protocole du circuit</i> NONE: No Protocol/ <i>Aucun Protocol/Protocole</i> X.25: ITU X.25 Protocol/ <i>Protocole X.25 de l'UIT</i>
6 and 11	Data transfer code (syntax) ITA-2: International Telegraph Alphabet N°2/ <i>Alphabet international N°2</i> IA-5: International Alphabet N°5/ <i>Alphabet international N°5</i> CBI: Code and byte independent (ATN compliant) / <i>Indépendant des codes et multipléts (compatible ATN)</i>
7 and 12	Aeronautical network served (AFTN or ATN)/ <i>Réseau aéronautique desservi (RSFTA ou ATN)</i>
13	Implementation target date/ <i>Date cible pour la mise en oeuvre</i>
14	Remarks/ <i>Observations</i>

Status of implementation of the rationalized AFTN circuits

Terminal I/ Terminal II	Circuit categ./ Categ. de circuit	Current/Existant					Planned/Prévu					Target Implem. date / Date de mise en oeuvre	Remarks/ Observations
		Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protoc ole	Code	Network / Réseau	Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protoc ole	Code	Network/ Réseau		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ADDIS ABABA													
Asmara	T	NIL											
Djibouti	T	RTT	50	NONE	ITA-2	AFTN	MWV	50	NONE	ITA-2	AFTN		
Khartoum	T	NIL					SAT/A	50	NONE	ITA-2	AFTN		
Nairobi	M	SAT/A/A	50	NONE	ITA-2	AFTN	SAT/A	1200	A	ITA-2	AFTN		
Niamey	M	SAT/A	50	A	ITA-2	AFTN	SAT/A	1200	X.25	ITA-2	AFTN		
MID (Jeddah)	M	SAT/A	50	A	ITA-2	AFTN	SAT/A	1200	X.25	ITA-2	AFTN		
ALGER													
Casablanca	M	SAT/A	50	NONE	ITA-2	AFTN	LTT/A	2400	X.25	ITA-2	AFTN		
Niamey	M	SAT/A	2x50	A	ITA-2	AFTN	LTT	1200	X.25	ITA-2	AFTN		
Tunis	M	SAT/A	1200	A	ITA-2	AFTN	SAT/A	1200	X.25	ITA-2	AFTN		
EUR (Bordeaux)	M	SAT/A	1200	A	ITA-2	AFTN	SAT/A	1200	X.25	ITA-2	AFTN		

Terminal I/ Terminal II	Circuit categ./ Categ. de circuit	Current/Existant					Planned/Prévu					Target Implem. date / Date de mise en oeuvre	Remarks/ Observations
		Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network / Réseau	Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network/ Réseau		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BRAZZAVILLE													
Bangui	T	SAT/D	50	NONE	ITA-2	AFTN	SAT/D	50	NONE	ITA-2	AFTN		
Dakar	M	SAT/D	2400	X-25	ITA-2	AFTN	SAT/D	2400	X-25	ITA-2	AFTN		
Douala	T	SAT/D	50	NONE	ITA-2	AFTN	SAT/D	50	X.25	ITA-2	AFTN		
Kinshasa	T	MWV	50	NONE	ITA-2	AFTN	LTT/D	50	NONE	ITA-2	AFTN		
Johannesburg	M	NIL					SAT/D	1200	X.25	ITA-2	AFTN	2001	
Libreville	T	SAT/D	50	NONE	ITA-2	AFTN	SAT/D	50	NONE	ITA-2	AFTN		
Luanda	T	NIL					SAT/D	50	X.25	ITA-2	AFTN	2001	
Nairobi	M	NIL					SAT/D	1200	X.25	ITA-2	AFTN	2001	
N=Djamena	T	SAT/D	50	NONE	ITA-2	AFTN	SAT/D	50	X.25	ITA-2	AFTN		
Niamey	M	SAT/D	2400	X.25	ITA-2	AFTN	SAT/D	2400	X.25	ITA-2	AFTN		
Sao Tome	T	RTT	50	NONE	ITA-2	AFTN	SAT/D	50	NONE	ITA-2	AFTN		
CAIRO													
Khartoum	T	SAT/A	50	NONE	ITA-2	AFTN	SAT/A	50	NONE	ITA-2	AFTN		
Nairobi	M	LTT/A	50	NONE	ITA-2	AFTN	SAT/A	1200	X.25	ITA-2	AFTN		

Terminal I/ Terminal II	Circuit categ./ Categ. de circuit	Current/Existant					Planned/Prévu					Target Implem. date / Date de mise en oeuvre	Remarks/ Observations
		Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network / Réseau	Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network/ Réseau		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
CAIRO ../..													
Tunis	M	SAT/A	100	NONE	ITA-2	AFTN	SAT/A	1200	X.25	ITA-2	AFTN		
EUR(Athens)	M	SAT/A	9600	CIDIN	IA-5	AFTN	SAT/A	9600	CIDIN	IA-5	AFTN		
MID(Beirut)	M	SAT/A	50	CIDIN	IA-5	AFTN	SAT/A	1200	CIDIN	IA-5	AFTN		
MID(Jeddah)	M	SAT/A	100	CIDIN	IA-5	AFTN	SAT/A	1200	CIDIN	IA-5	AFTN		
CASABLANCA													
Dakar	M	LTT/A	2x75	CIDIN	IA-5	AFTN	LTT/A	1200	CIDIN	IA-5	AFTN		
Las Palmas	T	LTT/A	50	CIDIN	IA-5	AFTN	LTT/A	50	CIDIN	IA-5	AFTN		
EUR(Madrid)	M	SAT/A	50+1x200	CIDIN	IA-5	AFTN	SAT/A	9000	CIDN	IA-5	AFTN		
DAKAR													
Abidjan	T	SAT/A	2400	X-25	ITA-2	AFTN	SAT/A	19.20K (?)	X.25	ITA-2	AFTN		
Bamako	T	SAT/A	75	NONE	ITA-2	AFTN	LTT/A	19.20K (?)	X.25	ITA-2	AFTN		
Banjul	T	SAT/A	75	NONE	ITA-2	AFTN	LTT/A	75	NONE	ITA-2	AFTN		

Terminal I/ Terminal II	Circuit categ./ Categ. de circuit	Current/Existant					Planned/Prévu					Target Implem. date / Date de mise en oeuvre	Remarks/ Observations
		Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network / Réseau	Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network/ Réseau		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
DAKAR ../..													
Bissau	T	NIL					SAT/A	50	NONE	ITA-2	AFTN		
Niamey	M	SAT/A	2400	X.25	ITA-2	AFTN	SAT/D	32K (?)	X.25	ITA-2	AFTN		
Nouakchott	T	LTT/A	2400	X.25	ITA-2	AFTN	LTT/A	19.2K (?)	X.25	ITA-2	AFTN		
Robertsfield	T	NIL					SAT/D	19.20K (?)	X-25	ITA-2	AFTN		
Sal	T	SAT/A	50-1200	NONE	ITA-2	AFTN	SAT/A	50-1200	NONE	ITA-2	AFTN		
SAM (Brasilia)	M	LTT/A	50	A	ITA-2	AFTN	SAT/A	1200	X.25	ITA-2	AFTN		
JOHANNESBURG													
Antananarivo	T	NIL					SAT/D	19.2K (?)	NONE	ITA-2	AFTN		
Beira	T	SAT/D	50	NONE	ITA-2	AFTN	SAT/D	50	NONE	ITA-2	AFTN		
Gaborone	T	SAT/D	50	A	ITA-2	AFTN	SAT/D	50	A	ITA-2	AFTN		
Harare	T	SAT/D	1200	A	ITA-2	AFTN	SAT/D	1200	A	ITA-2	AFTN		
Lilongwe	T	SAT/D	50	A	ITA-2	AFTN	SAT/D	50	A	ITA-2	AFTN		
Lusaka	T	SAT/D	1200	A	ITA-2	AFTN	SAT/D	1200	A	ITA-2	AFTN		
Maputo	T	SAT/D	50	A	ITA-2	AFTN	SAT/D	50	A	ITA-2	AFTN		

Terminal I/ Terminal II	Circuit categ./ Categ. de circuit	Current/Existant					Planned/Prévu					Target Implem. date / Date de mise en oeuvre	Remarks/ Observations
		Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network / Réseau	Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network/ Réseau		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
JOHANNESBURG													
Maseru	T	SAT/D	1200	NONE	ITA-2	AFTN	SAT/D	1200	NONE	ITA-2	AFTN		
Manzini	T	LTT/A	50	A	ITA-2	AFTN	SAT/D	50	A	ITA-2	AFTN		
Nairobi	M	LTT/A	50	A	ITA-2	AFTN	SAT/A	1200	X.25	ITA-2	AFTN		
Windhoek	T	SAT/D	1200	NONE	ITA-2	AFTN	SAT/D	1200	NONE	ITA-2	AFTN		
SAM (Buenos Aeres)	M	NIL					SAT/D	1200	X.25	ITA-2	AFTN		
NAIROBI													
Dar es Salaam	T	LTT/A	50	NONE	ITA-2	AFTN	LTT/A	50	NONE	ITA-2	AFTN		
Entebbe	T	LTT/A	50	A	ITA-2	AFTN	LTT/A	50	A	ITA-2	AFTN		
Mauritius	T	SAT/A	50	A	ITA-2	AFTN	SAT/A	50	A	ITA-2	AFTN		
Mogadishu	T	NIL		A		AFTN	SAT/A	50	A	ITA-2	AFTN		SITA
Seychelles	T	SAT/A	50	A	ITA-2	AFTN	SAT/A	50	NONE	ITA-2	AFTN		
ASIA (Mumbai)	M	LTT/A	50	A	ITA-2	AFTN	LTT/A	1200	X.25	ITA-2	AFTN		

Appendix D to the Report on Agenda Item 4

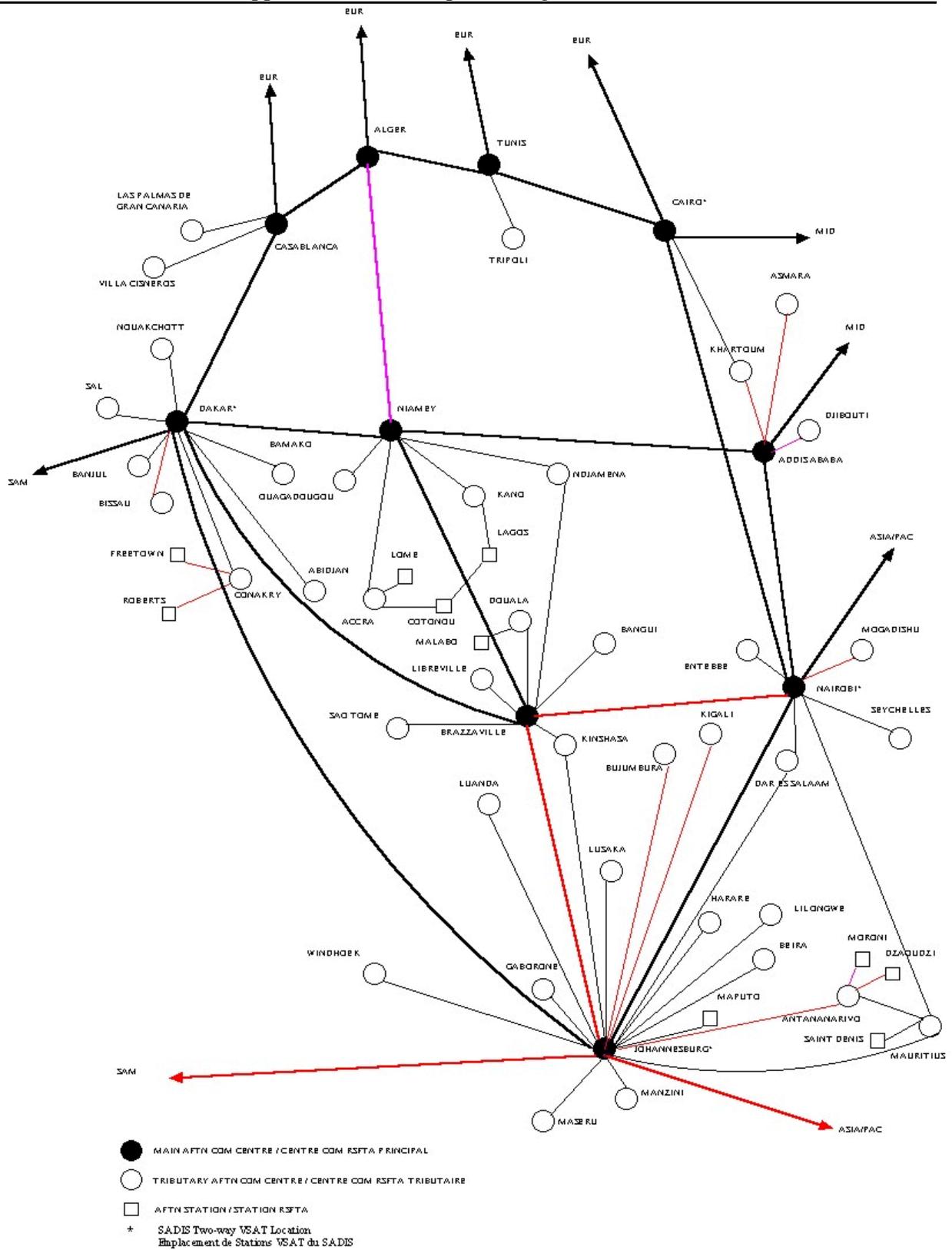
D-7

Terminal I/ Terminal II	Circuit categ./ Categ. de circuit	Current/Existant					Planned/Prévu					Target Implem. date / Date de mise en oeuvre	Remarks/ Observations
		Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network / Réseau	Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network/ Réseau		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NIAMEY													
Accra	T	SAT/D	50	NONE	ITA-2	AFTN	SAT/D	50	NONE	ITA-2	AFTN		
Kano	T	SAT/D	50	A	ITA-2	AFTN	SAT/D	50	A	ITA-2	AFTN		
N=Djamena	T	SAT/D	50	X.25	ITA-2	AFTN	SAT/D	32K (?)	X.25	ITA-2	AFTN		
Ouagadougou	T	LTT/A	50	NONE	ITA-2	AFTN	LTT/A	19.2K (?)	X25	ITA-2	AFTN		
TUNIS													
Tripoli	T	LTT/A	50	NONE	ITA-2	AFTN	LTT/A	50	NONE	ITA-2	AFTN		
EUR(Rome)	M	SAT/A	1200	X-25		AFTN	SAT/A	1200	X.25	ITA-2	AFTN		
ACCRA													
Cotonou	S	LTT/A	50	NONE	ITA-2	AFTN	LTT/A	50	NONE	ITA-2	AFTN		
Lome	S	LTT/A	50	A	ITA-2	AFTN	LTT/A	50	NONE	ITA-2	AFTN		
ANTANANARIVO													
Dzaoudzi	S	NIL					SAT/D	50	NONE	ITA-2	AFTN		

Terminal I/ Terminal II	Circuit categ./ Categ. de circuit	Current/Existant					Planned/Prévu					Target Implem. date / Date de mise en oeuvre	Remarks/ Observations
		Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network / Réseau	Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network/ Réseau		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mauritius	T	RTT	50	NONE	ITA-2	AFTN	SAT/D	50	NONE	ITA-2	AFTN		
Moroni	S	RTT	50	A	ITA-2	AFTN	SAT/D	50	NONE	ITA-2	AFTN		
DAR ES SALAAM													
Bujumbura	S	NIL					SAT/A	50	NONE	ITA-2	AFTN		
Kigali	S	NIL					SAT/A	50	NONE	ITA-2	AFTN		
DOUALA													
Malabo	S	LTT/A	50	NONE	ITA-2	AFTN	LTT/A	19.2K(?)	X.25	ITA-2	AFTN		
KANO													
Lagos	S	SAT/A	50	NONE	ITA-2	AFTN	SAT/D	100	NONE	ITA-2	AFTN		
LAGOS													
Cotonou	S	LTT/A	50	NONE	ITA-2	AFTN	LTT/A	50	NONE	ITA-2	AFTN		

Terminal I/ Terminal II	Circuit categ./ Categ. de circuit	Current/Existant					Planned/Prévu					Target Implem. date / Date de mise en oeuvre	Remarks/ Observations
		Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network / Réseau	Circuit type/ Type de circuit	Modulation rate/ Rapidité de modulation (baud)	Protocol/ Protocol e	Code	Network/ Réseau		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MAURITIUS													
Saint Denis	S	RTT	50	NONE	ITA-2	AFTN	SAT/A	1200	NONE	ITA-2	AFTN		
ASIA/PAC (Brisbane)	T	SAT/A	50	A	ITA-2	AFTN	SAT/A	50	A	ITA-2	AFTN		
Johannesburg	T	SAT/A	50	NONE	ITA-2	AFTN	SAT/A	1200	NONE	ITA-2	AFTN		
Robertsfield													
Conakry	S	SAT/A	19.2K (?)	X25	ITA-2	T	SAT/D	50	NONE	ITA-2	AFTN	SAT/D	50
Freetown	S	RTT	50	NONE	ITA-2	AFTN	SAT/D	50	NONE	ITA-2	AFTN		

Appendix E to the Report on Agenda Item 4.2



AMENDED RATIONALIZED AFTN PLAN FOR AFRI REGION
 PLAN RSFTA RATIONALISE AMENDE DE LA REGION AFRI

DRAFT VHF FREQUENCY UTILIZATION PLAN/
PROJET DE PLAN D-UTILISATION DES FREQUENCES VHF

Function/Fonction	Frequencies/Bands (MHz) - Fréquences/Bandes (MHz)			
	A	C	B	D
TWR	118.000	118.025	118.050	118.075
	118.100	118.125	118.150	118.175
	118.200	118.225	118.250	118.275
	118.300	118.325	118.350	118.375
	118.400	118.425	118.450	118.475
	118.600	118.625	118.650	118.675
	118.700	118.725	118.750	118.775
	118.800	118.825	118.850	118.875
	118.900	118.925	118.950	118.975
	120.800	120.825	120.850	120.875
SMC	121.600	121.625	121.650	121.675
	121.700	121.725	121.750	121.775
	121.800	121.825	121.850	121.875
	121.900	121.925	121.950	121.975
APP-PAR	119.500	119.525	119.550	119.575
	119.900	119.925	119.950	119.975
	120.100	120.125	120.150	120.175
APP-L	119.000	119.025	119.050	119.075
	119.100	119.125	119.150	119.175

Function/Fonction	Frequencies/Bands (MHz) - Fréquences/Bandes (MHz)			
	A	C	B	D
APP-L (...)	119.200	119.225	119.250	119.275
	119.400	119.425	119.450	119.475
	119.600	119.625	119.650	119.675
	119.700	119.725	119.750	119.775
	119.800	119.825	119.850	119.875
	126.000	126.025	126.050	126.075
APP-I, APP/SR/I	120.000	120.025	120.050	120.075
	120.300	120.325	120.350	120.375
	120.400	120.425	120.450	120.475
	120.700	120.725	120.750	120.775
	121.100	121.125	121.150	121.175
	121.200	121.225	121.250	121.275
	121.300	121.325	121.350	121.375
	121.400	121.425	121.450	121.475
	123.700	123.725	123.750	123.775
	124.000	124.025	124.050	124.075
	124.300	124.325	124.350	124.375
	125.300	125.325	125.350	125.375
APP-H	125.700	125.725	125.750	125.775
	127.200	127.225	127.250	127.275
	128.200	128.225	128.250	128.275
	128.600	128.625	128.650	128.675

Function/Fonction	Frequencies/Bands (MHz) - Fréquences/Bandes (MHz)			
	A	C	B	D
APP-U	123.900	123.925	123.950	123.975
	124.400	124.425	124.450	124.475
	124.500	124.525	124.550	124.575
	124.900	124.925	124.950	124.975
	127.800	127.825	127.850	127.875
	128.000	128.025	128.050	128.075
ACC-L	123.800	123.825	123.850	123.875
	125.400	125.425	125.450	125.475
	128.400	128.425	128.450	128.475
	129.000	129.025	129.050	129.075
	129.600	129.625	129.650	129.675
	131.200	131.225	131.250	131.275
ACC-U	118.500	118.525	118.550	118.575
	119.300	119.325	119.350	119.375
	120.500	120.525	120.550	120.575
	120.600	120.625	120.650	120.675
	120.900	120.925	120.950	120.975
	124.600	124.625	124.650	124.675
	124.700	124.725	124.750	124.775
	125.100	125.125	125.150	125.175
	125.500	125.525	125.550	125.575
	125.600	125.625	125.650	125.675

Function/Fonction	Frequencies/Bands (MHz) - Fréquences/Bandes (MHz)			
	A	C	B	D
ACC-U (./..)	125.900	125.925	125.950	125.975
	126.100	126.125	126.150	126.175
	126.500	126.525	126.550	126.575
	126.700	126.725	126.750	126.775
	127.100	127.125	127.150	127.175
	127.300	127.325	127.350	127.375
	127.700	127.725	127.750	127.775
	128.100	128.125	128.150	128.175
	128.300	128.325	128.350	128.375
	128.500	128.525	128.550	128.575
	128.700	128.725	128.750	128.775
	128.800	128.825	128.850	128.875
	128.900	128.925	128.950	128.975
	129.100	129.125	129.150	129.175
	129.200	129.225	129.250	129.275
	129.300	129.325	129.350	129.375
	129.400	129.425	129.450	129.475
	129.500	129.525	129.550	129.575
	130.900	130.925	130.950	130.975
	132.100	132.125	132.150	132.175
FIS-L	124.200	124.225	124.250	124.275
	125.200	125.225	125.250	125.275

Function/Fonction	Frequencies/Bands (MHz) - Fréquences/Bandes (MHz)			
	A	C	B	D
FIS-L (...)	127.500	127.525	127.550	127.575
	131.100	131.125	131.150	131.175
FIS-U, GP	124.800	124.825	124.850	124.875
	125.800	125.825	125.850	125.875
	126.300	126.325	126.350	126.375
	126.900	126.925	126.950	126.975
	127.400	127.425	127.450	127.475
	131.300	131.325	131.350	131.375
	132.300	132.325	132.350	132.375
OPC	131.400 – 131.900			
VOLMET, ATIS	126.200	126.225	126.250	126.275
	126.400	126.425	126.450	126.475
	126.600	126.625	126.650	126.675
	126.800	126.825	126.850	126.875
	127.000	127.025	127.050	127.075
	127.600	127.625	127.650	127.675
DATA LINK	136.900 – 136.975			
EMERGENCY	121.500			

Function/Fonction	Frequencies/Bands (MHz) - Fréquences/Bandes (MHz)			
	A	C	B	D
AUXILIARY SAR	123.100			
AIR-TO-AIR	123.450			

A : First choice / Premier choix

B : Second choice/Deuxième choix

C : Third choice/Troisième choix

D :Third choice/Troisième choix

UPDATED NOTES ON TABLE ATS 1 OF THE ICAO AFI ANP (Doc 7474)
NOTES MISES A JOUR DU TABLEAU ATS 1
DU PLAN DE NAVIGATION AERIENNE OACI (Doc 7474)

Lower ATS routes Routes ATS inferieures Rutas ATS inferiores	Upper ATS routes Routes ATS superieurs Rutas ATS superiores
A293 Ibiza *---Note 4 (DA) Tiaret (5 (LE))	Ibiza UA293 KIRLA *---Note 4 (DA) Tiaret
A400	UA400
Abidjan Sao Tome Luanda Luena A400 Kaoma EVOLU 1543S 2638E Lusaka Chileka	Abidjan Sao Tome Luanda Luena *----Note 1 (Luena-Lusaka) A400 Kaoma EVOLU 1543S 2638E Lusaka Antananarivo Moramanga Mauritius
A403	UA403
Tripoli *----Note (HL) A403 Sebha N'Djamena Berberati Brazzaville	Tripoli *----Note (HL) A403 Sebha N'Djamena Berberati Brazzaville
A405	UA405
Harare Masvingo A405 Greefswald Hartebeespoortdam Johannesburg	Hargeisa *Note 3 (HK) Nairobi Mbeya Harare *Note 1 (Harare-Greefswald) Masvingo UA405 Greefswald Hartebeespoortdam Johannesburg
A411	UA411

(NAT)	(NAT)
Rabat	Rabat
Fes	Fes
Oujda	Oujda
Oran	Oran
Cherchell	Cherchell
Alger	Alger
Bejaia	Bejaia
Annaba	Annaba
Tunis	Tunis
Monastir	Monastir
Jerba	Jerba
*-----Note (HL)	*-----Note (HL)
Tripoli	Tripoli
*-----Note (HL)	*-----Note (HL)
Beni-Walid	Beni-Walid
Benina	Benina
GARFE 3236N 2401E	GARFE 3236N 24012E
Mersa-Matruh	*-----Note 2 (HE and HL)
*-----Note 3 (HE)	Mersa-Matruh
Cairo	*-----Note 3 (HE and HL)
Sharm El-Sheikh	Cairo
(Wejh)	Sharm El-Sheikh
	(Wejh)
A607	UA607
Ghadames	Ghadames
*-----Notes 2 (HL) (DA)	*-----Notes 2 (HL) (DA)
A607 Dirkou	UA607 Dirkou
N'Djamena	N'Djamena
Bangui	Bangui
	Lubumbashi
	UA608
	El Bayadh
	*-----Notes 2 (DA)
	UA608 Niamey
	Cotonou
	UA615
	Zemmouri
	UA615 Ghardaia
	Tamanrasset
	Kano
A619	UA619

(Paleohora) METRU Alexandria A619 Cairo *----Note 3 (HE) Ras Sudr 2936N 3241E *-----Note 3 (HE) METSA 2924N 3458E (Hail)	(Paleohora) METRU Alexandria UA619 Cairo *----Note 3 (HE) Ras Sudr 2936N 3241E *-----Note 3 (HE) METSA 2924N 3458E (Hail)
A727	UA727
(Sitia) PAXIS Alexandria Cairo Luxor A727 Abu Simbel Merowe *-----Note 3 (HS) Khartoum Kenana Lodwar *-----Note 4 (HK) Nairobi	(Sitia) PAXIS Alexandria Cairo Luxor UA727 Abu Simbel Merowe *-----Note 3 (HS) Khartoum Kenana Lodwar *-----Note 4 (HK) Nairobi Kilimanjaro
A741	UA741
(Palermo) A741 *-----Note 2 (HL) Tripoli	(Palermo) A741 *-----Note 2 (HL) Tripoli
A748	UA748
Gozo A748 *-----Note 2(HL) Tripoli	Gozo A748 *-----Note 2(HL) Tripoli
A850	UA850
A850 OTARO 3900N 0441E Zemmouri	(Nice) *-----Note 5 (LF) UA850 OTARO 3900N 0441E Zemmouri

