INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT

TWENTIETH AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP MEETING (APIRG/20)

(Yamoussoukro, Cote d'Ivoire, 30 November – 2 December 2015)

PREPARED BY THE SECRETARY OF APIRG **2 December 2015**

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PART I - HISTORY OF THE MEETING

1. VENUE AND DATE

1.1 The Twentieth Meeting of the Africa-Indian Ocean Planning and Implementation Regional Group (APIRG/20) was held back to back with the Third Regional Aviation Safety Group (RASG/AFI/3), at l'Hôtel Président in Yamoussoukro, Côte d'Ivoire, from 30 November to 2 December 2015, at the kind invitation of the Government of Cote d'Ivoire.

2. LANGUAGE AND DOCUMENTATION

2.1 The discussions were conducted in English and French languages, and the meeting documentation was issued in both languages. Translation and simultaneous interpretation services were also provided.

3. OFFICERS AND SECRETARIAT

3.1 The meeting was chaired by Mr. John Tusubira Kagoro, Chairman of the APIRG.

3.2 Mr. Barry Kashambo, Regional Director, ESAF Regional Office, Nairobi served as Secretary to the meeting. He was assisted by Mr. Mam Sait Jallow, RD, WACAF Regional Office, Dakar with the participation of Mr. Meshesha Belayneh, Deputy Director, TCB and Mr. Marcos Merens, Chief, IAAS. The following Officers from ICAO Dakar and Nairobi Regional Offices serviced the meeting:

Mr. Gaoussou Konate	DRD, WACAF Office, Dakar
Mr. Prosper Zo'o Minto'o	DRD, ESAF Office, Nairobi
Mr. Seboseso Machobane	RO/ATM, ESAF Office, Nairobi
Mr. Arthemon Ndikumana	RO/AGA, ESAF Office, Nairobi
Mr. Benoit Okossi	RO/MET, WACAF Office, Dakar
Mr. François-Xavier Salambanga	RO/CNS, WACAF Office, Dakar
Mr. Albert Taylor	RO/ATM, WACAF Office, Dakar
Mr. Nika Meheza Manzi	RO/AGA, WACAF Office, Nairobi
Mr. George Baldeh	RO/AIM, WACAF Office, Dakar
Mr. David Labrosse	RO/ATM/SAR, ESAF Office, Nairobi
Mr. Frederic Legrand	AFPP Manager

4. ATTENDANCE

4.1 The meeting was attended by 151 participants from 30 AFI States and 14 Regional /International Organizations and Industry.

4.2 The list of participants is provided at **Appendix 1** to this report.

5. OPENING OF THE MEETING

5.1 H. E. Minister of Transport, Cote d'Ivoire, Mr. Gaoussou Toure, officially opened the Twentieth Meeting of the African-Indian Ocean Planning and Implementation Regional Group (APIRG/20) and the Third Meeting of the AFI Regional Aviation Safety Group (RASG-AFI/3) which were held back to back. Also in attendance were the Honourable Deputy Mayor of Yamoussoukro, Mr. Yaoura Konan, and the Prefect of Yamoussoukro Region, Mr. André Epkonon Assomou.

6. AGENDA

6.1 The meeting adopted the following Agenda:

Agenda Item 0: Adoption of Agenda

Agenda Item 1: Follow-up on APIRG/19 and APIRG Extraordinary Meetings Conclusions and decisions

1.1. Review of the action taken by the ANC and the Council on the report of APIRG/19
1.2. Review status of implementation of APIRG/19 Conclusions and decisions
1.3. Review of status of implementation of APIRG Extraordinary Meeting Decisions

Agenda Item 2: Performance Framework for Regional Air Navigation Planning and Implementation

2.0 State of Global and Regional Aviation Safety and Air Navigation
2.1 Aerodrome Operations Planning (AOP)
2.2 Air Traffic Management and Search and Rescue (ATM/SAR)
2.3 AFI Regional Monitoring Agency (ARMA)
2.4 Communications, Navigation and Surveillance (CNS)
2.5 Aeronautical Information Management (AIM)
2.6 Aeronautical Meteorology (MET)
2.7 Other Air Navigation matters

Agenda Item 3: Adoption of the New electronic AFI Air Navigation Plan (eANP)

3.1 New Air Navigation Plan Template
3.3 Development of the eANP on a web-based platform
3.6 Action plan for further development/approval of the eANP

Agenda Item 4: Re-organization of the APIRG

4.1 New Structure of APIRG and Contributory Bodies
4.2 Consequential amendments to APIRG Procedural Handbook
4.3 Establishment and operationalization of New APIRG Structure and Contributory Bodies
4.4 Identification of priority Projects

Agenda Item 5: Terms of reference and Future Work Programme of the APIRG

Agenda Item 6: Any other business

Agenda Item 7: Venue and date of the next Meeting of APIRG

7. CONCLUSIONS AND DECISIONS

7.1 APIRG records its actions in the form of conclusions and decisions with the following significance:

a) Conclusions deal with matters which, in accordance with the meeting'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; and

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

PART II - REPORT ON AGENDA ITEMS

AGENDA ITEM 0: Adoption of the Agenda

0.1 The meeting adopted the Agenda as attached to the invitation letter to the APIRG/20 Meeting without amendments.

AGENDA ITEM 1: Follow-up action taken on APIRG/19 and APIRG Extraordinary Meeting Conclusions and Decisions

1.1 Under this agenda item, the meeting reviewed the action taken by the Air Navigation Commission (ANC) on the report of APIRG 19, the status of implementation of APIRG/19 and APIRG Extraordinary Meetings' conclusions and decisions as presented by the Secretariat.

1.2 The Group noted that the follow up action taken by the Secretariat and APIRG Sub-groups on APIRG/EO decisions would be discussed in detail under Agenda Item 4 of APIRG/20 Meeting.

AGENDA ITEM 2: Performance Framework for Regional Air Navigation Planning and Implementation

2.0 State of Global and Regional Aviation Safety and Air Navigation

2.0.1 The Secretariat made a presentation on the state of Global and Regional Aviation Safety and Air Navigation, covering the following among other issues of relevance to the APIRG.

Global Flight Tracking

2.0.2 The meeting was apprised on the development of performance-based Standards and Recommended Practices (SARPs) for normal flight tracking, addressing operator responsibility to automatically track aircraft everywhere and in oceanic areas where ATC gets position information at more than every 15 minutes, data retention for last known aircraft location purposes, and complementary provisions to facilitate a practical implementation.

Risks to Civil Aviation Arising from Conflict Zones

2.0.3 The meeting recalled State letter SMM 1/4-15/16 informing States of the development and launch of the ICAO web-based conflict zone information repository (CZIR) as well as related interim procedures approved by the Council. States were particularly requested to share their experience working with the repository and highlight any identified policy and/or technical issues related to the repository and procedures; however, at the time of the meeting, ICAO had not yet received comments from its member States. The meeting also noted the establishment by the President of ICAO Council of the Repository Review Group (RRG) tasked to periodically review the implementation and progress of the CZIR, and that an end-of-year evaluation for the CZIR would be conducted by March 2016.

> *Note from the Secretariat: At the time of APIRG/20 meeting, two AFI States (Somalia and South Sudan) had CZIR entries.*

Review of the GASP and the GANP

2.0.4 The meeting noted the timelines for the review of the Global Aviation Safety Plan (GASP) and Global Air Navigation Plan (GANP), the outcome of which will be submitted to the 39th Session of the ICAO Assembly in 2016.

2.0.5 With respect to the revision of the GANP, the meeting noted the proposed major changes and additions to its current fourth edition, including: change in the order of the modules in all figures, tables, text, to match the one of the ASBU document; updates of all roadmaps to match the changes of the ASBU document, performance-based approach for the ASBUs; guidance on financial aspects, minimum path, standardization roadmap, global ATM logical architecture in accordance with the 12th Air Navigation recommendation.

2015 Safety and Air Navigation reports

2.0.6 The meeting noted the publication of ICAO Global Safety and Air Navigation reports in accordance with the GASP and GANP provisions. Detailed information was presented on the global status of implementation of the performance-based navigation (PBN) goals established by Assembly Resolution A37-11 as summarized in **Appendix 2.0A** to this report.

Development of Tools and Performance Metrics for Needs Analysis

2.0.7 The meeting noted the development of iMPLEMENT, an ICAO No Country Left Behind (NCLB) initiative set of tools purposed to serve as decision aids for implementation integrated into iSTARS, providing relevant and sustainable solutions to States.

Safety Information Monitoring Service (SIMS)

2.0.8 ICAO SIMS supports States and service providers in the process of collecting, monitoring, visualizing information, and thus sharing progress of their State Safety Programme (SSP) and Safety Management System (SMS). States, International Organizations and service providers that are willing and able to contribute to the design and development of the early stages of this effort should submit their expression of interest through the dedicated website. SIMS will particularly enable States to:

- Track key indicators for State Safety Programs (SSP);
- Prioritize areas with identified safety concerns;
- Address and improve effective implementation (EI) of ICAO Standards and Recommended Practices (SARPs);
- Illustrate bottom line economic and social impacts of aviation development; and
- Communicate (to approved audience) status reports and progress towards agreed goals.

Sustainable implementation

2.0.9 The meeting noted the impact of ICAO activities supporting its strategic objectives on the United Nations adopted sustainable development goals (SDGs) as summarized in **Appendix 2.0B** to this report.

Activities of the Planning and Implementation Regional Groups (PIRGs) in other regions

2.0.10 The meeting was updated on the activities of the Planning and Implementation Regional Groups (PIRGs) in other ICAO regions in 2014 and 2015 as follows:

- EANPG/56 Paris, 24-27 November 2014 (ICAO Secure Portal http://portal.icao.int)
- MIDANPIRG/15, Bahrain, 8-11 June 2015 (http://www.icao.int/MID/MIDANPIRG/Pages/default.aspx)
- NATSPG/51 Paris, 23-26 June 2015 (ICAO Secure Portal http://portal.icao.int)
- GREPECAS PPRC/3, Mexico City, Mexico, 21-23 July 2015 (http://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2015-CRPP3)
- APANPIRG/26, Bangkok (Thailand), 7-10 September 2015 (http://www.icao.int/APAC/Meetings/Pages/2015-APANPIRG26.aspx)

2.0.11 The reports of EANPG/56 and MIDANPIRG/15 meetings were reviewed by the Air Navigation Commission (ANC) during sessions held in April and September 2015 respectively, and the reports of the NATSPG/51, GREPECAS PPRC/3 and APANPIRG/26 meetings were to be reviewed by the ANC in November 2015 and January 2016 respectively.

2.1 Aerodrome Operations Planning (AOP)

Review of activities of the Aerodrome Operations Planning Sub-Group

2.1.1 Under this agenda item, the meeting deliberated on the report of the Eleventh Meeting of the Aerodrome Operations Planning Sub-Group (AOP/SG/11), held in Dakar, Senegal, from 3 to 7 August 2015.

AOP/SG background

2.1.2 The meeting acknowledged the discussion on the background of the Aerodrome Operations Planning Sub-Group (AOP/SG), taking into account the terms of reference of the Sub-Group as well as its working programme. The meeting further noted that the information and other related documentation used for the discussion on the AOP/SG background could be used in the methodology for the identification of AOP related projects.

Status of Implementation of the Sub-Group Work Plan Programme as assigned by APIRG

2.1.3 The meeting was reminded that at APIRG/19 all APIRG Sub-Groups had reported completion of their review and update of the conclusions and decisions from previous APIRG meetings. Conclusions and decisions that were still valid were consolidated or reformulated.

2.1.4 The meeting also noted that although the conclusions and decisions were analysed and consolidated, there are outstanding ones that are partially or not implemented. These conclusions and decisions are related but not limited to:

a) Aerodrome emergency plans;
b) Aerodrome Certification;
c) Training of Rescue and Fire Fighting Services (RFFS) personnel;
d) Implementation of SSP and SMS; and
e) Aerodrome Inspector Training requests to Comprehensive Regional Implementation Plan for Aviation Safety in Africa (AFI Plan), etc.

2.1.5 The meeting agreed to refer some of the outstanding matters to the identification of projects.

Evaluation of the Safety targets of the High level - Abuja Ministerial Conference, 2012

2.1.6 The meeting acknowledged the information on evaluation of the implementation of the Safety targets of the High level – 2012 Abuja Ministerial Conference in the aerodrome field. The meeting recalled that during this Conference, specific and measurable aviation safety targets were established in order to enhance safety standards and implement all safety initiatives in the region. Although most of these objectives have a link with the field of aerodrome operations, only the ones considered to have direct impact on the aerodrome field were discussed.

2.1.7 The meeting noted with great concern the low pace of certification of aerodromes in the AFI Region where currently, only 22.55% of international aerodromes are certified. Moreover, it's probable that certification of some aerodromes did not follow the appropriate national and international procedures.

2.1.8 The meeting urged States to take appropriate action on certification of international aerodromes being cognizant of the Abuja Safety targets which required completion of the task by the end of 2015 and formulated the following conclusion:

Conclusion 20/01: Certification of International Aerodromes

That:

a) States are urged to comply with ICAO SARPs on certification of aerodromes which came in force since November 2003 and Abuja safety targets. States should determine under which status their international airports will operate post December 2015;
b) In line with the provisions of coordination between the RASG-AFI and APIRG, relevant technical components of aerodrome certification should be included in the projects subsidiary bodies of APIRG; and
c) The target of attainment of 45% of certification of International Aerodromes in the AFI Region by end of 2016 is recommended in harmony with the approved AFI Plan targets for the same period.

Procedures for Air Navigation Services - Aerodromes (PANS – Aerodromes, Doc 9981) and Amendments of Annex 14, Volumes I and II

2.1.9 The meeting noted the discussion conducted by the AOP/SG/11 on the new document on ICAO Procedures for Air Navigation Services PANS–Aerodromes (Doc 9981)

2.1.10 The meeting recalled that the ICAO Procedures for Air Navigation Services PANS–Aerodromes (Doc 9981) document was approved on 20 October 2014 by the President of the Council on behalf of the Council in accordance with established procedure and will be applicable in November 2016. This first edition of PANS–Aerodromes addresses priority areas revealed by the ICAO Universal Safety Oversight Audit Programme (USOAP) audits in the areas of aerodrome certification, conduct of safety assessments and compatibility studies. The provisions therein specify, in greater detail that the Standards and Recommended Practices (SARPs) in Annex 14 - Volume I - Aerodrome Design and Operations, operational procedures to be applied by both aerodrome regulators and operators in those priority areas to ensure aerodrome operational safety and to improve overall system capacity and efficiency in a globally harmonized manner.

2.1.11 The meeting further noted that there is a consistent challenge of response to State letters, and in this regard there are outstanding responses to State letters on proposals for the amendment of PANS–Aerodromes and Annex 14, Volumes I and II as follows:

a) AN 4/1.1.54-14/97 of 19 December 2014: Proposals for the amendment of Annex 14, Volumes I and II and Annex 15;
b) AN 4/1.1.55-15/30 of 29 May 2015: Proposals for the amendment of Annexes 3; 6, Parts I and II; 8; 14, Volume I; 15; PANS-Aerodromes; and PANS-ATM relating to the use of an enhanced global reporting format for assessing and reporting runway surface conditions;
c) AN 4/1.1.56-15/51 of 10 July 2015: Proposals for the amendment to Annex 14, Volume I and the PANS-ATM (Doc 4444) relating to the runway incursion warning system (ARIWS); and
d) AN 4/1.1.57-15/53 of 15 July 2015: Proposals for the amendment to Annex 14, Volume I relating to visual aids for navigation and aerodrome design.

