INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF

THE NINETEENTH MEETING OF THE AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG/19)

(Dakar, Senegal, 28-31 October 2013)

PREPARED BY THE SECRETARY OF APIRG OCTOBER 2013

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PART I - HISTORY OF THE MEETING

1. VENUE AND DATE

1.1 The Nineteenth Meeting of the Africa-Indian Ocean (AFI) Planning and Implementation Regional Group (APIRG/19) was held back to back with the Second AFI Regional Aviation Safety Group (RASG AFI/2) and the Fifth Meeting of the Directors-General of Civil Aviation (DGCA/5), at the Hotel des Almadies in Dakar, Senegal, from 28 to 31 October 2013.

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 Engineer John T. Kagoro, from Uganda, Chairman of the APIRG.

3.2 Mr. Meshesha Belayneh, Regional Director, ICAO Eastern and Southern African Office (Nairobi) served as Secretary to the meeting. He was assisted by Mr. Mam Sait Jallow, Regional Director, ICAO Western and Central African Office (Dakar). The following Officers from ICAO Headquarters, the Dakar and Nairobi Regional Offices serviced the meeting:

Mr. C. Dalton	C/ATM, ICAO Headquarters
Mr. G. Konate	D/RD, WACAF Office, Dakar
Mr. P. Zo'o Minto'o	RO/CNS, ESAF Office, Nairobi
Mr. L. Ndiwaita	RO/AGA, ESAF Office, Nairobi
Mr. E. Gnang	RO/TC, WACAF Office, Dakar
Mr. S. Machobane	RO/ATM, ESAF Office, Nairobi
Mr. A. B. Okossi	RO/MET, WACAF Office, Dakar
Mr. F. Salambanga	RO/CNS, WACAF Office, Dakar
Mr. O. Manjang	RO/FLS, WACAF Office, Dakar
Mr. P. I. Mbengue	RO/OPS, ESAF Office, Dakar
Mr. A. Ndikumana	RO/AGA, WACAF Office, Dakar
Mr. G. Y. Baldeh	RO/AIM, WACAF Office, Dakar
Mr. F. Legrand	Programme Manager, AFI FPP, Dakar

4. ATTENDANCE

4.1 The meeting was attended by two hundred and twenty-two (222) participants from thirty-eight (38) AFI States and twelve (12) regional and international organizations and six (6) industry stakeholders.

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

5. OPENING OF THE MEETING

5.1 The 19th Meeting of the AFI Planning and Implementation Regional Group (APIRG/19) was opened jointly with the 2nd Meeting of the AFI Regional Aviation Safety Group (RASG-AFI/2) and the 5th Meeting of Directors-General of Civil Aviation (DGCA/5) by the Secretary General of the Ministry of Tourism and Air Transport, Mr. Ousseynou Dieng, representing the Minister of Tourism and Air Transport of the Republic of Senegal, His

Excellency Mr. Oumar Gueye. He welcomed the participants to Senegal, the land of Teranga, and expressed the joy of Senegal to host these three meetings organized by ICAO.

5.2. He recalled the major challenges faced by the AFI Region in the implementation of ICAO's Strategic Objectives and for the development of its air transport sector, including the effective implementation of APIRG Conclusions and Decisions, meeting the Safety Targets adopted by the Ministerial Conference held in Abuja, Nigeria, in July 2012, which were endorsed by the Heads of State and Government of the African Union held in Addis Ababa in January 2013. He also underscored the importance of these three meetings for the AFI Region.

5.3. Mr. Ousseynou Dieng took the opportunity to recall the strong contribution of Senegal in the field of civil aviation, especially, as regards safety at sub-regional, regional and international levels. He also confirmed the commitment of his Government to pursue its efforts to support the initiatives of ICAO and of all international organizations based in Senegal, namely, AFCAC, ASECNA, IATA and FAA.

5.4. In addition, he informed the meeting of a major infrastructural project which is being carried out in Senegal; the construction of a new Airport called "Blaise Diagne International Airport", which demonstrates the vision of the Government to make Senegal a regional hub. He announced that the work on this project is expected to be completed in December 2014.

5.5. In conclusion, he wished participants fruitful deliberations and an enjoyable stay in Senegal.

5.6 Mr. Meshesha Belayneh, Regional Director Eastern and Southern African Regional Office in his capacity as the Secretary to APIRG, welcomed all participants to the 19th meeting of the Group and expressed special gratitude to the Honourable Minister for accepting to officiate the opening of the meeting despite his heavy work programme. He further appreciated the special contribution of the Republic of Senegal to aviation in Africa, well known as the "Land of Teranga" meaning the Land of Hospitality for hosting the ICAO Regional Office accredited to Western and Central African States, and the African Civil Aviation Commission (AFCAC), the African Union specialized Agency for Civil Aviation.