	UA854
	(Palma) *----Note 2 (LE) UA854 SADAF 3748N 0220E *----Note 2 (DA) Cherchell
A856	UA856
(Alicante) *----Notes 2 (LE, DA), 3(LE) A856 Alger Constantine Tebessa Jerba A865 Menorca *----Note 2 (DA) Cherchell	(Alicante) *----Notes 2 (LE, DA), 3(LE) UA856 Alger Constantine Tebessa Jerba Menorca UA865 *----Note 2 (LE) RANKA *---Note 2 (DA) Cherchell
B607	UB607
(UB525 Addis Ababa:Luxor add Note 3 (HA) Sitia) TANSA El Daba B607 New-Valley Abu Simbel	(Sitia) TANSA El Daba UB607 New-Valley Abu Simbel Dongola *----Note 3 (HS) EL Obeid Goma
	UB738
	UB738 (Malaga) *---Note 5 (LE) *---Note 1 (Malaga-El Bayadh) LIGUM 3550N 00200W Hamman Bou Hadjar El Bayadh

G623	UG623
(BALEN 4057N 0541E) *----NOTE (LF) G623 Annaba Tebessa Ghadames	(BALEN 4057N 0541E) SALMA 39N 00643E UG623 Annaba *----Note 4 Tebessa *----Note 3 (HL) Ghadames
G652	UG652
Brazzaville Kinshasa Saurimo G652 NIDOS 1304S 2651E Lusaka Harare	Brazzaville Kinshasa Saurimo *-----Note 1 (Saurimo-Lusaka) UG652 NIDOS 1304S 2651E Lusaka Harare Beira Toliara (Perth)
G659	UG659
Beni Walid G659 Sarir *-----Note (HL)	Ben Walid UG659 Sarir
G731	UG731
Alghero) *-----Note 2 (LF) Zemmouri G731 *-----Note 4 (DA) Tiaret El Bayadh Timimoun	(Alghero) Zemmouri G731 *-----Note 4 (DA) Tiaret El Bayadh Timimoun Atar
G855	UG855
G855 Tripoli *-----Note (HL) Ghadames	Tripoli *-----Note (HL) *-----Notes (HL), 4 (DA) UG855 Bordj Omar Driss Tamanrasset Niamey Tamale Abidjan
	UG853

	Las Palmas/Gran Canaria *-----Note (GC) AMDIB 2055N 1800W TITOR 1300N 1800W DEMAR 0539N 1100W DEVLI 0400N 0730W Luanda Kuito
	UG853 Cuito Cuanavale Maun Hartebeespoortdam Johannesburg
	UG864
	UG864 Tunis Tebessa Ghardaia Timimoun
R611	UR611
(Caraffa) Benina R611 Merowe Khartoum Addis Ababa	(Caraffa) Benina UR611 Merowe Khartoum Addis Ababa Lake Awasa *-----Note 3 (HK) Garissa Mombasa
R616	UR616
(Pantelleria) R616 Lampedusa *---Note (HL) Tripoli	(Pantelleria) UR616 Lampedusa *---Note (HL) Tripoli
	UR400
	Abu Simbel *-----Note 2 (HS) UG400 Kassala Bahr-Dar Addis Ababa Mogadishu Praslin Mauritius
R986	UR986

Tunis	Tunis
*-----Note 2 (HL)	*-----Note 2 (HL)
R986 Ghadames	UR986 Ghadames
In Amenas	*---Note 2(DT)
Djanet	In Amenas
Kano	*---Note 2(DT)
	Djanet
	Kano
	Foumban
	Yaounde
	Franceville

ATS ROUTES IN THE ICAO AFI ANP (DOC. 7474) REQUIRING IMPLEMENTATION

Route Designator	Segment(s)	States	Observations/Remarks
UA145	(Paleohora) SALUN (3400N 024276) Sidi Barrani (31636N 02556E)	Egypt Greece	Implemented by Egypt for northbound traffic only
UA293	Ibiza Tiaret	Algeria	Required northbound
UA409	Lusaka Ndola Mansa Kalemie	Congo DRC Zambia	
UA411	Jerba Tripoli Benina	Libya	Implemented at variance with the Plan via: A411 - Jerba/Zawia/Tripoli/Misurata A411N - Jerba/TANLI/Mitiga/Misurata
UA451	Asmara RAGAS PARIM Aden	Eritrea Ethiopia Yemen	Implemented at variance with the Plan via RAGAS
UA618	Lubumbashi Bukavu SAGBU Malakal	Zaire Sudan	
UA748	(GOZO) Tripoli Mizda Cairo Sharm Sheileh	Libya Egypt	
UA861	Lagos Garoua	Nigeria	
UA865	Menorca Algiers Cherchell	Algeria	Essential AFI long-haul requirement.
UB525	Addis Ababa Luxor	Ethiopia Sudan	

Route Designator	Segment(s)	States	Observations/Remarks
UB527	Malakal Kenana	Sudan	Implemented at variance with AFI Plan via Kenana
UB528	Livingstone Luena	Angola	
UB607	Abu Simbel Dongola El Obeid	Sudan	Not implemented in Khartoum FIR (due to military reasons)
UG207	Mogadishu Karachi	Somalia	
UG465	Praslin Beira Johannesburg	Seychelles	
UG623	Annaba Ghadames Tebessa	Algeria Libya	Segment of the route suspended since 1980 by Libya.
UG855	Tripoli Ghadames B. Omar Driss	Libya	
UG864	Tunis Ghardaia Timimoun	Libya	
UG979	Bordj Omar Driss Bou Saada Zemmouri	Algeria	
UL612	Ghoma El Dhaba	Egypt Sudan Zaire	Egypt can accept implementation via ATMUL New Valley/KATAB/DBA
UM114	Lagos LITAK (11°00'00"N-003°24'05"E)	Nigeria	Implemented at variance with the plan within Kano FIR.
UM220	Lodwar Abu Simbel	Kenya Sudan	RNAV
UM651	Hargeisa Praslin	Somalia	

Route Designator	Segment(s)	States	Observations/Remarks
UM665	Mauritius Mandera Addis Ababa Somalia and Sudan	Somalia Sudan	Implemented but not as an RNAV route in
UM731	Khartoum Cabonora OSNAR	Angola	
Tunis	Jerba FARES DEKIL MOLOM Sauramo Johannesburg	Congo DRC Libya Botswana South Africa	Implemented in Tunis FIR between Tunis and FARES (Implementation by 29/11/2001)
UM997	Wajir Dire Dawa Djibouti	Ethiopia	RNAV
UM994	Beni Walid ORNAT	Libya	RNAV
UM998	(Martigues) BALEN Constantine B.O. Driss Tobuk ENBUT Maiduguri EBIMU Kinshasa Luena Maun Gaborone	Nigeria Congo DRC Angola Botswana	RNAV Congo DRC not implemented as RNAV between Kinshasa Luena-Maun-Gaborone Implemented as UB733 Kinshasa - Gaborone
UM999	Casablanca Errachidia El Golea Zarzaitine Sebba Sarir New Valley Luxor Jeddah	Morocco Algeria Libya Egypt Sudan Saudi Arabia	RNAV

Route Designator	Segment(s)	States	Observations/Remarks
UR400	Abu Simbel Kassala	Sudan	
UR613	Pantelleria Lampedusa Tripoli	Libya	Implemented in Malta FIR via SARKI. Not implemented in Tripoli FIR Sahara
UR780	Mogadishu Dire Dawa Asmara	Somalia	
UR981	Casablanca Marraketch BULIS Gao Niamey Lagos	Morocco Algeria Niger Nigeria	i) Implemented ii) Not implemented segment Casablanca Gao
UR984	Bangui/Kindu Kasama Lilongwe	Malawi	Not implemented in Lilongwe FIRs
UR986	Tunis Ghadames In Amenas	Algeria Libya	Not implemented due to restriction by Libya
UR991	ILDIR BOPAN	Namibia	
UR995	Merowe Addis Ababa	Sudan	

DRAFT AIC ON PRESSURE-ALTITUDE SSR TRANSPONDERS

IMPLEMENTATION OF PRESSURE-ALTITUDE REPORTING SSR TRANSPONDERS

All aircraft operating within airspace classes B to E in the AFI Region:

- ! shall be equipped with pressure-altitude reporting SSR transponders with effect from **1 January 2003**, due to the fact that the use of ACAS II is mandatory as of 1 January 2000 for aircraft having a maximum take-off mass exceeding 15 000 kg or a maximum approved passenger seating configuration of more than 30. A transition period of exemption extending to 1 January 2003 has been agreed within the AFI Region.

Note 1: The mandatory operation of transponders will be prescribed in the relevant AIPs as amended.

Note 2: The AIC will be published once the proposal for amendment to Doc 7030 has been approved by the Council of ICAO.

DRAFT AERONAUTICAL INFORMATION CIRCULAR ON THE USE OF ACAS II**AFI ACAS II IMPLEMENTATION****Transition Period and Exemption Process for Aircraft Unable to Comply with the ACAS II Carriage and Operation Requirements on 1 January 2000****1. INTRODUCTION**

This AIC provides information on the AFI ACAS II implementation and on the ACAS II transition period provisions applicable in the AFI Region.

2. ACAS II IMPLEMENTATION SCHEDULE

2.1 The AFI Regional Supplementary Procedures (Doc.7030) contain the provision for the mandatory carriage and operation of ACAS II for flights in the AFI Region as follows:

a. Phase 1.

With effect from 1 January 2000, all civil fixed-wing turbine-engined aircraft having a maximum take-off mass exceeding 15 000 kg, or a maximum approved passenger seating configuration of more than 30, will be required to be equipped with ACAS II, and

b. Phase 2.

With effect from 1 January 2005, all civil fixed-wing turbine-engine aircraft having a maximum take-off mass exceeding 5 700 kg, or a maximum approved passenger seating configuration of more than 19, will be required to be equipped with ACAS II.

Note: To meet the ACAS II mandate, to comply with full ICAO ACAS II Standards and Recommended Practices (SARPs) functionality, TCAS II, Version 7 (RTCA DO-185A) is required, together with a Mode S transponder compliant with ICAO Annex 10, Mode S SARPS, Amendment 73. Current TCAS II, Version 6.04.A installations will require to be upgraded to TCAS II Version 7.

3. ACAS II IMPLEMENTATION TRANSITION PERIOD

3.1 The primary aim is to achieve the fitment of ACAS II as soon as possible. However, practical implementation issues, involving the supply, installation and certification of ACAS II equipment, have been identified.

- 3.2 Taking into account these difficulties, the AFI Planning and Implementation Regional Group (APIRG) has agreed on an ACAS II implementation transition period. The transition is hereby defined as extended to 1 January 2003, except as noted under 4.4 below.
- 3.3 Aircraft subject to the ACAS II Phase 1 carriage requirements may be granted exemptions from compliance during the transition period under the conditions specified in paragraph 4 of this AIC.
- 3.4 Operators who have not yet fitted TCAS II Version 6.04A or Version 7 to their aircraft are required to apply for an exemption. These aircraft will be required to be fitted with TCAS II, Version 7 equipment, by an agreed date within the transition period.
- 3.5 For the purpose of meeting the ACAS II requirement, the Mode S transponder, which is part of the ACAS II installation, need not comply with ICAO Mode S/ACAS II SARPs until 1 January 2003, provided that a Mode S transponder, compatible with ACAS II, is installed.

4. **EXEMPTION CONSIDERATIONS**

- 4.1 The cost of the ACAS II installation is not an acceptable criterion for an ACAS II exemption.
- 4.2 Despite best reasonable endeavour, operators might encounter ACAS II installation or upgrade delays. These might include:
- ! Late parts delivery (software, hardware, cables, antennas, etc.)
 - ! Late approvals of the service bulletins for TCAS II, Version 7
 - ! Unexpected technical or airframe installation problems
 - ! Delays to the certification process

These reasons might be ground for an application for exemption.

- 4.3 Operators of aircraft that will be withdrawn from operation before the end of the transition period will not be required to equip these aircraft with ACAS II. However, an exemption from the ACAS II requirement must be obtained.

Note: Aircraft may be dispatched in accordance with the ACAS II minimum equipment list (MEL) provisions. Short-term alleviation for unserviceable TCAS II equipment, shown in the aircraft MEL, do not require an application for an exemption to the AFI airspace requirement.

4.4 Aircraft for which full ACAS II installation is unfeasible will be granted exemption provided that the latest TCAS version available for the aircraft type concerned is fitted.

5. **ACAS II TRANSITION PERIOD EXEMPTION APPLICATIONS PROCEDURES**

5.1 ICAO has been designated by AFI States to coordinate those elements of the ACAS II transition period exemptions process which are described in this AIC.

Note: The ICAO Office or Offices concerned will be determined at a later stage.

5.2 All aircraft operators in AFI who require an exemption should route the applications through the above-designated authority, which will coordinate with all other authorities concerned.

5.3 A specimen ACAS Transition Period Exemption application form is at Annex A.

6. **ACAS II IMPLEMENTATION INFORMATION**

6.1 Further information or guidance on the ACAS II implementation strategy, the ACAS transition period or exemption criteria may be obtained from relevant ICAO Regional Offices accredited to the AFI Region.

PROPOSED CHANGES TO THE AIRSPACE RE-ORGANIZATION**1. ACCRA FIR DGA**

- a) Delete Winneba.
- b) Establish KADE as a non-compulsory reporting point.
- c) Establish NIAMTOUGOU as a non-compulsory reporting point.
- d) Delete NANGA and make BIGOM a transfer of control point.
- e) Name the crossing of UA 400F and UA 560 "MEPON".
- f) Delete DIKMA.
- g) Reposition AMKEL half-way on UG 853 between TERBA and RASAD.
- h) Delete KETAT.
- i) Delete GAPEN.
- j) Make ADA CPR (verify serviceability of NDB).
- k) Delete VOSSA rename intersection of UR 984 and A608 KELEX.
- l) Delete VOLMA and rename intersection of R603 and R979 as INOSA.
- m) Delete RITAT and LISAN for upper airspace.
- n) Delete MONOS from upper airspace.

2. ADDIS ABABA FIR - HAAA

The requirements for Addis Ababa FIR shall be finalized in line with the decision made by the ICAO Council on 8 March 2000.

3. ANTANANARIVO FIR, FMMM

- a) The numerous CPRs are thought to be delineating the lower airspace and then the rest for the TMA in the upper airspace.
- b) Realignment of UA401 and UB709 over KINAN is acceptable.
- c) Deletion of the 5-letter code designators is acceptable except for UVENA and APLEM.
- d) Designator for crossing UA402 with UG653 is acceptable.

4. ASMARA FIR - HHAA

The requirements for Asmara FIR shall be finalized in line with the decision made by ICAO Council on 8 March 2000.

5. BAMAKO TMA

Airspace above FL 245 should be controlled from the ACC/FIC responsible for the FIR.

6. BLOEMFONTEIN FIR, FABL

ITPAS to be maintained on UQ12. CRP to be created 15 minutes flying time from the intersection of UQ12, W94 and W84.

7. BRAZZAVILLE FIR, FCCL

- a) Accra FIR and Brazzaville FIR to consider re-location of TCP on VB600, UR979, VA400 and R603.
- b) On UA 403, ONIMA to be the TCP between Brazzaville and N'djamena.
- c) Delete GUPAM and ETNOM to be designated TCP between Libreville/Douala.
- d) All upper airspace in Brazzaville FIR must be managed by Brazzaville ACC.
- e) There must be only **one** direct ATS route between Douala and Yaounde.
- f) SID and STAR to be established.
- g) Delete TI and VITLI.
- h) Delete PONOT and KOPOV to be the TCP between Libreville and Brazzaville.
- i) Delete OPINA and KOPOV to be the TCP between Libreville and Brazzaville.
- j) Delete IPAMU.
- k) Let DIMLA be non-CRP.
- l) Delete the segment KOPOV-LIKAD and establish RAMIS-LUANDA as a direct route.

8. BUJUMBURA FIR, HBBA

Proposal not accepted. Re-proposed to relocate/rename the points as TCPs. Subject to bilateral agreements.

9. CAPETOWN FIR, FACT

- a) The double “FIR” is not; but rather a UTA boundary.
- b) UA 53 is cancelled.
- c) UA 599 remains as stand-alone.
- d) Code designators to be provided at 15 minutes flying time away from the intersection.
- e) NERES, MITAR, ETOLA and ITBON are part of the radar processing system and therefore cannot be deleted.
- f) UA 333 is deleted so there is no need for a designator.
- g) UA333 is deleted so there is no need for a designator.
- h) UA402 to be realigned coast-wise to Cape Town.
- i) PUTNA is critical as handover point.
- j) G451 and UA402 are unknown.

10. DAKAR FIR - Abidjan Sector, DIII

Note: Further information is required.

11. DAKAR, FIR, Gooo

- a) All upper airspace must be managed by the ACC responsible for the FIR.
- b) The segment ARLEM-IPEKA on UA560 to be delegated to Dakar or Abidjan by Roberts FIR.
- c) Delete KERUS.

12. DAR ES SALAAM - HTDC

- a) Proposal is accepted.
- b) Retain MODAM as the crossing point for UB531 and UA401 and delete NESOS
- c) Not appropriate to expand FIR at this time. Agreed to name the crossing point between UA610 and UB533.
- d) Accepted the proposal. Shift AVIGO to crossing point of UA609 and UG424. Shift ELAVA to crossing point between UA609 and UB400.
- e) Delete MOKAD
- f) To name the point at which UG424 crosses the FIR boundary
- g) Accepted. Shift PARIN to crossing point UA610 and UG450.

- h) Shift APLOG to crossing point UA610 and UB532

Note: These changes should not necessarily involve delineation of FIR boundary but just change of CRPs and TCPs.

- i) **ATS route alignment**

Not accepted due to the reason that the route is better defined when routing via navaid (MZ).

- j) **TCPs**

i) Accepted. MB VOR should be TCP.

ii) Delete GESAT and APKOL

iii) MANDA becomes the CRP and TCP

iv) Delete ORLIM and UTINA

- k) **5-Letter code designator**

i) Add crossings UA610 with UB532 and with UG450. Accepted.

ii) Add crossings UA401 with UB532 and UG450. Accepted. Shift GAGNA to be crossing point between UB532 and UA401. Create a new CRP at the present GAGNA position and rename it.

iii) Add crossing UA401 with UR409 . Accepted.

iv) Delete GAGNA on UA401, RABOR on UA407 and UVKAT on UR409. Accepted, but to shift UVKAT to crossing point of domestic route and UR409.

v) Align ITOBO, SINGI and abm DO on ATS route from AVITA to TABORA NDB - accepted.

vi) Add crossing UG656 with UB532. Accepted.

vii) Shift ATUDO to crossing point.

viii) Add crossing UA401 with UB531 - accepted.

Note: The changes affecting the triangle shared by DAR ES SALAAM FIR and Nairobi FIR require coordination procedures to be established.

13. **DOUALA**

See Brazzaville FIR.

14. **ENTEBBE - HUEC**

a) Add crossing UB527 with UW325, with UA609, with UA610 - accepted.

b) Shift SIPKI to crossing UB527 and UW325 and shift AKBON to crossing UB527 with UA609.

- c) Shift OPERO to crossing UA610 and UB527.
- d) Delete SIPKI on UW325, AKBON on UA609 and OPERO on UA610 - accepted.

15. **GABORONE FIR, FBGR**

- a) To remain as such, as it is for Approach protecting climbing/descend phase in the lower airspace.
- b) KUTLA on 3853 for lower airspace and such to remain.
- c) KUTLA as in b) as its designator at the intersection of two routes, this covers the need stated below for UA409 and UG853 also.
- d) Crossing UA409 with UR544 not necessary as UR544 does not serve any purpose as it terminates at the Gaborone FIR, not in Beira FIR as planned.

16. **HARARE FIR, FVHA**

- a) Realign of UA404 and UB528 accepted; but UA407 not within the FVHA FIR.
- b) Crossing UB 525 with UB 529 is acceptable.
- c) Crossing UR 409 with UR 410 is acceptable.
- d) Crossing UG 652 with UR 409 and with UR 410 is acceptable.
- e) Crossing UB 400 with UB 529 is acceptable.
- f) Crossing UA 404 with UR 409 is acceptable.
- g) APMOR is the handover point between the two approach units, (Francistown/Bulawayo) in the lower airspace.
- h) RC NDB (UB 400) can only be deleted as CRP for upper airspace.

17. **JOHANNESBURG FIR, FAJS**

- a) Crossing UQ 12 with W 84 and with W 94 are covered by the climb areas within FABL FIR to remain.
- b) UA 333 is deleted.
- c) BONON and GABGO are part of the radar data processing system and EXOBI is a radar handover point.
- d) ITPAS is a designator for the crossing on UQ 12 with ATS route.
- e) AVARO, GEPES and NESAG are not within FAJS FIR.

18. KANO FIR, DNKK

- a) Delete BIRNI and name crossing point of UG854 and UB731 to be TCP Kano/N'djamena
- b) Delete BORNA
- c) Delete LIPUT on UR986

19. KHARTOUM HSSS

- a) Delete: DELAM/UG660
ALMAN/UB736
RABAK/UB527
NAGIR/UB535
- b) Add crossing ATS Route DONGOLIA - ORNAT with ATS route GENEINE-NUBAR. Accepted.
- c) SAMHA accepted to be NCRP.
- d) GAGNI and ALPOX to remain CRPs due to the reason that they are at ATS routes crossing point.
- e) BOPID to be relocated as CRP at crossing point of routes UG660 and ATS route from MAROWE to ASMARA.

20. KIGALI - HRYR

- a) Add crossing B12 with UB532. Accepted.
- b) Add crossing UB12 with UB532. Accepted.

21. KINSHASA, FIR FZAA

- a) Name crossing UH1 and UR984.
- b) Name crossing UHI and UA607.
- c) Name crossing UH10 and UR984.
- d) Name crossing UH10 and UA607.
- e) Delete TUVAB on UA609.
- f) Delete UNUTU on UV30.
- g) Name crossing of UA609 and UJ200.
- h) Name crossing of UA609 and UV30.
- i) Delete DESEK, LISAT, EDIKU and INUVA from upper airspace.
- j) Crossing UH10 with R984/UA609.

- k) Add crossing UB535 with V48 and with ATS Route MBA-KNG (Mbadaka-Kisangani/V48)

22. **KINSHASA FIR (KISANGANI TMA)**

- a) Delete TUSOX on UA607 and OXAVI on UA613.
- b) Make ILBOK on UA613 non-CRP.
- c) Delete LOSMI on UA613.
- d) Make KIBRO on UG655 non-CRP.
- e) Name crossing UG655 and UG450.
- f) Delete TENKA and EDUSA on UA607 and create new CRP.
- g) Delete PIRVO and GALIC on UA618.
- h) Delete ONRAB on UA618.
- i) Delete UBIDA on UA610.
- j) Delete ARMEM on UB535.

23. **LAGOS (SUB) FIR, DNLL**

- a) Make ANIPO non-CRP.
- b) Give 5 letter on UB736 - 100 nm from LAG VOR/DME.

24. **LIBREVILLE TMA**

Same as in II Brazzaville FIR

25. **LILONGWE FIR, FWLL**

- a) Crossing UA 407 with UG 656 and with W 601 okay. ANTOP instead should be shifted to the crossing UG 656 with UA 407.
- b) VMZ on W 601 as an aid used in Procedural ATC.
- c) NALSA on W 601 is a TMA boundary applicable to procedural ATC.

26. **LUANDA FIR, FNAN**

- a) There is no 100nm TMA. The present TMA is 120nm and the 12 CRPs' are for procedural ATC and therefore the TMA remains as such.
- b) Crossing UG 450 with UG 652 already published.
- c) Crossing R 991 with UA 611 already published.

27. LUSAKA FIR, FLFI

- a) Suggest designator at crossing point UR 779 with A406
- b) Route UA 408 does not exist
- c) SENGI is a designator for the lower airspace.
- d) UB 530 not within FLFI FIR.
- e) Crossing UA 408 with A405 is acceptable
- f) Crossing UR 779 with UA 407 acceptable; but UA 408 not indicated on the chart.
- g) KAPIRI critical for the lower airspace.
- h) Crossing UR 779 with UA 607 acceptable. OKSIX is a designator for the lower airspace and AVEKA marks the 150NM on route UR 779.
- i) UA 408 not on chart.
- j) Crossing designators on UA 405 with UA 407, UA 407 with UA 406 and UA 407 with UA 607 acceptable.
- k) IBNOR on UR 782 for lower airspace.
- l) Crossing designator UR 782 with UA 602 okay. LAGNA not compulsory reporting point.
- m) NESAK and IXALU designators are in the lower airspace.
- n) TIMAX on UA 400 is for the lower airspace.
- o) Crossing designator UA 400 with UA 607 okay.
- p) KEPOK is at the FIR boundary and therefore must remain.
- q) Crossing designator UA 408 with UA 405 okay.
- r) EVOLU is the designator for the crossing of UA 400 with UR 525.
- s) Crossing designator UR 779 with UR 525 okay.

28. MOGADISHU FIR - HCSM

- a) UR775 as-is passes over HG NDB
- b) ASKEN and ALNAB shall remain as TCP and CRPs due to the fact that they are located at the FIR boundaries.
- c) HG and BT are at this time redundant of navigational aids. Mog. FIC no more insist for HG and BT as CRPs.

29. MOGADISHU - HCSM

Notes as applicable in HAAA (3).

30. NAIROBI - HKNA**Delineation of TMA**

- a) **Mombasa:**
 - i) Crossing ATS route Nairobi - Malindi with UR611 and UG657 - accepted.
 - ii) Propose to shift NORVU to crossing ATS route with UR611.
 - iii) Shift MIDNI to crossing route with UG657.
- b) **Nairobi:**
 - i) Rearrange so that MELMO on UA609 and EKBAD on UB532 are deleted as CRPs.
 - ii) Note accepted due to reason MELMO being CRP for lower airspace and not for upper airspace should be deleted from upper airspace chart.
 - iii) Deletion of EKBAD on UB532 is accepted.

5-Letter name code designators

- a) Add crossing UB612 with UA609, with UB532, with UG450. Accepted.
- b) Add crossing UG658 with UR611, with UG657. Accepted.
- c) Add crossing UB533 with UA610. Accepted.
- d) Shift MERKU to crossing point
- e) Add crossing UG450 with UR611. Accepted.
- f) Shift ANSUT to crossing point.
- g) Delete GAR VOR on UG450 and ANSUT on UR611. Propose to delete GAR VOR as CRP.
Note: ANSUT shifted as above.
- h) Add crossing UG450 with UG657 AND NAME IT, KESOM
- i) Add crossing UG658 with UB400. Accepted.
- j) Propose to shift ITMAR to crossing point - CRP/TCP
- k) Add crossing UA610 with UB400. Accepted.
- l) Delete GETAT establish DESRA as CRP and TCP on UA407
- m) Delete ENABO. Establish new position of KESOM as CRP and TCP on UG 657

Airway UA609 between NAIROBI and MOMBASA

- a) Too many frequency changes.
- b) Too many incidents.

Plan

- a) To expand Nairobi UTA to overlap Mombasa TMA thereby encompassing the positions GITNO - IMSAN (termed as black spot).
- b) To restructure the airspace so that the upper airspace above FL245 remains under the control of Nairobi ACC.
- c) The above area to be radar covered by June 2000, which should minimize ATS incidents.