2.1.12 The meeting urged States to take action by providing comments and publishing in their Aeronautical Information Publications (AIPs) differences - if any - in accordance with Annex 15 provisions; and respond to the State letters related to proposals for the amendments of PANS–Aerodromes and Annex 14, Volumes I and II. The meeting then formulated the following conclusion:

Conclusion 20/02: Implementation of PANS-Aerodromes provisions

That:

a) States are urged to ensure implementation of applicable procedures of the PANS-Aerodromes - Doc 9981. In case of differences between their procedures and the PANS-Aerodromes provisions, they should publish these differences in their aeronautical information publication (AIP) in accordance with Annex 15 to the Chicago Convention; and
b) States should respond to ICAO State letters and in particular to proposals for the amendments to PANS–Aerodromes and Annex 14, Volumes I and II.

CAPSCA Programme

2.1.13 The meeting recalled the ICAO Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation (CAPSCA) and its activities. The meeting noted the relevant information by the AOP/SG on the Ebola virus disease outbreak in Africa and its impact on air transport.

2.1.14 The meeting further noted that ICAO, learning from the previous public health events, developed and included specific Standards and Recommended Practices (SARPs) in Annexes 6, 9, 11, 14 and 18 to the Chicago Convention, as well as guidelines for States, airports, air traffic services and airlines for reducing the risk of the spread of communicable diseases through air travel.

2.1.15 The meeting also recalled that the health of passengers and crew on international flights was recognized by the Thirty-fifth Session of the ICAO Assembly in 2004 (Resolution A35-12) as an "integral element of safe air travel" and the Universal Safety Oversight Audit Programme (USOAP) includes audit Protocol Questions (PQs) on the PHE related SARPs since November 2014.

2.1.16 The meeting urged States to prepare for widespread of communicable diseases and this preparedness in the aviation sector requires communication and collaboration between the aviation and public health sectors. The meeting then formulated the following conclusion:

Conclusion 20/03: Aerodrome Emergency Planning (AEP) including Public Health Emergency (PHE)

That:

a) States are urged to ensure that public health component of the Aerodrome Emergency Plan and organization of the Emergency Operations Centre are based on all relevant ICAO Annexes and Documents, and the WHO IHR 2005;
b) States are urged to ensure close collaboration between the public health authority and aviation stakeholders in planning and management of Public Health Emergency (PHE) to avoid duplication of effort and consistently improve efficiency; and
c) WHO, ICAO and CAPSCA Member States discourage restrictions on flights and passengers originating from countries with confirmed, suspect and contact cases of Ebola Virus Disease (EVD). Similarly, suspension of flights by air operators is also discouraged.

2.2 Air Traffic Management and Search and Rescue (ATM/SAR)

Fourteenth Meeting of the Air Traffic Management/Aeronautical Information Management/Search and Rescue

2.2.1 The meeting noted that the Fourteenth Meeting of the Air Traffic Management/Aeronautical Information Management/Search and Rescue (ATM/AIM/SAR SG/14) was held at the ICAO WACAF Regional Office in Dakar, Senegal from 11 to 14 May 2015. It addressed issues related to its terms of reference, matters arising from the Extra-Ordinary Meeting of APIRG (APIRG/EO) Lusaka, Zambia (10 to 11 July 2014) and other air navigation safety issues brought to its attention by the ESAF and WACAF Regional Offices. The meeting was attended by 57 participants from seventeen States and six organisations and agreed on 11 conclusions and decisions as part of its outcome.

Status of implementation of the Sub-group work programme pertaining to ATM and SAR

2.2.2 The meeting reviewed progress and achievements of the ATM/AIM/SAR Sub-Group, in particular the status of implementation of APIRG Conclusions and decisions as consolidated by the APIRG/19 Meeting in October 2013 and reiterated the need for States to do more in order to address the apparent lack of effective implementation in many areas.

Linkage of Remaining Tasks of the Sub-Group with Aviation System Block Upgrades Block 0 modules (ASBU Block 0) and Regional Performance Objectives

2.2.3 The meeting reviewed the ASBUs and Regional Performance Objectives adopted by its Nineteenth Meeting including the linking of tasks identified by the Sub-Group with Block 0 modules. The meeting further acknowledged that while some States were fairly advanced with their ASBU preparation and would be in a position to commence with Block 1 by 2018, most AFI States had still much to do with Aviation System Block Upgrades (ASBU) Block 0 implementation. The linking of the remaining tasks related to ASBU B0 modules and Regional Performance Objectives is at **Appendix 2.2A** to this report.

AFI Key Performance Indicators, Targets and Monitoring

2.2.4 The meeting recalled a recommendation made by the AFI Plan Steering Committee concerning the development and adoption by the APIRG of a subset of ANS performance indicators and targets. These ANS targets are expected to be accorded the same status as the Abuja safety targets, which were adopted by the African Ministers responsible for civil aviation in July 2012, and further endorsed, by the African Union Assembly of Heads of State and Government in January 2013.

2.2.5 Accordingly, the meeting reviewed and adopted the ANS Key Performance Indicators and targets proposed by the Secretariat for the AFI Region shown at **Appendix 2.2B** to this report. The adopted ANS Key Performance Indicators and targets were to be presented to RASG-AFI for information and to the AFI Plan Steering Committee for endorsement and gradual implementation. Consequently the meeting endorsed the following decision:

Decision 20/04: AFI ANS key performance indicators, targets and monitoring

That:

a) The institutional and regional ANS key performance indicators (KPIs) and targets at Appendix 2.2B to this report are adopted by APIRG;

b) The Secretariat should present the adopted ANS key performance indicators and targets to the 3rd RASG-AFI Meeting for information and the AFI Plan Steering Committee for endorsement and subsequent implementation by States; and

c) The Secretariat should continue the development of appropriate targets for ASBU Block 0 modules and regional performance objectives KPIs for adoption by APIRG, and report implementation progress to APIRG through the Project Coordination Committee (APCC).

2.2.6 The Group also discussed the issue of monitoring the implementation of ICAO Aviation System Block Upgrade (ASBU) modules. In this regard, it was recalled that in many cases, elements of the ASBU Block 0 modules were already being implemented before the ASBU concept. However, while the regional status of implementation can be identified with respect to some modules, for many modules it is not readily available. States were urged to provide information on the status of implementation. The following Conclusion was formulated:

Conclusion 20/05: Status of implementation of ASBU Block 0 modules

That:

a) States be urged to provide information on the status of implementation of ASBU modules using the Air Navigation Reporting Forms (ANRFs) or other reporting tools as may be provided, at least twice a year; and

b) The Secretariat should coordinate the development of annual air navigation reports reflecting the status of implementation of ASBU modules, to be presented to the APIRG through its Project Coordination Committee (APCC).

Outcome of TAG/6 and TAG/7 Meetings and follow up on issues emanating from the AFI Tactical Action Group (TAG)

2.2.7 The meeting discussed the high number of Unsatisfactory Condition Reports (UCRs) in the Region and expressed concern on the continuing trend, in particular the aircraft proximity (AIRPROX) occurrences, which constituted 43 percent of the 88 UCRs reported in relation to the RVSM airspace in 2014. It was noted that staffing level in air traffic control, training and proficiency of ATC staff and air traffic services communications deficiencies continue to be the main causal and contributing factors to a high number of UCRs. The meeting agreed that specific attention should be given to addressing these factors effectively and timeously. The following decision was formulated:

Decision 20/06: Measures to reduce the high number of unsatisfactory condition reports (UCRs) in the AFI Region

That, APIRG in coordination with RASG-AFI, take necessary action to identify specific measures to be undertaken by States, Air Navigation Service Providers and other stakeholders

to effectively reduce the high numbers of UCRs in the AFI Region, with particular attention to AIRPROXs in line with the established ANS performance indicators and targets.

2.2.8 The meeting noted that an ICAO mission was conducted to Nigeria (Abuja, Kano and Lagos) in 2014 to assist the State in addressing deficiencies in the Air Navigation fields identified within the Kano FIR and in its adjacent FIRs, and reduce the number of UCRs occurring in that airspace. The mission formulated 28 recommendations and a Plan of Action comprising 47 activities for the Short, Medium and Long Term implementation. The meeting was also further informed that the ESAF Regional Office carried out Assistance missions to Angola in 2014 to assist the regulator and ATS provider to address ATS related safety issues.

2.2.9 The meeting noted that in order to support development of the safety culture, the International Federation of Air Traffic Controllers Association (IFATCA) had planned to conduct a safety culture workshop in Nairobi, Kenya from 3 to 5 February 2016. States and ANSPs were encouraged to send participants to the workshop.

Airspace modification in the Accra FIR

2.2.10 The meeting noted the safety concerns raised with regard to the airspace sectorization within the Accra FIR, especially the recent change in management of the airspace over Benin and Togo. The ICAO WACAF Regional Office had convened a Meeting in Dakar, Senegal from 13 to15 July 2015, which involved all parties where issues relating to safety assessment and coordination deficiencies between Ghana CAA, Nigerian Airspace Management Agency (NAMA) and ASECNA were addressed, with a recommendation for post sectorization monitoring and reporting by users.

Air Traffic Services Competencies

2.2.11 The meeting noted the convening of the first Meeting of the Air Traffic Services Competencies Study Group (ATSCSG), held in Nairobi, Kenya, from 22 to 23 July 2014 and which included actions to enable the Group to carry out its activities, including circulation of surveys to collect relevant information.

Development and promulgation of Contingency Plans (CPs)

2.2.12 The meeting noted the convening of a *Workshop on Flight Information Region (FIR) and Regional Contingency Plans Development and Implementation Coordination for Southern AFI FIRs and States therein* in Gaborone, Botswana, 25 to 27 August 2015, in response to the results of the ICAO Universal Safety Oversight Audit Programme (USOAP), which indicated a significant shortcoming with respect to Standard 2.30 of Annex 11 to the Chicago Convention, relating to contingency plans (CP). The audit protocol question (PQ) relating to this Standard was satisfactory in less than 24% of AFI States. A second workshop will be organized in December 2015 in Nairobi, Kenya and will include those FIRs that were not able to participate in the Gaborone event. A similar workshop will be organised to cover States and FIRs in the WACAF area and in this regard, the meeting recognized Nigeria's offer to host the workshop in 2016.

ATS Minimum Separation Standards

2.2.13 The meeting noted that since the 10 minute longitudinal separation was agreed for regional implementation in 2003, there had been numerous operational requirements including the introduction of PBN, increased coverage of communication and surveillance, multilateration, CPDLC/ADS-C, ADS-B and other developments which justify a reduction of separation minima in specific FIRs in order to improve airspace capacity and efficiency. A need was identified for an APIRG project which will involve the harmonized review and implementation of separation minima in the AFI Region.

ATS incidents reporting and investigation

2.2.14 The meeting noted that the reporting of ATS incidents and deficiencies in the region remained low. It was noted, however, that in areas where the World Food Programme (WFP) operated, it had consistently reported several incidents including AIRPROXs within a 12 month period, which was not the case with many other operators in the same areas.

2.2.15 The meeting also noted the need for improvements in the quality of incident investigation and States' follow-up action through proper training. Slow progress in establishing the "Just Culture" continued to be a critical factor negatively affecting the reporting of incidents. It was further noted that many States were yet to establish functional safety management mechanisms as provided for in Annex 19 to the Chicago Convention and that efforts need to continue to be directed at specific challenges such as the low reporting of ATS incidents and incident investigation training. Furthermore, the meeting agreed that although , in accordance with the Abuja Targets, States that had not reached 60% Effective Implementation to Safety oversight systems (EI) were not expected to prioritize implementation of SSP, the implementation of SMS should still continue.

2.2.16 The meeting further noted that the US Federal Aviation Administration (FAA) had offered to assist the region with training in the accident and incident investigation in the field of ATS in order to strengthen the efforts aimed at mitigating the incidents. The Secretariat would be liaising with the FAA on their offer.

ATS route network improvement

2.2.17 The meeting noted that the PRND Working Group had completed the primary task of comprehensively improving the route network and by using PBN as an enabler, achieved the following:

a) The AFI ATS route lengths have been reduced by about 4797 nautical miles, representing a reduction of an estimated 144 million metric tons of CO_2 emissions; and
b) Fifty eight (58) iFLEX tracks have been created to provide access to the Atlantic Ocean Random Routing Area (AORRA).

Missing Flight Plans (FPL)

2.2.18 The meeting noted that in relation to missing flight plans, although some ANSPs had reported encouraging improvements from efforts taken, many of the related conclusions and recommendations were not being effectively implemented by AFI States and ANSPs and that most of the challenges in missing flight plans were related to operational aspects, rather than shortcomings in equipment or infrastructure. It was therefore agreed that more effort should be made through a mechanism in the new APIRG structure to address this shortcoming and also consolidate all APIRG Conclusions and recommendations formulated over time by various forums, for all stakeholders to implement.

2.2.19 The meeting noted the initiatives taken by ASECNA to mitigate the risk of "missing flight plans," In this respect, the "missing flight plan" issue was discussed at length, with the recognition of its importance to safety, efficiency and security. It was recognized that while the causal factors were both technical and operational, the most impact would be realized by addressing the operational aspects. These mainly had to do with competence of filers and ANSP message handling staff. As a way forward the meeting agreed to consolidate and improve on the existing APIRG Conclusions, highlighting the criticality and urgency to implement remedial measures to effectively address the matter of missing flight plans. In this regard, the meeting formulated the following conclusion:

Conclusion 20/07: Addressing missing flight plans

That:

a) States should implement remedial measures identified within the framework of APIRG and learn from other ICAO Regions to address the irregularity of missing flight plans;
b) States should establish a focal point team to follow up on the implementation of the remedial measures;
c) ICAO, ANSPs, AFRAA, IATA and IFALPA should continue to encourage stakeholders for the use of collective addresses as implemented by ASECNA to mitigate the loss of flight plans; and
d) The Secretariat should institute a mechanism at AFI level to analyze deeply and find a definitive solution to the problem of missing flight plans under a project.

Implementation of ADS-C/CPDLC

2.2.20 The meeting noted that thirteen ANSPs in the AFI region had implemented ADS-C/CPDLC systems and nine were already in advanced stages. The meeting recognized the need for continuous monitoring of the performance of these systems to ensure safety and acknowledged user concern over cost implications related to the establishment of a Data Link Central Monitoring and Reporting Agency (DL/CMRA). The meeting agreed that the matter be referred to the Infrastructure and Information Management (IIM) Sub-Group for follow-up. Further consideration of issues related to ADS-C/CPDLC implementation is addressed under Section 2.4 of this report.

2.2.21 The meeting noted that the Global Operational Data Link Document (GOLD) had been updated and agreed on the application of the updates, pending the completion of a manual under development by ICAO to replace the GOLD. The meeting requested South Africa, which has been the custodian of the GOLD in the AFI region, to appoint/nominate a specific focal point to replace the previous focal point and to provide ICAO with this information before 31 January 2016.

Operational Data Link Familiarization Seminar

2.2.22 The meeting noted the convening of an Operational Data Link Familiarization Seminar in Nairobi, Kenya from 2 to 6 November 2015, facilitated by ICAO, in collaboration with the Federal Aviation Administration (FAA) and International Air Transport Association (IATA). The Seminar was hosted by the Kenyan Civil Aviation Authority (KCAA) and was attended by forty three (43) participants from ten States. The purpose of the Seminar was to support ADS-C and CPDLC implementation in the AFI Region, consistent with ICAO Global Air Navigation Plan Aviation System Block Upgrade (ASBU) Block 0, following observations by the AFI Tactical Action Group (TAG) of a number of Unsatisfactory Condition Reports (UCRs) in which shortcomings in the use of CPDLC/ADS-C was identified to be causal or contributing factor. The Seminar particularly addressed the need for training of CNS/ATM operational personnel. The Seminar recognized and highlighted the need for cooperative effort at regional level and to involve all stakeholders (e.g. operators, CSPs, aircraft manufacturers, avionics suppliers). In order to better support this initiative, the meeting adopted the following decision and conclusion:

Decision 20/08: Measures to Support CPDLC/ADS-C implementation in the AFI Region

That the Secretariat should develop a Project under APIRG framework of AFI Region CPDLC/ADS-C Implementation Planning Continuous Improvement (CPDLC/ADS-C IPCI);

Conclusion 20/09: Iimplementation of ICAO PBCS manual (DOC 9869) and GOLD Manual (DOC 10037)

That:

a) States, Air Navigation Service Providers (ANSPs) and users take necessary action to apply the technical and operational guidance provided in the Second Edition of Doc 9869 (Performance Based Communication and Surveillance (PBCS) Manual) and the Global Operational Datalink (GOLD) Manual (Doc 10037) once published;

b) States and ANSPs that have already implemented CPLDC/ADS-C review their systems performance using PBCS Manual and take immediate action where remedial measures are necessary; and

c) ICAO should provide assistance to States facing implementation challenges under the No Country Left Behind (NCLB) initiative to ensure that communication and surveillance requirements are met by all AFI States.

Search and Rescue (SAR)

2.2.23 The meeting noted that minimal progress had been achieved in the area of SAR. Among others, the establishing of SAR agreements continued to be a challenge. The meeting noted that the format of the agreement could be part of the challenge in respect of the levels at which the agreements were to be and recognized the potential benefit of establishing agreements at lower level in order to facilitate operational cooperation and efficiency, in particular coordination of SAR efforts where political issues are not necessarily involved. The meeting observed with concern the lack of implementation of APIRG/19 Conclusion 19/21 on SAR Data Collection and Development and Management of an AFI SAR Web Page, and 19/22 calling upon ICAO to establish a SAR Team of Experts to assist States in establishing their SAR systems, and AFCAC to create a SAR Support Project to take over the SAR Team of Experts and provide a structured support to States. Accordingly, the following conclusion was formulated:

Conclusion 20/10: Search and Rescue (SAR)

That:

a) States be urged to conclude SAR agreements under Regional frameworks to facilitate operational cooperation and efficiency; and

b) The Secretariat should follow up on APIRG/19 Conclusion 19/21, on SAR Data Collection and Development and Management of an AFI SAR Web Page and 19/22 on Establishment of SAR Team of Experts and SAR Support Project and report progress to APCC and subsequently present a status report to the next Meeting of APIRG (APIRG/21).

Air Navigation Deficiencies

2.2.24 The meeting noted that the reporting of incidents continued to be a challenge and recalled that, at its Seventeenth Meeting, it had agreed under Conclusion 17/100 - *Development of the AFI web-based Air Navigation Deficiency Database*, to expedite development of the AFI Air Navigation Deficiency Database (AANDD). However development was suspended based on the establishment of a central mechanism and database on the integrated Safety Trend Analysis and Reporting System (iSTARS) platform.

The meeting acknowledged that the regional and centralized databases served different purposes, and in this regard agreed to resume the development of the AANDD and accordingly, formulated the following decision:

Decision 20/11: AFI Air Navigation Deficiency Database (AANDD)

That:

a) In order to facilitate the clear identification of challenges and the prioritization of implementation support, States are urged to provide status of implementation in various areas as requested by the Secretariat, and in particular, to respond to surveys to that effect; and
b) In order to facilitate achievement of the objectives of reporting and resolution of deficiencies in the AFI Region, the Secretariat should take necessary action to bring the AANDD into operation.

Civil/Military Coordination and Cooperation

2.2.25 The meeting noted the convening of an AFI Seminar on Civil/Military Coordination and Cooperation at the Ecole Africaine de la Météorolgie et de l'Aviation Civile (EAMAC) in Niamey, Niger from 26 to 28 May 2015. The seminar, attended by 105 participants from 25 States and one organization, was opened by Mr. Raymond Benjamin, then ICAO Secretary General and was held pursuant to a recommendation of the 14th Meeting of the AFI Plan, as a continuation of the worldwide civil/military cooperation campaign recommended by the Global Air Traffic Management Forum on Civil/Military Cooperation (Montreal, October 2009) to enhance airspace optimization through flexible use of airspace (FUA). The meeting agreed on the following conclusion:

Conclusion 20/12: Civil/military cooperation and coordination

That in order to facilitate civil/military cooperation, States:

a) Consider application of ICAO guidance material including Circular 330 and share such material with their military counterparts;
b) Adopt a Flexible Use of Airspace (FUA) approach in establishing prohibited, restricted or danger areas such that these areas are established on a temporary basis, taking into account the needs of civil aviation;
c) Establish a legal framework to support effective coordination between civil and military authorities;
d) Incorporate element of civil/military cooperation in the training syllabus of both civil and military air traffic service personnel; and
e) Constantly review the existence of prohibited, restricted or danger areas pursuant to LIM/AFI (1988) Recommendation 2/21.

Airspace safety in South Sudan

2.2.26 The meeting discussed at length the critical and persistent safety issues in the airspace of South Sudan, noting the high volumes of traffic in the airspace in particular at Juba. The meeting acknowledged interventions by ICAO together with other International stakeholders, as well as the continued support provided to the State including assistance missions, to address the safety concerns the meeting requested ICAO to continue its efforts and engage the State until the safety issues are adequately addressed. Accordingly, the meeting agreed on the following conclusion:

Conclusion 20/13: Resolution of safety issues in the airspace over South Sudan

That:

a) South Sudan be urged to take necessary measures as matter of urgency, to effectively address safety issues in the airspace as identified by users and ICAO;
b) ICAO and AFCAC are requested to continue engagement with South Sudan in order to make the assistance being provided more effective; and
c) Urge partner States and Organizations supporting South Sudan in the fields of civil aviation to work more closely with ICAO in order to consolidate their efforts and realize synergies in addressing the safety issues.

PBN Implementation

2.2.27 On discussing progress regarding the implementation of PBN, the Group expressed concern on status of implementation in the Region, which was below 50 percent of the implementation targets established in Assembly Resolution A37-11. The status and projected implementation of PBN goals by AFI States was reported as shown in **Figures 2.2(a)** and **2.2(b)** below:

Figure 2.2(a): Implementation of PBN Goals by AFI States (A37-11)

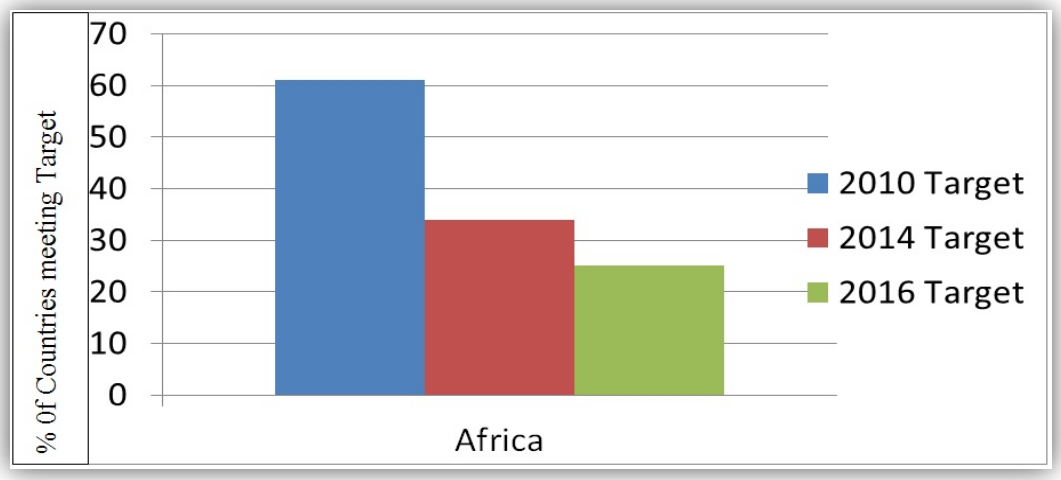
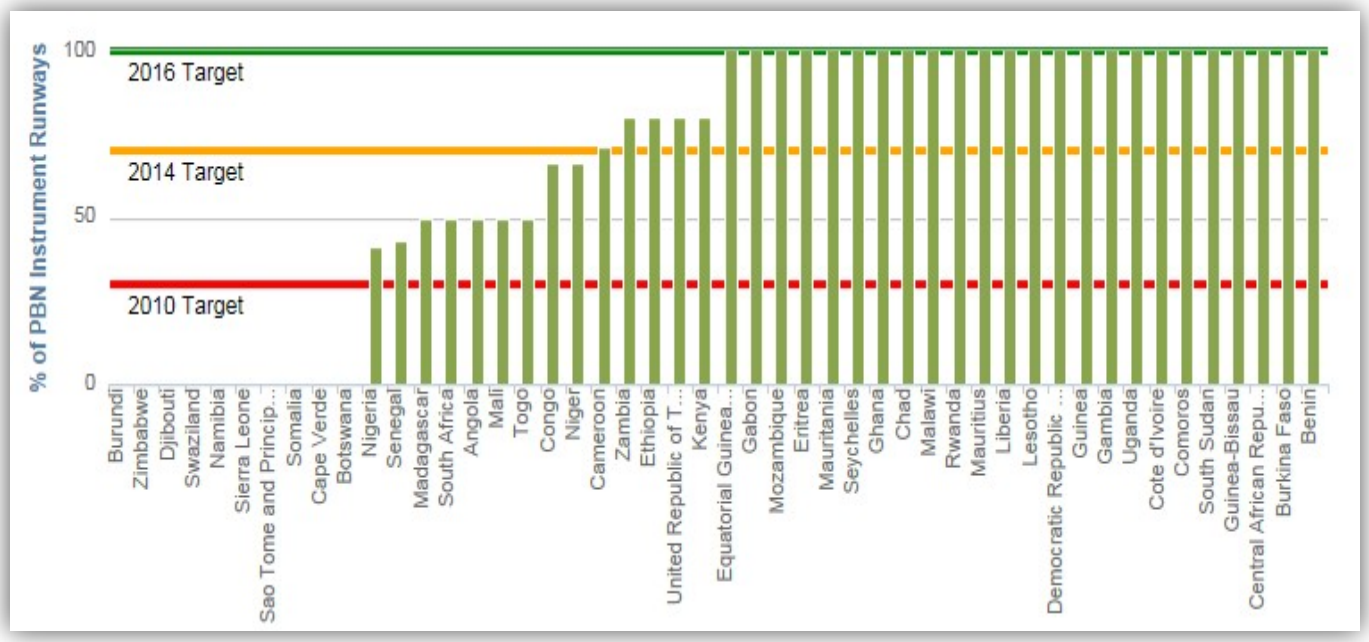


Figure 2.2(b): Implementation by AFI States of PBN procedures for instrument runways at international aerodromes

(120 out of 180 (66.7%) instrument runways are equipped with PBN procedures)



2.2.28 With regard to the development of national PBN implementation plans, the meeting noted that the number of States that had submitted copies of the plan during the ATM/AIM/SAR SG/14 in May 2015 was below 20, but this number had since risen to 31. The meeting acknowledged the positive trend, however, added that more concerted effort should be taken to increase the overall rate of implementation.

2.2.29 With regard to the quality of the national plans, the Group noted that many of the plans whose copies had been submitted to ICAO were "not robust." States were accordingly urged to seek assistance from AFPP and ICAO as necessary, in order to improve the quality and details of their national PBN implementation plans to a status that could effectively support systematic implementation. In addition, States were urged to prioritize development of PBN airspace concepts, as an important part of PBN implementation process, that would enable States and their ANSPs improve on implementation priorities of PBN as well the ASBU Modules such as B0-CCO and B0-CDO which are enabled by PBN.

2.2.30 The Group reviewed the Regional PBN Implementation Plan and requested the Secretariat to update and align the target implementation dates with ASBU Block timelines, taking into consideration recommendations of AFI Plan Steering Committee with respect to the regional target dates. The Group also recognized a proposal to insert the words "where practical" with respect to the expansion of the implementation of RNP APCH where challenges are apparent beyond the minimum locations called for in Assembly Resolution A37-11, to be included in the amended Regional PBN Implementation Plan.

Stakeholder contributions in PBN implementation

2.2.31 The Group noted with concern that while the African Flight Procedure Programme (AFPP) was successfully launched in June 2014 and is fully operational, its engagement by States was still low. The Group acknowledged the role of the African Civil Aviation Commission (AFCAC) in assisting States in the implementation of PBN through mechanisms such as seminars and workshops. In this case, recalling the supportive role of users in PBN implementation, the meeting recognized the importance of coordinated efforts by all relevant stakeholders in the implementation of PBN, and the need for a specific strategic document to guide such coordination.

2.2.32 The Group was apprised of the establishment and activities of the AFPP recalling that its activities were essential as identified by the AFI RAN/08 Meeting in 2008, to achieve the goals set in Assembly Resolution A37-11 within framework of APIRG. The meeting further noted the need for increased contribution in order to accord the AFPP with sufficient resources for its tasks. In this respect, Group urged African States and International Organizations to second personnel with skills required by the AFPP, and pay their membership financial contributions to the AFPP timeously. In view of the above, the Group agreed on the following conclusions to support the increased rate of implementation of PBN and the ASBU Modules enable by PBN.

Conclusion 20/14: Regional PBN Implementation Plan

That:

a) The Regional PBN Implementation Plan should be updated based on ASBU block timelines
b) The updated Regional PBN Implementation Plan be submitted to the APIRG Projects Coordinating Committee (APCC) for endorsement on behalf of APIRG and forwarded to States to guide implementation.

Decision 20/15: Regional Performance Based Navigation (PBN) Implementation Strategy

That, the APIRG Secretariat expedite the development of a Regional PBN Implementation Strategy to speed up PBN implementation in relation to Assembly Resolution A37-11 global goals, through coordinated efforts of stakeholders including States, ICAO Regional Offices, AFCAC, and airspace users (AFRAA, IATA)

Conclusion 20/16: Optimization of the functions of the African Flight Procedure programme (AFPP)

That, in order to attain optimum benefits from the AFPP and to effectively support progress in the implementation of PBN in the region:

a) African States are urged to approach the AFPP to establish how best they could participate in the Programme and to benefit from its establishment; and
b) The AFPP take concerted effort to provide information and sensitize States on taking advantage of its establishment and functions and services.

Conclusion 20/17: Support to the African Flight Procedure Programme

That, in order to provide the AFPP with resources to effectively discharge on its mandate:

a) African States are urged to second qualified staff to the AFPP; and
b) Member States of the AFPP are urged to pay their contributions to the AFPP timeously at the beginning of the year or as arranged with the AFPP.

2.3 AFI Regional Monitoring Agency (ARMA)

Outcome of ATM/AIM/SAR SG/14 Meeting and AFI RVSM collision risk assessment (CRA) NO. 8

2.3.1 The meeting recalled the primary functions that are expected to be carried out by the AFI Regional Monitoring Agency (ARMA) in accordance with ICAO Doc 9574 and the AFI RMA Manual, and noted that with regard to RVSM approvals, States listed in **Table 2.3** hereunder have been included in the

dataset as the data was of the minimum standard required by ICAO for distribution. States (regulatory authorities), aircraft operators and ANSPs were urged to consult the table on a regular basis to ensure that the data was correct, and to send amendments to ARMA as necessary. Up to date AFI RVSM Approvals lists may be viewed at the following ARMA webpage: www.atns.co.za/afi-rvsm

Table 2.3

Algeria (All)	Djibouti (Unsure)	Mali (All)	Seychelles (All)
Angola (All)	Eritrea (All)	Mauritius (All)	Senegal (All)
Botswana (All)	Ethiopia (All)	Mozambique (All)	Sudan (All)
Burkina Faso(All)	Gabon (All)	Namibia (All)	Swaziland (All)
Cameroon (All)	Gambia (All)	Niger (All)	Togo (All)
Cabo Verde (All)	Ghana (All)	Nigeria (All)	Uganda (All)
Chad (All)	Kenya (All)	Reunion (All)	Zambia (All)
Congo (All)	Libya (Unsure)	RSA (All)	Zimbabwe (All)
Côte d'Ivoire (All)	Madagascar (All)	Rwanda (All)	
DRC (Limited)	Malawi (All)	Sao Tome (Unsure)	

Note from the Secretariat: Algeria, Libya and Sudan are no longer in the AFI Air Navigation Plan.