31. N'DJAMENA FIR, FTTT

- a) Delete POMPU on UA620.
- b) Delete GUSIL on UW605.
- c) Delete SEMOK on UA403.
- d) Delete PINSU on UG857.
- e) Delete ETRIS on UB736.
- f) Name intersection of UG857 and UG13.
- g) Make SABSI a non-CRP.

32. NIAMEY FIR, DRRR

- a) Airspace above FL 245 must be managed by the ACC.
- b) Delete BILOT on UA603.
- c) Delete FANDO on UA600.
- d) Delete BULSA on UG854.
- e) Delete NANGA, TCP be BIGOM.
- f) Delete MISLA on A614 and TCP BIGOM.
- g) Delete SESAM and ZR VOR as CRP on UG854.
- h) Name crossing UG854 and UG858.

33. PORT ELIZABETH FIR, FAPE

- a) Crossing W84 with W94, with UZ3 and with UA 402 okay.
- b) BONON and GABGO for radar RDPS and FIR boundary.

34. ROBERTS FIR, GLRB

- a) Name crossing UG854 with UB727.
- b) Make EBRAK as non-CRP.

- c) Make RITAM as non-CRP.
- d) Make PIMSO on UR72 and AXIRO on UB600 as non-CRP.
- e) Make TEKTO on UB600 as non-CRP.
- f) Delete KIRTO on UB600.
- g) Make EDBAL on UG854 and KIMKA on UB727 as non-CRP.

35. **SAINT DENIS TMA**

- a) UVENA, APLEM, APKOT probably for lower airspace. RERON not on chart.
- b) TAMTA yes can be deleted on UA 400.
- c) RASMA and SOBAT to remain as they are at the FIR boundary.

36. **WINDHOEK FIR, FYWH**

- a) According to the chart, the TMA is already 100 NM. OMATA on UA 617 is to remain as CRP for procedural ATC.
- b) Crossing UR 991 with R 987 is okay.
- c) Crossing UR 991 with UA 617 is okay.
- d) Crossing UR 991 with W91 is not necessary.
- e) Crossing UR 991 with A404 is okay.
- f) Designators MOKAK, LUBIL, LONOD, LUGAN, MUPOS are reporting points and in lower airspace.
- g) LOTAT is not a compulsory reporting point and as such stays.
- h) ALSOL is designator TMA boundary for Walvis Bay TMA.
- i) RASLU is not a compulsory point so stays.
- j) Moving RASUL to 25S brings it closer to another designator NOTAG, so it must remain in its present position.

NB: The task force noted that the source of conflicting information are chart procedures. It is therefore strongly suggested that ICAO shall henceforth be the only legal source for the production of aeronautical charts to ensure flight safety and harmonize operational requirements.

1.4 Your AIS address and contacts

- Mail address : _____
- Telephone : _____
- AFTN : _____
- TELEX : _____
- FAX _____
- E-mail : < _____ > Web Site : < _____ >
- SITA : _____

1.5 Equipment :

- List of equipment for text processing (AIP, AIC, Supp AIP, etc.)
- List of equipment for aeronautical charts production
- List of existing telecommunication liaisons /Transmission speed

MAIN	BACK-UP

2. Statistics for 1999

2.1 National publications

Please fill in the table below :

Publication	NOTAM	Monthly Summaries	AIP Supplements		AIC	AIP Amendments	
			Normal	AIRAC		Normal	AIRAC
Total Number							

2.2 **Foreign publications**

Publication	NOTAM	Monthly Summaries	AIP Supplements		AIC	AIP Amendments	
			Normal	AIRAC		Normal	AIRAC
Total Number							

3 **Level of State's AIS automation**

3.1 Has your AIS been automated ?

Partially

Totally

Non automated

3.2 Describe the automated tasks ? _____

3.3 Has your State implemented the world geodetic reference coordinates WGS-84 ?

WGS -84	Implemented*	In progress	Planned Date
Aerodromes			
Nav aids			
Reporting Points			
Transfer Points (FIR) Boundaries			

* The implementation includes the publication in the AIP.

3.4 **Quality System ISO 9002**

Implemented

In progress

Planned date of implementation

**INDICATIVE LIST OF TECHNICAL CRITERIA FOR THE DESIGNATION
OF REGIONAL AIS SYSTEM CENTRES (RASC) IN THE AFI REGION**

- a) AIS organization
- b) AIS staffing
- c) AIS production means
- d) Service provided and its quality
- e) Automated AIS system
 - a) Reliability
 - b) Redundancy
 - c) Interoperability
- f) Communication infrastructure
 - a) Type of links
 - b) Speed
 - c) Bandwidth
 - d) Reliability
 - e) Redundancy
 - f) AFTN.

Note: The above list is not exhaustive.

UNIFORM METHODOLOGY FOR REPORTING OF WGS-84 IMPLEMENTATION
STATUS BY STATES

STATUS OF WGS-84 IMPLEMENTATION
EXPLANATION OF THE TABLE

Column

- 1 Name of the State, territory or aerodrome for which WGS-84 coordinates are required with the designation of the aerodrome use:
 - RS — international scheduled air transport, regular use
 - RNS — international non-scheduled air transport, regular use
 - RG — international general aviation, regular use
 - AS — international scheduled air transport, alternate use
- 2 Runway designation numbers
- 3 Type of each of the runways to be provided. The types of runways, as defined in Annex 14, Volume 1, Chapter I, are:
 - NINST — non-instrument runway;
 - NPA — non-precision approach runway
 - PA1 — precision approach runway, Category I;
 - PA2 — precision approach runway, Category II;
 - PA3 — precision approach runway, Category III.
- 4 Requirement for the WGS-84 coordinates for FIR, indicated by the expected date of implementation or an “X” if already implemented.
- 5 Requirement for the WGS-84 coordinates for Enroute points, indicated by the expected date of implementation or an “X” if already implemented.
- 6 Requirement for the WGS-84 coordinates for the Terminal Area, indicated by the expected date of implementation or an “X” if already implemented..
- 7 Requirement for the WGS-84 coordinates for the Approach points, indicated by the expected date of implementation or an “X” if already implemented.
- 8 Requirement for the WGS-84 coordinates for runways, indicated by the expected date of implementation or an “X” if already implemented.
- 9 Requirement for the WGS-84 coordinates for Aerodrome/Heliport points (e.g. aerodrome/heliport reference point, taxiway, parking position, etc.), indicated by the expected date of implementation or an “X” if already implemented.
- 10 Requirement for geoid undulation indicated by the expected date of implementation or an “X” if already implemented.
- 11 Requirement for the WGS-84 Quality System, indicated by the expected date of implementation or an “X” if already implemented.
- 12 Requirement for publication of WGS-84 coordinates in the AIP indicated by the expected date of publication or an “X” if already published.
- 13 Remarks

TERMS OF REFERENCE FOR MET/SG TASK FORCE ON THE USE OF GRIB AND BUFR CODES

Background

One of the objectives for the final phase of WAFS, agreed within the WAFSSG, is for the eventual cessation of T4 chart broadcasts on the SADIS satellite distribution system. The cessation of the T4 element of the broadcast will enable a significant reduction in both transmitted data volumes and therefore also in the transmission costs associated with the SADIS broadcast.

However the cessation of the T4 chart broadcast can only be actioned when all SADIS recipient States are capable of producing WAFS charts from the GRIB and BUFR elements of the SADIS broadcast.

As the current plan is that the T4 element of the broadcast should be terminated in 2004, there is an urgent need to ensure that all SADIS recipient States are capable of satisfactorily decoding GRIB and BUFR messages on an operational basis prior to cessation of the T4 broadcast.

In order to facilitate the process of ensuring that all States can operationally decode GRIB and BUFR messages the SADIS provider State has proposed that each of the 4 ICAO Regions within the SADIS satellite footprint should establish a task force to undertake the following activities:

Terms of reference

To prepare and maintain with the SADIS provider State a regional transition plan for the implementation of operational GRIB and BUFR decoding within the region.

Work programme

- i) The plan should as a minimum identify:
 - a) Those States within the region taking a SADIS service.
 - b) The current capability of each of the identified States in regard to GRIB and BUFR decoding.
 - c) The necessary level and form of technical assistance and training required within the Region in order to enable cessation of the T4 broadcast.
 - d) Establish a mechanism by which the region can identify when all the States within the Region are prepared for the T4 broadcast to be ceased.
- ii) To operate and monitor the mechanism by which the region will identify when all the States within the region are prepared for the T4 broadcast to be ceased.
- iii) To instigate and manage with the assistance of the SADIS provider State a programme of GRIB and BUFR decoder training commensurate with the needs of the Region.
- iv) To report to the MET/SG on the status of preparedness of the region for the cessation of the T4 broadcast.

Composition

Kenya, Senegal, United Kingdom and ASECNA.

**DATA TO BE PROVIDED FOR THE TASK
ON THE CATEGORIZATION OF TMAS AND AERODROMES**

1. **Aerodromes:**

- S total number of movements during the year 2000 for each of the following types of traffic: commercial, military and general aviation
- S IFR and VFR traffic numbers.

2. **TMAs:** for each TMA:

- S number of civil and military airports within the TMA
- S total number of movements during 2000 at each type of airport
- S vertical and lateral limits of the TMA
- S IFR and VFR traffic numbers
- S restricted, prohibited and danger areas.

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Table CNS 4A - SURVEILLANCE

EXPLANATION OR THE TABLE

Column

1	Name of country and location of radar head facility or FIR
2	Area of routing
3	Air traffic services unit served by the facility or FIR
4	PSR - primary surveillance radar
5	Coverage of primary surveillance radar in nautical miles
6	SSR - secondary surveillance radar and modes implemented will be indicated within brackets, namely Modes A, C and S
7	Coverage of secondary surveillance radar in nautical miles
8	ADS-B - automatic dependent surveillance broadcast *
9	ADS-C - automatic dependent surveillance contract
10	Remarks

Note:

The following codes are used in columns 4, 6, 8-10

I - Required and implemented. For column 6,

I stands for implementation using conventional SSR, while

MI stands for implementation using Monopulse SSR.

X - Required but implementation status not determined

N - Required but not implemented

A - existing facility provided to supplement or substitute the requirement

F - Future Plan

< - Year: planned commissioning year to be used as appropriate in conjunction with "F" and "N"

> - Year: planned commissioning year to be used as appropriate in conjunction with "A" and "I"

* Under development

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CNS - SURVEILLANCE SYSTEMS /SYSTEMES DE SURVEILLANCE

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	PSR	Coverage/ Couverture of/du PSR (NM)	SSR (A/C/S)	Coverage/ Couverture of/du SSR (NM)	ADS-B*	ADS-C	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10
ALGERIA Alger	AR4 AR7	Alger ACC			F<- 2003			F<- 2003	MSSR planned/prévu
Annaba		Alger ACC			F<- 2003				
El Bayad		Alger ACC			F<- 2003				
El Oued		Alger ACC			F<- 2003				
Oran		Alger ACC			F<- 2003				
ANGOLA Luanda	AR2 AR4 AR8	Luanda ACC			F<- 2003			N	MSSR planned/prévu
BOTSWANA Gaborone	AR4 AR8	Gaborone ACC						N	
CAPE VERDE Sal	AR1	Sal ACC						F<- 2004	

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CNS - SURVEILLANCE SYSTEMS /SYSTEMES DE SURVEILLANCE

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	PSR	Coverage/ Couverture of/du PSR (NM)	SSR (A/C/S)	Coverage/ Couverture of/du SSR (NM)	ADS-B*	ADS-C	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10
CHAD/TCHAD N'Djamena	AR4 AR9	N'Djamena ACC			N<- 2002			N<- 2002	
CONGO Brazzaville	AR4 AR5	Brazzaville ACC						F<- 2003	
CONGO (Dem. Rep. of) Kinshasa	AR4	Kinshasa ACC						N	
COTE D'IVOIRE Abidjan	AR5	Abidjan ACC						N	
EGYPT Cairo 300715N 312354E 300621N 312439E 300621N 312439E	AR3 AR7	Cairo ACC			MI(A/C)	250		I	
Hurghada 270319N 335025E	AR3	Cairo ACC			MI(A/C)	250			

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State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	PSR	Coverage/ Couverture of/du PSR (NM)	SSR (A/C/S)	Coverage/ Couverture of/du SSR (NM)	ADS-B*	ADS-C	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10
Mersa Matruh 311810N 270831E		Cairo ACC			MI(A/C)	250			
Aswan 235830N 324636E		Cairo ACC			MI(A/C)	250			
Asyut 270332N 310108E		Cairo ACC			MI(A/C)	2550			
ERITREA Asmara	AR3 AR9	Asmara ACC						N	
ETHIOPIA Addis Ababa	AR3	Addis Ababa ACC						F<- 2002	
GHANA Accra	AR5	Accra ACC			I(A/C)	250		N	
Tamale		Accra ACC			I(A/C)	250			
GUINEA/ LIBERIA/ SIERRA LEONE Robertsfield	AR5	Roberts FIC/ACC						N	

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State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	PSR	Coverage/ Couverture of/du PSR (NM)	SSR (A/C/S)	Coverage/ Couverture of/du SSR (NM)	ADS-B*	ADS-C	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10
KENYA Nairobi	AR3	Nairobi ACC			I(A/C)	200		N	
LIBYAN ARAB JAMAHIRIYA Tripoli	AR3 AR4 AR7	Tripoli ACC						N	
MADAGASCAR Antananarivo	AR3 AR10	Antananarivo ACC						I--2001	
MALAWI Lilongwe	AR8	Lilongwe ACC						N	
MAURITIUS Mauritius	AR3 AR10	Mauritius ACC						N<- 2001	

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 CNS - SURVEILLANCE SYSTEMS /SYSTEMES DE SURVEILLANCE

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	PSR	Coverage/ Couverture of/du PSR (NM)	SSR (A/C/S)	Coverage/ Couverture of/du SSR (NM)	ADS-B*	ADS-C	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10
MOROCCO Casablanca 332124.12N 073642.99W Agadir 301908.96N 092440.75W Ifrane 333151.87N 050926.95W Safi 321904.94N 091444.078W	AR1 AR6 AR7	Casablanca ACC			MI(A/C)	250		N	
MOZAMBIQUE Beira	AR8	Beira ACC						N	
NAMIBIA Windhoek	AR4 AR8	Windhoek ACC						N	
NIGER Niamey	AR4 AR9	Niamey ACC						F<- 2004	
NIGERIA Kano	AR4 AR9 AR5	Kano ACC			F(A/C)	250		F<- 2005	

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CNS - SURVEILLANCE SYSTEMS /SYSTEMES DE SURVEILLANCE

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	PSR	Coverage/ Couverture of/du PSR (NM)	SSR (A/C/S)	Coverage/ Couverture of/du SSR (NM)	ADS-B*	ADS-C	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10
Lagos		Lagos ACC			F<2003	250		F<- 2005	
SENEGAL Dakar	AR1 AR9	Dakar ACC						F<- 2002	
SEYCHELLES Seychelles	AR3 AR10	Seychelles ACC						N	
SOMALIA Mogadishu	AR3	Mogadishu FIC						N	
SOUTH AFRICA Cape Town	AR2 AR4 AR8 AR10	Cape Town ACC			I(A/C)			N	
Johannesburg		Johannesburg ACC			I(A/C)			I	
		Johannesburg Oceanic							

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CNS - SURVEILLANCE SYSTEMS /SYSTEMES DE SURVEILLANCE

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	PSR	Coverage/ Couverture of/du PSR (NM)	SSR (A/C/S)	Coverage/ Couverture of/du SSR (NM)	ADS-B*	ADS-C	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10
SPAIN (Canarias) Gran Canaria Lanzarote Las Palmas La Palma Tenerife	AR1 AR6	Canarias ACC			I(A/C)	200		I	5 radars on multi radar system
		Canarias ACC			I(A/C)	220		N	
		Canarias ACC			I(A/C)	150			
		Canarias ACC			I(A/C)	170*			<i>*Between/Entre 005°-210°</i>
		Canarias ACC			I(A/C)	120		N	
SUDAN Khartoum	AR3 AR9	Khartoum ACC						N	
TUNISIA Tunis PSR: 365135.417N 0101428.9293E Sidi Zid: 362829.0381N 0101929.0568E	AR4 AR7	Tunis ACC			MI(A/C)	250		N	

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State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	PSR	Coverage/ Couverture of/du PSR (NM)	SSR (A/C/S)	Coverage/ Couverture of/du SSR (NM)	ADS-B*	ADS-C	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10
Akouda 035 53 37N 010 33 46E		Tunis ACC			MI(A/C)	250			
UGANDA Entebbe	AR3	Entebbe ACC						N	
UNITED REP. OF TANZANIA Dar Es Salaam	AR3 AR8	Dar Es Salaam ACC						N	
ZAMBIA Lusaka	AR4 AR8	Lusaka ACC						N	
ZIMBABWE Harare	AR8	Harare ACC			I(A/C)			N	

Table CNS 4B - ATS AUTOMATION SYSTEMS

EXPLANATION OR THE TABLE

Column

1	Name of country and location of radar head facility or FIR
2	Area of routing
3	Air traffic services unit served by the ATS automation systems. The abbreviations for this column are: ACC-Area control AACC-Area/approach control centre APP-Approach control EC-En-route centre FIS-Flight information service SMC-Surface movement control TCU-Terminal control unit TMA-Terminal control area TWR-Tower control
4	Surveillance sensor linked to the ATS automation systems, 4-letter FIR identifier, enclosed in brackets, shall be shown for sensors outside the FIR
5	RDPS - Radar data processing system
6	FDPS - Fight data processing system
7	MSAW - Minimum safe altitude warning system
8	ADS - Automatic Dependent Surveillance
9	CPDLC - Controller-pilot data link communications
10	AIDC - ATS inter-facility data link communications
11	PA/RDPS - Processing area of the radar data processing system in (nautical miles) ²
12	Npos - Number of ATS positions
13	Remarks

Note:

The following codes are used in columns 5 to12:

I - Required and implemented.

X - Required but implementation status not determined

N - Required but not implemented

A - Existing facility provided to supplement or substitute the requirement

F - Future plan

The number of systems provided for each type of process and the year of commissioning and decommissioning:

< - Year: planned commissioning year to be used as appropriate in conjunction with “F” and “N”

> - Year: planned decommissioning year to be used as appropriate in conjunction with “A” and “I”

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CNS -ATS AUTOMATION SYSTEMS/SYSTEMES D'AUTOMATISATION ATS

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	Data Source Source de données	RDPS	FDPS	MSAW	ADS	CPDLC	AIDC	PA/RDPS (NM) ²	Npos	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10	11	12	13
ALGERIA Alger	AR4 AR7	Alger ACC		N	N	N	N	N	N			
ANGOLA Luanda	AR2 AR4 AR8	Luanda ACC			N		N	N	N			
BOTSWANA Gaborone	AR4 AR8	Gaborone ACC			F<- 2001		N	N	N			
CAPE VERDE Sal	AR1	Sal ACC			N		N	N	N			
CHAD/TCHAD N'Djamena	AR4 AR9	N'Djamena ACC		N	N	N	N<- 2002	N<- 2002	N			
CONGO Brazzaville	AR4 AR5	Brazzaville ACC			N		N	N	N			
CONGO (Dem. Rep. of) Kinshasa	AR4	Kinshasa ACC			N		N	N	N			

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CNS -ATS AUTOMATION SYSTEMS/SYSTEMES D'AUTOMATISATION ATS

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	Data Source Source de données	RDPS	FDPS	MSAW	ADS	CPDLC	AIDC	PA/RDPS (NM) ²	Npos	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10	11	12	13
COTE D'IVOIRE Abidjan	AR5	Abidjan ACC			N		N	N	N			
EGYPT Cairo	AR3 AR7	Cairo ACC		I	I	N	I	I	N			
ERITREA Asmara	AR3 AR9	Asmara ACC			N		N	N	N			
ETHIOPIA Addis Ababa	AR3	Addis Ababa ACC			I		F<- 2002	F<- 2002	N			
GHANA Accra	AR5	Accra ACC			I		N	N	N			
GUINEA/LIBERIA /SIERRA LEONE Robertsfield	AR5	Robertsfield ACC			N		N	N	N			
KENYA Nairobi		Nairobi ACC	Mua Hills Eldoret Poror Wajir Mombasa	I	I	N	N	N	N		4	

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CNS -ATS AUTOMATION SYSTEMS/SYSTEMES D'AUTOMATISATION ATS

Q-3

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	Data Source Source de données	RDPS	FDPS	MSAW	ADS	CPDLC	AIDC	PA/RDPS (NM) ²	Npos	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10	11	12	13
LIBYAN ARAB JAMAHIRIYA Tripoli	AR3 AR4 AR7	Tripoli ACC			N		N	N	N			
MADAGASCAR Antananarivo	AR3 AR1 0	Antananarivo ACC			I-2001		I-2001	I-2001	N			
MALAWI Lilongwe	AR8	Lilongwe ACC					N	N	N			
MAURITIUS Mauritius	AR3 AR1 0	Mauritius ACC			N		N<- 2001	N<- 2001	N			
MOROCCO Casablanca Rabat	AR1 AR6 AR7	Mohamed V Radar Casablanca Radar	Casablanca Agadir Ifrane Safi	I I	I I	I I	 N	 N	 N	11310 ² 375330 ²	1 5	
MOZAMBIQUE Beira	AR8	Beira ACC			N		N	N	N			
NAMIBIA Windhoek	AR4 AR8	Windhoek ACC			N		N	N	N			

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CNS -ATS AUTOMATION SYSTEMS/SYSTEMES D'AUTOMATISATION ATS

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	Data Source Source de données	RDPS	FDPS	MSAW	ADS	CPDLC	AIDC	PA/RDPS (NM) ²	Npos	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10	11	12	13
NIGER Niamey	AR4 AR9				F<- 2004		F<- 2004	F<- 2004	N			
NIGERIA Kano	AR4 AR5 AR9	Kano ACC		N	N	N	N	N	N			
Lagos		Lagos ACC		N	N	N	N	N	N			
SENEGAL Dakar	AR1 AR9	Dakar ACC			F<- 2002		F<- 2002	F<- 2002	N			
SEYCHELLES Seychelles	AR3 AR1 0	Seychelles ACC			N		N	N	N			
SOMALIA Mogadishu	AR3	Mogadishu ACC			N		N	N	N			
SOUTH AFRICA Cape Town	AR2 AR4 AR8	Cape Town ACC		I	I	N	N	N	N			
Johannesburg	AR1 0	Johannesburg ACC		I	I	N	I	I	N			

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CNS -ATS AUTOMATION SYSTEMS/SYSTEMES D'AUTOMATISATION ATS

Q-5

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	Data Source Source de données	RDPS	FDPS	MSAW	ADS	CPDLC	AIDC	PA/RDPS (NM) ²	Npos	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10	11	12	13
SPAIN (CANARIAS)	AR1 AR6										ACC-8	
Gran Canaria		Canarias ACC		I	I	N	I	I	N	200		
Lanzarote		Canarias ACC		I	I	N	N	N	N	220		
Las Palmas		Canarias ACC		I	I	I	N	N	N	150		
La Palma		Canarias ACC		I	I	N	I	I	N	170*		<i>*Between/Entre 005°-210°</i>
Tenerife		Canarias ACC		I	I	I	N	N	N	120	GCTS-1	
SUDAN Khartoum	AR3 AR9	Khartoum ACC			F<- 2001		N	N	N			
TUNISIA Tunis	AR4 AR7	Tunis ACC		I	I	I	N	N	N		4 3 3	
UGANDA Entebbe	AR3	Entebbe ACC			N		N	N	N			
UNITED REP. OF TANZANIA Dar Es Salaam	AR3 AR8	Dar Es Salaam ACC			N		N	N	N			

Appendix Q to the Report on Agenda Item 4
CNS -ATS AUTOMATION SYSTEMS/SYSTEMES D'AUTOMATISATION ATS

State/Location Etat/Emplacement	AR	ATS unit served Organe ATS desservi	Data Source Source de données	RDPS	FDPS	MSAW	ADS	CPDLC	AIDC	PA/RDPS (NM) ²	Npos	Remarks/ Remarques
1	2	3	4	5	6	7	8	9	10	11	12	13
ZAMBIA Lusaka	AR4 AR8	Lusaka ACC			N		N	N	N			
ZIMBABWE Harare	AR4 AR8	Harare ACC		I	I	N	N	N	N			

CONCEPT OF THE GNSS STRATEGY FOR THE AFI REGION

Introduction

The purpose of the AFI GNSS strategy is to define an evolution path for replacement of ground-based navigation aids, i.e. VOR/DME/ILS/NDB, ensuring that operational and other concerns such as positive cost-benefit are fully taken into account.

The AFI GNSS strategy assumes availability of a GNSS meeting the specified parameters at every phase of deployment. It does not analyse GNSS systems configuration per se nor the advantages and disadvantages of various deployment strategies.

General considerations

By necessity, satellite-based and ground-based navigation systems will co-exist for a period of time. Considering that the operation of a dual system is detrimental to a positive cost-benefit, users and providers will co-operate with the view of reducing the duration of the transition period as much as possible, having due regard for the following principles:

- The level of safety will not be downgraded during the transition
- GNSS-based service must, before the end of the transition period, fully meet the required parameters of accuracy, availability, integrity and continuity for all phases of flight;
- During the transition, gradually evolving levels of functionality will be available.
- Operational advantage shall be taken of the available capabilities at every step of deployment.
- Methods of application will take into full consideration safety considerations of any functional limitations;
- Users must be given sufficient advance notice to re-equip before ground-based systems are decommissioned.

Evolving functionality*

Phase I (Short term), up to 2004 : *Additional ranging and health information on GPS constellation provided via GEO satellites*

- This phase will allow the use of GNSS as a primary-means of navigation for en-route, and for NPA and as a supplemental-means navigation system for TMA. Existing ground infrastructure remains intact.

Phase I-A (up to 2003)

- An AFI GNSS test bed will be implemented to validate the objectives and differential correction algorithms of the operational EGNOS system to be implemented during Phase I.

Phase I-B (up to 2004): This phase will be achieved by the deployment of a network of RIM stations through the AFI Region.

- To prepare EGNOS implementation, numerous activities must be carried out: final system

* Dates are indicative

definition, specifications development, cost/benefit analysis (CBA) and funding, preparation of the institutional and operational framework and programmatic issues will be carried out.

- This phase will end with EGNOS validation in the AFI Region.

Phase II (Medium term) 2005-2011 -: *APV-I-I, 20m vertical accuracy, will be available everywhere in the AFI Region*

1. This phase will allow for:

- En-route phase: sufficient capability to meet en-route navigation requirements everywhere in the AFI Region; GNSS is approved as a sole-means system for en-route navigation, taking into account technical and legal developments, and institutional aspects. En-route navigation aids will be progressively withdrawn accordingly in consultation with users.
- Terminal areas: sufficient capability to meet TMA navigation requirements everywhere in the AFI region; GNSS is approved as sole-means for TMAs, taking into account technical and legal developments, and institutional aspects.
- Terminal area VOR/DME/NDB, and Locators not associated with ILS, will be progressively withdrawn in consultation with users during Phase II.
- Approach and landing phase: sufficient capability for APV-1 in the whole AFI Region.
- ILS will continue to be provided at aerodromes¹.

Note 1: Where the requirements for approach and landing can be met by APV-I, the withdrawal of ILS CAT I should be considered.

2. During Phase II, the implementation of Long term GNSS will be developed.

Phase III (Long term) 2012 onwards: It is assumed that at least two constellations of navigation satellites will be available. *Sole-means navigation services from en-route to CAT I operations. CAT I by SBAS or GBAS will be available in those locations where analysis of historical MET data or traffic characteristics justifies the requirement. Other requirements will be met by ground-based augmentation system (GBAS).*

- a) During Phase III, ILS CAT I will be withdrawn in consultation with users.
- b) Where CAT II/III ILS requirements have been confirmed, these facilities will remain unless technical evolution then demonstrates that the requirement can be supported by GBAS or SBAS .

Institutional issues

- a) Phases II and III of the AFI GNSS strategy will require the deployment of AFI specific GNSS components. In order to minimize costs associated with the deployment and operation of these components, AFI should seek cooperation agreements with systems providers in adjacent regions with a view to the joint use of GNSS components where feasible and cost-effective.
- b) Meanwhile the modalities of installation and cost-recovery of multinational facilities, essentially RIMS, in some AFI States, must be addressed without delay so that deployment can be initiated as soon as technically possible.

Synopsis of the AFI GNSS strategy

AFI GNSS Strategy				
	Phase I		Phase II	Phase III
Time scale	2000 – 2004		2005 – 2011	2012 – 2017
Certification	Supplemental	Primary	Sole-means from en-route to APV-1	Sole means from en-route to CAT I
Oceanic/En-route		GPS	GPS with EGNOS	Long-term GNSS
Continental/ En-route		GPS	GPS with EGNOS	Long-term GNSS
Terminal	GPS		GPS with EGNOS	Long term GNSS
Approach and landing	(GPS/Baro) NPA		APV-1 SBAS	SBAS CAT I CAT I GBAS CAT II/III GBAS



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DOCUMENT CHANGE RECORD

VERSION	DATE	REASON FOR CHANGE	SECTIONS PARAGRAPHS AFFECTED
5.0	15/11/99	Adoption by APIRG/12 of CNS/ATM/SG/2 Report and of the Initial AFI GNSS strategy.	Section II: 2.1.4, 2.2.1.6, 2.2.1.12 (new), 2.2.1.13 (new), 2.2.3.1.4 (new), 2.2.4.1.5 (new) Section III: 3.3.4.2 Appendices A, B, F, G, H (new), I (new)
5.0	15/5/00	Amendment No. 1: Inclusion of Asmara FIR	Appendices A (pages A1, A2), B (pages B3, B9), G (pages G14-G22, G61-G66)

History of the versions

- Version 1 was drafted in October 1994 by the second meeting of the CNS/ATM Task Force. It contained Sections I and II.
- Version 2 was drafted in November 1995 by the first meeting of the CNS/ATM Subgroup. It contained Sections I, II and III.
- Version 3 was published in June 1996 consecutive to the adoption of Doc 003 by the Tenth meeting of the AFI Planning and Implementation Regional Group (APIRG) for presentation to the Seventh AFI Regional Air Navigation (AFI/7 RAN) Meeting.
- Version 4 was published in January 1998 following the review and adoption of Doc 003 by the AFI/7 RAN meeting.
- Version 5.0 was published in January 2000 following the adoption by the Twelfth Meeting of the APIRG (Tunis, 21 – 25 June 1999) of amendments formulated by the Second meeting of the CNS/ATM/IC/SG.

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Glossary of Terms

AAIM	Aircraft autonomous integrity monitoring
ACC	Area Control Centre
ADS	Automatic Dependent Surveillance
ADS-B	Automatic Dependent Surveillance broadcast mode
ADSP	Automatic Dependent Surveillance Panel
AFI	Africa - Indian ocean area
AFS	Aeronautical Fixed Service
AFTN	Aeronautical Fixed Telecommunication Network
AIDC	ATS Inter-facility data communications
AIREP	Air Report
AIS	Aeronautical Information Service
AMCP	Aeronautical Mobile Communications Panel
AMS(R)S	Aeronautical Mobile-Satellite (R) Service
AMSS	Aeronautical Mobile-Satellite Service
APIRG	AFI Planning and Implementation Regional Group
APR	Automatic Position Reporting
AR	Area of routing
ASECNA	Agency for the Security of Aerial Navigation in Africa and Madagascar
ASM	Airspace Management
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATN	Aeronautical Telecommunication Network
ATS	Air Traffic Services
ATS/DS	Air Traffic Services Direct Speech
CNS	Communications, Navigation, and Surveillance
CNS/ATM	Communications, Navigation, and Surveillance / Air Traffic Management
COM/MET/OPS	Communications/Meteorology/Operations
CPDLC	Controller pilot data link communications
DARPs	Dynamic user preferred re-routes
DCPC	Direct Controller Pilot Communications (voice/data)
DFIS	Data Link Flight Information Services
DGNSS	Differential Global Navigation Satellite System
DME	Distance Measuring Equipment
EUR	European Region
FIR	Flight Information Region
FDPS	Flight Data Processing System
FL	Flight Level
FMS	Flight Management System
GES	Ground Earth Station
GIC	GNSS Integrity Channel
GLONASS	Global Orbiting Navigation Satellite System (Russian Federation)

Appendix S to the Report on Agenda Item 4

S-8 Extract from the AFI CNS/ATM Implementation Plan (Doc 003), Rev.5.1

GNSS	Global Navigation Satellite System
GPS	Global Positioning System (United States)
HF	High Frequency
HFDL	High Frequency Data Link
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
INS	Inertial navigation system
ITU	International Telecommunication Union
MASPS	Minimum Aviation System Performance Standards
MET	Meteorological services for air navigation
METAR	Aviation routine weather report
MLS	Microwave Landing System
MMR	Multimode receiver
MNPS	Minimum Navigation Performance Specifications
MNT	Mach Number Technique
MODE S	Mode S - SSR Data Link
MSAW	Minimum Safe Altitude Warning System
NDB	Non-directional beacon
NPA	Non-precision approach
PANS-OPS	Procedures for Air Navigation Services — Aircraft Operations
RAIM	Receiver Autonomous Integrity Monitoring
RNAV	Area Navigation
RNP	Required Navigation Performance
R/T	Radiotelephony
RVR	Runway visual range
RVSM	Reduced Vertical Separation Minimum
SAM	South American Region
SARPs	Standards and Recommended Practices
SAT	South Atlantic
SATCOM	Satellite Communication
SBAS	Satellite-based augmentation system
SIGMET	Information concerning en-route phenomena which may affect the safety of aircraft operations
SIGWX	Significant weather
SITA	Société Internationale de Télécommunications Aéronautiques
SSR	Secondary Surveillance Radar
TAF	Terminal area forecast
TBD	To be determined
TMA	Terminal Control Area
VFR	Visual flight rules
VHF	Very High Frequency
VOR	VHF Omnidirectional Radio Range
WGS-84	World Geodetic Reference System 1984

DOC.003

SECTION I : INTRODUCTION

1.1 GENERAL

1.1.1 The AFI Plan for the implementation of the new ICAO Communications Navigation and Surveillance and Air Traffic Management (CNS/ATM) Concept was initially contained in three documents, namely:

Doc 001	-	Executive Summary
Doc 002	-	System Concept Description
Doc 003	-	AFI Implementation Plan

1.1.2 Doc 001 and Doc 002 are no longer in publication. The reader should refer to ICAO *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750) for a complete description of the CNS/ATM concept.

1.1.3 The present document, Doc 003 - AFI Implementation Plan, specifies implementation time-frames for the various systems and concepts, gives an operational overview of systems configuration during the transition, and lists activities required for an evolutionary and co-ordinated implementation towards the final objectives as contained in Doc 9750.

1.2 DOCUMENT OVERVIEW

1.2.1 The scope of this document is:

- a) To present the implementation strategy for the Future AFI CNS/ATM concept. This consists of overlapping terms during the time-frame 1995 to 2015 namely: mid-term (1995-2005) and long term (2000 to 2015).
- b) To present the implementation plan which will enable the national administrations and airspace users to develop their plans so as to meet the conditions and prerequisites laid down in the ICAO *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750), and which takes account of the need to harmonize with plans currently being developed by the regions which interface with the AFI Region. The implementation plan takes into account present facilities which meet the reliability expected in the future CNS/ATM systems.

- c) This implementation plan will at the direction of the AFI Planning and Implementation Regional Group (APIRG) progressively address the planning process into long term.

1.2.2 Document 003 is organized in three distinctive sections:

Section I: Introduction

Section II: Implementation Strategy and System Configuration

Details the objectives to be achieved during the planning time-frame;

For each system (Communications, Navigation and Surveillance and ATM), specifies which system components (both of the old and of the new concept) must be in place to support the required level of service in each phase.

Section III: Implementation Plan:

Contains Implementation Sheets detailing:

- objectives;
- actions required to achieve implementation;
- required ground and airborne capabilities;
- provider and user States and Organisations concerned;
- and the target dates for implementation.

1.3 PLANNING CONCEPT

1.3.1 The AFI Implementation Plan is conceived as a rolling ten years Plan towards the full implementation of the ICAO CNS/ATM Concept throughout the AFI Region and in the interface with adjacent regions, in order to achieve a coherent regional Air Traffic Management (ATM) system fully responsive to the regional needs in a timely and cost-effective manner and adequately integrated with the world-wide air navigation system.

1.3.2 The AFI Implementation Plan will be reviewed and updated periodically by APIRG, based on input from States and International Organisations concerned, in order to ensure it is kept responsive to changing requirements and abreast with world-wide developments.

1.3.3 The implementation, monitoring and co-ordination methodology contained in this document has been adopted by the AFI States.

1.4 GUIDING PRINCIPLES

1.4.1 In defining time-frames in the systems' evolution Tables and for the implementation activities due account was taken of the following general guidelines on transition:

- "a) *Careful planning will be necessary to ensure that aircraft of the future are not unnecessarily required to carry a multiplicity of existing and new CNS equipment. In addition, as already referred to, there is a close relationship between the required CNS services and the desired level of ATM and, finally, there is, for reasons of both economy and efficiency, a need to ensure that differences in the pace of development around the world do not lead to incompatibility between elements of the system. Particularly, because of the wide coverage of satellite CNS systems, the above considerations call for conscientious world-wide coordination of the planning and implementation if such systems are to be optimized.*
- b) *In developing guidelines for the transition it is useful to consider the type of system (C, N, or S), and the specific problems, or issues affecting its transition to full operational use in a particular type of airspace or phase of flight."*
- c) *Ideally, the transition to new CNS systems should be based in improvements in ATM and accompanied by procedural and structural changes that will provide benefits to ATM and to users. The transition should be carefully planned so as to avoid degradation in system performance."*
- d) *The priority structure of system elements and areas of applicability with regard to implementation has to be established. The priorities in terms of time-scales are then established in response to identified constraints and the perceived view of States as to the systems and areas of applicability providing the most immediate benefits, or for which early implementation may be most likely."*

SECTION II - IMPLEMENTATION STRATEGY AND SYSTEM CONFIGURATION

2.1 IMPLEMENTATION STRATEGY

2.1.1 Introduction

- a) The provider, user States and Organizations concerned acknowledge that the AFI Region stands to derive great benefits from the introduction of the new integrated ICAO CNS/ATM System. It is recognized that it is only with the full coordination of implementation activities that the complete benefits of CNS/ATM will be realized.
- b) Consequently, and in order to ensure a coherent, timely, coordinated, cost-effective, operationally oriented implementation of the integrated ICAO CNS/ATM system in the AFI Region, the approach and strategy contained in this document are adopted at the AFI Regional level for use and compliance by provider and user States and Organisations concerned.
- c) In deciding the possible introduction at regional level of new elements of the integrated CNS/ATM system requiring the carriage of additional equipment on-board aircraft, APIRG will take into consideration the need of airspace users to be given adequate advance notice for major new equipment fittings.

2.1.2 General Principles

2.1.2.1 The AFI Region shall aim at taking advantage in a timely manner, of those individual elements of the CNS/ATM systems for which positive benefit in relation to overall cost has been demonstrated or recognized by those concerned.

2.1.2.2 It is recognized that the full implementation of all ATM objectives with their CNS requirements will take time. The AFI Region, therefore, will adopt a step by step approach starting with the ATM objectives which can be achieved with in the short term with minimum CNS requirements or relatively low cost.

2.1.2.3 The introduction of individual elements of the new integrated CNS/ATM concept in the AFI Region shall be carried out in a co-ordinated and coherent manner, under the aegis of the AFI Planning and Implementation Regional Group (APIRG). In this context it is essential to ensure that:

- a) adjacent systems shall interface in such a way that airspace boundaries between control sectors, Flight Information Regions, or Air Navigation Regions, are transparent.
- b) systems must remain responsive to operational requirements at every step of development, avoiding to the extent possible, discontinuities in evolution likely to cause disturbances to the operational environment.

2.1.2.4 At least in the short and medium term, the difference in equipage between the domestic and regional operators on the one hand, and the transcontinental operators on the other hand, will be significant. The transcontinental operators will be fully equipped to operate in regions such as Europe and will certainly value taking advantage of their capabilities to obtain more economic flight profiles. As far as the domestic and regional operators are concerned, because they would not operate in other regions with the new CNS/ATM requirements for equipage/approval, they may not derive a positive cost/benefit from equipping. In light of the foregoing, long haul operators which are adequately certified and/or approved should be given timely full benefit and the domestic and regional operators be allowed to choose either to equip (approved or certified) or to fly segregated airspace.

2.1.2.5 The seamless airspace, which is indispensable for total benefit, will not be achieved without close coordination among providers and between providers and users. It is then more and more necessary and important that providers and users agree before any decision on implementation is taken. In this regard the following should be kept in mind:

- ! Communications
The objective of the region is full deployment of an ATN environment with the possibility to accommodate FANS1/A and the highest degree of functionality possible.
- ! Navigation
The ultimate objective of the Region is a navigation system based on satellite as a sole means of navigation for all phases of flight. As far as augmentation is concerned, any deployment should be in line with the regional policy as defined and approved by APIRG.
- ! Surveillance
Even if the Region is recognized as a valid candidate for ADS, enough caution is necessary at all levels in order to avoid ground equipage with prototypes and/or systems without operational benefits.

2.1.2.6 All planned operations, including domestic, civil and military operations to the extent that they may influence the ATS system, should be taken into account when system capacity is defined to meet the requirements.

2.1.3 The objectives

2.1.3.1 The future system must evolve from the present system so as to meet user needs to the maximum extent possible while taking the potential benefits from the application of new system technologies. This evolution should be guided by the principle of maintaining an optimum separation assurance.

2.1.3.2 Of the overall goals of the future ATM system, the following are specially of relevance in the AFI context:

- a) maintenance of, or increase in, the existing level of safety;
- b) increased system capacity and full utilisation of capacity resources as required to meet traffic demand;
- c) dynamic accommodation of user-preferred three-dimensional and four-dimensional flight trajectories;
- d) accommodation of full range of aircraft types and airborne capabilities;
- e) improved provision of information to the users such as weather conditions, traffic situation, availability of facilities;
- f) improved navigation and landing capabilities to support advanced approach and departure procedures;
- g) increased user involvement in ATM decision making including air-ground computer dialogue for flight negotiation;
- h) create, to the maximum extent possible, a single continuum of airspace, where boundaries are transparent to users; and
- i) organize airspace in accordance with ATM provision and procedures.

2.1.3.3 Priority should be given to the implementation of systems or functions specifically aimed at the attainment of any of these stated objectives.

2.1.4 Planning Targets

2.1.4.1 Under Section III the Implementation Plan identifies target dates, by which individual tasks are required to be accomplished. These are in line with the following milestones:

1999	Uniform application of 10 minutes longitudinal separation in the upper airspace;
1999	Provision of area control service in upper airspaces
1999	Pursue the implementation of fixed RNAV routes contained in the AFI ANP
1999	Implementation of WGS-84;
1999	Data exchange between Flight Data Processing Systems in selected Air Traffic Control Centres;
1999	Progressive introduction of Controller pilot data link communications (CPDLC) with full capacity in 2005;
1999	Complete implementation of all AFTN and ATS/DS circuits
1999	Extension of VHF coverage at all operationally significant altitudes
1999	Progressive provision of SSR in selected airspaces
2000	Progressive reduction of lateral separation minima in selected airspaces from 100 NM to 50 NM (in RNP 10 environment) and eventually to 30 or 25 NM (in RNP 5 environment) as dictated by operational requirements;
2000	Progressive introduction of Automatic Dependent Surveillance Service with full ground capability by 2005 ;
2000	Continuation of introduction of Random RNAV routes in oceanic airspaces;
2000	Progressive introduction of random RNAV routes above FL 350 in continental airspaces
2000	Progressive introduction of GNSS-based procedures
2000	Progressive introduction of RNP 5 in selected upper airspaces
2001	Progressive introduction of Longitudinal RNAV/RNP separation minima of 10 minutes and / or 80NM RNAV derived distance in selected airspaces
2001	Progressive introduction of AIDC with completion by 2005.
2002	Progressive Implementation of 1000 FT Vertical Separation Minima (RVSM) between FL290 and FL410 in selected airspaces. ¹

Note 1: In accordance with para. 2.2.1.9 of this Document, implementation of RVSM should be pursued within APIRG. In areas of routing adjacent to the EUR Region, the planning target date should be harmonized with the selected date in that Region (i.e. 2002).

2.1.5 Institutional Arrangements

2.1.5.1 Many of the technical and operational aspects of the implementation of the integrated CNS/ATM system are still under development. It is not possible, or probably even wise, at this stage to establish detailed institutional arrangements which, in many ways, will be strongly influenced by the options to be retained.

2.1.5.2 APIRG will closely monitor world-wide developments relating to Global Communications and Navigation Satellite systems and address the issue in due course.

2.1.5.3 Meanwhile, it would appear to be in the best interest of cost-effectiveness and efficiency of the overall system if an open, competitive environment was finally retained for the provision of individual elements of the new concept.

2.1.6 Trials and Demonstrations

2.1.6.1 It is anticipated that many contenders for the provision of individual elements of the integrated CNS/ATM system will emerge. It is also to be anticipated that such contenders will need partners at the level of provider and user States and Organisations, so that technical solutions can be tested in the operational environment.

2.1.6.2 As a matter of priority for the AFI Region, trials and demonstrations should be:

- a) operationally oriented;
- b) aimed at providing familiarisation with the new technologies and concepts;
- c) aimed at assisting States with the transition; and
- d) aimed at demonstrating cost-effectiveness.

2.1.6.3 It is also anticipated that the results of trials are also likely to provide useful information to assist the regional planning bodies in their work. In this context trials are encouraged and supported.

2.1.6.4 Providers and User States and Organisations are encouraged to co-operate in the conduct of trials. In order to minimize redundancy, the objectives and scope for specific trials and the results of such trials should be coordinated and disseminated through APIRG or its designated subsidiary body.

2.2 SYSTEM CONFIGURATION

STAGE A (1995/2005)

2.2.1 Airspace and Traffic Management

2.2.1.1 Airspace planning is to be carried out in close co-ordination between civil and military users, with a view to achieving an efficient joint utilization of available airspace to the greatest benefit of all users.

2.2.1.2 The ideal objective of airspace management should be to maximise the utilization of available airspace, by dynamic accommodation of all short-term requirements within a single system.

2.2.1.3 Where a single system is not established, a dynamic time-sharing of specific volumes of airspace should be considered; permanent segregation of airspace among various categories of users should be avoided. In this case airspace management should be oriented by the following principles:

- a) airspaces reserved for individual classes of users shall be released as soon as the respective operational need ceases;
- b) specific reserved airspace should be released for limited periods or at specific altitudes;
- c) alternative routes should be established in order to facilitate traffic management when specific airspaces are intended for alternative civil and military use;
- d) specific reserved airspaces may be relocated when required and possible.

2.2.1.4 Air traffic management in AFI should evolve progressively from the present route system to a system of area navigation (RNAV) routes.

2.2.1.5 Random RNAV areas should be established whenever feasible. Where implementation of random RNAV areas may not be feasible due to traffic densities or constraints of the present CNS/ATM system, priority should be given to the implementation of those elements of the new CNS/ATM concept aimed at eliminating such constraints.

2.2.1.6 The RNP values to be used in the AFI Region should be selected from the following ones:

- 1) RNP 5, with consequential route spacing of 25NM or 30NM as appropriate, on continental RNAV routes or RNAV areas, and in those non-RNAV ATS routes where ground-based navigation aids permit frequent determination of position and the requirement for full VHF coverage is satisfied;
- 2) RNP 10, with consequential route spacing of 50 NM, on oceanic RNAV routes where there is limited nav aids coverage and in continental airspaces.

Note: Transition areas, namely between continental and oceanic airspaces, between pure RNAV and VOR/DME environments will be assessed case by case.

2.2.1.7 Optimum longitudinal separation minima must be applied on an internationally co-ordinated manner. The aim will be to apply not more than 10 minutes longitudinal separation

progressively in the Region. However, in selected airspaces where navigation aids are not available to permit frequent determination of aircraft's position, use of Mach Number Technique (MNT) shall be applied. Lower minima may be required in specific areas of the Region, and in this case will be based upon the availability of positive surveillance to ATC. The introduction of longitudinal separation minima based on RNAV Route criteria of 10 minutes/80NM should be pursued through APIRG.

2.2.1.8 In order to increase airspace capacity, implementation of Reduced Vertical Separation minima (RVSM 1000ft) for subsonic aircraft between FL290 and FL410 inclusive, should be pursued through APIRG.

2.2.1.9 There will be a progressive introduction of automated flight data processing systems (FDPS) by Air Traffic Control Units. The main objectives of ATC automation should be, by priority:

- a) assistance to ATC co-ordination, especially between adjacent FIRs and between control sectors within busy ATS units;
- b) code-call sign correlation in radar units;
- c) assistance in monitoring adherence to flight plan;
- d) computer assisted conflict prediction;
- e) computer assisted conflict resolution.

2.2.1.10 Automated preparation of flight progress strips is a desirable by-product of automated flight plan processing, but not an objective in itself in most of the ATS units in the Region.

2.2.1.11 ATC automation should also aim at simplifying the interface between the air traffic controller and the communication and information systems, namely AFTN, AIS, MET.

2.2.1.12 In view of the recognized potential of the enhancement of flight safety of the Minimum Safe Altitude Warning System (MSAW), States are encouraged to implement this system as soon as possible. APIRG will monitor the progress of implementation.

2.2.1.13 In order to enhance ATM benefits in an RNP/RNAV environment, States are advised to refer to the material in **Appendix H** relating to ATM operational requirements in an RNP/RNAV environment.

2.2.2 Surveillance

2.2.2.1 Terminal areas (TMAs)

2.2.2.1.1 Secondary Surveillance Radar (SSR) should be used to provide surveillance within busy TMAs meeting criteria to be defined by APIRG; SSR Mode S data link will gradually be introduced in selected busy TMAs to be confirmed by APIRG. Introduction of VDL Mode 4 which is being standardized will be considered in due course.

2.2.2.1.2 Primary radars may continue to be used in those TMAs where there is a mix of transponder equipped and non transponder equipped aircraft and the number of non-transponder equipped aircraft is sufficiently large to justify the requirement.

2.2.2.1.3 ADS may be introduced, initially on a trial basis and eventually in broadcast mode (ADS-B) which is still under development.

2.2.2.2 En-route

2.2.2.2.1 En-route surveillance will mostly continue to be based on present procedural methods, but with improved pilot-controller communications in terms of reliability and transit times. This improvement will come about mostly as a result of enhanced mobile communications and of fixed communications between adjacent ACCs.

2.2.2.2.2 Where a requirement for en-route surveillance has been identified, this shall rely essentially on SSR, and on ADS particularly for low density, remote and oceanic airspaces outside SSR coverage.

2.2.2.2.3 Automatic Position Reporting will be initiated on a cooperative basis in selected airspaces.

2.2.2.2.4 ADS will be introduced, initially on a trial basis.

2.2.2.2.5 There is no requirement for primary radars for en route surveillance in the Region. Those already in place should be progressively phased-out.

2.2.3 Navigation

2.2.3.1 Approach and landing

2.2.3.1.1 The AFI strategy for transition from ILS to new precision approach and landing systems is based on the worldwide strategy developed by the Special Communications/Operations Divisional Meeting (1995) (SP COM/OPS/95) for the introduction and application of non-visual aids

to approach and landing which enables each region to develop an implementation plan for future systems. The AFI strategy, which will be kept under constant review states as follows:

- a) continue ILS operations to the highest level of service as long as operationally acceptable and economically beneficial.

Note: To co-ordinate with the users any withdrawal of ILS and provide at least a five-year notice for the withdrawal of any ILS ground-based equipment.

- b) promote the use of MMR or equivalent airborne capability to maintain aircraft interoperability;
- c) validate the use of GNSS, with such augmentations as required, to support approach and departure operations, including Category I operations, and implement GNSS for such operations as appropriate; and
- d) complete feasibility studies for Category II and III operations, based on GNSS technology, with such augmentations as required. If feasible, implement GNSS for Category II and III operations where operationally acceptable and economically beneficial.

2.2.3.1.2 Although it is anticipated that Global Navigation Satellite system (GNSS) will provide the capability for precision approaches, these shall not be taken into consideration in the formulation of the requirements of the regional air navigation plan for the time being.

2.2.3.1.3 GNSS may be used as an approach and landing guidance system initially as an overlay to conventional systems.

2.2.3.1.4 The initial AFI GNSS implementation strategy was adopted by the APIRG/12 Meeting (Tunis, 21 - 25 June 1999). It details an evolutionary path from existing constellations through a minimal satellite-based augmentation system (SBAS) providing over the whole AFI Region a non-precision approach capability with vertical guidance at 20 m accuracy (APV-I). The initial strategy is shown at **Appendix I** to this document.

2.2.3.2 Terminal areas (TMAs)

2.2.3.2.1 As a general principle, navigation facilities in TMAs must allow for navigation during departure, holding and approach with the required degree of accuracy. For the time-frame encompassed by this first Stage, the standard navigation aid in TMAs is envisaged to remain the VOR/DME.

2.2.3.2.2 Whenever feasible, VORs must be so located as to serve both terminal and en-route requirements.

2.2.3.2.3 NDBs may continue to be used on a case by case basis when there is an agreed requirement to be confirmed by APIRG.

2.2.3.2.4 Global Navigation Satellite systems may initially be used as supplemental navigation means in the TMAs.

2.2.3.3 **En-route**

2.2.3.3.1 Area Navigation (RNAV) will progressively be extended throughout the AFI Region, based on the criteria contained in the ICAO Manual on Required Navigation Performance (RNP) (Doc 9613 - AN/937) and within the terms and conditions defined by the AFI Planning and Implementation Regional Group (APIRG).

2.2.3.3.2 VOR will continue to be the agreed en-route navigation aid in the AFI Region along conventional ATS routes. In case a requirement exists for a new route or for a higher level of navigation performance along an existing route, primary consideration should be given to meet the requirement by the implementation of an RNAV route.