RVSM Operations approval survey

2.3.2 The meeting reviewed the outcome of the aircraft RVSM approval survey for December 2014 and noted that the ARMA was unable to conduct surveys by flight plans due to limited access to such information and had to rely instead on RVSM safety assessment traffic flow data per FIR and flight plans requested from Area Control Centres (ACCs). Out of 30 Flight Information Regions (FIRs), only 20 were assessed which is four less in the 2013 assessment.

2.3.3 The meeting noted that a total of 64367 flights were assessed and 10 aircraft were found to be non-RVSM approved, indicating a reduction from 204 aircraft based on the 2013 assessment. The 10 aircraft conducted multiple flights in the AFI RVSM airspace during December 2014 and operated without a State RVSM approval, exposing the airspace to significant risk. The need for States' FIRs to submit their traffic data to ARMA to support the success of the assessment was reiterated.

Monitoring Height Keeping Performance

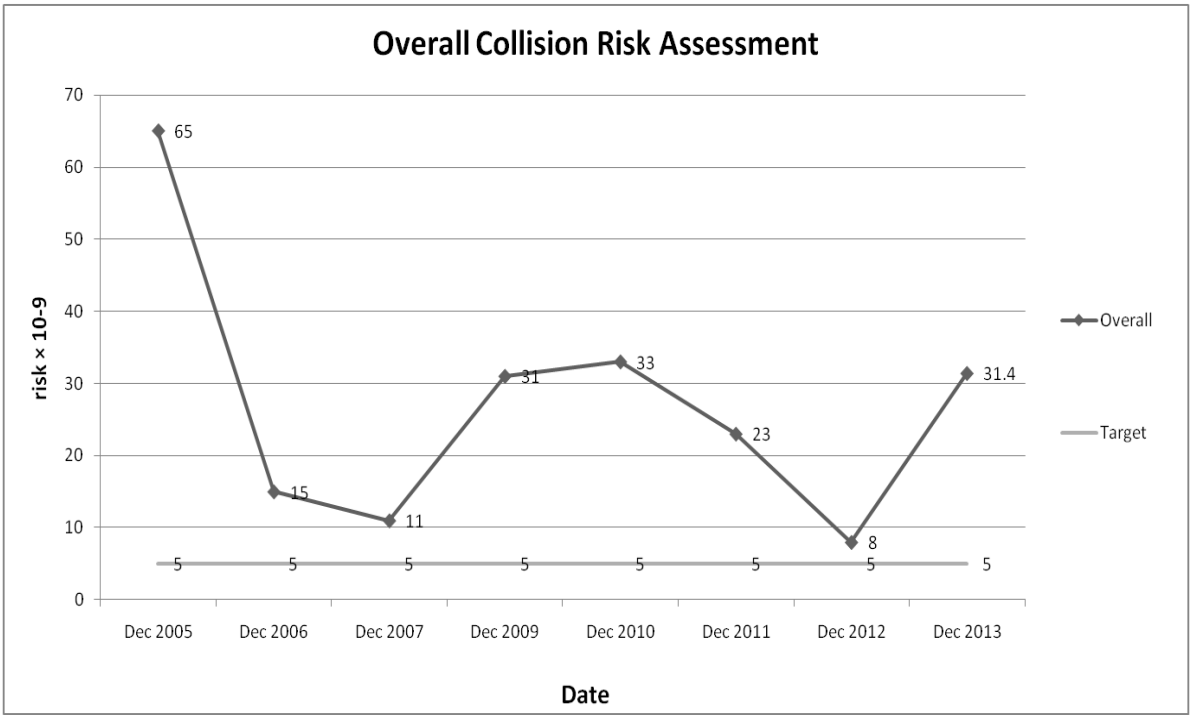
2.3.4 The meeting noted that the ARMA monitoring load was 575 aircraft and out of this figure, 224 still required monitoring, representing 38% as opposed to the 48% in 2013. Accordingly CAAs were urged to ensure compliance with the Annex 6 standards and to cooperate with the ARMA, noting that lack of compliance could result in unnecessary inconvenience to operations, such as withdrawal of aircraft RVSM approvals.

2.3.5 The meeting agreed that greater emphasis should be placed on ATM coordination failures and breakdown of separation at crossing points, which are creating an environment for greater RVSM risk.

2.3.6 The meeting reiterated the need for States identified as having deficiencies in RVSM *Safety Assessment Data, RVSM Height Monitoring, and RVSM Operations Approval*, to take necessary action to ensure that remedial measures are identified and effectively implemented with minimum delay, and to provide updates on the resolution of the deficiencies to the ARMA as necessary. The meeting also noted the transfer of RVSM responsibilities of Libya and Sudan to the MIDRMA, in accordance with Recommendation 6/11 of the 12th Air Navigation Conference.

AFI RVSM Collision Risk Assessment

2.3.7 The meeting noted that the Technical Vertical Collision risk was once again calculated to be below the agreed Technical Vertical TLS of 2.5×10-9 fatal accidents per flight hour. The two main components affecting the Total Vertical Collision Risk is due to flight levels being crossed without proper ATC clearance and aircraft flying at an incorrect flight level, including improper crossings at waypoints or navigational facilities where aircraft are at the same flight level. The meeting also underscored that TCAS is not an ATC separation tool.



2.3.8 The meeting noted that 65% of the time, aircraft operation in AFI RVSM airspace would be made with GNSS navigation, with the remaining 35% with VOR/DME navigation. The risk mitigating effect of strategic lateral offsets procedures (SLOP) has not been adequately incorporated to determine the extent of the safety benefits.

2.3.9 The meeting noted that the CRA was providing a good indication of the successes, failures, errors and remedial actions that are required and agreed that continuous RVSM vigilance should be embedded in all RVSM system elements. The meeting recognized the need to take concerted effort rectify the deficiencies and shortcomings in the AFI RVSM operations and accordingly agreed on the following conclusions:

Conclusion 20/18: Comprehensive measures to improve the AFI RVSM safety levels

That, in order to effectively and sustainably address the AFI RVSM safety levels, AFI States prioritize the effective implementation of the following measures:

a) Incorporate Strategic Lateral Offset Procedures (SLOP), noting the safety benefits thereof even where surveillance has been implemented;
b) Ensure adequate safety assessments, with particular attention to crossing points, before implementing new ATS routes;
c) Take necessary action to improve reporting and investigation of incidents;

d) Prioritise the implementation of ATS Inter-facility Data Communications (AIDC) to reduce coordination failures between FIRs; and
e) Regulators to strictly enforce SARPs and regulatory provisions relating to aircraft RVSM approvals and operations.

Conclusion 20/19: Implementation of SLOP

That, AFI States:

a) As a matter of urgency, should take necessary measures in implementing strategic lateral offset procedures (SLOP) to ensure compliance with the provisions in PANS-ATM Doc 4444 Chapter 16 and ICAO Circular 331; and
b) Seek assistance from ICAO or the ARMA as necessary to ensure that the related publication meet the relevant ICAO provisions.

2.3.10 The meeting commended South Africa for hosting and supporting the AFI RMA, and was informed that a related memorandum of understanding was being concluded between South Africa and ICAO.

2.4 Communications, Navigation and Surveillance (CNS)

2.4.1 Aeronautical Fixed and Mobile Communication Services

Implementation and performance of the Aeronautical Fixed Service (AFS)

2.4.1.1 Examining the status of implementation of the AFI Plan the meeting noted effort made by AFI States to comply with the AFI ATS/DS implementation plan with significant improvements, notably with the implementation of aeronautical satellite telecommunications networks.

2.4.1.2 The meeting identified the ATS/DS deficiencies reported in the AFI Region, in respect of international standards and recommended practices (SARPs) and requirements in the air navigation plan (ANP) and agreed that in the framework of the implementation of ATN Ground/Ground application, the emerging IP based technology is reaching its status of maturity; trials on Voice over IP (VoIP) have been conducted successfully in AFI neighboring regions.

2.4.1.3 In order to improve the availability and Quality of Service, the AFI Region should implement Conclusion 19/25 of APIRG 19 which calls upon States to consider VoIP as an alternative to the current point to point based ATS/DS with respect to the reference to guidelines for the implementation of VoIP as ATN Ground Application provided in ICAO Manual for the ATN using IPS Standards and Protocols (Doc 9896) Part III (Guidance Section).

2.4.1.4 The meeting also reviewed the status of implementation of AFTN, identified its deficiencies and encouraged State/Organizations to conduct the appropriate actions aiming to restoring the performance of the Aeronautical Fixed Services (ATS/DS-AFTN) with regard to the identified deficiencies. The following conclusion was formulated:

Conclusion 20/20: Restoration of the performance of AFS circuits

That States/ANSPs should as a matter of priority endeavor to restore the performance of Aeronautical Fixed Services (ATS/DS and AFTN) circuits.

2.4.1.5 The meeting examined the work conducted by the AFI ATS Message Handling System Task Force (AMHS/TF). In this regard the meeting reviewed the planning and implementation activities by AFI States and noted the progress made in the implementation of AMHS in the AFI Region. The meeting applauded the draft **AFI AMHS Manual** as well as the **AFI AMHS IP Infrastructure Test Guidelines** developed by the study group. The following decision was formulated:

Decision 20/21 : Adoption of the AFI AMHS Manual and the AFI IP infrastructure test guidelines

That the AFI AMHS Manual and IP Infrastructure Test Guidelines are adopted as attached at Appendices 2.4.1A and 2.4.1B.

2.4.1.6 Trials on AMHS operation were reported to have been conducted in the region in particular by ATNS (South Africa) and by ASECNA. It was agreed that States/Organizations shall develop/revise their AMHS implementation plans and establish bilateral Memoranda of Understanding (MoUs) for the interconnection of AMHS systems and inform the Secretariat for the update of the AFI AMHS implementation table. The following conclusion was formulated:

Conclusion 20/22: Implementation of AMHS

That States/ANSPs develop/revise their AMHS implementation plans and establish bilateral Memoranda of Understanding (MoUs) for the interconnection of AMHS systems and inform the ICAO Regional Offices for updates of the AFI AMHS implementation.

2.4.1.7 It was reported to the meeting that during the trials the limitation of the speed of the current ground/ground circuits was experienced. The meeting recalled on-going activities by VSAT network managers in order to modernize and conduct upgrade of their respective existing networks (AFISNET, CAFSAT, NAFISAT and SADC VSAT) as requested by APIRG. It was agreed to upgrade the VSAT Backbone to support the interconnection and operation of AMHS. The following conclusion was formulated:

Conclusion 20/23: Upgrade of VSAT backbone to support the interconnection and operation of AMHS

That, in order to eliminate the ground/ground limitation of the speed of the current circuits experienced during trials undertaken by ANSPs (ATNS, ASECNA), the current VSAT based ground/ground communication backbone be upgraded to support the interconnection and operation of AMHS.

Implementation and performance of Aeronautical Mobile Service (AMS)

2.4.1.8 The meeting discussed issues related to Aeronautical Mobile Service and recalled Recommendation 6/20 of the Special AFI/RAN Meeting held in Durban, South Africa from 24 to 29 November 2008, calling upon States and Air Navigation Service Providers (ANSPs) utilizing high frequency (HF) for air-ground communications to develop procedures for selection of operational frequencies taking into account ionospheric propagation forecasts in order to improve HF analog

communications in the AFI Region. Although some ANSPs such as ASECNA reported to have purchased software on HF propagation forecast, the meeting noted a low pace of implementation of this Recommendation.

2.4.1.9 The meeting also noted that HF Data Link (HF DL) has been identified by the ICAO Global Air Navigation Plan (GANP- Doc. 9750 4th Edition) as a candidate technology for the provision of a more reliable bidirectional air ground communication. However in the AFI region the implementation of HF Data Link for air ground communication is not formally scheduled although this Region comprises huge oceanic and remote continental airspaces. The meeting agreed that it would be advisable to envisage the introduction of HF Data Link within the region as part of sub infrastructure components to support ATN ground/air applications. This implementation should be based on the provision of the ICAO GANP in the framework of the ICAO Aviation systems blocks Upgrade (ASBU) concept and methodology and should inter alia take into consideration:

- Traffic characteristics (*volume, flow, profiles, growth*…) within AFI homogeneous Areas of Routing (A-R);
- Users requirements (PBN constraints);
- Fleet equipage (current and trend); and
- Cost/benefit analysis.

2.4.1.10 The meeting reviewed the status of implementation of VHF coverage and noted continuous efforts and initiatives undertaken by States and Organizations to increase the VHF coverage of the remote continental airspaces and ensure the reliability of the VSAT extended VHF stations. The meeting noted that within the continental airspaces, the satellite C-Band VSAT based remote VHF networks implemented since the early 2000 seems to have reached its maturity cycle of life. Most of the AFI ANSPs have successfully implemented remote stations ensuring extended VHF coverage in their FIRs and some of them such as ASECNA and Roberts FIR are about to implement redundant VHF remote facilities to increase service availability. However some ANSPs were reported to be experiencing difficulties on the reliable operation of the new remote VHF stations:

- NAMA (Nigeria) is experiencing lack of coverage in the center portion of the Kano FIR.
- RVA (DRC) encountered power supply hurdles that were programmed to be solved by the installation of solar cells and;
- ENANA (Angola) is facing many barriers related to power supplies, adapter interfacing the facilities on the ATCs desks, human factors affecting technical and operational staff.

2.4.1.11 The table to be updated by States/Organizations provides a list of deficiencies for VHF communications as identified by APIRG/20 is presented at **Appendix 2.7.1B** to this report.

IATA Regional Communications Survey 2015

2.4.1.12 The meeting recalled that in accordance with APIRG Conclusion 16/20 *(States participation in VHF Coverage Surveys),* IATA conducts aeronautical mobile communications surveys in the AFI Region every 18 months with an objective to determine VHF/HF coverage within the region, in order to identify deficiencies in communication and arrive at corrective action plans to address them, in coordination with States and Air Navigation Service Providers (ANSPs).

2.4.1.13 The last survey of this kind was done on the 24th November to 8th December 2014 but was inconclusive due to inadequate data received from airlines and therefore IATA was not able to generate a report for submission to APIRG19. This was an issue of great concern to IATA and ICAO. After a lengthy

deliberation by the User's representative in the IATA Regional Coordination Group (RCG), it was decided that a new survey be carried out on the 15-28 June 2015. This was duly done following results as presented in this report.

2.4.1.14 However, the IATA RCG meeting recognized the need for feedback to airlines and flight crew on the usefulness of continuing with the survey. It is desirable that feedback is provided to the participating flight crew to encourage positive response to future surveys in order to avoid apathy.