2.2.3.3.3 NDBs will not normally be provided for en-route navigation unless there is an operational requirement which cannot be satisfied by any other means, this will be confirmed through APIRG.

2.2.3.3.4 Global Navigation Satellite Systems will be used as supplemental en-route navigation means and as primary en-route means in designated airspaces.

2.2.3.3.5 It is foreseen that GNSS will eventually become the sole means of radio navigation and that the present radionavigation systems will be progressively withdrawn. The timing of such withdrawal will depend on many factors, among which the level of implementation and the quality of the new systems will be prominent. Withdrawal will only be undertaken in line with a plan to be developed by APIRG.

2.2.4 **Communications**

2.2.4.1 **Mobile communications**

2.2.4.1.1 Aeronautical mobile communications should provide for static-free, direct pilot-controller communications throughout the Region, at least at operationally significant altitudes.

2.2.4.1.2 Voice, will remain the main form of pilot-controller communications throughout the region within the time-frame encompassed by this first Stage. Meanwhile, the early introduction of data links is supported and encouraged with the initial main objective of reducing R/T workload.

2.2.4.1.3 In view of the remoteness of large areas of the AFI region, satellite links offer one of the best methods of achieving the above objectives. However, the number of users equipped for this type of communications may not be significant for several years, and therefore efforts should continue on the implementation of remote and extended range VHF.

2.2.4.1.4 HF voice stations could be phased out as VHF and satellite communications become available in a given FIR or in a given portion of the airspace; for the time being, however, increased traffic on HF will have to be accommodated and it will be necessary to ensure the integrity, reliability and availability of the system.

2.2.4.1.5 Although high frequency (HF) data link was not addressed in the original CNS/ATM concept, ICAO has now adopted SARPs for HF data link (HFDL). HF data link is ATN compliant. APIRG will closely monitor these developments.

2.2.4.2 Fixed Communications

2.2.4.2.1 The aeronautical fixed telecommunications system must provide for the exchange of messages between end-users with a very high degree of reliability within the specified transit times; in case this cannot be achieved within the current configuration of the AFTN Plan or the ATS/DS switched network plan, these must be re-planned as necessary and without delay in order to meet those objectives.

2.2.4.2.2 As a step towards the ATN the mutual support between aeronautical networks should be reinforced by the automatic interchange of messages, at least at the level of AFTN main centres, and ideally at the level of all tributary centres.

2.2.4.3 Data communications

2.2.4.3.1 It is anticipated that the mobile element of the integrated ATN may be developed at a slower pace than the end-user requirements for fixed communications; it is essential to ensure that the implementation of the necessary improvements to the ground network does not suffer delays as it is a pre-requisite for the development of the air-ground network as well.

2.2.4.3.2 In those circumstances in AFI, where only satellite links will be capable of supporting the implementation of the ground elements of the ATN with the required degree of reliability, considerations concerning costs of circuits, should not therefore delay the implementation of specific links by satellite whenever such requirement has been identified.

2.2.4.3.3 Notwithstanding the above, and considering the regional objective of inter-operability between sub-networks, the decision on which carrier to use to connect specific centres must be taken based on cost-benefit and operational efficiency only. The final aim is for a global ATN ensuring that the routing over the various sub-networks is predominantly based on choice.

2.2.4.3.4 There will be a progressive introduction of Gate data-links at the busiest airports in the Region. This consists of a physical link between aircraft on the apron and ATC. The main purpose of this type of data-link, in so far as ATC is concerned, is to allow for ATC clearance delivery by data instead of voice, thus reducing communications work-load and the risk of misinterpretation.

2.2.4.3.5 Data link flight information services (DFIS) applications, like the two other ATM data link applications (ADS, CPDLC) have been standardized and validated by the Automatic Dependent Surveillance Panel (ADSP). These services will make it possible to improve both aeronautical and meteorological air-ground communications as well as the availability of meteorological information (METAR, WINDSHEAR, RVR, TAF, SIGMET, AIREP, SIGWX, etc.). In particular, DFIS will make it possible for aircraft operating on Europe-Africa and Gulf of Guinea routes to obtain meteorological and aeronautical information by a reliable and relatively uncongested data link.

Note: *This Document may eventually include the AGA, AIS/MAP, MET and SAR elements of the CNS/ATM system.*

SECTION III - AFI CNS/ATM IMPLEMENTATION PLAN

3.1. INTRODUCTION:

3.1.1. The present section gives a detailed presentation of the implementation activities of the AFI CNS/ATM Implementation Plan and information on the programme of activities to be carried out by concerned States and users to implement specific system components of the Plan.

3.2. PLANNING METHODOLOGY

3.2.1 En route airspace

3.2.1.1 Taking into account the global nature of the CNS/ATM Systems, the AFI Region has been divided into ten homogeneous areas of routing corresponding to the major traffic flow patterns of the Region. The ten areas of routing (AR) are:

- AR-1: the Europe - South Atlantic (EUR/SAT) oceanic routes;
- AR-2: the Atlantic Ocean interface between the AFI, NAT and SAM Regions (AFI/NAT/SAM interface);
- AR-3: the Europe to Eastern Africa routes including the area of the Indian Ocean (EUR/AFI-East);
- AR-4: the Europe to Southern Africa routes (EUR/AFI-South);
- AR-5: the coastal routes over the Gulf of Guinea;
- AR-6: the Iberian peninsula to Canaries routes;
- AR-7: the North AFI coastal area (EUR/AFI interface);
- AR-8: the Continental Southern Africa routes;
- AR-9: the Trans-Sahelian routes; and
- AR-10: the Trans-Indian Ocean area interfacing with the ASIA/PAC Region.

3.2.1.2. Chart CNS/ATM-1 in **Appendix A** shows the areas of routing.

3.2.1.3. For each area of routing a set of air traffic management (ATM) objectives has been defined. Then the required communications, navigation, surveillance (CNS) systems are derived

taking into account the nature (oceanic, continental) of the area, the existing CNS systems and the improvements which could be introduced during the time frame of the plan (1995 - 2005).

3.2.2 **Terminal Airspace and Aerodromes**

3.2.2.1 The AFI CNS/ATM Plan defines three types of terminal airspaces based on the traffic density and the complexity of the traffic pattern. The three types of TMA's are:

- a) TMA Type 1: characterised by multiple airports within the single TMA, a complex traffic pattern and a high density traffic;
- b) TMA Type 2: characterized by multiple airports within the TMA, a complex traffic pattern and a medium density traffic; and
- c) TMA Type 3: low density traffic TMA's.

3.2.2.2 Likewise, three types of aerodromes are defined based on traffic density (high, medium and low).

3.2.2.3 The TMA's and aerodromes of the AFI Region will be type-designated by the AFI Planning and Implementation Regional Group (APIRG) based on the proposals by provider and user States and organizations concerned.

3.3. **AFI CNS/ATM IMPLEMENTATION PLAN (1995 - 2005)**

3.3.1. The first phase of the AFI CNS/ATM Implementation Plan is intended to cover the 1995 - 2005 time period.

3.3.2 **En route**

3.3.2.1 The major en route ATM objectives are:

- extension of random routing in oceanic areas;
- reduction of separation minima in oceanic and high traffic density continental areas;
- progressive extension of fixed and random RNAV routes; and
- definition of Required Navigation Performance (RNP) values for specific itineraries.

3.3.2.2 To support the above ATM objectives, it is proposed in the plan to:

- improve and extend VHF coverage in continental area;
- progressive introduction of data links;
- improve the AFTN network and implement ATS/DS circuits;
- improve SSR surveillance in certain continental areas;
- introduce automatic position reporting as a first step toward automatic dependent surveillance (ADS); and
- progressive introduction of ATC automation.

3.3.2.3 The en-route AFI CNS/ATM Plan is shown at **Appendix B**.

3.3.3 **TMA's and Aerodromes**

3.3.3.1 In terminal airspace and aerodromes, VHF coverage will be extended to at least 150 NM, while VHF data link is to progressively be introduced in high and medium traffic density areas.

3.3.3.2 For navigation in terminal areas, GNSS is to be introduced during the planning period.

3.3.3.3 For approach and landing at aerodromes, ILS will remain the standard aid. GNSS based approach procedures will be progressively introduced as follows:

- a) overlay to ILS procedures;
- b) non-instrument runways; and
- c) non-precision runways.

3.3.3.4 For surveillance, voice position reports will remain the dominant procedure. However in high and medium traffic density terminal and approach area, SSR will be required while ADS will be progressively introduced.

3.3.3.5 The AFI CNS/ATM Plan for TMA's and aerodromes is at **Appendix C**. The list of TMA's and Aerodromes is at **Appendix D**.

3.3.4 GNSS Applications

3.3.4.1 For en route navigation, GNSS will be used, initially as a supplemental-means of navigation. States are recommended to make use of the guidance material contained in ICAO Circular 267 - AN/159 - "*Guidelines for the introduction and operational use of the Global Navigation Satellite System (GNSS)*" when drafting their GNSS Plan. Particular attention should be given to the following:

- a) procedures development;
- b) aeronautical coordinates referenced to the WGS-84 coordinate system;
- c) data base creation and maintenance;
- d) certification and operational approvals;
- e) ground and flight inspection;
- f) trials and demonstrations;
- g) GNSS planning and organization;
- h) GNSS training;
- i) information of users by NOTAM and Aeronautical Information Circular;
- j) legal issues; and
- k) implementation assistance through ICAO.

3.3.4.2 A sample Aeronautical Information Circular (AIC) for the approval of GPS as a *supplemental* means of navigation for en route and terminal operations and overlay non-precision approaches (NPA) was adopted by the AFI/7 RAN Meeting and is shown as **Appendix E**. In due course, a similar AIC for approval of GNSS-based precision approach and landing applications shall be developed and included in this document.

3.4 IMPLEMENTATION PROGRAMME (1995 - 2005)

3.4.1 This part of Section III defines in more detail, the actions to be undertaken by States and users in each area of routings or in the terminal and approach areas for the actual co-ordinated implementation of the Plan.

3.4.2 **Timelines Reference Sheets (TRS)**

3.4.2.1 The Timelines Reference Sheets (TRS) which reflect the actual plans of States, the status of implementation is at **Appendix F**.

3.4.3 **Implementation worksheets**

3.4.3.1 The implementation worksheets have been developed for each operational and technical element. The area concerned, the FIRs involved, the specific activity that must be carried out, the system that must be in place, by whom, and in which time-frames are identified. The implementation worksheets are aimed at providing to all concerned clear guidance to ensure uniformity of approach, compatibility of implemented systems and procedures and training. They will be used by Implementation Co-ordination Groups (ICGs) which are recommended to be set-up for each area of routing.

3.4.3.2 The implementation worksheets are at **Appendix G**.

3.4.4 **Implementation Co-ordination Groups (ICGs)**

3.4.4.1 The achievement of the intended benefits along each routing or within each area of affinity is entirely dependent on the coordinated implementation of the required elements by all concerned, provider and users alike. This part of Section III introduces the three pillars on which the attainment of that objective will rely: the Implementation Worksheets, the Implementation Coordination Groups (ICG's), and the Time-lines Reference Sheets (TRS).

3.4.4.2 The Implementation Worksheets (IWS) detail, for each traffic flow and for each area of affinity, and for every CNS element, the systems that must be put in place, by whom, and within which time-frames. Thus, the IWS will provide to all concerned a clear indication of what is required from each one of them, and will provide the basis to ensure coordinated and harmonized systems deployment.

3.4.4.3 Implementation Coordination Groups (ICGs) should be established for each routing and for each area of affinity. Members will be all those providers and users alike, required to implement systems either on the ground or airborne on the area of routing concerned, i.e., States and or Organizations responsible for the provision of services in the FIRs concerned, and the Users Organizations.

3.4.4.4 On their implementation role, the ICGs are independent of the Regional Planning machinery. They will nevertheless be guided by the IWS, on which they are free to improve and detail as necessary. However, any substantive modification either of objectives or time frames must be submitted to APIRG through the CNS/ATM Sub-Group in order to ensure overall conformity at the Regional level. The ICGs will, in their work, give due regard to the maintenance of, or increase in, the existing level of safety.

3.4.4.5 The ICAO Secretariat will coordinate the establishment and activities of ICGs. The ICGs will appoint a coordinator for each element (i.e. for each IWS). The coordinator will be responsible to initiate and coordinate actions required to carry out implementation and among all concerned. The coordinator will also be responsible to report to the CNS/ATM Sub-group on progress, on eventual constraints being experienced, or on any other matters of concern. These will be mostly reflected in the TRS as detailed below.

3.4.4.6 The Timelines Reference Sheets at Appendix F are intended to ensure timeliness of implementation and to identify deviations so that corrective action can be initiated on a timely manner. They show, again for each element and for each area of affinity, the planned date of implementation and the FIRs and States concerned. Against each FIR, they will show the date on which the responsible authority has declared it can meet the requirement. This will allow for immediate identification of any significant deviation where corrective action may be required.

LIST OF APPENDICES

- A - Areas of routing
- B - AFI CNS/ATM Implementation Plan: Table I En route **(Attached)**
- C- AFI CNS/ATM Implementation Plan: Table II TMAs and Aerodromes
- D - List of TMA's and Aerodromes
- E - Sample Aeronautical Information Circular on the use of GPS as supplemental means of navigation
- F - Timelines
- G - Implementation worksheets
- H - ATM operational requirements in an RNP/RNAV environment
- I - Initial Concept of the GNSS Strategy for the AFI Region

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Europe - South Atlantic (Oceanic routes) AR-1	Canarias Casablanca Dakar Oceanic Recife ¹ Sal	Progressive evolution towards a random RNAV environment from West to East (2000 - 2005); Reduction of longitudinal separation to 10 minutes using Mach Number Technique (1998); extension to route UA302 (1999); Distance based separation 80 NM (1998 - 2002) 50NM (2002 - onwards);	DCPC (data) by participating aircraft (Bpa) (2000); Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports (2000)	Gradual introduction of ATN compatible bit-oriented procedures (BOP) between AFTN main centres (1999-onwards)	RNP 5: Casablanca and Canarias FIRs (1998); RNP 10: Other FIRs (1999-2004); RNP 5: (2004 - onwards) Other FIRs; GNSS as primary-means	Automatic Position Reporting (APR) Bpa trials (2000); Automatic Dependent Surveillance (ADS) on RNP airspace Bpa (from 2000)

Note 1: Outside AFI. Indicated for coordination.

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
AR-1 (Continued)		Reduction of lateral separation to 50 NM (1999- 2004). Further reduction of lateral separation to 25 NM/30NM (2004 - onwards); RVSM (2000 -2005): progressive evolution towards RVSM FL290/410				

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Europe - Eastern Africa (including oceanic areas) AR-3	Addis Ababa Antananarivo Asmara Cairo Dar es Salaam Entebbe Khartoum Mauritius Mogadishu Nairobi Seychelles Tripoli	Fixed RNAV routes coexisting with conventional routes (1999); Longitudinal separation 10 minutes (2000); Lateral separation: progressive introduction of 25 NM or 30 NM in line with RNP 5 in the upper airspace (2001); Vertical Separation: introduction of RVSM initially between FL 350 and FL 390 (2001-onwards) and extension to FL 290 - FL 410 by 2005;	Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports (2000); DCPC (data) Bpa (2000).	Gradual introduction of ATN compatible bit-oriented procedures (BOP) between AFTN main centres (1999-onwards); Full interface between aeronautical networks (2001); AFTN and ATS/DS (1999);	RNP 10: (2000); RNP 5: from 2001 onwards; GNSS as primary-means	Procedural; ADS 2001 onwards with full ground capability in 2005; SSR in selected airspaces (1999); Automation: progressive introduction of computer assisted conflict detection and resolution from 2000

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
AR-3 (Continued)		Area control service in all FIRs (1999); RNAV: Gradual implementation of Random RNAV initially above FL 350 from 2001.		Introduction of ATS inter-facility data communications (AIDC) starting in 2002 to be completed by 2005		

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Europe - Southern Africa AR-4	Algiers Brazzaville Gaborone Johannesburg Kano Kinshasa Luanda Lusaka N'Djamena Niamey Tunis Tripoli Windhoek	Fixed RNAV routes coexisting with conventional routes from 1995 to 2000; Longitudinal separation 10 minutes from (2000); Lateral separation minima; Gradual introduction of 25 NM or 30 NM (2000); RVSM: Introduction initially between FL 350 and 390 (2002-onwards), evolving towards FL 290/410 from 2005;	Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports; DCPC (data) Bpa (From 2001)	Implementation of all ATS/DS circuits. AFTN and ATS/DS links upgraded; full interface between aeronautical networks (from 2001); Gradual introduction of ATN compatible bit-oriented procedures (BOP) between AFTN main centres (1999 - onwards);	RNP 5: Initially above FL350 (from 2000); WGS 84; GNSS as primary-means	Procedural (on account of traffic diversity); ADS (2000 onwards); SSR at Brazzaville, Kinshasa, Luanda and N'Djamena from (2000); RADAR and ADS integration from (2000)

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
AR-4 (Continued)		Full ATC service on all ATS routes above FL 245 and 150NM from international airports; Random RNAV initially above FL350		Gradual introduction of AIDC to be completed by (2005)		

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Gulf of Guinea (Coastal routes) AR-5	Accra Brazzaville Dakar Kano Roberts	<p>Longitudinal separation 10 minutes (2000);</p> <p>Full ATC service on all ATS routes above FL 245 and 150NM from international airports;</p> <p>Lateral separation 25NM or 30 NM in an RNP 5 environment (2001 - onwards);</p> <p>RVSM initially between (FL 350-FL 390) (2001 -onwards);</p> <p>Random routing initially above FL350 (2001 - onwards)</p>	<p>Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports (2000);</p> <p>Progressive introduction of DCPC (data) from 1999 onwards</p>	<p>AFTN and ATS/DS links upgraded (June 1999);</p> <p>Gradual introduction of ATN compatible bit-oriented procedures (BOP) between AFTN main Centres (1999-onwards);</p> <p>Full interface between aeronautical networks 2001 - onwards</p>	<p>VOR/DME (TMAs);</p> <p>RNP 5 environment (2001);</p> <p>GNSS as primary-means</p>	<p>SSR along itinerary Abidjan/Accra/Lagos (2000);</p> <p>ADS/CPDLC from 2001 with full ground capability by 2005</p>

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Iberian Peninsula-Canaries AR-6	Canarias Casablanca Lisbon ¹	Fixed RNAV routes (1995); Longitudinal separation 30 NM (2001). Lateral separation 25 NM (2001) both with radar surveillance; RVSM (2002 - onwards)	DCPC 2005 - onwards	Gradual introduction of ATN compatible bit-oriented procedures (BOP) between main AFTN centres (2002)	RNP 5 (1998); GNSS as primary-means	APR Bpa (1998); Mode S (2000); ADS Bpa - 1999 onwards

Note 1: Outside AFI. Indicated for coordination.

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
North AFI/Coastal and EUR/AFI Interface routes AR-7	Algers Cairo Casablanca Tripoli Tunis	Reduction of longitudinal separation to 10 minutes along specific itineraries (2000); Fixed RNAV coexisting with conventional routes (1999); RVSM (2002 - onwards)	DCPC 2005 onwards; Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports (2000)	Gradual introduction of ATN between selected ACCs (1999); ATS/DS (1999)	VOR/DME (TMAs); RNP 5 2000 onwards in selected upper airspaces; GNSS as primary-means	SSR (high density airspaces) (2000); Mode S (where justified) (2000).

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Continental Southern Africa AR-8	Beira Gaborone Harare Bloemfontein Capetown Dar es Salaam Durban Johannesburg Lilongwe Luanda Lusaka Port Elizabeth Windhoek	Fixed RNAV routes coexisting with conventional routes (2000); Longitudinal separation 10 minutes (2000); Full ATC on all ATS routes above FL 245 and 150NM from international airports.(2000); Lateral separation (TBD); Random routing initially above FL 350 (TBD); RVSM initially between FL350 and FL390 (TBD)	Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports (2000); DCPC (data) from 2000	AFTN implemented (1999); Gradual introduction of ATN compatible bit-oriented procedures (BOP) between AFTN main centres (1999); ATS/DS (1999); AIDC (2001-2005)	VOR/DME (TMAs); RNP 10 (2000); RNP 5: (from 2000), and evolution to RNP 4 in selected airspaces; GNSS as primary-means	SSR (high density airspaces) (1996); ADS/CPDLC Bpa (2000); SSR (Luanda, 2000)

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Trans-Sahelian AR-9	Asmara Dakar Kano Khartoum N'Djamena Niamey	Fixed RNAV routes co-existing with conventional routes (1999) evolving to random routing; Full ATC service on all ATS routes above FL 245 and 150NM from international airports; Longitudinal separation of 10 minutes (2000); Lateral separation 25 NM or 30 NM in an RNP 5 environment (2001 - onwards); RVSM- initially between FL350 -390	Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports (2000); DCPC (data) (2000 - 2005).	AFTN and ATS/DS links upgraded (1999); Full Interface between aeronautical networks 2001 - onwards; Gradual introduction of ATN compatible bit-oriented procedures (BOP) between AFTN main centres (1999-onwards)	RNP 10: (2000); RNP 5: 2000-onwards evolving towards RNP5; GNSS as primary-means	APR Bpa (1998); ADS/DCPC (2001 - onwards) with full ground capability by 2005; SSR coverage at N'Djamena sector

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Trans-Indian Ocean AR-10	Antananarivo Bombay ¹ Johannesburg Oceanic Male ¹ Mauritius Perth ¹ Seychelles	Reduction of longitudinal separation to 10 minutes (2000); Random routing in selected portions of the airspace (1999); RNP itineraries (2000); Upper airspace control in 1999; Reduction of lateral separation to 50 NM coinciding with RNP 10 from 2000 onwards; RVSM along selected itineraries initially between FL 310-FL 370 (2001-onwards) evolving towards FL 290 - FL 410 from 2005 onwards.	DCPC (data) from 1999); Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports (2000)	AFTN and ATS/DS links upgraded (1999); Interface between aeronautical networks (1999); AIDC (2002) with full capability in 2005	RNP 10: (2000); GNSS as primary-means	APR Bpa (1999); ADS Bpa (2000)

Note 1: Outside AFI. Indicated for coordination.

Table I – En-route

Area of Routing	FIRs	Systems Evolution 1995-2005				
		Airspace and Traffic Management	Communications		Navigation	Surveillance
			Mobile Service	Fixed Service		
1	2	3	4	5	6	7
Atlantic Ocean (AFI-NAT/SAM interface) AR-2	Accra Dakar Oceanic Johannesburg Oceanic Luanda Sal	Random routing; Reduction of longitudinal separation to 10 minutes (2000)	DCPC (data) by participating aircraft (Bpa) (1998); Full VHF coverage on all ATS routes above FL300, and 150 NM from international airports (2000)	Gradual introduction of ATN compatible bit-oriented procedures (BOP) between main AFTN Centres (1998-onwards); AFTN and ATS/DS (1999)	RNP 10 (2000); GNSS as primary-means	Automatic Position Reporting (APR) Bpa trials (2000); ADS (2000)

APPENDIX V: SHORTCOMINGS/DEFICIENCIES IN THE AOP FIELD**(Ref: Air Navigation Plan - Africa-Indian Ocean Region (Doc. 9702))**

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
Aerodrome fencing and security lighting AFI/7 Conc. 4/2 and 4/9 Annex 14 vol I, para 8.4.1 - 8.4.3	Cameroon/ Douala	Aerodrome fence inadequate	1993	D	Access to manoeuvring areas by Unauthorized persons.	Fence to be completed.	CCAA		B
	Chad/ N'djamena	Aerodrome fence incomplete	1998	D	Access to maneuvering areas by unauthorized persons.	Fence to be completed	DCA/ ANAT		B
	Central African Republic/ Bangui	Aerodrome fence non existing	1999	S	Access control impossible.	Build perimeter fence and road for patrols.	DGACM		B
	Côte d'Ivoire/ Abidjan	Aerodrome fence incomplete	1998	D	Access to all airside areas by Unauthorized persons.	Fence to be completed	SODEXAM/ ANAC		B
	Congo/ Brazzaville	Aerodrome fence inadequate	1993	D	Control of unauthorized persons in movement areas inadequate	Extensive repair of fence required	ANAC	2000	B
	D. R. of Congo/ Kinshasa	Aerodrome fence incomplete	1998	D	Access to all airside areas by unauthorized persons.	Extensive repair of fence required. Work in progress.	RVA	2002	B

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Gabon/ Libreville	Aerodrome fence incomplete	1999	D	Access to airside by unauthorized persons.	Complete the fence construction	SGAC		B
	Guinea Bissau/ Bissau	Aerodrome fence inadequate	1993	D	Access to airside by unauthorized persons.	Extensive repair of fence required	DCA		B
	Mauritania/ Nouakchott	Aerodrome fence inadequate	1996	D	Control of access by animals and unauthorized persons to airside inadequate	New concrete fence under construction.	SAM	2001	B
	Mauritania/ Nouadhibou	Aerodrome fence non existing.	1996	S	Access to airside by unauthorized persons.	New fence under construction.	SAM	2001	B
	Niger/ Niamey	Aerodrome fence inadequate	1992	D	Access to airside by unauthorized persons.	Corrective measures not entirely adequate System of access ID implemented. Project of a new fence envisaged.	DCA/ AANN	1999 2001 2002	B
	Nigeria/ Abuja	Aerodrome Fence inadequate	2000	D	Access to airside by unauthorized persons and stray animals	Build a perimeter fence using appropriate materials. Project for adequate fence budgeted for year 2001.	FAAN	2001	B

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Nigeria/ Kano	Aerodrome fence inadequate	1999	D	Access to airside by unauthorized persons and stray animals	Previous efforts not effective. Project for adequate fence budgeted for year 2001.	FAAN	2001	B
	Nigeria/ Lagos	Aerodrome fence incomplete	1993	D	Access control implemented with regular patrols using the perimeter road.	New type of fence under construction.	FAAN	2001	B
	Sao Tomé & Príncipe/ Sao Tomé	Aerodrome fence inadequate	1993	D	Access to airside by unauthorized persons	Fence to be repaired	DCA		B
	Sierra Leone/ Freetown	Fence missing over more than half of perimeter.	1993	D	Access to airside by unauthorized persons	Situation to be evaluated after civil unrest.	SLAA		B
	Somalia/ Mogadishu	Aerodrome fence inadequate	1995	D	Access to airside by unauthorized persons	Extensive repair of fence	Not available		B
	Tanzania/ Dar es salaam	Aerodrome fence incomplete	2000	D	Access to airside by unauthorized persons	Complete the ongoing repairs to the fence and rehabilitation of the perimeter road	TAA		B

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
Bird hazard control and reduction AFI/7 Conc. 4/2 and 4/7 Annex 14 vol I, para 9.5.1 - 9.5.3	Angola/ Luanda	Inadequate bird hazard control	1998	D	Grain seeds available close to aircraft manoeuvring areas. Slum development close to airport.	Control measures to be implemented and monitored Land use plan for airport environs required.	ENANA		A
	Benin/ Cotonou	Inadequate bird hazard control mechanism	1998	D		Control measures to be implemented and monitored	ASECNA/ DCA		A
	Burkina Faso/ Ouagadougou	Inadequate bird hazard control mechanism	1998	D	Problem discussed with Administration during the last Workshop on reducing bird hazard held in Ouagadougou from 9 to 13 October 2000.	Control measures to be implemented and monitored in particular relocation in coordination with local authorities of factors attracting birds (tannery, slaughterhouses, refuse dumps). Organization in progress.	ASECNA- DAAN/ DCA		U
	Chad/ N'Djamena	Bird hazard control measures to continue	1996	D		Equipment to reduce number of birds now available, Bird Hazard Committee created.	ANAT/ DCA/ ASECNA	1999	A
	Côte d'Ivoire/ Abidjan	Bird hazard control measures to continue.	1998	D		Coordination committee and equipment to reduce number of birds now available.	SODEXA M/AERIA/ ASECNA		B

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Democratic Rep. Of Congo/ Kinshasa	Inadequate bird hazard control measures	1998	D		Control measures to be implemented and monitored. Tenders invited for the provision of scaring equipment.	RVA	2002	A
	Gabon/ Libreville	Bird hazard control measures necessary	1996	D		Bird control measures to be enhanced and monitored.	SGAC/ ASECNA/ ADL	1998	B
	Guinea/ Conakry	Bird hazard control measures to continue.	1998	D		Bird control measures in progress	DNAC/ ANA- SOGIAC		B
	Kenya/ Nairobi	Inadequate bird hazard control measures	1999	D	Airport located close to national park.	Bird control measures to be enhanced and monitored	KAA		B
	Libya/ Benghazi	Bird hazard control measures required		S		Control measures to be implemented and monitored	NCAA		U
	Libya/ Tripoli	Bird hazard control measures required		S		Control measures to be implemented and monitored	NCAA		U
	Malawi/ Lilongwe	Additional bird hazard control measures required	1993	D	Ornithological study required to determine cause of bird attraction to airport.	Monitor and control farming activities around airport. Maintain appropriate grass height. Ornithological study.	Malawi DCA		U

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Mali/ Bamako	Bird hazard control measures to continue.	1998	D		Bird Control Committee created. Environmental management measures and awareness increase through media underway.	DCA/ ASECNA/ Aéroports du Mali.	1999 200	A
	Senegal/ Dakar	Bird hazard control measures to continue	1993	D		Bird control unit set. Equipment available. Bird control unit to be re-activated.	ASECNA/ AANS		B
	Sudan/ Khartoum	Bird hazard control measures required	1993	S		Control measures to be implemented and monitored	NCAA		A
	Togo/ Lome	Bird hazard control measures to continue.	1996	D		Bird control committee and scaring equipment now available. Committee activated and bird hazard control programme developed.	DCA/ ASECNA/ SALT	2001	A
Rescue and fire fighting AFI/7 Conc. 4/2 and 4/7 Annex 14 Vol. 1 para 2.11.1 - 2.11.4 and 9.2.1 - 9.2.33	D. R. of Congo/ Kinshasa	RFFS: Major improvements required. RFFS CAT 9 not achieved. (Only cat 7 available)	1997	D		Procure new fire vehicles and accessories. Training and recycling of personnel. Tenders invited for the provision of new fire fighting equipment.	RVA	2002	U

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Guinea Bissau/ Bissau	Fire fighting services inadequate. Rescue services inadequate.	1999	D	Equipment vandalized during the unrest situation.	General revision and rehabilitation required. Supplement certain rescue equipment to meet the required level as in AFI ANP.	ENAG		U
	Liberia/ Monrovia	RFFS: inadequate	1996	D	<i>A study was carried out by ICAO/UNDP.</i>	<i>Rehabilitate facilities and acquire equipment as defined in the OACI/PNUD study available.</i>	DCA		U
	Nigeria/ Lagos	Communications equipment on RFF vehicles inadequate	2000	D		Equip all fire tenders with adequate two-way communication equipment.	FAAN		A
	Somalia/ Mogadishu	RFFS practically inexistent	1995	S		Establish new RFFS for Mogadishu airport	Not available!		U
	Tanzania/ Zanzibar	Fire fighting and rescue services inadequate	1999	D	CAT 8 required not met, rescue equipment not sufficient, staff not adequately trained, no grid map, station inappropriately located	Heavy investment required to train staff, procure additional fire trucks and rescue equipment and tools.	Zanzibar Director Aviation		U

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
Pavement strength AFI/7 Conc. 4/4 and 4/10 Annex 14 Vol.1 para 2.5.1 - 2.6.8	Angola/ Luanda	Parallel txwy to Rwy 23 required. Runway needs resurfacing. Runway shoulders and clear-way need stabilizing. Apron uneven.	1998	D	Delays inevitable. Aircraft vibrating at take-off and landing. FOD risks.	Development master plan and corresponding financial investment required.	ENANA		A
	Burkina Faso/ Ouagadougou	Wrenching of asphalt pavement in some zones of Apron. Raising of bitumen to the surface of runway pavement.	1999	D		Repairs on damaged areas required.	ASECNA/ DAAN		B
			1999	D	Risk of skid during raining times.	Monitor the status and initiate studies for rehabilitation if deemed necessary.		B	
Cameroon/ Douala	Bearing strength on some parking positions (C8) inadequate. Taxiway surface in critical condition.	1993	D	Risk of damage to aircraft.	Rehabilitation in progress.	ADC	2001	A	
	Cameroon/ Yaounde	Poor braking action when wet	1998	D	Information on runway friction characteristics not promulgated.	Measure friction resistance and promulgate.	ADC	2001	A
	Chad/ N'Djamena	Runway surface degraded. Heavy rubber deposits on runway	1998	D	Potholes on runway surface	Pavement rehabilitation. Rubber deposit removal	ANAT/ DCA		U A
	Congo/ Brazzaville	Bearing strength inadequate.	1998	D		Pavement rehabilitation required.	ANAC		U

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	D.R. of Congo/ Kinshasa	Rwy surface uneven and bumpy (bearing strength problem over a portion of runway).	1998	D	Unevenness caused by slippage of concrete slabs and many cracks. Risk to damage of aircraft.	Pavement rehabilitation to be put in place. An agreement has been concluded for the rehabilitation of the runway .	RVA	2002	A
	Gambia/ Banjul	Bearing strength problem on taxiway and runway.	1999	D	Urgent repairs done pending total rehabilitation planned.	Pavement surface rehabilitation.	GCAA	2002	B✂
	Guinea Bissau/ Bissau	Parking area insufficient Bearing strength on Parking B.	1998	D		Apron rehabilitation and expansion required	DGCA/ ENAG		B
	Guinea/ Conakry	Runway slippery when wet.	1999	D		Friction characteristics to be measure and published.	DNAC/ ANAC		A
	Kenya/ Mombasa	Runway surface rough, severe undulations	1999	D	Extreme vibrations during take-off and landings.	Resurfacing to be programmed after thorough study of causes of undulations	KAA		A
	Malawi/ Lilongwe	Runway damaged	1999	D		Resurfacing to be programmed	DCA		B
	Morocco/ Casablanca	Runway surface damaged and rough.	1999	D					

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Mozambique/ Maputo	Runway damaged	1999	D	Potential damage to engines due to ingestion of sand.	Runway resurfacing required Sweep off the sand and investigate cause to programme permanent solution	NCAA	1999	B
		Problem with blowing sand on taxiway	1999	D					B
	Nigeria/ Kano	Severe undulation and roughness on first half of RWY06	1998	D	Causing bouncing during take-off roll. Studies for rehabilitation in progress.	Pavement rehabilitation to be put in place.	FAAN	2001	U
	Rwanda/ Kigali	Runway slippery when wet.	1999	D	Probably due to rubber deposits	Removal of rubber deposits. Measure friction factor and publish.	Régie des Aéroports		A
	Tanzania/ Dar es salaam	Runway surface rough	1999	D		Resurfacing to be programmed	DA		B
	Tanzania/ Zanzibar	Rwy length inadequate, rwy strength inadequate.	1999	D	FOD cases reported, payload restrictions	Pavement overlay required. Runway length to be extended.	Zanzibar Director Aviation		U
Emergency plan Annex 14 vol I para 9.1.1-9.1.9	Angola/ Luanda	No aerodrome emergency plan No grid map available	1995	S D	ICAO guidance material cannot be used due to language problems.	Develop an emergency plan. Conduct a full scale emergency exercise.	ENANA		A
	Central African Rep./Bangui	Emergency plan needs updating.	1999	D		Update the existing plan. Conduct a full scale emergency exercise.	DGACM/ ASECNA		B

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Côte d'Ivoire/ Abidjan	Emergency plan needs updating.	1998	D		Update the existing plan. Conduct a full scale emergency exercise.	ANAC/ ASECNA		B
	Democratic Rep. of Congo	Emergency plan needs updating	1997	D		Update the existing plan	RVA		B
	Djibouti	No aerodrome emergency plan	2000	S		Develop an emergency plan. Conduct a full scale emergency exercise.			U
	Equatorial Guinea/Malabo	No aerodrome emergency plan	1993	S		Draft being reviewed	ASECNA		A
	Gabon/ Libreville	Emergency plan needs updating	1999	D		Update the existing plan and organize a full-scale exercise.	SGAC/ ASECNA		A
	Guinea Bissau/Bissau	No aerodrome emergency plan	1993	S		Develop an airport emergency plan. Conduct full scale emergency exercise	DGAC/ ENAG		A
	Liberia/ Monrovia	No aerodrome emergency plan	1996	S		Develop plan. Conduct emergency exercise	DCA	1998	A
	Madagascar/ Antananarivo	No aerodrome emergency plan. Emergency exercises not held yet.	2001	S	Draft emergency plans by each organization to be amalgamated	Develop an airport emergency plan. Conduct full scale emergency exercise	ADM/ ADEMA/ ASECNA	2001	A

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Rwanda/Kigali	No aerodrome emergency plan. Emergency exercise not held at regular intervals	2000	S		Develop an airport emergency plan. Conduct full scale emergency exercise	Régie des Aéroports		A
	Sao Tomé & Príncipe/Sao Tomé	No aerodrome emergency plan	1993	S		Develop an emergency plan and conduct exercises at regular intervals	DCA		A
	Somalia/ Mogadishu	No aerodrome emergency plan	1995	S		Develop an emergency plan. Conduct a full scale emergency exercise.	Not available!		B
	Tanzania/ Zanzibar	No aerodrome emergency plan	1999	S	Emergency plan still being drafted	Develop an emergency plan. Conduct a full scale emergency exercise.	Zanzibar Director Aviation		B
	Togo/ Lomé	No aerodrome emergency plan	1999	S	Emergency plan still being drafted	Develop an emergency plan. Conduct a full scale emergency exercise. Emergency plan approval process underway. Exercise envisaged with the assistance of ICAO.	DAC/ ASECNA	2001	B
Foreign objects on movement area AFI/7 Conc. 4/4 Annex 14 vol I para 2.9.1-2.9.3	Angola/ Luanda	Foreign objects on movement areas	1995	D	Potential damage to aircraft engines due to ingestion of sand.	Establish ramp safety committee. Procure pavement sweeper.	ENANA		B

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Mozambique/ Maputo	Blowing sand on taxiway	1998	D	Potential damage to aircraft engines due to ingestion of sand.	Establish sand cleaning work programme. Procure pavement sweeper if necessary.	NCAA		B
Power supply. AFI Conc 4/2 and 4/8. Annex 14 Vol 1 para 9.4.1-9.4.27	Angola/ Luanda	Primary Power supply unreliable	1995	D	Although substantial backup system in place, reliability of power supply still precarious.	Negotiate with primary power supply company for reliability	ENANA		A
	D.R. of Congo/ Kinshasa	Primary power supply unreliable. Secondary power supply arrangements deficient	1998	D		Negotiate with primary power supply company for reliability. Secondary power supply rehabilitation.	RVA		A
	Guinea Bissau/ Bissau	Secondary power supply inadequate	1993	D		Rehabilitation of secondary power supply required	DGCA		B
	Kenya/ Nairobi	Mains power unreliable. Secondary power supply arrangements deficient	1999	D	Adverse effect on all lighting, nav aids and communication	Negotiate with primary power supply company for reliability. Secondary power supply rehabilitation.	KAA		A

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Kenya/ Mombasa	Mains power unreliable. Secondary power supply arrangements deficient	1999	D	Adverse effect on all lighting, navaids and communication	Negotiate with primary power supply company for reliability. Secondary power supply rehabilitation.	KAA		A
	Nigeria/ Lagos	Switch over time to secondary power supply inadequate	2000	D	Rehabilitation in progress	Rehabilitation of the connections of the facilities to standby generators to ensure automatic connection on failure of the primary source.	FAAN	2001	U
	Nigeria/ Port Harcourt	primary power very unreliable	1998	D	Frequent mains power, arrangements unreliable	Negotiate with primary power supply company for reliability. Negotiations are on for a dedicated primary power source. A new 850 KVA secondary source have been provided.	FAAN	2001	B
	Somalia/ Mogadishu	Power supply inadequate	1995	D			Not available		
	Tanzania/ Dar es salaam	Main power supply unreliable. Secondary power supply inadequate	1996	D	Frequent major surges adversely affecting reliability of all lighting, navaids and communication	Negotiate for new mains supply. Rehabilitate secondary power supply. Establish planned maintenance programme.	DA		U

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
Implementation of visual aids AFI/7 Conc 4/1 Annex 14 Vol I chapter 5	Angola/ Luanda	Unserviceable aids not NOTAM'ed, NDB approach only without DME vertical guidance, All markings faded	1998	D		NOTAM office to be revamped.	ENANA		A
				D		A			
				D		Repaint markings.			B
	Benin/ Cotonou		2000	D		New marking painted. Update the AIP accordingly.	ASECNA	2001	A
	Cameroon/ Yaounde	ICAO obstacle map non available.	1998	D		Establish an ICAO obstacle map and publish.. Drafting in progress.	ADC/ CCAA		B
	Djibouti/ Djibouti	Threshold lighting inoperative, Taxiway lighting inadequate. Runway markings not clear	1999	D	Inadequate visual guidance to pilots. Many bulbs missing.	Rehabilitate lighting system and implement planned maintenance programme. Repaint markings			
	D.R. Congo/ Kinshasa	Approach lighting deficient.	1998	D	Inadequate visual guidance to pilots. Many bulbs missing.	Lighting aids to be rehabilitated.	RVA		U
Egypt/ Hurghada	Taxiway and apron lighting inadequate.	1999	D		Actions are being taken.		1999	A	
Egypt/ Sharm el Sheik	Taxiway and apron lighting inadequate.	1999	D		Actions are being taken.		1999	A	

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Guinea Bissau/ Bissau	Lighting aids inadequate	1993	D	Inadequate visual guidance to pilots	Rehabilitation of lighting aids required	DGAC		A
	Malawi/ Lilongwe	Taxiway lights inadequate	1999	D	Inadequate visual guidance to pilots	Rehabilitate taxiway lights	Malawi DCA		B
	Nigeria/ Abuja	Runway centerline deficient RWY end and threshold 22 lighting inoperative. PAPI not calibrated.	2000	D		Rehabilitation of the lighting aids required. Calibrate the PAPI and NOTAM	FAAN	2001	B
	Nigeria/ Kano	Threshold and Rwy end lighting partially deficient. Approach lights RWY 06 & 24 partially inoperative. Taxiway edge lighting not implemented while centerline lights partially inoperative. PAPIs require calibration. Runway markings non conspicuous.	1999 2000 2000 2000 2000	D D S D D	Inadequate visual guidance to pilots Pilots reporting misalignment	Rehabilitate airfield lighting and establish maintenance programme. Implement taxiway light as per AFI ANP. Calibrate PAPIs and NOTAM. Markings to be repainted.	FAAN	2001	U B B U A

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Nigeria/ Lagos	Txwy lighting inadequate and reflective markers ineffective. Centerline lighting at high speed turnoffs deficient and colors non standard. No approach light on 01L and 01R. Intensity of approach lighting on 19R cannot be controlled from control tower. Rwy Markings unclear.	1999	D D S D D	Taxiway lights required Approach lights frequently reported too bright.	Development plans for rehabilitation are required. Markings to be repainted.	FAAN	2001	A
	Nigeria/ Port Harcourt	Approach lighting 21L unreliable. No txwy lighting Rwy edge lights on first quarter of Rwy 21 inoperative. PAPIs inoperative. Runway marking unclear.	1999	D S D D	Inadequate visual guidance to pilots	Rehabilitation of lighting aids required Markings to be repainted.	FAAN	2001	A
	Rwanda/ Kigali	Unserviceable aids not NOTAM'ed, Runway markings unclear.	1999	D D	Pilots misguided	NOTAM office to be revamped Repaint markings	RWANDA Régie des Aéroports	1999	U B

Identification		Shortcomings				Corrective Action			
Requirements	States/ facilities	Description	Date first reported	Status	Comments	Description	Executive body	Date of complete	Priority
	Sierra Leone/ Freetown	Only 50% runway edge lighting available Markings faded	1993	D D	Inadequate visual guidance to pilots	Rehabilitate runway edge lights. Repaint markings. Revaluation of the damage caused by the war with all the lighting system.	SLAA		A B
	Somalia/ Mogadishu	VASIS not working Markings totally faded	1995	D D	Inadequate visual guidance to pilots	Evaluation of the damage caused by the war on the lighting system.	Not available		B
	Sudan/ Khartoum	VASIS not operational	1993	D		Implement PAPIs as per AFI ANP	NCAA		
	Zambia/ Lusaka	Approach lights inoperative, taxiway lights inadequate.	1999	D	Pilot's visual guidance inadequate	Project for rehabilitation of lighting system ongoing	ZNACL		A

**SHORTCOMINGS AND DEFICIENCIES
IN THE FIELD OF AERONAUTICAL TELECOMMUNICATIONS (COM)**

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

Notes:

U-1* Implementation status; i.e.

S = shortcoming
D = deficiency

Priority and classification

- ** “U” priority = **Urgent** requirements having a **direct** impact on **safety** and requiring **immediate** corrective actions.
Urgent requirement consisting of any physical, configuration, material, performance 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.

**1. SHORTCOMINGS AND DEFICIENCIES IN THE AERONAUTICAL FIXED
TELECOMMUNICATIONS NETWORK (AFTN)**

Appendix U to the Report on Agenda Item 5

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	Leased line since July 99 Dakar/Johannesburg	U
	Ethiopia Djibouti	Circuit Addis- Ababa/Djibouti	25/5/97	D	To be improved U-3	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									
	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	VSAT being considered	To implement	ASECNA Kenya		U
	Kenya Somalia	Circuit Nairobi/ Mogadishu	7/6/96	S	SITA OP between FICs	To implement LTT	Kenya Somalia	-	A
	South Africa SAM (Argentina)	Circuit Johannesburg/ Buenos Aires	7/6/96	S			South Africa Argentina		A

**2. SHORTCOMINGS AND DEFICIENCIES IN THE AIR TRAFFIC)
SERVICES DIRECT SPEECH NETWORK (ATS/DS**

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	Burundi Tanzania	Circuit Bujumbura/Da-es-salaam	"	S	"	VSAT being implemented.	Burundi Tanzania Kenya	"	U
	Burundi D.R of Congo	Circuit Bujumbura/ Goma	35798	S		To implement LTF circuit	Burundi D.R of Congo		U
	Cameroon Equatorial Guinea	Circuit Douala/Bata	"	S		To implement LTF circuit	ASECNA Equatorial Guinea		U
	Central African Republic	Circuit Bangui/ Gbadolite	"	S		To implement LTF circuit	R.C.A D.R.C		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	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		On trial	ASECNA Ghana		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
	Djibouti Eritrea	Circuit Djibouti/Asmara	7/6/96	D	To be improved	To implement LTF circuit	Djibouti Eritrea		U
	Djibouti Somalia	Circuit Djibouti/ Hargeisa	“	S		To implement LTF circuit	Djibouti Somalia		U
	D.R of Congo Zambia	Circuit: Lubumbashi/Ndola	23/5/97	S	Inmarsat phone available at Lumbumbas hi	" "	D.R of Congo Zambia		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
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	“ “	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	7/6/96	S		To implement the circuits.	Kenya Tanzania		U
		Mombasa/ Kilimanjaro	“	S					U
	Ghana Togo	Accra/Niamtougou	“	S			Ghana ASECNA		U
	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			

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	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		
	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
	Rwanda D.R. Congo	Circuit Kigali/Bukavu	7/6/96	S		VSAT SADC being considered in Rwanda. It is already operational in D.R.Congo	D.R. Congo Rwanda		U
		Kigali/Goma	“	S					
		Kigali/Kinshasa	“	S					
	Rwanda Tanzania	Circuit Kigali/ Dar-es-Salaam	7/6/96	S		To implement VSAT	Rwanda Tanzania		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 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	Inmarsat phone available at Kinshasa	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	

3. SHORTCOMINGS AND DEFICIENCIES IN THE AERONAUTICAL MOBILE SERVICE (AMS)

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
	CONGO Brazzaville ACC	ACC/F/NW	02/02/98	S		ER VHF installation in progress	ASECNA	2002	U
	D.R. OF CONGO Kinshasa FIR	Inadequate VHF coverage of busy ATS routes	1/4/98	S		Extend VHF to all upper routes Extended VHF coverage planned	RVA	End of 2001	
	Kinshasa FIR	HF poor quality Selcal not available	1/4/98	D S		Improve Installations	RVA		
	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
	NIGERIA Lagos/Murtala Muhammed	Tower VHF;	36168	D	No back-up radio	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	36168	D	Low power		Zimbabwe			

4. SHORTCOMINGS AND DEFICIENCIES IN THE RADIONAVIGATION SERVICE (NAVAIDS)

Appendix U to the Report on Agenda Item 5

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/U-1501/98	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	SD		To repair	“		U
	Dem. Rep. of Congo/Kinshasa	DME	15/1/98	D	Flight calibration not done		“		A
	Dem. Rep. of Congo/Kisangani	VOR/DME	15/01/98	D		To repair	”		A
Dem. Rep. of Congo/Lubumbashi	DME	15/1/98	D	Flight calibration not done		“	D.R. Congo		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
	Gambia /Banjul	DME	15/01/98	D	Unserviceable	To repair	Gambia		U
AFI/7, Rec. 10/4	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	36169	D	Intermittent		Guinea Bissau		A
	Kenya /Mandera	VOR/DME	15/01/98	S		Implement facility	Kenya		U
	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	

Appendix U to the Report on Agenda Item 5

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/Morondava	VOR	15/01/98	S		Implement facility	Madagascar		A
	Madagascar/Nosy-Be/Fascene	ILS 23	15/01/98	S		“	”		A
AFI/7, Rec. 10/4	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
	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	36526	D	facilities not calibrated			2001	A
	Sao Tome/Sao Tome	ILS 01	15/01/98	S		Implement facility	Sao Tome		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
	Sierra Leone Freetown/Lungi	ILS VOR/DME	01/01/99 01/01/99	D D	Unservice-able		Sierra Leone		A A
	Somalia /Hargeisa	VOR/DME	15/01/98	S		Implement facility	Somalia		U
	Somalia/Mogadishu	VOR/DME	15/01/98	S	U-18	“	”		U
AFI/7, Rec. 10/4	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	36169	D	No flight check	“	“		

Appendix U to the Report on Agenda Item 5

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
	Dar-Es-Salaam	DME	36168	D	Unserviceable		Tanzania		A
	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
AFI/7, Rec. 10/4	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

SHORTCOMINGS/DEFICIENCIES IN THE AIR TRAFFIC MANAGEMENT FIELD
(Ref. Air Navigation Plan - Africa-Indian Ocean Region (Doc 7474))
PART V - AIR TRAFFIC MANAGEMENT (ATM)

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
ALGERIA	Alger FIR								
AFI/7 Rec.5/8 and Table ATS 1 AFI ANP Doc.7474/27	Route UA293	(Ibiza) KIRLA Tiaret	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Algeria	17/05/2001	A
“	Route UA865	Menorca Cherchell	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Algeria	“	A
“	Route UG623	Annaba Tebessa Ghadames	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Algeria	“	A
“	RNAV UM999	Casablanca Errachidia El Golea zarzaitine Sebha Sarir New Valley Luxor Jeddah	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Algeria Egypt Libya Morocco Saudi Arabia	“	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UR981	Casablanca Marrakech BULIS Gao Niamey Lagos	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date (Route segment implemented in Algeria)	Mali Mauritania Morocco Niger Nigeria	17/05/2001	A
“	Route UR986	Tunis Ghadames)* segment In Amenas) Djanet) Kano Foumban Yaoundé France Ville	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Algeria	“	A
Annex 11 Appendix 2	Five letter name code	Route crossings not identified	1998	D	Difficulties for Pilots identifying potential traffic conflicts	ICAO Regional Office concerned allocate the 5 letter name codes	Algeria	Dec. 2002	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
ANGOLA	Luanda FIR								
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	RNAV UM731	Carbonara OSMAR Tunis Jerba FARES Dirkou N'Djamena Beriberati Saurimo Johannesburg	1996	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Angola Botswana Central Africa Republic Congo (DRC) Chad Libya Niger South Africa Zambia	17/05/2001	A
AFI/7 Rec.5/21	Provision of ATC 150 NM concept	Non-provision of ATC service 150 NM of Luanda and Huambo	1988	D	Delayed descend for arrival and steep climb for departure	Implemented as required	Angola	“	U
BOTSWANA	Gaborone FIR								
AFI/7 Rec.5/21	RNAV UM731	Johannesburg Saurimo	1990	S	Aircraft subjected to fly non- economical routes	State concerned to coordinate common implementation date	Angola Botswana South Africa Zambia	Implemented by 29/11/2001 with South Africa	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
“	RNAV UM998	Gaborone Luena Kinshasa	1990	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Angola Botswana Congo (DRC)	“	A
CAMEROON	Brazzaville FIR								
AFI/7 Rec.5/8 Table ATS 1 Doc.7474/27	Route UA861	Lagos Garoua	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	”	A
COMOROS	Antananarivo FIR								
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UR996	Nampula Moroni ODAKA	1996					Amendment proposal to delete the route under circulation (ESAF 2001/ - ATS)	A
AFI/7 Rec.5/21	Provision of ATC 150 NM concept	Non-provision of ATC service 150 NM of Moroni	1988	D	Delayed descend for arrival and steep climb for departure	Implemented as required	Comoros Madagascar	17/05/2001	U