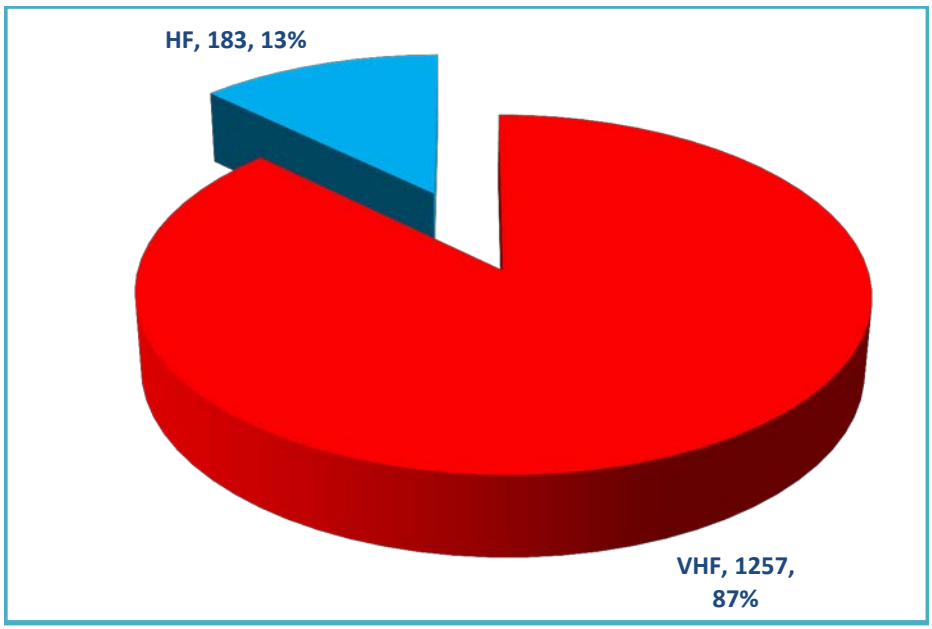
2.4.1.15 *Airlines participation*: The following airlines: Air Botswana (BP), Air France (AF), British Airways (BA), Delta Air Lines (DL), Kenya Airways (KQ), KLM Royal Dutch Airlines (KL), Lufthansa (LH), Swiss International Airlines (LX) and South African Airways (SA); provided data representing over 1400 communication reports on 24 ATS units. The data covers a good part of the AFI Region.

2.4.1.16 *Participation of States Air Traffic Services Units:* Only the ATS Unit of Botswana participated in the survey. It is commendable that they have done this consistently over the years.

Summary of the results

2.4.1.17 The distribution of the survey data is as depicted in the chart below. VHF represented 87% of the data received from airlines while HF represented only 13% **Figure 2.4.1(a)**. This may not represent the distribution of usage of VHF compared to HF in the AFI Region. However, at the individual FIR level, the proportion of the VHF and HF provides an indication on the coverage of VHF i.e. if attempt in calls over HF indicates some difficulties in VHF communication.

Figure 2.4.1(a) Distribution of survey data received for VHF and HF



2.4.1.18 It is generally assumed that an increase in VHF communication usage vis-à-vis a decrease in HF communication usage usually indicates an improvement in the overall status of communication in the FIR as more airlines tend to use the more effective VHF communication channels.

2.4.1.19 The table below summarizes the VHF/HF and CPDLC usage and the respective success rate. The figures in the table have been arrived at based on the data received during the survey period and are indicative of the reality on the ground.

Table 2.4.1 Summary of the VHF, HF and CPDLC Survey

		NO. OF CALLS			% COMMUICATION SUCCESS		%VHF	%HF	CPDLC	%CPDLC
N0.	ATS UNIT	VHF	HF	TOTAL	VHF	HF	Usage	Usage	Log on tried	success
1	Abidjan	4	5	9	-	-	44	56	-	-
2	Accra	35	8	43	80	-	81	19	16	76
3	Addis Ababa	43	0	43	60	-	100	0	-	-
4	Algiers	86	5	91	83	-	95	5	53	38
5	Antananarivo	8	0	8	-	-	100	0	-	-
6	Beira	38	0	38	50	-	100	0	-	-
7	Brazzaville	32	6	38	84	-	84	16	25	80
8	Cairo	17	0	17	82	-	100	0	-	-
9	Dakar	7	0	7	-	-	100	0	-	-
10	Dar es salaam	66	0	66	52	-	100	0	-	-
11	Entebbe	13	0	13	-	-	100	0	-	-
12	Gaborone	401	0	401	99	-	100	0	-	-
13	Harare	12	0	12	-	-	100	0	-	-
14	Johannesburg	10	0	10	-	-	100	0	-	-
15	Kano	29	0	29	59	-	100	0	-	-
16	Khartoum	86	9	95	54	33	91	9	-	-
17	Kinshasa	48	57	105	30	29	46	54	-	-
18	Lagos	17	0	17	71	0	100	0	-	-
19	Lilongwe	6	0	6	-	-	100	0	-	-
20	Luanda	47	23	70	55	23	67	33	23	65
21	Lusaka	34	17	51	30	1	67	33	-	-
22	Mogadishu	7	35	42	-	49	17	83	-	-
23	Nairobi	49	0	49	84	-	100	0	-	-
24	N'djamena	21	0	21	81	-	100	0	21	90
25	Niamey	48	18	66	77	28	73	27	42	69

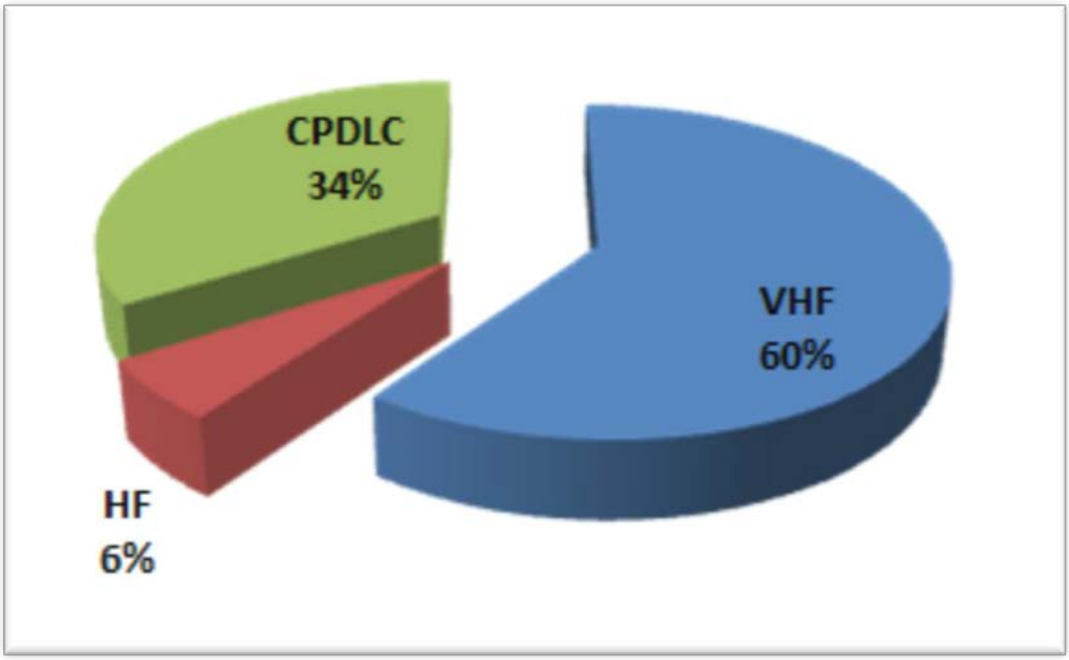
Note: Algiers and Cairo ACCs are not providing air traffic services in the AFI Region.

2.4.1.20 The meeting commended IATA for its continued support to the assessment of air-ground communications performance in the AFI Region.

ASECNA Survey 2015

2.4.1.21 The meeting also noted the results of a similar survey conducted by ASECNA for its 6 managed flight information regions (FIRs) covering 20 AFI States (Antananarivo, Brazzaville, Dakar Terrestrial and Oceanic, Ndjamena and Niamey FIRs). Out of a total number of 10449 exchanges of communications between air traffic controllers and pilots, the results show an increased use of VHF and data link communications (CPDLC) as summarized in **Figure 2.4.1(b)** below:

Figure 2.4.1(b) Results of air-ground communications survey in Antananarivo, Brazzaville, Dakar Terrestrial and Oceanic, Ndjamena and Niamey FIRs



Implementation and performance monitoring of data link applications

2.4.1.22 The meeting recalled previous conclusions of the meeting as well as its deliberations under Section 2.2 related to ADS-C and CPDLC implementation in the AFI Region. It therefore reviewed the status of implementation of CPDLC in the AFI Region and noted the progress made by States/Organizations (Thirteen (13) ANSPs have implemented ADS-C/CPDLC systems in the region and nine (9) are in advanced stage to carry out this system). However those data link services were implemented without proper coordination of systems performance monitoring and reporting of anomalies/deficiencies. Many events have been reported by airspace users where causes of technical dysfunctions could not be identified either by ANSPs or operators.

2.4.1.23 The meeting noted that although it is the responsibility of States to monitor operations performance and analyze problem reports as part of implementing data link services, the APIRG Conclusion 19/30 requesting stakeholders to explore available options to establish a Data Link Central Monitoring and Reporting Agency (**DL/CMRA**) for the AFI Region in the view to ensure effective operations, monitoring and reporting of ATS data link applications, was not implemented.

2.4.1.24 Taking into account three options proposed by the users (IATA) for the funding of the DL/CMRA, the meeting established an Ad hoc Study Group composed of Cape Verde, Ghana, ASECNA, South Africa and Seychelles tasked with identifying and developing proposals concerning the main functions of an AFI DL/CMRA, the appropriate organizational framework and a cost-effective funding mechanism. The following conclusion was formulated:

Conclusion 20/24: Establishment of a Project Team for the implementation of a data link central monitoring and reporting agency (DL/CMRA)

That:

a) A Project Team comprised of Cabo Verde (as Team Leader), Ghana, ASECNA, South Africa, Seychelles, AFRAA and IATA be established to identify and propose the main functions of an AFI DL/CMRA, the appropriate organizational framework and a suitable cost effective funding mechanism; and
b) The Project Team Leader should provide a report of the activities of the project, which are to be mainly done through electronic conferences to the Secretariat for submission to the APCC and the outcome should subsequently be submitted to APIRG/21.

2.4.2 Aeronautical Radio Navigation Systems (ARNS)

2.4.2.1 The meeting reviewed the status of implementation of the Aeronautical Radio Navigation service (ARNS), and identified deficiencies and remedial actions.

Implementation and performance of the Aeronautical Global Navigation Satellite System (GNSS) for Aeronautical Radio Navigation Service (ARNS)

2.4.2.2 The meeting reviewed the status of implementation of GNSS with regard to the AFI GNSS strategy and noted that the cost benefit and impact analysis of an AFI GNSS/SBAS as called upon under APIRG/17 (Conclusion 17/29), APIRG/18 (Conclusion 18/33) and APIRG 19 (Conclusion 19/29) have not been conducted due to lack of funding for the study.

2.4.2.3 The meeting was informed on trials conducted by ANSPs in particular by ASECNA on the implementation of GBAS. In this regard, ASECNA also informed the meeting on trials conducted on GBAS data collection in Dakar in the framework of a partnership with Pildo/AENA.

2.4.2.4 The meeting was appraised on the implementation by ASECNA of APIRG Conclusion 19/28 calling upon States to assess and mitigate GNSS vulnerabilities in their airspace including unintentional and intentional interference, ionosphere scintillation in equatorial regions and other vulnerabilities as may be identified. In this regard the meeting was provided with the results of studies on the impact of the equatorial ionosphere conducted by ASECNA in partnership with Thales Alenia Space and CNES (France). The meeting commended the initiative and encouraged States/Administrations to pursue their efforts to conduct studies and trials on GNSS and share their results with APIRG Members. The following conclusion was formulated:

Conclusion 20/25: Sharing of study on GNSS

That:

a) States/ Organization who have undertaken studies and trials on GNSS should share their results to inform the impact analysis of an AFI GNSS/SBAS to be completed pursuant to APIRG Conclusion 19/29, covering operational, technical, environmental and economic aspects for this GNSS augmentation system;
b) AFCAC Regional offices should pursue the search for the funding of an impact analysis related to GNSS/SBAS implementation in AFI Region; and
c) AFCAC convene a regional Meeting to address GNSS implementation issues in the AFI Region.

2.4.3 Aeronautical Surveillance systems

2.4.3.1 The meeting reviewed the status of implementation of Aeronautical Surveillance systems and noted the progress made in this field. Based on the available data of SSR Mode S stations; the Secretariat provided the meeting with the SSR Mode S Radar coverage in the western portion of the AFI Region.

2.4.3.2 The meeting recognized the opportunity to ensure in this portion a continuity of surveillance service in order to provide to the ATM community, more efficiency and flexibility by ensuring to ATCs more accurate situational awareness. CANSO informed the meeting on SADC ANSPs experience with ADS-B and Multilateration. However, the meeting noted the challenge in many States along the areas of routing with no surveillance facilities, or plans to implement such facilities for the necessary continuity. The following conclusion was formulated:

Conclusion 20/26: Implementation and Interconnection of Surveillance Systems

That in the framework of the AFI surveillance implementation strategy, the ICAO Regional Offices facilitate States implementation of the AFI Surveillance Plans and interconnection of their surveillance systems in order to increase surveillance capability along the Area of Routing and provide seamless surveillance service.

2.4.3.3 The Secretariat informed the meeting on the ongoing implementation of SSR Mode S stations in the AFI Region and underlined difficulties encountered to assign SSR Mode S Interrogator Identifier (II) Codes due to lack of coordinates of SSR Mode S stations. The meeting was informed on the ongoing development by ICAO of the software aiming to facilitating the automation of this assignment.

2.4.3.4 In order to prevent conflicts in SSR Mode S operation in the overlapping coverage airspaces SSR Mode S II codes assignment needs to be coordinated in a regional level. The following conclusion was formulated:

Conclusion 20/27: Assignment of SSR Mode S interrogator identifier (II) Codes

That in order to prevent conflicts in SSR Mode S operation in the overlapping coverage airspaces:

a) States/Organizations send to the Secretariat, not later than 29 February 2016, the coordinates of their SSR Mode S stations and refer to their respective accredited ICAO Regional Office for the assignment of SSR Mode S Interrogator Identifier (II) code; and
b) ICAO finalize the data base and the software for SSR Mode S Interrogator Identifier (II) code assignment.

2.4.3.5 The meeting also applauded the draft AFI II code assignment planning criteria presented by the Secretariat for approval. The AFI II code assignment Criteria and the AFI II Codes Assignment Manual are presented at **Appendices 2.4.2B and 2.4.2C** to this report. The following decision was formulated:

Decision 20/28: Adoption of the AFI II Code assignment criteria and the AFI II codes assignment manual

That the AFI II code planning criteria and procedures attached in Appendices 2.4.2B and 2.4.2C are adopted.

2.4.3.6 The meeting recognized that, in order to apply the planning criteria at a Regional level, such planning criteria need to be incorporated in the Regional Air Navigation Plan. This should be done along the following lines:

Amend the AFI Regional Air Navigation Plan (FASID) Section addressing Aeronautical Surveillance (re. Doc 7474, first edition, 2001, Part IV) to include the following provisions:

- A1 The principles and criteria to be used for the international coordination and assignment of SSR Mode S II-codes as provided in **Appendix 2.4.2B** to this report.
- A2 Add a new Appendix to complete the planning criteria for II codes as provided in **Appendix 2.4.C** to this report.
- A3 The internationally agreed SSR Mode S II code assignments should be published separately from the FASD for the AFI Region. One way is to publish them through a relevant ICAO website in the format of the table of internationally agreed SSR Mode S II-codes.