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
CONGO	Brazzaville FIR								
AFI/7 Rec.5/6	Letters of Agreements	Letters of Agreement not yet signed	1998	D	non-compatible ATC procedures	State concerned to follow-up	Congo and adjacent States	“	A
LIM AFI Rec.10/38	SSR Provision of effective surveillance	Need for SSR surveillance in extended TMA as expressed in the AFI CNS/ATM Plan	1988	D	Traffic density/ complexity contributing to frequent ATS incidents	Implement SSR at Brazzaville	Congo	As soon as possible	U
CONGO (DRC)	Kinshasa FIR								
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UA408	Harare Kalemie Bujumbura Kigali Entebbe			Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Congo (DRC)	17/05/2001	A
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UA617	Kinshasa Windhoek	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date (Coordination meeting with military authorities on going)	“	17/05/2001	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
“	RNAV UL612	Goma El Dhaba (Paleohoral)	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Congo (DRC) Egypt Sudan	“	A
	UA 607	N'Dola Lubumbashi Bangui	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Congo (RDC)	31/12:96	B
	UA 617	Kinshasa Windhoek	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Congo (RDC)	31/12:96	B
	UA 618	Lubumbashi Bukavu SAGBU Malakal	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date (Implemented in DRC, but the route segment EDGOX - SAGBU is suspended by contingency procedures)	Congo (RDC)	31/12:96	B
	UB 527	Lubumbashi Kalemie Bujumbura Kigali	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date (Deleted in DRC, traffic passing by UA618)	Congo (RDC)	31/12:96	B

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
	UB 607	Bujumbura Goma El Obeid	1995	S	Aircraft subjected to fly non-economical routes (Does not exist in DRC)	States concerned to coordinate common implementation date	Congo (RDC)	31/12:96	B
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	UM731	Johannesburg Saurimo Berberati	1995	S	Aircraft subjected to fly non-economical routes	States concerned to coordinate common implementation date (Need of VHF coverage before implementation)	Angola Botswana Congo (DRC)	“	A
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	UR984	Lilongwe Kasama Kindu Bangui	1995	S	Aircraft subjected to fly non-economical routes	States concerned to coordinate common implementation date	Implement as required	“	A
EGYPT	Cairo FIR								
AFI/7 Rec.5/21	Route UM999	Sebha Sarir New Valley Luxor Jeddah	1995	S	Aircraft subjected to fly non-economical routes	States concerned to coordinate common implementation date	Algeria Libya	17/05/2001	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
ERITREA									
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UB525	Addis Ababa ALEBA Luxor	1996	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Eritrea	“	A
GABON		Brazzaville							
AFI/7 Rec.5/6	Letters of Agreements	Letters of Agreement not yet signed	1998	D	non-compatible ATC procedures	State concerned to follow-up	Gabon	2000	A
KENYA		Nairobi FIR							
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	RNAV UM220	Lodwar A. Simbel	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	17/05/2001	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
AFI/7 Rec.5/1	P2 R10 D20 Airspace management	Prohibited area Restricted area Danger area	1990	D	Non-availability of direct routing	Withdraw these areas	“	”	A
LIBYA	Tripoli FIR								
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UA411	Jerba Tripoli Beni-Walid Benina GERFA Mersa Matruh Cairo	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	”	A
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UA748	(Gozo) Tripoli Mizda Cairo Sharm Sheikh	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Libya and adjacent States	17/05/2001	A
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UG623	BALEN Annuba Tebessa Ghadames	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Libya	“	A
“	Route UG855	Tripoli Ghadames B. Omar Driss	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	”	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UG864	Tunis Tebessa Ghardaia Timmimoun	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	17/05/2001	A
“	RNAV UM731	Dirkou Jerba	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	”	A
“	RNAV UM994	Monastir Mitiga Beniwalid ORNAT	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	”	A
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	RNAV UM999	Zarzaitine Sebha Sarir New Valley	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Libya	17/05/2001	A
“	Route UR616	Pantelleria Lampedusa Tripoli	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	”	A
AFI/7 Rec.5/21	Provision of ATC 150 NM concept	Non-provision of ATC 150 NM of Tripoli	1990	S	Delayed descent for arrival and steep climb for departure	Implement as required	Libya	As soon as possible	U

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
“	Route UR996	Johannesburg Moroni Haima	1991	S			“	Amendment proposal to delete the route under circulation (ESAF 2001/ - ATS)	A
MALAWI	Lilongwe FIR								
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UR984	Lilongwe Kasama Kindu Bangui	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Malawi	17/05/2001	A
AFI/7 Rec.5/21	ATC Provision of ATC 150 NM concept	Non-provision of ATC service 150 NM of Lilongwe	1990	D	Delayed descent for arrival and steep climb for departure	Implement as required	“	2000	U
AFI/7 Rec.5/1	ATS Provision of ATS	Efficiency of ATS	1998	D		Establish ATS operational auditing and proficiency maintenance procedures (AFI/7 Rec 5/27 refers)	Malawi	Immediately	U

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
AFI/7 Rec.5/1	Provision of ATS Airspace Management	Inadequate airspace management between ATS units leading to frequent traffic incidents in the FIR boundaries between Lilongwe and Harare FIRs not responding to existing route structure flows	1998	D	Frequent ATS incidents in the area attributed to airspace management	Need for urgent meeting of the States concerned to address the problem of airspace management and prevalent ATS incidents in the area	Malawi and Zimbabwe	LOAs signed to the effect with Mozambique, Tanzania and Zambia	U

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
MOROCCO	Casablanca FIR								
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UR981	Casablanca Marrakech BULIS	1995	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Mauritania	25 March 1999 Lower airspace only	A
“	Airspace Management	Problems associated with non flight level allocations on ATS routes	1998	D	Non-standard flight level allocations contributed to ATS incidents	State concerned meet to address issues under column 3	Nigeria Morocco Mauritania Senegal Portugal	Immediately	U
“	(SSR) Provision of effective surveillance	Need for SSR surveillance in extended TMA as expressed in the AFI CNS/ATM Plan	1988	S	Traffic density/ complexity contributing to frequent ATS incidents	Implement SSR at Casablanca	Morocco	“	U
MOZAMBIQUE	Beira FIR								
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UG465	Praslin Beira Johannesburg	1990	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Mozambi- que	17/05/2001	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
“	Route UR996	Johannesburg Beira Moroni	1990	S				Amendment proposal to delete the route under circulation (ESAF 2001/ - ATS)	A
AFI/7 Rec.5/21	Provision of ATS Airspace Management	Inadequate airspace management between ATS units leading to frequent traffic incidents in the FIR boundaries between N'djamena, Tripoli, Niamey and Lagos not responding to existing route structure flows	1998	D	Frequent ATS incidents in the area attributed to airspace management	Need for urgent meeting of the States concerned to address the problem of airspace management and prevalent ATS incidents in the area	Mozambi- que and adjacent States	Immediately	U
NAMIBIA	Windhoek FIR								
AFI/7 Rec.5/21	Provision of ATC 150 NM concept	Non-provision of ATC service 150 NM Windhoek	1994	S	Delayed descent for arrival and steep climb for departure	Implemented as required	Namibia	2000	U

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	RNAV UM731	Johannesburg Saurimo	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	South Africa	29/11/2001	A
“	Route UM998	Johannesburg Saurimo	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	”	A
SUDAN	Khartoum FIR							“	
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UA618	Bukavu Malakal	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Sudan	17/05/2001	A
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UB525	AddisAbaba Luxor	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Sudan	17/05/2001	A
AFI/7 Rec.5/8 Table ATS 1 AFI ANP Doc.7474/27	Route UB527	Malakal Kenana	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	Sudan	17/05/2001	A
“	Route UB607	Bujumbura Goma El Obeid New Valley El Dabha	1994	S	Aircraft subjected to fly non- economical routes	States concerned to coordinate common implementation date	“	”	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
AFI/7 Rec.5/1	P4 Airspace Management	Prohibited area	1990	D	Non-availability of direct routings	Withdraw this area	“	As soon as possible	A
AFI/7 Rec.5/1	Provision of ATS Airspace Management	Inadequate airspace management between ATS units leading to frequent traffic incidents in the FIR boundaries between Beira Lilongwe and Harare not responding to existing route structure flows	1998	D	Frequent ATS incidents in the area attributed to airspace management	Need for urgent meeting of the States concerned to address the problem of airspace management and prevalent ATS incidents in the area	Zambia and adjacent States	Immediately	U
AFI/7 Rec.5/21	Provision of ATC Service	Efficiency of ATS Saturation of TMS functions at peak hours	1998	D D		Establish ATS operational auditing and proficiency maintenance procedures (AFI/7 Rec 5/27 refers) Need to improve reorganise TMA to cope with traffic demand	Zambia	Immediately	U
ZIMBABWE	Harare FIR								
AFI/7 Rec.5/1	D23 P14 Airspace Management	Danger area Prohibited area	1990	D	Non-availability of direct routing	Withdraw the areas	Zimbabwe	As soon as possible	A

**SHORTCOMINGS/DEFICIENCIES IN THE FIELD OF SEARCH AND
RESCUE SERVICES (SAR)**
(Ref. Air Navigation Plan - Africa-Indian Ocean Region (Doc 7474))
PART VII - SEARCH AND RESCUE SERVICES (SAR)

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
ANGOLA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordination with States concerned	Angola and Adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1997	D	Delay to conduct SAR OPS	i) Provide SPOC to ICAO ii) Implement 406/121.5 MHz	Angola	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation		Immediately	A
BENIN									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Benin and adjacent States	30/9/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordinate with States concerned	Burkina Faso and Adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Burkina Faso	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation		Immediately	A
BURUNDI									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordinate with States concerned	Burundi and Adjacent States	Cannot be determined until the current political situation in the Great Lakes area improves.	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406 MHz	Burundi	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation		Immediately	A
CAMEROON									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordinate with States concerned	Cameroon	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	Implement 406/121.5 MHz	Cameroon	30/9/2000	A
CENTRAL AFRICAN REPUBLIC									
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Lack of legal authority could delay SAR efficiency	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Central African Republic	30/9/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation		Immediately	A
COMOROS									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1991	D	Delay to conduct SAR OPS	Coordinate with States concerned	Comoros and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	Provide SPOC to ICAO	Comoros	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Comoros	Immediately	A
CONGO									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordinate with States concerned	Congo and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	Implement 406/121.5 MHz	Congo	30/9/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Congo	Immediately	A
CONGO (DRC)									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR Operations	Coordination with States concerned	Congo (DRC) and adjacent States	30/9/2000 Agreement signed with Zambia	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR Operations	Coordination with States concerned	Congo (DRC)	Mandatory carriage signed at ministerial level	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Congo (DRC)	Immediately Draft ready and signed at ministerial level	A
CÔTE D'IVOIRE									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Côte d'Ivoire and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1993	D	Delay to conduct SAR OPS		Côte d'Ivoire	30/9/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Côte d'Ivoire	Immediately	A
DJIBOUTI									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1991	D	Delay to conduct SAR OPS	Coordinate with States concerned	Djibouti and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHZ and 121.5 MHZ	1993	D	“	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Djibouti	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Djibouti	Immediately	A
EGYPT									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR agreements	-	1995	D	Delay to conduct SAR Operations	Coordination with States concerned	Egypt and adjacent States	30/9/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHZ and 121.5 MHZ	1993	D	Delay to conduct SAR Operations	Coordination with States concerned	Egypt	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Egypt	Immediately	A
EQUATORIAL GUINEA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1991	D	Delay to conduct SAR OPS	Coordinate with States concerned	Equatorial Guinea and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Equatorial Guinea	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Equatorial Guinea	Immediately	A
ERITREA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordination with States concerned	Eritrea and Adjacent States	Undetermined	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1997	D	Delay to conduct SAR OPS	Implement 406 MHz	Eritrea		A
Annex 12, 2.1		Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Eritrea	“	A
ETHIOPIA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordinate with States concerned	Ethiopia and adjacent States	30/9/2000	A
GABON									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1990	D	Delay to conduct SAR OPS	Coordinate with States concerned	Gabon and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	Provide SPOC to ICAO	Gabon	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Gabon	Immediately	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
GAMBIA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1991	D	Delay to conduct SAR OPS	Coordinate with States concerned	Gambia and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1993	D	Delay to conduct SAR OPS	Implement 406 MHz	Gambia	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Gambia	Immediately	A
GHANA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1994	D	Delay to conduct SAR OPS	Coordinate with States concerned	Ghana and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1993	D	Delay to conduct SAR OPS	Implement 406 MHz	Ghana	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Ghana	Immediately	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
GUINEA									
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	Implement 406/121.5 MHz	Guinea	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Guinea	Immediately	A
GUINEA BISSAU									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Guinea Bissau and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHZ and 121.5 MHZ	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Guinea Bissau	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Guinea Bissau	Immediately	A
KENYA									

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Kenya and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Kenya	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Kenya	Immediately	A
LESOTHO									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Lesotho and adjacent States	30/9/2000 Draft completed awaiting signature	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1993	D	Delay to conduct SAR OPS	Implement 406 MHz	Lesotho	30/9/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Lesotho	Immediately Act submitted to Parliament	A
LIBERIA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Liberia and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Liberia	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Liberia	Immediately	A
LIBYA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Libya and adjacent States	30/9/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Libya	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Libya	Immediately	A
MADAGASCAR									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Madagascar and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHZ and 121.5 MHZ	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Madagascar	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Madagascar	Immediately	A
MALAWI									

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordinate with States concerned	Malawi and Mozambique	Agreements signed with Tanzania and Zambia	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Malawi	30/9/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Malawi	Immediately	A
MALI									
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1993	D	Lack of legal authority could delay SAR efficiency	Implement 406 MHz	Mali	30/12/2000	A
MAURITANIA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR agreements	-	1995	D	Delay to conduct SAR Operations	Coordination with States concerned	Mauratania and adjacent States	30/12/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1997	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Mauritania	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Mauritania	Immediately	A
MAURITIUS									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR agreements	-	1995	D	Delay to conduct SAR Operations	Coordination with States concerned	Mauritius and adjacent States of India Madagascar and Maldives	SAR agreements signed with Australia and France (La Reunion). Agreements with South Africa being considered.	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1993	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406 MHz	Mauritius	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Mauritius	Implementation in progress (13/12/2000)	A
MOROCCO									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR agreements	-	1995	D	Delay to conduct SAR Operations	Coordination with States concerned	Morocco and adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Morocco	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Morocco	Immediately	A
MOZAMBIQUE									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR agreements	-	1995	D	Delay to conduct SAR Operations	Coordination with States concerned	Mozambique	30/12/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1997	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	“	”	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Mozambique	Immediately	A
NAMIBIA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1991	D	Delay to conduct SAR OPS	Coordination with States concerned	Namibia and Adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Namibia	“	A
NIGER									
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Niger	“	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
NIGERIA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Nigeria and adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR Operations	Implement 406/121.5 MHz	Nigeria	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Nigeria	“	A
RWANDA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Rwanda and adjacent States	“	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Rwanda	“	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Rwanda	Immediately	A
SAO TOME									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordination with States concerned	Sao Tome and Adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1997	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Sao Tome	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Sao Tome	Immediately	A
SENEGAL									
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR Operations	Implement 406/121.5 MHz	Senegal	30/12/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
SEYCHELLES									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Seychelles and adjacent States		A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR Operations	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Seychelles	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Seychelles	Immediately	A
SIERRA LEONE									
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Lack of legal authority could delay SAR efficiency	Implement 406/121.5 MHz	Sierra Leone	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Sierra Leone	Immediately	A
SOMALIA									

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Somalia and adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHZ	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHZ	Somalia	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Somalia	Immediately	A
SOUTH AFRICA									
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	South Africa	“	A
SUDAN									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordination with States concerned	Sudan and Adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHZ	1997	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHZ	Sudan	30/12/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Sudan	Immediately	A
SWAZILAND									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Swaziland and adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Swaziland	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Swaziland	Immediately	A
TANZANIA									

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Tanzania and adjacent States	August 2001	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 Mhz	1993	D	Delay to conduct SAR OPS	Implement 406 MHz	Tanzania	2005	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Tanzania	Discussions going on with the Ministry Headquarters MOU signed. Implementation by April 2002	A
TCHAD									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1991	D	Delay to conduct SAR OPS	Coordinate with States concerned	Chad and adjacent States	30/9/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Chad	30/9/2000	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995		Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Tchad	Immediately	A
TOGO									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned. October 1998	Togo and adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406/121.5 MHz	Togo	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Togo	Immediately	A
TUNISIA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Tunisia and adjacent States	30/12/2000	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Tunisia	Immediately	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
UGANDA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1995	D	Delay to conduct SAR OPS	Coordinate with States concerned	Uganda and adjacent States	31/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406 MHz	Uganda	“	A
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Uganda	30/12/2000	A
ZAMBIA									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Zambia Angola, Mozambique and Zimbabwe	Concluded with Democratic Republic of Congo, Malawi and Tanzania	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz	1993	D	Delay to conduct SAR OPS	Implement 406 MHz	Zambia	“	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements 1	States/ facilities 2	Description 3	Date first reported 4	Status 5	Comments 6	Description 7	Executing body 8	Target date for implementation 9	Priority for action 10
Annex 12, 2.1	SAR legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Zambia	Immediately	A
ZIMBABWE									
Annex 12, 3.1.5 AFI/7 Conc.6/3	SAR Agreements	-	1996	D	Delay to conduct SAR OPS	Coordinate with States concerned	Zimbabwe and adjacent States	30/12/2000	A
Annex 12, 2.4 Annex 12, 3.2.4 AFI/7 Rec. 6/1 and 6/2	SARSAT ELT	406 MHz and 121.5 MHz	1993	D	Delay to conduct SAR OPS	i)Provide SPOC to ICAO ii)Implement 406 MHz	Zimbabwe	30/12/2000	A
Annex 12, 2.1	SAR Legislation	Provide legal framework for the SAR Authority	1995	D	Lack of legal authority could delay SAR efficiency	Establish SAR legislation	Zimbabwe	In progress- August 2000 Draft ready. Implementation before end 2001	A

SHORTCOMINGS/DEFICIENCIES IN THE FIELD OF AERONAUTICAL INFORMATION SERVICES (AIS)
(Ref. Air Navigation Plan - Africa-Indian Ocean Region (Doc 7474))
PART VIII - AERONAUTICAL INFORMATION SERVICES (AIS)

Identification		Shortcomings/deficiencies				Corrective action			
ANGOLA									
Annex 15, 3.4.4 AFI/7 Rec.12/29	Coordinates WGS84	Accuracy of coordinates in accordance with Annexes 11 and 14	1/1/98	S	Delay in introduction of GNSS	Implement WGS- 84 coordinates	Angola	30/12/2000	U
Annex 4 AFI/7 Rec.12/31 and Rec.12/32	ICAO Mandatory Charts	Non- availability of the ICAO Aerodrome Chart and the ICAO Aerodrome Obstacle Chart - Type A	1990	S	Lack of charts affects safety	Publish these Charts for Luanda and Huambo	Angola	“	U
Annex 15, 5.1 Annex 15, 6.11 AFI/7 COM 12/7	NOTAM	Irregular Publication of NOTAM	1990	D	Lack of NOTAM affects safety	Publish regularly	Angola	Immediately	U

Identification		Shortcomings/deficiencies				Corrective action			
CAMEROON									
Annex 15, 5.1 Annex 15, 6.11 AFI/7 COM 12/7	ICAO Mandatory Charts	Non- availability of the ICAO Aerodrome Chart and the ICAO Aerodrome Obstacle Chart - Type A	1990	S	Lack of charts affects safety	Publish these Charts for Yaounde	Cameroon	30/12/2000	U
COMOROS									
Annex 15, 5.1 Annex 15, 6.11 AFI/7 COM 12/7	ICAO Mandatory Charts	Non- availability of the ICAO Aerodrome Obstacle Chart - Type A	1990	S	Lack of this chart affects safety	Publish this Chart for Moroni and Dzaoudzi	Comoros	“	U
“	NOTAM	Irregular Publication of NOTAM	1990	D	Lack of NOTAM affects safety	Publish regularly	Comoros	Will soon be solved	U
CONGO (DRC)									
Annex 15, 5.1 Annex 15, 6.11 AFI/7 COM 12/7	ICAO Mandatory Charts	Aerodrome Charts outdated	1990	S	Non-updated charts affects safety	Publish new Charts	Congo (DRC)	30/12/2000	U

Identification		Shortcomings/deficiencies				Corrective action			
“	NOTAM WGS-84 provided in Kinshasa and Lubumbashi	Irregular Publication of NOTAM Accuracy of coordinates in accordance with Annexes 11 and 14	1990	D	Lack of NOTAM affects safety	Publish regularly	Congo (DRC)	Immediately	U

Identification		Shortcomings/deficiencies				Corrective action			
DJIBOUTI									
Annex 15, 8.1	Intergrated AIS package	Irregular distribution of AIS package	1/1/98	S	Non-availability of latest status of information	Distribute regularly	Djibouti	30/12/2000	A
“	AIRAC NOTAM	Non-adherence to AIRAC requirements	1994	D	Non-observation of AIRAC procedures affects regularity of flight operations	Data indicated in Appendix 4 of Annex 15 to be promulgated on AIRAC dates	Djibouti	Immediately	U
“	Coordinates WGS84	Accuracy of coordinates in accordance with Annexes 11 and 14	1/1/98	S	Delay in introduction of GNSS	Implement WGS-84 coordinates	Eritrea	30/12/2000	U
GAMBIA									
Annex 15, 8.1		Irregular distribution of AIS package	1/1/98	D	Non-availability of latest status of information	Distribute regularly	Gambia	30/12/2000	A
GUINEA									

Identification		Shortcomings/deficiencies				Corrective action			
Annex 15, 8.1	Integrated AIS package	Irregular distribution of AIS package	1/1/98	S	Non-availability of latest status of information	Distribute regularly	Guinea	“	A
GUINEA BISSAU									
Annex 15, 8.1	Coordinates WGS84	Accuracy of coordinates in accordance with Annexes 11 and 14	1/1/98	S	Delay in introduction of GNSS	Implementation of WGS-84 coordinates	Guinea Bissau	30/12/2000	U
KENYA									
Annex 15, 8.1	Intergrated AIS package	Irregular distribution of AIS package	1/1/98	S	Non-availability of latest status of AIP information	Distribute regularly	Kenya	Draft AIP New Format ready	A
LESOTHO									
Annex 15, 8.1	Integrated AIS package	Irregular distribution of AIS package	1/1/98	S	Non-availability of latest status of information	Distribute regularly	Lesotho	“	A
LIBYA									

Identification		Shortcomings/deficiencies				Corrective action			
Annex 15, 8.1	ICAO Mandatory Charts	Non-availability of ICAO Aerodrome Chart for Keetmanshoop and Windhoek	1979	S	Lack of these charts affects safety	Publish the required Charts	Namibia	“	U
RWANDA									
Annex 15, 8.1	ICAO Mandatory Aerodrome Chart ICAO Aerodrome Obstacle Chart type A	Non-availability of ICAO Aerodrome Chart and Aerodrome Obstacle Chart - Type A	1979	S	Lack of these charts affects safety	Publish the two Charts for Kigali	Rwanda	“	U
SAO TOME									
“	NOTAM	Irregular Publication of NOTAM	1991	D	Lack of NOTAM affects safety	Publish regularly	Sao Tome	Immediately	U
SIERA LEONE									

Identification		Shortcomings/deficiencies				Corrective action			
Annex 15, 8.1	NOTAM WGS-84	Irregular Publication of NOTAM Publication of reported points	1991	S	Lack of NOTAM affects safety Delay in introduction of GNSS	Publish regularly Publish the ...in the table	Roberts FIR	Immediately	U
SOMALIA									
Annex 15, 8.1	Coordinates WGS84	Accuracy of coordinates in accordance with Annexes 11 and 14	1/1/98	S	Delay in introduction of GNSS	Implementation of WGS-84 coordinates	Somalia	30/12/2000	U
Annex 15, 8.1	ICAO Mandatory Aerodrome Chart ICAO Aerodrome Obstacle Chart type A ICAO Instrument Approach Chart	Non- availability of ICAO mandatory Charts for Hargeissa Kismayu Mogadishu	1990	S	Lack of these charts affects safety	Publish the three Charts as required	Somalia	30/12/2000	U
SUDAN									

Identification		Shortcomings/deficiencies				Corrective action			
Annex 15, 8.1	Coordinates WGS84	Accuracy of coordinates in accordance with Annexes 11 and 14	1/1/98	S	Delay in introduction of GNSS	Implement WGS-84 coordinates	Sudan	30/12/2000	U
“	ICAO Mandatory Charts	Non-availability of ICAO Aerodrome Chart for Khartoum	1990	S	Lack of this chart affects safety	Publish the required Chart	Sudan	“	U
SWAZILAND									
Annex 15, 8.1	ICAO Mandatory Chart	Non-availability of ICAO Aerodrome Obstacle Chart type A for Matsapha	1991	S	Lack of this chart affects safety	Publish the required Chart	Swaziland	36889	U

Identification		Shortcomings/deficiencies				Corrective action			
Annex 15, 8.1	NOTAM AIRAC	Non-adherence to AIRAC requirements	1991	D	Non-observation of AIRAC procedures affects regularity of flight operations	Data indicated in Appendix 3 of Annex 15 to be promulgated on AIRAC dates	Swaziland	Immediately	U
ZAMBIA									
Annex 15, 8.1	Intergrated AIS package	Irregular distribution of AIS package	1/1/98	D	Non-availability of latest status of information	Distribute regularly	Zambia	“	A

SHORTCOMINGS/DEFICIENCIES IN THE METEOROLOGY FIELD
(REF. Air Navigation Plan - Africa-Indian Ocean region (Doc 7474))
PART IV - METEOROLOGY (MET)

Identification		Shortcomings/deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
Implementation of MET facilities and services - AFI/7 Rec. 14/10	Angola/Luanda 4 de Fevereiro	Exchange of OPMET deficient - Problems of institutional aspect	1996	ID	Advice given through correspondence and mission	Reorganize MET Services for autonomous management	Angola	-	U
Implementation of aeronautical MET offices - AFI/7 Rec. 14/11	Burundi/Bujumbura	Inadequate staffing	1990	ID	Advice given through correspondence and mission	Training of Forecasters	Burundi	-	B
Implementation of MET facilities and services - AFI/7 Rec. 14/10	Democratic Rep. of Congo/Kinshasa Njili	Irregular OPMET data	1992	ID	Advice through correspondence	Installation of reliable telecom. link	D. Rep. of Congo		B
Implementation of aeronautical MET offices - AFI/7 Rec. 14/11	Equatorial Guinea/Malabo	Inadequate staffing	1995	ID	Advice given through correspondence and mission	Training of MET personnel	Equatorial Guinea	-	B
Implementation of MET facilities and services - AFI/7 Rec. 14/10	The Gambia/Banjul - Yundum Intl.	Wind measurement unreliable	1994	ID	Advice given through correspondence	Installation of reliable wind equipment	The Gambia	-	A

Identification		Shortcomings/deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
Implementation of MET facilities and services - AFI/7 Rec. 14/10	Guinea Bissau/ Bissau Osvaldo V.	Trend type landing forecasts not issued	1995	NI	Advice given through correspondence	Forecast unit to issue Trend type landing forecasts	Guinea Bissau	-	B
Implementation of MET facilities and services AFI/7 Rec.14/10	Lesotho/ Maseru Moshoeshoe 1	1) Siting of the observatory in an unsuitable location	1993	ID	Advice given through missions	Identify a suitable location	Lesotho	-	U
		2) Anemometer on RWY 04 has been unserviceable for many months	1997	ID	Advice given through missions	Instal a new sensor with displays at appropriate ATC and MET positions	Lesotho	-	U
Implementation of MET facilities and services - Implementation of aeronautical MET offices AFI/7 Rec. 14/10 and 14/11	Liberia/ Roberts Intl.	1) Assistance to operators and crew members deficient	2000	ID	Advice given to authorities	Adequate equipment	Liberia		U
		2) inadequate staffing	2000	ID	Advice given to authorities	Training of forecasters	Liberia		U
Implementation of MET facilities and services - AFI/7 Rec. 14/10	Malawi/ Lilongwe Intl.	Irregular OPMET data	1992	ID	Advice through correspondence	Installation of reliable telecom. link	Malawi	-	B

Identification		Shortcomings/deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Status	Comments	Description	Executing body	Date of completion	Priority
1	2	3	4	5	6	7	8	9	10
Implementation of MET facilities and services - AFI/7 Rec. 14/10	Kano MA	Provision of MET data to ATS deficient	1996	ID	Advice given through correspondence and mission	Better display system of MET data to ATS units	Nigeria	2001	B
Implementation of aeronautical MET offices AFI/7 Rec.14/11	Rwanda/Kigali G.K.	Inadequate staffing	1994	ID	TC Project RWA/87/006	Further training is needed	UN - Rwanda		B
Implementation of MET facilities and services. Implementation of aeronautical MET offices AFI/7 Rec. 14/10 and Rec 14/11	Sao Tomé & Principe/ Sao Tomé	Irregular OPMET data inadequate staffing	1991	ID	Advice given through correspondence	Installation of reliable telecom. link. Training of MET personnel	Sao Tome & Principe		B
Implementation of MET facilities and services - AFI/7 Rec. 14/10	Sierra Leone/ Lungi Airport	Data from basic MET equipment unreliable	1994	ID	Advice given through correspondence	Installation of reliable MET basic equipment	Sierra Leone	-	B
Implementation of MET facilities and services AFI/7 Rec.14/10	Swaziland/ Manzini Matsapha Airport	Wind sensor height about 30 meters above aerodrome elevation	1993	ID	Advice given through missions	Lower the height of the wind sensor to recommended WMO/ICAO standards	Swaziland	-	A

 EXPLANATORY NOTES FOR APPENDICES ON SHORTCOMINGS DEFICIENCIES

1. Requirement identified at a given meeting through a recommendation; name of the meeting and the related recommendation number
2. Name of the State or States involved and/or the name of the facilities such as name of airport, FIR, ACC, TWR, etc.
1. Brief description of the deficiency :
2. Date shortcoming/deficiency was first reported :
3. status of implementation; i.e. NI = not implemented
 ID = implemented but deficient
4. Appropriate important references (Meetings, Reports, etc). This field would include any information that could assist in the monitoring and reviewing of activities undertaken to resolve the identified shortcoming/deficiency.
5. Brief description of the corrective actions to be undertaken ;
6. Identification of the executing body.
7. Expected completion date of the corrective action ; and
8. Priority and classification

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

Urgent requirements consisting of any physical, configuration, material, performance, personnel or procedures specifications, 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.