Note: The secretariat will ensure that the proposed amendments are reflected in the AFI eANP addressed under Agenda Item 3 of this report.

2.4.4 Aeronautical Frequencies Spectrum

Coordination action in the framework of the AFI Frequency Management Group (AFI/FMG) and VSAT C band protection.

2.4.4.1 The Meeting considered the status of implementation of the conclusions and decisions of the APIRG previous meetings related to aeronautical spectrum operation and management.

2.4.4.2 The Secretariat presented to the meeting the action undertaken to coordinate the attendance by the AFI Region Civil Aviation community to the first and third preparatory Meetings of the African Telecommunication Union (ATU) held in Dakar, Senegal from 18 to 20 March 2013 and in Abuja, Nigeria from 26 to 30 January 2015 respectively.

2.4.4.3 During these Meetings, the ICAO views were presented aimed at ensuring that the ITU Radio Regulations shall not be in conflict with ICAO Standards and Recommended Practices (SARPs), enabling the advancement of technological innovation to maintain and enhancing the safety of the global air transport system as well as increasing efficiency in spectrum utilization.

2.4.4.4 ICAO position on the WRC-15 Agenda Items of particular importance to civil aviation (1.1; 1.5; 1.17 and 9.1.5) was presented in detail and ICAO specific views on the other various Agenda Items recorded under each respective agenda items in particular agenda items 1.4; 1.6; 1.7; 1.10; 1.11; 1.12; 1.16; 4; 8; 9.1.1; 9.1.6 and 10.

2.4.4.5 ASECNA, the Rapporteur of the AFI Frequency Management Group (AFI/FMG) reported on the coordination action undertaken toward stakeholders in order to obtain the support to ICAO position in particular the protection of the C-band operated by the AFI Aeronautical satellite based Networks.

2.4.4.6 The Secretariat informed the meeting on the results of the 4th and last preparatory Meeting convened by ATU in Nairobi, Kenya from 20 to 24 July 2015 as well as those from the sub-regional Meetings in ECOWAS and SADC.

Outcome of the ITU World Radiocommunication Conference (WRC-15)

2.4.4.7 The ITU World Radiocommunication Conference (WRC-15) was held in the Centre International de Conference de Genève (CICG) from 2 to 27 November 2015. The meeting was attended by about 4100 participants compared to 3200 for the last conference presenting an escalation of interest and pressure.

2.4.4.8 ICAO participation covered the entire conference period represented by two Technical Officers from ICAO Headquarters , supported by the Regional Officers CNS WACAF and the Regional Officer CNS ESAF on part time basis.

2.4.4.9 In addition to the various coordination actions undertaken by the Secretariat in conjunction with stake-holders during the preparatory activities, the aviation community strategized in Geneva in order to have a support to ICAO position leading to100% success in promoting/defending the ICAO Position. Focus was made on African civil aviation delegates included in national delegation.

2.4.4.10 Under Agenda Item 1.17 of WRC-15 dealing with Wireless Avionics Intra-Communications (WAIC), the frequency band 4200-4400MHZ was allocated to this service.

2.4.4.11 WRC-15 Agenda item 1.5 has been subject to intense and long discussion. The development of an allocation for UAS CNPC links (RPAS C2 links) using FSS spectrum is provisional, and will enter into full force in 2023, provided that ICAO successful develop SARPs using the conditions described in the ITU Resolution associated with the allocation. However, this Resolution gives to the RPAS panel the adequate material needed for development of SARPs for the C2 link. This proved to be a very divisive issue amongst some of our civil aviation colleagues during the WRC deliberations; however the end result is in good alignment with the ICAO Position.

2.4.4.12 Under WRC-15 Agenda 1.1 dealing inter alia with aeronautical frequencies, no change in their allocation for IMTs was obtained.

2.4.4.13 Under Agenda item dealing with Global Flight Tracking (GFT) allocation was made to the band 1090MHZ in the direction Earth to Space for ADS-B operation contributing to GFT. As a follow up to GFT, a WRC-19 agenda item was developed to facilitate the development of Global Aviation Distress and Safety System (GADSS).

2.4.4.14 Based on the above and the lessons learnt the following conclusion was formulated:

Conclusion 20/29: Continued support to ICAO Position

That, in accordance with the ICAO spectrum strategy, policy Statements and related information as contained in the Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc 9718):

a) States /Organizations continue to support ICAO position for WRC in particular on agenda item of high importance to the safe operation of aircraft by participation in the national and regional/sub regional preparatory Meetings for ITU WRC Meetings; and
b) The Secretariat reinforce the coordination of the initiatives that will ensure the alignment of their national position with ICAO position for WRC.

2.4.4.15 Agenda item 9.1.5 related to the protection of the C Band (3.4-4.2 GHz) lead to the revision of ITU WRC-12 Resolution 154 (Rev. WRC-15) in order to ensure the safe operation of VSATs. The revised resolution is at **Appendix 2.4.4** to this report. Before and during this Conference, the difficulties encountered in the coordination to have the support from the AFI States underscored the necessity to reinforce the coordination amongst stakeholders in particular for the protection of the C-Band. In view of the above the following conclusion was formulated:

Conclusion 20/30: Protection of C band spectrum

That in accordance with Resolution 154 (Rev. WRC-15), States /Organizations take the appropriate measures in order to ensure the protection of the satellite C-band operated by the AFI VSAT networks:

a) Registration of the aeronautical VSAT frequencies in the States register held by the national authorities of regulation of telecommunication; and
b) Follow-up with the concerned authorities in the States to further register the frequencies in the ITU Master International Frequency Register (MIFR).

2.4.5 Implementation of Recommendation of Special AFI/RAN Meeting related to CNS

2.4.5.1 The Secretariat informed the meeting on the status of implementation of the recommendations of the special AFI/RAN Meeting related to CNS.

2.4.5.2 As for the implementation of Recommendation 6/18, it was noted that the AFISNET Audit was successfully completed and the results presented to the SNMC Board on 16 October 2015. Deficiencies were identified and a re-engineering Action Plan is under development.

2.4.5.3 For the implementation of the SP AFI/RAN Recommendation 6/19 the Secretariat informed the meeting on the regular holding of VSAT Network Supervisory Committee Meetings, including SNMC (AFISNET), CNSMC (CAFSAT), NAFISAT and SADC VSAT/2 Supervisory Committees.

2.4.6 CNS General issues

Reinforcement of AFI CNS personnel capacity

2.4.6.1 The meeting took note of the discussions conducted by the CNS Sub-Group on the issues related to the reinforcement of the AFI CNS personnel capacity with regard to the new APIRG structure and project approach. It was agreed that the project approach will require for the CNS personnel additional knowledge and skill in project designing, management and assessment. The following conclusion was formulated:

Conclusion 20/31: Reinforcement of the Capacity of AFI CNS Personnel

That in order to ensure an effective implementation of the APIRG identified projects:

a) States /Organization should pursue their efforts in developing CNS personnel capacity building through consolidated training plans and programmes. In doing so, they should make optimum use of available expertise in the AFI Region; and
b) ICAO should continue to support CNS personnel capacity building through workshops and seminars.

Future CNS activities

2.4.6.2 The meeting noted that CNS activities are across the new two APRIG Sub-Groups and are related to the same Performances Improvement Areas (PIAs) and the same ASBU Block 0 Modules. It results in a need of close collaboration between stake-holders. The following conclusion was formulated:

Conclusion 20/32: Coordination for air navigation service planning and implementation

That in the framework of its new structure and project based approach, APIRG should establish appropriate mechanisms to ensure efficient coordination of planning and implementation of air navigation services (AGA, AIM, ATM, CNS, SAR and MET).

Agenda Item 2.5: Aeronautical Information Management (AIM)

Review of the Report of ATS/AIM/SAR/14 Meeting

2.5.1 The meeting was informed about the outcome of the Third Meeting of the APIRG AIM Implementation Task Force (AFI AIM TF/3) held in Dakar, Senegal from 15-17 October 2014. The meeting also reviewed the information on the outcomes related to Aeronautical Information Services and Aeronautical Information Management emanating from the APIRG/19 Meeting, the 12th Air Navigation Conference (AN-Conf/12) and the Ninth and Tenth Meetings of the AIS-AIM Study Group (AIS-AIMSG/9/10). The objective of the meeting was to consider the amendment proposals for a restructured Annex 15, the proposed new PANS-AIM document.

2.5.2 The meeting was informed that most recently, the Steering Committee of the AFI Regional Aviation Safety Group (RASG-AFI), at its first Meeting held in Dakar on 19th and 20th of April 2015 took a decision (Decision RASC 1/02) that Aeronautical Information Management (AIM) be included in the list of Emerging Safety Issues (ESIs), and that AIS/AIM transition forms part of the RASG-AFI ESI-Safety Support Team activities. The meeting reviewed the outcome of the First Working Group Meeting on the implementation of AN-Conf/12 Rec. 3/8 (c) held in Dakar, Senegal from 13-14 October 2014. AN-Conf/12 Recommendation 3/8(c) calls for intraregional and interregional cooperation for an expeditious transition from aeronautical information service (AIS) to aeronautical information management (AIM) in a harmonized manner and use of digital data exchange and regional or subregional AIS databases as an enabler for the transition from AIS to AIM.

2.5.3 The meeting noted that in compliance with APIRG Conclusion 19/41, the Regional Offices in Dakar and Nairobi, convened an ICAO AIM/SWIM Seminar for the AFI Region in Dakar, Senegal from 7 to 9 September 2015 to discuss issues related to the planning and Implementation of the transition from AIS/AIM to Information Management/SWIM, in order expedite the harmonized implementation of the AIM/SWIM requirements. In compliance with Twelfth Air Navigation Conference (AN-Conf/12) under Recommendation 6/1–Regional performance framework–planning methodologies and tools the Regional Offices in Dakar and Nairobi, conducted a Workshop for ASBU-Module B0–DATM: (Service Improvement through Digital Aeronautical Information Management) in Dakar, on 10 to 11 September 2015.

2.5.4 The meeting acknowledged that the current system of NOTAM is not sustainable in the long term since there are a multitude of information channels that can be integrated by the user to acquire awareness flight–critical conditions. Increasingly this is denying the advantage of modern information management techniques and failing to provide optimum situational awareness. There is need for the NOTAM system to evolve under the emerging SWIM concepts as the current NOTAM system does not allow for critical updates to the FMS data.

2.5.5 The following conclusions and decision were formulated**:**

Conclusion: 20/33: Implementation of AN-Conf/12 Rec. 3/8 (c)

That States which have taken the initiative of the AFI-CAD concept of implementing Centralized AIS databases should ensure compliance with the provisions of AN-Conf/12 Recommendation 3/8(c) calling for intraregional and interregional cooperation for an expeditious transition from aeronautical information service (AIS) to aeronautical information management (AIM) in a harmonized manner and use of digital data exchange and regional or subregional AIS databases as an enabler for the transition from AIS to AIM.

Conclusion: 20/34: Interoperable Systems and Data

That States should ensure the compatibility of the various versions of AIXM databases and integration of the different aeronautical data domains to facilitate implementation of a system wide information management (SWIM), under ASBU B0-DATM element on AIXM in the AFI Region.

Conclusion: 20 /35: Planning and implementation of AIM

That States should ensure that the planning and implementation of AIM in the region, is coherent and compatible with the developments in adjacent regions, and is carried out within the framework of the ATM Operational Concept, the Global Air Navigation Plan.

Decision 20/36: AIM Personnel competency in the AFI Region

That APIRG should consider developing AIS/AIM competency provisions and monitoring mechanisms to guide harmonized framework for qualifying AIM personnel through initial and periodic assessments as per ICAO Annex 15 para 3.7.4 requirement.

2.5.6 The meeting took note of the sectorization in June 2015 of the Accra Flight Information Region, and of a subsequent proposal for amendment to the AFI Air Navigation Plan (ANP) requested by Benin and Togo with respect to AIS responsibilities. The proposed amendment proposal should be addressed as per established procedures.

Agenda Item 2.6: Aeronautical Meteorology

2.6.1 The meeting was presented with the report of the Twelfth Meeting of the Meteorology Sub-Group (MET/SG/12) which was held in Dakar, Senegal, from 1 to 5 December 2014. The meeting made an in-depth review of the report and decided on the following actions.

Status of implementation of the MET/SG work programme

2.6.2 The meeting reviewed the status of implementation of the work programmes and associated Task Forces of the MET/SG/12 as provided in the report of the Sub-group.

2.6.3 On the basis of the reviewed air navigation deficiencies in the MET field, the summary of recent and forthcoming developments to the WAFS and SADIS, the status of implementation of the Decisions/Conclusions and work programmes of the MET/SG, MTF and ATM/MET/TF, the Sub-group prepared a status of implementation of its work programme given in **Appendix 2.6A** to this report. In this regard, the meeting formulated the following decision:

Decision 20/37: Status of Implementation of the MET/SG Work Programme

That, the Secretariat incorporate the work programme of the AFI Meteorological Sub-Group (MET/SG) in the work programme of the new APIRG Infrastructure and Information Management Sub-group (IIM/SG).

Linkage of remaining tasks of the MET/SG with Aviation System Block Upgrades (ASBU) Modules B0 and Regional Performance objectives for MET

2.6.4 The meeting reviewed the ANRF related to B0-AMET in the AFI Air Navigation System Implementation Action Plan, as indicated in **Appendix 2.6B** to this report, based on ASBU module B0-AMET elements (GANP, Doc 9750) and on the remaining tasks of the MET/SG. In this regard, the meeting formulated the following conclusion:

Conclusion 20/38: AFI Air Navigation Report Form (ANRF) for B0-AMET Module

That the updated Air Navigation Report Form (ANRF) at Appendix 2.6B be adopted for ASBU B0-AMET module in the AFI Region.

Relationship between MET related AFI PFFs and ASBU B0-AMET

2.6.5 The meeting noted and endorsed the amendment proposed by the MET/SG Meeting to **Appendix 2.6C** of the Air Navigation System Implementation Action Plan adopted by APIRG/19 Meeting, as provided in **Appendix 2.6C** to this report. In this regard, the meeting formulated the following decision:

Decision 20/39: Amendment to the AFI Air Navigation System Implementation Action Plan

That the AFI Air Navigation System Implementation Action Plan be amended as provided in Appendix 2.6C to this report.

Review of the Outcome of the 2014 Meteorology Divisional Meeting (Montréal, Canada, 7 – 18 July 2014)

2.6.6 The meeting noted that, the MET/SG Meeting was briefed on the outcome of the Meteorology (MET) Divisional Meeting in 2014 (MET/14), which was conjointly held with the 15th Session of the World Meteorological Organization (WMO) Commission for Aeronautical Meteorology (CAeM) and that the MET/14 Meeting recommended ICAO to urge States to ensure that the personnel performing safety oversight functions of the aeronautical meteorological service are adequately qualified and competent, thus meeting the requirements of Annex 19, and to develop appropriate guidance material to assist States with regard to the oversight of aeronautical meteorological service provision. In this regard, the meeting formulated the following conclusion.

Conclusion 20/40: Qualification of Personnel Performing Safety Oversight functions of the Aeronautical Meteorological Service

That, States put in place mechanisms to ensure personnel performing safety oversight functions of the aeronautical meteorological service in the AFI region, are adequately qualified and competent as stipulated in Annex 19 to the Chicago Convention and report progress to APCC and status report to the next meeting of the APIRG (APIRG/21).

2.6.7 To allow a greater involvement of the AFI region in the activities of future expert groups proposed by the MET/14, the meeting adopted the following conclusion:

Conclusion 20/41: Participation in the activities of the future Expert Group on the implementation of MET related SWIM Activities

That AFI States be encouraged to participate in the activities of the future Expert Group on the implementation of the system wide information management (SWIM) in the MET field.

Summary of recent and forthcoming developments to the World area forecast system (WAFS) and Satellite Distribution System (SADIS)

2.6.8 The meeting was informed that WAFC London Provider State (UK) presented the MET/SG Meeting with developments to the WAFS and SADIS since the MET/SG/11 Meeting (8-10 July 2013, Nairobi, Kenya).

2.6.9 The meeting noted that the WAFCs had produced a training module regarding the use of WAFS gridded CB, icing and turbulence forecasts. The training module and the related PDFs are supplemental to the existing guidance material 'Guidance on the Harmonized WAFS Grids for Cumulonimbus Cloud, Icing and Turbulence Forecasts' which is available at: http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/GuidanceMaterial.aspx.

2.6.10 The meeting further noted that WAFC London had made available (from 8th July 2014) verification data for WAFS GRIB2 CAT and CB and that the information, to be used in conjunction with the guidance material, is available at: http://www.metoffice.gov.uk/aviation/responsibilities/icao.

Conclusion 20/42: Recent WAFS and SADIS developments

That:

a) AFI States are encouraged to regularly obtain information on the verification of WAFC London GRIB2 CAT and CB forecast data;

b) SADIS Users in the AFI region:

1) Contact their SADIS Workstation software provider to seek information regarding future updates and to take advantage of the enhancements including the provision of traditional alphanumeric OPMET data at 1 minute intervals and

2) Establish and regularly test backup accounts with the alternative provider to be used in the event that their normal service in accordance with the AFI ANP, is not available.

Air navigation deficiencies in the MET field

2.6.11 The Group noted that the list of deficiencies in the MET field had been reviewed and updated based on the uniform methodology approved by the ICAO Council for identification, assessing, tracking and reporting of deficiencies of air navigation systems. In analysing the updated list of deficiencies, the following was observed:

a) The deficiencies in the MET field, were identified in only 24 States visited;
b) Lack of certified QMS in 23 States/24 (Angola, Burundi, Cape Verde, Chad, Cameroon, Congo, Djibouti, Gambia, Ghana, Guinea, Guinea Bissau, Lesotho, Liberia, Mauritania, Niger, DRC, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Togo and Zambia);
c) Lack of use of quality WAFS products (no SADIS station) in 5 States/24 (Djibouti, Liberia, Nigeria (Kano), Sao Tome and Principe and Sierra Leone;
d) Lack of issuance of aerodrome forecasts (TAF) in 3 States/24 (Angola, Burundi and Sao Tomé and Principe;
e) Lack of issuance of aerodrome warnings (AD WRND) in 4 States/24 (Djibouti (Djibouti), Guinea (Conakry), DRC (Kinshasa) and Sao Tome and Principe (Sao Tome); and
f) Lack of issuance of wind shear warnings and alerts (WS WRND) while experienced by aircraft in 4 States/24 (Djibouti (Djibouti), Guinea (Conakry), DRC (Kinshasa) and Sao Tome and Principe (Sao Tome).

2.6.12 The Group was apprised on developments with regard to implementation of QMS for MET service (QMS/MET) and was pleased to note that aerodromes of 17 ASECNA Member States under the Agency's responsibility including that of the States listed under item b) above had been certified. Regarding issuance of TAF, Dakar RODB informed the meeting that TAF were being received from the States listed under item d) above. ASECNA and the concerned States should confirm the QMS certification and issuance of TAF respectively through letters to ICAO to enable updating the list of deficiencies accordingly.

2.6.13 In addition, the Group noted the following MET deficiencies collected from the reports of the annual SIGMET tests and from other sources:

a) Lack of issuance of SIGMET: 6 MWOs/28 have never issued any SIGMET during AFI SIGMET Tests: (Angola (Luanda), Ethiopia (Addis Ababa), Namibia (Windhoek), Tanzania (Dar es Salaam), Zambia (Lusaka) and Zimbabwe (Harare) – Source: 2013 SIGMET TEST report);
b) AFI Meteorological Bulletins Exchange (AMBEX) scheme not fully implemented (Availability of AFI METAR and TAF at Dakar RODB during 3ird quarter of 2014): TAF – 79,51% (ESAF – 76,13% and WACAF – 82,88%), METAR – 51,66% (ESAF -48,05% and WACAF – 55,27%); source: DAKAR RODB OPMET monitoring on 30 September 2014);
c) ATIS not implemented: 0/17 (Angola, Cameroon, Congo, Côte d'Ivoire, Gabon, Ghana, Guinea, Kenya, Madagascar, Nigeria, Uganda, Senegal, Tanzania, Zambia and Zimbabwe); Source: AFI ANP Table AOP/1)
d) Lack of implementation of HF VOLMET: 0/2 (Congo and Madagascar). Source: AFI ANP Table ATS/2.

2.6.14 The Group agreed that statistics on availability of OPMET data should be presented using the following thresholds: "above 97%, between 50% and 97% and below 50%". The meeting noted that Dakar RODB does not make distinction in the statistics between the exchange of amended TAF and regular TAF and also between AOP aerodromes and non-AOP aerodromes. The RODB Dakar should correct its software accordingly.

2.6.15 The Group noted that the MET/SG /12 meeting agreed that States with deficiencies in the MET field should endeavor to establish corrective action plans to rectify these deficiencies. The Group therefore adopted the following conclusion:

Conclusion 20/43: Action plan to remove air navigation deficiencies in the MET field

That:

a) ICAO Regional Offices in Dakar and Nairobi, update the air navigation deficiencies in the MET field in the remaining non-visited AFI States;
b) AFI States where deficiencies still persist, endeavour to establish and implement an action plans aimed at removing air navigation deficiencies in the MET field; and
c) AFI Regional OPMET Data Banks (RODBs) present statistics on availability of OPMET data, using the following thresholds: "above 97% availability, between 50% and 97% availability and below 50% availability".

Status of implementation of APIRG/19 Decisions and Conclusions related to MET

2.6.16 The meeting noted that the MET/14 Divisional Meeting proposed a global transition plan for table-driven data representation (XML/GML) for METAR/SPECI, TAF and SIGMET as given in **Appendix 2.6D** to this report. The meeting further recalled that Conclusion 19/44 of APIRG/19 called for the development of capabilities of handling OPMET information in digital format by inviting Dakar and Pretoria RODBs to assist associated Bulletin Compiling Centres (BCCs) in implementing digital OPMET.

2.6.17 In this regard, the meeting adopted the transition plan proposed by the MET/SG for the table-driven data representation (XML/GML) in the AFI region given at **Appendix 2.6D** to this report. The meeting therefore agreed to adopt the following conclusion:

Conclusion 20/44: Transition Plan for handling OPMET Information in Digital Format in the AFI region

That, the information given in Appendix 2.6D to this report, is endorsed as the Transition Plan for handling OPMET Information in Digital Format in the AFI region.

2.6.18 For a better understanding and involvement of AFI States in the implementation of the transition plan, the meeting agreed that AFI States should develop capability of handling OPMET data in digital format. In this regard, the meeting further agreed that it was desirable to conduct training for personnel in the AFI Meteorological Bulletins Exchange (AMBEX) units in the region, thus the meeting formulated the following conclusion:

Conclusion 20/45: Training Seminars to develop capability building for handling OPMET data in digital format in the AFI region

That the WMO, in coordination with ICAO, assist AFI States in implementing OPMET Information exchange in Digital format by conducting regional training seminars and workshops in order to:

a) increase awareness of users of the AFI Meteorological Bulletin Exchange (AMBEX) units, on the exchange of OPMET data in digital format; and
b) expedite the implementation of the AFI Transition Plan for handling OPMET Information in Digital Format.

2.6.19 The meeting reviewed and adopted the draft amendments of the AFI SIGMET Guide and the AMBEX Handbook presented in **Appendices 2.6E and 2.6F** to this report respectively. The meeting then formulated the following decision:

Decision 20/46: Updating the AFI regional SIGMET Guide and AMBEX Handbook

That, the documents given at Appendix 2.6E and 2.6F to this report, are endorsed as the 10th edition of the AFI regional SIGMET Guide and the updated AMBEX Handbook, 7th Edition – Amendment 4, respectively.

2.6.20 The meeting noted with appreciation that the MET/SG Meeting was appraised of the ongoing activities of the Cooperative Development of aeronautical meteorology Programme in the AFI region (CODEVMET-AFI) and the WMO Aircraft Meteorological Data Relay(AMDAR) Regional Implementation Programme Implementation Programme for Africa. In addition, the Sub-group reported that the East African School of Aviation (EASA) in Nairobi, Kenya has introduced a MET inspector's course in its programme.

Agenda Item 2.7: Other Air Navigation issues

Air Navigation Deficiencies

2.7.1 The meeting reviewed the list of deficiencies affecting air navigation services in the areas of aeronautical telecommunications (CNS) and aeronautical meteorology (MET) as shown in **Appendices 2.7.1A, 2.7.1B, 2.7.1C, 2.7.1D** and **2.7.1E** to this report. Concerned States and Organizations were requested to take remedial action on these long standing deficiencies **by September 2016**.

Implementation of ASBU Block 0 modules and AFI Regional Performance Objectives

2.7.2 Following a request by participants, the Secretariat made a presentation on the categorization and prioritization of the 18 ASBU Block 0 modules adopted by APIRG/19 under its Conclusion 19/06 and reflected in the AFI Air Navigation System Implementation Plan as summarized in Table 2.7.5 below:

2.7.3 The categories of the 18 adopted Block 0 Modules are as follows:

- Essential (E): These are the ASBU modules that provide substantial contribution towards global interoperability, safety or regularity. The nine (9) Modules for all States of AFI Region are FICE, DATM; ACAS, FRTO, APTA, CDO, CCO, AMET and ACDM.
- Desirable (D): These are the ASBU modules that, because of their strong business and/or safety case, are recommended for implementation almost everywhere. The four (4) Modules for all States of AFI region are NOPS, ASUR, SNET, and TBO.
- Specific (S): These are the ASBU modules that are recommended for implementation to address a particular operational environment in specific countries of AFI region (for example South Africa). The three (3) Modules are OPFL, ASEP and WAKE *(elements and targets are to be developed by APIRG).*
- Optional (O): These are the ASBU modules that address particular operational requirements in specific countries of AFI region and provide additional benefits that may not be common everywhere. The two (2) Modules are SURF and RSEQ.

2.7.4 The priorities of the 18 adopted Block 0 Modules are as follows:

- Priority 1 : Immediate Implementation
- Priority 2 : Recommended Implementation

2.7.5 **Table 2.7** below provides the categorization and prioritization of Block 0 Modules for the AFI Region.

Table 2.7: Categorization and prioritization of Block 0 Modules for the AFI Region

PIA	Module Description	Module	Category	Priority
PIA1	Improve Traffic flow through Runway Sequencing (AMAN/DMAN)	B0-RSEQ	O	2
	Optimization of Approach Procedures including vertical guidance	B0-APTA	E	1
	Increased Runway Throughput through optimized Wake Turbulence Separation	B0-WAKE	S	2
	Safety and Efficiency of Surface Operations	B0-SURF	O	2
	Improved Airport Operations through Airport-CDM	B0-ACDM	E	1
PIA2	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	B0-FICE	E	1
	Service Improvement through Digital Aeronautical Information Management	B0-DAIM	E	1
	Meteorological information supporting enhanced operational efficiency and safety	B0-AMET	E	1
PIA3	Improved Operations through Enhanced En-Route Trajectories	B0-FRTO	E	1
	Improved Flow Performance through Planning based on a Network-Wide view	B0-NOPS	D	2
	Initial capability for ground surveillance	B0-ASUR	D	2
	Air Traffic Situational Awareness(ATSA)	B0-ASEP	S	2
	Improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B	B0-OPFL	S	2
	ACAS Improvements	B0-ACAS	E	1
	Increased Effectiveness of Ground-Based Safety Nets	B0-SNET	D	2
PIA4	Improved Flexibility and Efficiency in Descent Profiles (CDO)	B0-CDO	E	1
	Improved Safety and Efficiency through the initial application of Data Link En-Route	B0-TBO	D	2
	Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)	B0-CCO	E	1

2.7.6 The meeting recognized the challenge faced by the Secretariat in collecting relevant information on the status of implementation of the elements supporting the adopted ASBU Block 0 modules, and called upon States to provide the required information on a regular basis, or as part of surveys conducted from time to time by the ICAO Regional Offices. The meeting also noted that the Secretariat had compiled information on the status of implementation of ASBU Block 0 modules related to Aeronautical Information Management (B0-DATM) and Aeronautical Meteorology (B0-AMET). The Secretariat was requested to include the available information in this report. The required information is provided at **Appendix 2.7.6** to this report, as well as key performance indicators and supporting metrics for ASBU Block 0 module elements for which planning targets and implementation status are yet to be determined by APIRG. The meeting requested the Secretariat to expedite the on-going work on the development of appropriate targets for ASBU Block 0 modules and regional performance objectives KPIs for adoption by APIRG. It also requested the APIRG Projects Coordination Committee (APCC) to oversee this important work aimed at establishing an effective AFI performance monitoring and reporting mechanism.

2.7.7 It was clarified that, in addition to the ASBU Block 0 modules, the work programme of the APIRG and its auxiliary bodies also includes the regional performance objectives established by the Group pursuant to ICAO Special Regional Air Navigation Meeting of 2008 (SP AFI RAN/08), Recommendations

3/3 (Performance-based approach and performance measurement), 6/1 (Regional Performance Framework), 6/2 (National Performance Framework). These regional performance objectives which are reflected in the performance framework forms (PFFs) developed and amended from time to time by APIRG, cover areas such as:

- RVSM Implementation
- PBN Implementation for en-route, terminal and approach operations
- Enhancement of CNS Infrastructure
- Search and Rescue,
- Transition from AIS to AIM
- Improvement of the provision of Meteorological Services
- Improvement of Aerodrome Operations

2.7.8 The implementation of ASBU Block 0 modules and agreed regional performance objectives should be addressed under the projects to be developed by the Group as discussed under Section 4.3 of this report.

Agenda Item 3: Adoption of the New electronic AFI Air Navigation Plan (eANP)

New Air Navigation Plan Template

3.1 The meeting recalled the Twelfth Air Navigation Conference (AN-Conf/12) Recommendation 6/1 — Regional performance framework – planning methodologies and tools regarding the alignment of regional air navigation plans (ANPs) with the fourth edition of the *Global Air Navigation Plan (GANP)* (Doc 9750), and the Working Group (eANP WG) established by the Secretariat, composed of a representative from each Regional Office and ICAO Headquarters, to make proposals for changes to the regional ANPs which included the development of a new structure, format and content of the ANP, as well as the outcome of the AN-Conf/12 and the revised GANP. As a result of this process, the ICAO Council approved a new Template for the eANP. The Templates for ANP Volumes I, II and III are available in **Appendices 3.1A, 3.1B and 3.1C** to this report respectively.

3.2 The meeting acknowledged that the endorsement of the ANP template, which includes the new procedure of amendment of the eANP shown at **Appendix 3.1D** to this report, is the most important milestone in this process. The approval of the eANP of each region, based on the approved ANP template, would be accomplished with the transfer of the corresponding information from current volumes Basic and FASID to the new volumes I and II in accordance with the procedures for amendment.

Development of the eANP on a web-based platform

3.3 The meeting was informed that, in view of the agreed format of the eANP, it is considered that the current ANP application under SPACE (iSTARS 2.0 website) could be used as the basis for the development of the eANP web-based platform with some improvements.