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.

Conclusion/Follow-up	Action by PIRG	Q3, 2001			Q4, 2001			Q1, 2002			Q2, 2002			Q3, 2002		
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Database developments (Conclusion 4/13)																
ICAO to post promptly all tabular material from all regional air navigation plans relating to facilities and services to an ICAO-controlled web site in a simple PDF format	Note that ICAO has already implemented this task for the AFI and MID Regions – ongoing task															
ICAO to invite CNS/ATM partners to post their relevant planning material on the web site referred to above	Note that ICAO is progressing the task															
ICAO to provide appropriate free access to relevant ICAO Headquarters' Sections, Regional Offices, PIRGs and participating CNS/ATM partners	Note															
ICAO to maintain the currency of this database, inter alia, to take account of amendments made to hard copy ANPs	Note – ongoing task															
ICAO, with the assistance of PIRGs and interested CNS/ATM partners, to refine and develop the database, as a matter of urgency, to provide access and functionality commensurate with its use as a planning tool and in line with ICAO sale of publications	Support ICAO in the implementation of this task															
Expansion of the Universal Safety Oversight Audit Programme (Conclusion 4/14)																
The Universal Safety Oversight Audit Programme to be expanded to include Annexes 11 and 14 and the necessary resources made available	Note that ICAO is progressing the task															
Remedial action (Conclusion 4/15)																
In following up the audits carried out in the context of the Universal Safety Oversight Audit Programme, the necessary remedial actions to be taken as a matter of urgency.	Invite States and regional offices to initiate remedial action as a follow-up to the audits															
Databases for CNS/ATM systems planning activities (Conclusion 4/16)																
ICAO to set up a mechanism to collect and update the relevant data to be used by regions, sub-regions and States for their CNS/ATM systems planning activities.	Note that ICAO is progressing the task															

**TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION
OF THE AERODROME OPERATIONAL PLANNING SUB-GROUP (AOP/SG)**

1. Terms of reference

a) In the field of aerodrome operational planning:

To keep under review the adequacy of the requirements contained in the ICAO Regional Air Navigation Plan taking into account changes to aircraft operations, new operational requirements and/or technological developments and propose amendments as required.

b) In the field of aerodrome services:

To identify, assess and track critical shortcomings and deficiencies in the provisions of aerodrome installations, equipment and services with priority to:

- i) aerodrome power supply;
- ii) visual aids;
- iii) rescue and fire fighting;
- iv) aerodrome fencing;
- v) bird hazards;
- vi) aerodrome emergency planning; and
- vii) pavement surface condition.

2. Work programme:

No.	Task description	Priority	Target Date
1	Review at each AOP/SG meeting the content of the Table AOP 1 and where necessary, after coordination with users and operators, introduce the respective changes through the established procedures. (AFI/7 RAN Meeting Conc. 3/2.)	A	Continuing
2	Develop a data base on shortcomings and deficiencies in the AOP field including their safety assessment according to the ICAO approved procedures and at each AOP/SG meeting, review and update the data base and identify requirements for possible technical cooperation. (AFI/7 RAN Meeting Concs. 14/1 and 14/2 and Rec. 14/3)	A	Continuing
3	Review the severity of the bird hazard and the status of implementation of appropriate bird hazard reduction measures in the Region .(AFI/7 RAN Meeting Conc. 4/7)	A	Continuing
4	Review States efforts to allocate the necessary resources to ensure the establishment of preventive maintenance at their aerodromes in order to provide adequate maintenance of facilities, installations and services. (AFI/7 RAN Meeting Conc. 4/10)	A	APIRG/14

No.	Task description	Priority	Target Date
5	Review the need and monitor the measurement and reporting by States of the surface condition and unevenness on movement areas at aerodromes in the AFI Region. (AFI/7 RAN Meeting Rec. 4/4)	B	APIRG/14
6	Review the provision of rescue and fire fighting services and emergency planning at international aerodromes in the AFI Region and monitor the switch over to the use of environmentally friendly materials for fire fighting. (AFI/7 RAN Meeting Conc. 4/6)	A	APIRG/14
7	Review and monitor the development and implementation of guidelines and procedures for surface movement guidance and control systems at complex airports and during low visibility conditions. (Input to CNS/ATM planning process)	C	APIRG/15
8	Review, assess and provide guidance on the impact of the operations of the new larger aeroplanes at aerodromes in the AFI Region.	B	APIRG/15
9	Review and monitor the implementation of new approach and landing systems in order to ensure smooth transition and optimization of the performance of the systems implemented. (Input to CNS/ATM planning process)	A	APIRG/14
10	Monitor the progress in the implementation of the common geographical reference system (WGS-84) and the publication of coordinates of significant points with required degree of accuracy in the AFI Region. (AFI/7 RAN Meeting Recs. 12/28 and 12/29)	A	APIRG/14
11	Review and monitor the status of implementation of visual aids in the AFI Region and of provision of resources for ensuring preventive maintenance, human factors and progress in technology development in order to achieve increased safety and capacity. (AFI/7 RAN Meeting Conc. 4/1, Rec. 14/7)	A	APIRG/14
12*	Review and monitor the traffic growth in the AFI Region in order to develop appropriate guidance for the development of planning criteria.	B	APIRG/14
13	Monitor the work being conducted by the ICAO Air Navigation Commission on the impact of new larger aeroplanes at aerodromes and assess the particular circumstances pertaining to the aerodromes in the AFI Region.	A	APIRG/15
14	Taking into account human factors, study problems and make specific recommendation related to AOP personnel, with a view to ensuring the best services (AFI/7 RAN Meeting, Rec. 14/7)	A	Continuing

Priority:

- A High priority tasks, on which work should be speeded up;
- B Medium priority tasks, on which work should be undertaken as soon as possible, but without detriment to priority A tasks;
- C Lesser priority tasks, on which work should be undertaken as time and resources permit, but without detriment to priority A and B tasks.
- * This task will be a subject of coordination with the Traffic Forecasting Task Force.

3. Composition:

Angola, Algeria, Burkina Faso, Cameroun, Cape Verde, Congo, Côte d'Ivoire, Egypt, Erytrea, Gambia, Ghana, Guinea, Kenya, Malawi, Morocco, Nigeria, Senegal, South Africa, Togo, Tunisia, Uganda, Zambia, ACAC, ACI, ASECNA, IATA and IFALPA.

FUTURE WORK PROGRAMME OF THE COM SUB-GROUP

Item	Task description	Priority	Target date
1	Analyse, review and monitor shortcomings and deficiencies in the operation of the aeronautical fixed service, the aeronautical mobile service and the radio nav aids.	A	Continuing
2	Monitor the performance and implementation of the AFTN and propose corrective measures, as required	A	Continuing
3	Follow-up the implementation programme of the ATS/DS circuits and propose corrective measures, as required	A	Continuing
4	Update the AFI AFTN Routing Directory	A	Continuing
5	Follow-up the interconnection of VSAT networks in the AFI Region	A	Continuing
6	Draft, in co-ordination with the ATS/SAR/AIS Sub-group, a plan for the extension of VHF coverage in the AFI region along all ATS routes shown in Table ATS-1 (AFI/7 Rec. 5/12)	B	APIRG/14
7	Analyse and review the report of the ATN Planning Task Force on the transition from the AFTN to the ATN.	B	APIRG/14
8	Review of the survey on AFTN circuits performance in the AFI Region by IATA.	B	APIRG/14
9	Review of VHF coverage survey in the AFI Region	B	APIRG/14
10	Follow-up the upgrading modulation rate for main AFTN circuits.	B	APIRG/14
11	Follow-up the ICAO position for the ITU-WRC meetings	B	Continuing
12	Follow-up of IFALPA proposals for VHF coverage	B	Continuing
13	Address human factors issues in the COM field	B	Continuing

Priority:

A: High priority tasks on which work should be speeded up;

B: Medium priority tasks, on which work should be undertaken as soon as possible, but without detriment to priority A tasks;

C: Lesser priority tasks, on which work should be undertaken as time and resources permit, but without detriment to priority A and B tasks.

Composition: Algeria, Angola, Congo, Côte d'Ivoire, D.R. of Congo, Egypt, Eritrea, Ethiopia, Ghana, Guinea, Kenya, Malawi, Morocco, Niger, Nigeria, South Africa, Spain, Tunisia, Zambia, ACAC, ASECNA, IATA and IFALPA.

**TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION
OF THE ATS/AIS/SAR SUB-GROUP**

1. Terms of reference

- a) To identify, State by State, those specific shortcomings and problems that constitute major obstacles to the provision of efficient air traffic management, aeronautical information services and search and rescue services and recommend specific measures to eliminate them.
- b) To keep under review the adequacy of requirements in the Air Traffic Management, Aeronautical Information Services and Search and Rescue fields, taking into account, *inter alia*, changes to aircraft operations and new operational requirements or technological developments.

2. Work programme

No.	Task description	Priority	Target date
1	Analyse the operational implications of the introduction of ICAO CNS/ATM systems in the fields of ATS, SAR and AIS/MAP and propose any required actions with a view to ensuring their smooth integration in the operational environment.	A	APIRG/13
2	Taking into account human factors, study problems and make specific recommendations related to ATS and AIS personnel, with a view to ensuring the best services to users. (AFI/7 Rec. 14/7)	A	APIRG/13
3	Study the requirements for civil/military coordination procedures, including the promotion of the implementation of the concepts of joint use of airspace, free flight, flexible tracks, etc. and consider reducing and/or eliminating prohibited, restricted and danger areas. (AFI/7 Rec. 5/3)	A	APIRG/13
*4	Determine the framework within which air traffic data collection statistical analysis and forecasting should be carried out.	C	APIRG/13
5	Review the requirements and monitor the programme of implementation of area control service. (AFI/7 Rec. 5/21)	A	APIRG/13
6	Review the existing ATS route network (including RNAV routes) on a systematic basis with a view to achieving an optimum flow of air traffic while keeping flight distances of individual flights to a minimum. (AFI/7 Rec. 5/8)	A	APIRG/13
7	Consider problems and make specific recommendations relating to ATS interface routes with other regions.	A	Continuing

No.	Task description	Priority	Target date
8	Monitor achievements and progress in the implementation of RNAV/RNP, RSP and RTSP in the AFI Region and provide recommendations in the light of acquired experience.	A	APIRG/13
9	Monitor developments in SSR planning criteria and review the allocation of SSR codes in the region to ensure there is no duplication with adjacent regions. (AFI/7 Rec. 5/20)	A	Continuing
10	Review the ATS requirements for navigation. (AFI/7 Rec. 10/4)	A	APIRG/13
11	Review of ATS requirements for communication including extension of VHF coverage. (AFI/7 Rec. 5/13, Rec. 5/12 and LIM AFI Rec. 10/36)	A	APIRG/13
12	Identify the ATS requirements for surveillance (RADAR, ADS, voice etc.) (AFI/7 Rec. 11/1)	A	APIRG/13
13	Carry out studies and develop recommendations aimed at facilitating in an effective way the existing contingency plans, reduce air traffic incidents, implementation of ACAS, ATIS, pressure-altitude reporting transponders, digital flight information service (D-FIS), RVSM, MSAW/CFIT, COSPAS/SARSAT and safety oversight programs in the AFI Region.	A	Continuing
14	Develop standard auditing and proficiency maintenance procedures to be used by States to assess the capability/competence of any ATS unit and monitor the implementation of uniform proficiency assessment for ATS personnel. (AFI/7 Conc 5/27)	B	Continuing
15	Review the requirements and monitor the implementation of search and rescue services.	B	Continuing
16	Review the requirements and monitor the implementation of AIS and MAP services, including AIS automation.	A	Continuing
17	Analyse, review and monitor shortcomings and deficiencies in the fields of ATS, AIS/MAP and SAR.	A	Continuing
<u>18</u>	<u>Develop guidance material for the reporting and investigation of air traffic incidents in the AFI Region, taking into account material developed by other organizations such as the European Commission, EUROCONTROL, FAA, etc.</u>	<u>A</u>	<u>Continuing</u>
<u>19</u>	<u>Develop a standard criteria for the determination of new ATS route requirements to be included in the ICAO AFI Air Navigation Plan</u>	<u>A</u>	<u>Continuing</u>

Priority:

- A High priority tasks, on which work should be speeded up;
- B Medium priority tasks, on which work should be undertaken as soon as possible, but without detriment to priority A tasks;
- C Lesser priority tasks, on which work should be undertaken as time and resources permit, but without detriment to priority A and B tasks.

* This task will be a subject of coordination with the Traffic Forecasting Task Force.

3. Composition:

Algeria, Burkina Faso, Cameroon, Congo, Congo (DRC), Côte d'Ivoire, Egypt, [Equatorial Guinea](#) Ethiopia, France, Gabon, Guinea, Kenya, Madagascar, Malawi, Mauritania, Morocco, Niger, Nigeria, Senegal, Spain, South Africa, Sudan, Tanzania, Togo, Tunisia, Zambia, ASECNA, IATA and IFATCA.

**TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION
OF THE METEOROLOGY SUB-GROUP (MET/SG)**

1. Terms of reference

- a) To keep under review, the adequacy of meteorological facilities and services to meet new technological developments in the air navigation field and make proposals as appropriate for implementation by States to APIRG.
- b) To identify, State by State, those specific deficiencies and shortcomings that constitute major obstacle to the provision of efficient and reliable meteorological facilities and services to meet the requirements of air navigation in the AFI Region and recommend specific measures to eliminate them.

2. Work programme

No.	Task description	Priority	Target date
1	Establish and maintain detailed lists, State by State, of the specific shortcomings of facilities for the provision of atmospheric measurements pertaining to surface wind, pressure, visibility/runway visual range, cloud base, temperature and dew point temperature considered critical for flight safety.	A	Continuing
2	Monitor the exchange of OPMET information through the AMBEX scheme in the AFI Region and between the AFI and ASIA/PACIFIC and EUR Regions.	A	Continuing
3	Plan for the introduction of efficient interregional OPMET exchanges in coordination with the COM Sub-group as required.	B	Continuing
4	Study the possibility of including other OPMET information in the AMBEX Scheme in addition to the exchanges of TAFs and AIREPs.	B	Continuing
5	Study the impact of SADIS on the AMBEX scheme and, in particular, the possible inclusion of METARS. (AFI/7 Rec. 8/4 b)	A	Continuing
6	Monitor the degree of implementation of very small aperture terminals (VSATs) for the reception of WAFS products (AFI/7 Rec. 14/12).	B	Continuing
7	Review and determine the necessary OPMET exchanges through the two-way VSAT SADIS stations in the AFI Region.	A	Continuing
8	Monitor the quality of WAFS high- and low-level significant weather charts in the AFI Region, provide feed back to WAFC, London as appropriate.	B	Continuing

No.	Task description	Priority	Target date
9	Monitor the implementation of regional procedures for the issuance of volcanic ash and tropical cyclone advisories. (AFI/7 Rec. 7/3 and 7/4)	A	Continuing
10	Review on a continuing basis the contents of Tables MET 1A and 1B and Tables MET 2A and MET 2B to ensure their validity in light of operational requirements and develop proposals to update them if necessary.	B	Continuing
11	Review the meteorological procedures in the introductory text to Part IV – Meteorology of the AFI Regional Plan FASID, as well as meteorology-related issues in other sections of the plan and relevant meteorology-related procedures contained in the <i>Regional Supplementary Procedures</i> (Doc 7030), in the light of procedures employed in other regions and develop amendment proposals as appropriate, coordinating where necessary with other APIRG Sub-groups.	A	Continuing
12	Monitor developments in the CNS/ATM systems with regard to meteorological requirements in the AFI Region.	B	Continuing
13	Develop guidelines for the use of GRIB and BUFR codes in the AFI Region.	A	Continuing

Priority:

- A High priority tasks on which work should be speeded up;
- B Medium priority tasks, on which work should be undertaken as soon as possible, but without detriment to priority A tasks;
- C Lesser priority tasks, on which work should be undertaken as time and resources permit, but without detriment to priority A and B tasks.

3. Composition

Algeria, Burkina Faso, Cameroon, Congo, Côte d'Ivoire, Egypt, Eritrea, Ethiopia, France, Gabon, The Gambia, Ghana, Guinea, Kenya, Madagascar, Morocco, Niger, Nigeria, Senegal, Spain, Tunisia, United Kingdom, Zambia, ASECNA and IATA.

**TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION
OF THE AFI CNS/ATM SYSTEMS IMPLEMENTATION COORDINATION SUB-GROUP**

1. Terms of reference

- a) Ensure the continuing and coherent development of the AFI Regional Implementation Plan for CNS/ATM Systems in the light of new developments, in harmony with the Global Air Navigation Plan for CNS/ATM Systems (Global Plan) and the plans of adjacent regions;
- b) Prepare cost/benefit analyses for CNS/ATM Implementation options;
- c) Study institutional arrangements for the implementation of CNS/ATM systems in the AFI Region.

2. Work programme

Item	Task description	Priority	Target date
1	Continue the evolutionary development of the AFI CNS/ATM Systems Implementation Plan (AFI/7 Concl. 13/1)	A	Continuing
2	Identify requirements for digital flight information service (D-FIS) and develop appropriate implementation worksheets for the concerned areas of routing (AFI/7 Concl. 13/1)	B	APIRG/15
3	Develop comprehensive business cases for competing CNS/ATM systems implementation options for the routing areas.	A	Continuing
4	Coordinate plans developed by States, international organizations, airlines and industry for the implementation of the regional CNS/ATM systems implementation plan.	A	Continuing
5	Update, on a regular basis, Chapter 2 and the tables contained in Volume II of the Global Plan.	B	Continuing
6	Advise on the Egyptian initiative for a multi-mission satellite-based system dedicated to CNS/ATM services.	B	APIRG/14
7	Monitor the research and development, trials and demonstrations within the AFI Region and information from other regions.	B	Continuing
8	Give further consideration to the concept of “Multinational ICAO AFI Air Navigation Facility/Service” addressed in the AFI/7 Report under Agenda Item 14. (AFI/7 Concl. 10/6 c))	C	Continuing
9	Identify and address as appropriate, possible sources of funding to facilitate GNSS implementation in the Africa-Indian Ocean Region. (AFI/7 Concl. 10/6 d))	B	APIRG/14

Item	Task description	Priority	Target date
10	Establish and maintain current a data base on CNS/ATM planning and implementation in the AFI Region	B	
11	Examine the planning of early implementation of SBAS to augment GNSS so as to provide precision approach capability.	B	
12	Review the report on categorization of TMAs and airports for further development of the surveillance plan and GNSS plan.	A	APIRG/14
13	Continue the development of the draft AFI Aeronautical Surveillance Plan.	A	APIRG/14
14	Identify and address, to the extent possible, institutional and legal matters related to the GNSS implementation in the region. (AFI/7 Concl. 10/6 e))	B	APIRG/14
15	Review, in due course, the requirements for the implementation of GBAS at identified locations, in accordance with the AFI GNSS strategy.	C	

Priority:

- A High priority tasks on which work should be speeded up;
- B Medium priority tasks, on which work should be undertaken as soon as possible, but without detriment to priority A tasks;
- C Lesser priority tasks, on which work should be undertaken as time and resources permit, but without detriment to priority A and B tasks.

3. **Composition**

Angola, Algeria, Botswana, Cameroon, Cape Verde, Côte d'Ivoire, Congo, D.R. of Congo, Egypt, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Mali, Mauritania, Morocco, Nigeria, Niger, Senegal, Seychelles, South Africa, Spain, Tunisia, Tanzania, Zambia, Arab Civil Aviation Commission (ACAC), ASECNA, IATA, IFALPA, IFATCA.

**TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION
OF THE TRAFFIC FORECASTING TASK FORCE (TF/TF)**

1. Terms of reference:

- a) Identify the data source (air traffic control centres or ATS units) and the data requirements for the development of medium-term (3 to 5 years) and long-term (6 to 20 years) forecasts of air traffic for the AFI Region.
- b) Develop medium- and long-term passenger, freight and total aircraft movement forecasts for the AFI Region to support the air navigation systems planning, including CNS/ATM systems implementation, taking into consideration that:
 - i) the forecasts should be developed using a methodology which links passenger and freight demand with aircraft movement forecasts directly and in a consistent manner; and
 - ii) the forecasts should cover traffic flows as contained in Doc 003.
- c) Assist in the development of cost/benefit analyses for the implementation of CNS/ATM systems components, as required.

2. Work programme

The Secretariat will prepare drafts for consideration by the task force in time for APIRG/14.

3. Composition

Six experts have been designated by the following member States as follows:

Malawi	(Economist)
Nigeria	(Information/Statistics - will submit Economist)
Senegal	(Statistician)
South Africa	(1 Economist, 1 Statistician)
Tanzania	(Economist/Statistician)
Togo	(Business and Finance)

**TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION
OF THE TASK FORCE FOR THE STUDY AND IMPLEMENTATION
OF 1 000 FT REDUCED VERTICAL SEPARATION MINIMUM (RVSM),
AREA NAVIGATION (RNAV) AND REQUIRED NAVIGATION PERFORMANCE (RNP)
IN THE AFI REGION**

1. Terms of reference

- a) To develop a comprehensive implementation plan for RVSM, RNAV and RNP in the AFI Region, taking into account the requirements contained in ICAO Doc 9574, Doc 9613, Doc 9689, Doc 4444 and other relevant reference documents.
- b) To identify any areas within the AFI Region where it may not be feasible to introduce RVSM and RNAV/RNP in the initial implementation.
- c) To determine the extent to which a cost/benefit analysis is required prior to implementation of RVSM and RNAV/RNP.
- d) To coordinate with the bodies responsible for the implementation of RVSM and RNAV/RNP in adjacent regions in order to harmonize implementation plans.
- e) To develop guidance material for RVSM and RNAV/RNP implementation in the AFI Region, including taking due account of experience gained in the SAT Region and existing material developed by other ICAO Regions (EUR, NAT, ASIA/PAC, etc.).
- f) To address any other matters, as appropriate, which are relevant to the implementation of RVSM and RNAV/RNP.

2. Work programme

Item	Task description	Priority	Target date
1	To address safety and airspace monitoring issues relating to RVSM and RNAV/RNP implementation, including safety assessment as required.	A	2002
2	To address all matters relating to air traffic services within the RVSM, RNAV/RNP and transition airspace, including relevant ATS procedures.	A	2002
3	To address pilot operations, airworthiness and aircraft approval/certification issues relating to RVSM, RNAV and RNP implementation.	A	2002
4	To establish the type of certification for aircraft and operators in the AFI Region following FAA and JAA experiences, and develop standard documents for aircraft and operator RNAV/RNP certification.	A	2002
5	To assess the impact of RVSM implementation along the ATS route network in the AFI Region.	A	2002

Item	Task description	Priority	Target date
6	To develop RVSM, RNAV and RNP standard training programme models for aircraft operators and air traffic controllers.	A	2002
7	To conduct a study on the necessary CNS capabilities for RNAV implementation in the AFI Region.	B	APIRG/14
8	To assess the possibility of applying PANS/OPS design criteria to the implementation of RNAV procedures in TMAs, and develop a reference document to validate RNAV approach procedures.	B	APIRG/14

Priority:

- A High priority tasks, on which work should be speeded up;
- B Medium priority tasks, on which work should be undertaken as soon as possible, but without detriment to priority A tasks;
- C Lesser priority tasks, on which work should be undertaken as time and resources permit, but without detriment to priority A and B tasks.

3. **Composition**

Composition of this task force is yet to be determined.

TENTATIVE MEETING SCHEDULE FOR APIRG AND ITS SUBSIDIARY BODIES

YEAR	2001				2002				2003			
Group or Sub-group	Quarter				Quarter				Quarter			
	1	2	3	4	1	2	3	4	1	2	3	4
APIRG/14									N			
AOP/SG						D						N
ATS/AIS/SAR/SG						N						D
CNS/ATM/IC/SG								D				
COM/SG							N					D
MET/SG						N						D
TF/TF					X							
ASM/TF					X							
AIS/AUTOMATION/ TF					X							

D = DAKAR

N = NAIROBI

X = TO BE DETERMINED

– END –