3.4 Focal points designated by States and international organizations would be given access to the ANP web-based platform to develop and submit proposals for amendments (PfAs) to the ANP of each region concerned as per corresponding procedures for amendment and the public would be given read-only access to the ANPs.

3.5 The access to the eANP through the web-based platform would facilitate the consultation of the ANPs of all regions, thus providing a global view of air navigation planning. The new approach in Volumes II and III of the eANP would allow significant flexibility to States to plan while increasing the possibility to enhance coordination, particularly for States in the interface area with adjacent regions.

Action plan for further development/approval of the eANP

3.6 The meeting took cognizance of the action plan established by the Secretariat for the development/approval of the eANP as follows:

ANP volume	eANP activity/task	Responsible	Completion date
Vol I, II & III	Population of eANP with existing data completed	Regional Offices	September 2014
Vol I, II & III	Agreement on the content of the eANP	PIRGs/States	Mid 2015
Vol I	Approval of Volume I of eANPs by the Council	Regional Offices/ANB	End 2015
Vol II	Approval of Volume II of eANPs by regional agreement involving the relevant PIRG	Regional Offices/PIRGs	End 2015
Vol III	Development and approval of Part II under PIRG responsibility. Inclusion of Volume III on web-based platform.	Regional Offices/ PIRGs/ANB	End 2015
Consequential amendments	Amendments to existing ICAO documentation related to ANPs to ensure harmonization, including the Regional Office Manual, and review of the applicability of the Uniform methodology for the identification, assessment and reporting of air navigation deficiencies to the new ANP	ANB	Mid 2015

3.7 Specific action taken or to be taken by the ICAO Regional Offices and ANB, APIRG and States for the development/approval of the AFI eANP, is summarized as follows:

ANP volume	eANP activity/task	Responsible	Status
Vol I, II & III	Population of eANP with existing data completed	Regional Offices	Completed.
Vol I, II & III	Agreement on the content of the eANP	APIRG/States	Material developed and endorsed by APIRG.
Vol I	Approval of Volume I of eANPs by the Council	Regional Offices/ANB	Proposal for amendment to be initiated by ROs.
Vol II	Approval of Volume II of eANPs by regional agreement involving the relevant PIRG	Regional Offices/APIRG	Proposal for amendment to be initiated by ROs.
Vol III	Development and approval of Part II under PIRG responsibility. Inclusion of Volume III on web-based platform.	Regional Offices/ APIRG/ANB	Proposal for amendment to be initiated by ROs.

3.8 In view of the above, the meeting endorsed the new Regional Air Navigation Plan Template approved by the ICAO Council. The meeting also noted with appreciation the population of AFI eANP Volumes I, II and III with existing data completed by the ICAO Regional Offices and the APIRG AOP, ATM/AIM/SAR, CNS and MET Sub-groups; and agreed that the developed material should be circulated to States for their comments and inputs. Therefore, the following conclusion was formulated:

Conclusion 20/47: Endorsement and Development of the AFI eANP

That:

a) APIRG endorse the new Regional Air Navigation Plan Template approved by the ICAO Council; and

b) The Secretariat:

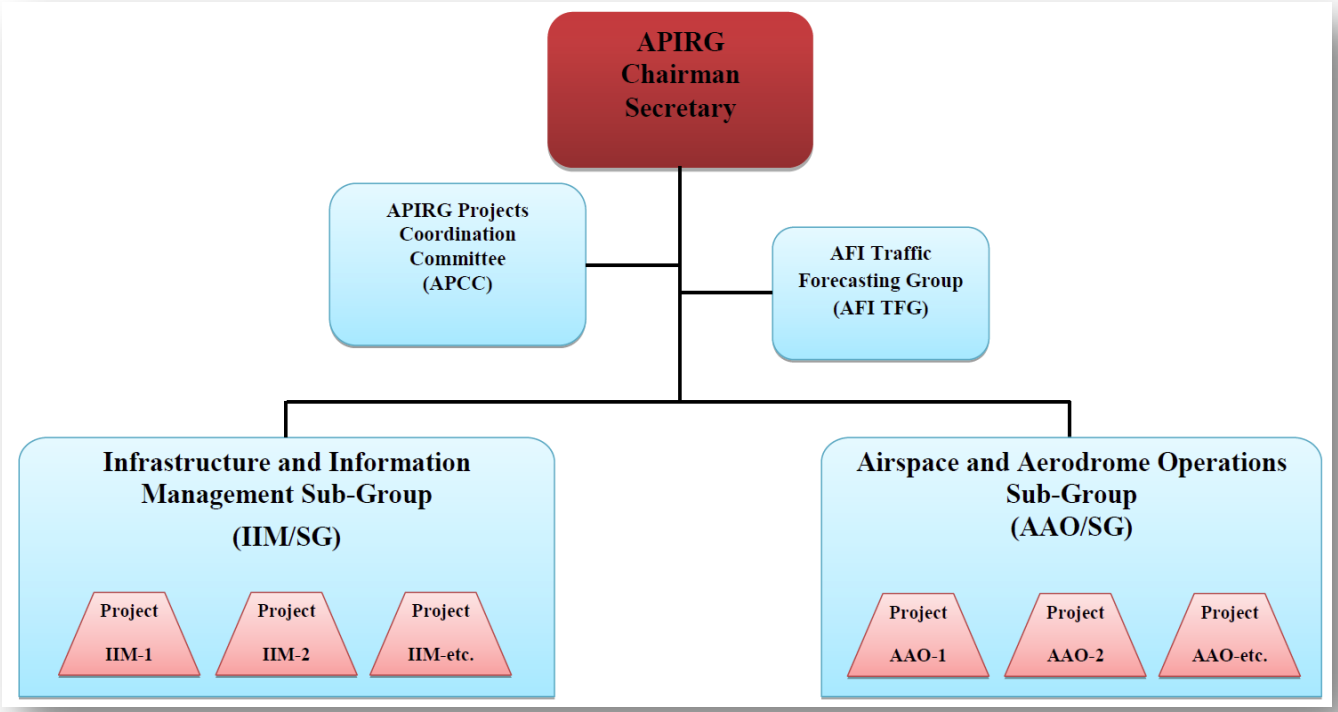
1) Finalize AFI eANP Volumes I, II and III in coordination with States by 29 February 2016, based on the material developed by APIRG Sub-groups; and

2) Initiate the corresponding proposals for amendment as per applicable procedures.

Agenda Item 4: Re-organization of the APIRG

4.1 The meeting recalled APIRG Decisions 19/48 and EO/01 (Reorganization of APIRG) establishing the New Structure of APIRG and its Contributory Bodies as shown below and accordingly agreed to proceed with the operationalization of the new organizational structure of the meeting.

New Structure of APIRG and Contributory Bodies



4.2 Consequential amendments to the APIRG Procedural Handbook

4.2.1 The meeting reviewed its Procedural Handbook which is intended to provide, for easy reference of all interested parties, a consolidation of material, particularly of a procedural nature, relevant to the work of the APIRG and its contributory bodies. The Procedural Handbook contains the terms of reference, working arrangements, internal instructions, rules of procedures for the conduct of the meetings of APIRG and its contributory bodies, as well as the uniform methodology for the identification, assessment and reporting of air navigation deficiencies.

4.2.2 Due to elapse of time since its last publication in June 2001, ICAO guiding principles that have come into effect and the reorganization of APIRG as adopted by the APIRG Extraordinary Meeting in July 2014, the Secretariat developed consequential amendment proposals to the APIRG Procedural Handbook, including the following:

a) Amendments to existing provisions to align them to adopted reorganization;
b) Improvements to existing provisions for purpose of clarity and enhanced guidance;
c) Additional provisions to reflect the newly adopted working methods;
d) Amendments to the Appendices to the Handbook, and
e) Editorial changes.

4.2.3 The meeting therefore requested the Secretariat to circulate the revised Procedural Handbook to APIRG Members for their comments and inputs and, based on these comments, finalize the new edition of the Procedural Handbook in coordination with the APIRG Projects Coordination Committee (APCC). Accordingly, the meeting formulated the following conclusion:

Conclusion 20/48: Revised APIRG Procedural Handbook

That the APIRG Secretariat:

a) Circulate the draft revised APIRG Procedural Handbook provided as Appendix 4.2 to this report, to APIRG members for their comments and inputs not later than 29 February 2016; and

b) Finalize and publish the final version of the revised APIRG Procedural Handbook by 30 March 2016.

4.3 Establishment and operationalization of New APIRG Structure and Contributory Bodies

4.3.1 The meeting established the bureau of the APIRG:

- Uganda: Chairperson (re-elected)
- Senegal: First Vice Chairperson
- Namibia: Second Vice Chairperson

4.3.2 The meeting requested the APIRG Secretariat to expedite the establishment and operationalization of the contributory bodies of the new APIRG structure.

4.4 Identification of priority Projects

4.4.1 The meeting recalled that its APIRG Extraordinary Meeting (Lusaka, Zambia, July 2014) agreed that, in order to carry out the work of the Sub-Groups of APIRG, 'Projects' would be identified by the meeting, and noted that APIRG Sub-groups had identified an initial set of projects, based on the ICAO Aviation System Block Upgrade (ASBU) Modules and the regional performance objectives adopted by APIRG. The meeting then reviewed the work done by the Sub-groups. It noted that noted that a Project Team may carry out one or more projects and that, based on the nature of a project, the meeting may decide that the team responsible for the project should report directly to the Group rather than to the Sub-Group.

Working methods

4.4.2 The identified projects will be executed by Teams of experts and Champions reporting to the Sub-Groups. Project Teams shall elect from among them, Project Team Coordinators (PTCs) who shall facilitate and coordinate the activities including deliberations of the Project Teams and report to the Sub-Groups. Each Project Team will be supported by a Facilitator designated by the Secretary of APIRG from among members of the ICAO Secretariat. Additional members of the Secretariat may be assigned to support Sub-Groups as necessary.

4.4.3 Many Projects may not necessitate physical Meetings, but may carry out their tasks through electronic correspondence and other media such as teleconferences. Similarly, even in those projects where physical Meeting will be necessary, more work should be carried out through electronic media, in order to reduce the costs. This aspect is reflected in the revised APIRG Procedural Handbook (**Appendix 4.2A** to this report).

Geographic scope of the projects

4.4.4 The meeting agreed that, consistent with the AFI CNS/ATM Implementation Plan (Doc 003) adopted by the APIRG, where applicable, in defining the scope of projects, consideration will be given to the concept of homogeneous ATM areas or major traffic flows/routing areas established by the APIRG as shown in **Table 4.4** below, and related implementation coordination groups (ICG). Similarly, a project involving a few FIRs may be identified in the context of addressing seamlessness of a specific area of routing.

Table 4.4: AFI Major Traffic Flows/Routing Areas

Areas of routing (AR)	Traffic Flows	Areas involved	Type of area covered	Remarks
Africa-Indian Ocean (AFI) Region				
AR1	Europe — South America (EUR/SAM) (oceanic)	Atlantico ,1Canarias , Casablanca , Dakar Oceanic, Sal Oceanic	Oceanic en route low density in southern part and oceanic high density in northern part	Major traffic flow EUR/SAM
AR2	Atlantic Ocean interface between the AFI, NAT and SAM Regions	Accra, Dakar, Johannesburg, Luanda, Sal	Oceanic en route low density	Homogeneous ATM area AFI/NAT/SAM
AR3	Europe — Eastern Africa routes including the area of the Indian Ocean	Addis Ababa, Antananarivo, Asmara, Cairo , Dar es-Salaam, Entebbe, Khartoum , Mauritius, Mogadishu, Nairobi, Seychelles, Tripoli	Continental en route/ oceanic low density	Major traffic flow AFI/EUR
AR4	Europe to Southern Africa	Algiers , Beira, Brazzaville, Cape Town, Gaborone, Harare, Johannesburg, Kano, Kinshasa, Lilongwe, Luanda, Lusaka, N'Djamena, Niamey, Tripoli , Tunis, Windhoek	Continental en route low density	Major traffic flow AFI/EUR
AR5	Continental Western Africa including coastal areas	Accra, Addis Ababa, Brazzaville, Dakar, Dar-es-Salaam, Entebbe, Kano, Khartoum , Kinshasa, Nairobi, Ndjamena, Niamey, Roberts	Continental/oceanic low density	Homogeneous area AFI (this is a growing traffic, developing into major traffic flow)
AR6	Trans-Indian	Antananarivo, Mumbai , Johannesburg , Male ,1 Mauritius, Melbourne , Seychelles	Oceanic high density	Homogeneous ATM area AFI/ASIA/PAC

Interregional coordination

4.4.5 The meeting recommended close coordination between APIRG and other PIRGs from adjacent ICAO regions, in order to achieve the desired harmonization and interoperability of air navigation systems, as well as seamless air transport operations across the regions. In this regard, the meeting recommend that ICAO continue to facilitate interregional coordination, through Meetings, Global PIRG/RASG Coordination and other relevant fora. In doing so, due account should be taken of the alignment of ANP and SUPPs areas of applicability.

Project funding

4.4.6 The meeting noted that, in the application of Project Management Principles, cost, time, and quality are co-dependent, and that mobilization of resources had always been a major challenge in the implementation of air navigation facilities and services in Africa. Accordingly, in order to support implementation of a sustainable air navigation system in the AFI Region, the APIRG should explore assistance and funding mechanisms such as the ICAO No Country Left Behind initiative, as well as those established through regional and sub-regional organizations including the African Union, the African Civil Aviation Commission, Regional Economic Communities (RECs), and financial institutions.

Role of the APIRG Projects Coordination Committee (APCC)

4.4.7 The meeting reiterated the important role assigned to the APIRG Projects Coordination Committee (APCC) in coordinating the activities carried out by the sub-Groups.

4.4.8 In view of the above, the meeting formulated the following conclusion:

Conclusion 20/49: Projects Identification and Implementation issues

That:

a) The initial set of projects identified by APIRG Sub-groups as shown at Appendix 4.4.8A through Appendices 4.4.8B, 4.4.8C, 4.4.8D1, 4.4.8D2, 4.4.8D3, 4.4.8E1, 4.4.8E2 and 4.4.8E3 are adopted;

b) The Secretariat develop a consolidated catalogue of all identified projects, using a standard format, to be endorsed by the APCC. In doing so, projects should be structured according to applicable areas of routing;

c) The APIRG through its APCC explore assistance and funding mechanisms in cooperation with regional and sub-regional organizations such as the African Union, the African Civil Aviation Commission, Regional Economic Communities (RECs) and financial institutions; and

d) The ICAO Regional Offices, AFCAC and AFRAA pursue interregional coordination to achieve harmonization and interoperability of air navigation systems, as well as seamless air transport operations across the regions.

Agenda Item 5: Terms of reference and Future Work Programme of the APIRG

Amendment to PIRG Terms of reference related to Basic Operational Requirements and Planning Criteria (BORPC)

5.1 The meeting noted that on 17 June 2015, during its review of the consolidated annual report planning and implementation regional groups (PIRGs) and regional aviation safety groups (RASGs) – results up to February 2015, the Council through its Decision C-DEC 205/5, agreed that the terms of reference of all PIRGs should be amended to remove the BORPC from regional air navigation plans (ANPs). The terms of reference of the APIRG were amended accordingly.

Agenda Item 6: Any other business

Duration of APIRG Meetings

6.1 Participants raised concerns at the limited time allocated to properly address issues on the agenda of APIRG Meetings in accordance with the terms of reference of the meeting. This issue should be further assessed under the new structure and methods of work of the APIRG.

Agenda Item 7: Venue and date of the Next Meeting of the APIRG

7.1 The Secretariat will coordinate and communicate in due course the venue and date of the next Meeting of the APIRG, mindful of the relevant provisions of the APIRG Procedural Handbook.