5.7 He noted that the meeting was taking place a few weeks after the 38th Session of the ICAO Assembly, which was held in Montreal, Canada, from 24 September to 4 October 2013, and which particularly endorsed the Global Aviation Safety Plan (GASP) - Doc 10004 and the Fourth Edition of the ICAO Global Air Navigation Plan (GANP) -Doc 9750 adopted by the Council in 2013. He emphasized that these two Global Plans, which provide strategic direction for the technical work programmes of ICAO in the fields of safety and air navigation, serve as planning and implementation guidance for the Regional Aviation Safety Groups (RASGs), Planning and Implementation Regional Groups (PIRGs), States and industry worldwide. The GANP requests ICAO Regions and States to give due consideration to the safety priorities set out in the GASP, when planning, establishing and updating their Air Navigation Plans.

5.8 Concerning the AFI Region, Mr. Belayneh reminded the meeting that in the field of safety, on 23 September 2013 (prior to the 38th Session of the ICAO Assembly), a Ministerial Briefing was provided to the African Ministers of Transport & Safety Partners on the status of aviation safety in Africa and the initiatives undertaken under the Comprehensive Regional Implementation Plan for Aviation Safety in Africa (AFI Plan). The Ministers were briefed on the high-level objectives of the AFI Plan which are closely linked to the ICAO Strategic Objectives of enhancing global civil aviation safety and efficiency of aviation operations which are to:

- strengthen safety oversight capabilities of civil aviation authorities in Africa;

- ensure impartial and unimpeachable investigation and reporting of serious accidents and incidents;
- enhance capacity of regional and sub-regional safety oversight systems; and
- ensure expeditious implementation of aviation safety management systems for airports, air navigation service providers and airlines.

5.9 Mr. Belayneh highlighted the achievements of the AFI Plan during the six years of its existence to be:

- Regional Safety Oversight Organizations (RSOOs) have been established and continue to being supported;
- Training activities for inspectors and service providers have been successfully delivered; Significant Safety Concerns (SSCs) are being resolved with encouraging improvement of the Effective Implementation (EI) of the Standards;
- The creation of the Association of African Aviation Training Organizations (AATO) ; and
- The integration of the AFI Plan activities into the Regional Offices activities.

5.10 The 38th Session of the ICAO Assembly also adopted a Resolution on the expansion of the focus areas of the activities of the AFI Plan to include Air Navigation Services (ANS), Aerodromes and Ground Aids (AGA), and Aircraft Accident and Incident Investigation (AIG) in addition to Airworthiness, Operation of Aircraft (OPS) and Personnel Licensing (PEL). This expansion will enable AFI Plan align with the decisions and high-level Safety Targets adopted during the Ministerial Conference on Aviation Safety held in Abuja in July 2012 and endorsed by the Heads of States of the African Union in January 2013. The expansion requires the continued and active engagement of the relevant authorities responsible for civil aviation in Africa, significant support from ICAO and aviation safety partners as well as considerable financial investments in the sector.

5.11 In the field of Air Navigation, the AFI Planning and Implementation Regional Group (APIRG) has been working diligently to tackle air navigation issues facing the region, particularly in the areas of Air Traffic Management (ATM), Aeronautical Information Management (AIM), Aeronautical Meteorology (MET), Aeronautical Telecommunications (CNS), Aerodrome Operations (AOP) and Search and Rescue (SAR). From 2001 to 2012, the APIRG has produced about five hundred (500) Conclusions and Decisions aimed at the furtherance of the regional programmes pertaining to air navigation, which will be consolidated to facilitate follow up action by the States, the ICAO Secretariat and all concerned stakeholders.

5.12 Mr. Belayneh highlighted some significant achievements since APIRG/18 as follows:

- the successful implementation of the New ICAO Flight Plan on 15 November 2012;
- the implementation, in accordance with Assembly Resolution A37-11, of additional Performance Based Navigation (PBN) user preferred routes, standard arrival and departures (STARs and SIDs) approach procedures throughout the AFI region, in close coordination with users; and
- the 7 year extension of the administrative and funding arrangements existing between States, airspace users represented by the International Air Transport Association (IATA) to ensure sustainability of aeronautical satellite telecommunications networks (NAFISAT and SADC VSAT networks), to support the continued and effective provision of air traffic management (ATM) services.

5.13 The meeting was apprised of the outcome of the 12th Air Navigation Conference (AN-Conf/12, 19-30 November 2012) which addressed the ICAO Aviation System Block Upgrades - the ASBUs. The Conference particularly reached consensus, obtained commitments and formulated recommendations to achieve a harmonized global air navigation system for international civil aviation. The APIRG/19 Meeting was expected to adopt the AFI Air Navigation System Implementation Action prepared by the ICAO Regional Workshop which was conducted in Nairobi, Kenya from 21 to 25 October 2013. This Action Plan was to be aligned with the ICAO Aviation System Block Upgrades (ASBUs), in accordance with Recommendation 6/1 (Planning framework and Tools) of the Twelfth Air Navigation Conference (AN-Conf/12). In this regard, APIRG will coordinate its work with the AFI Regional Aviation Safety Group (RASG-AFI), the second meeting of which was also scheduled to take place in Dakar, from 1 to 2 November 2013. The outcome of the two groups was expected to be presented to the Fifth Meeting of the Directors-General of Civil Aviation (DGCA/5) on 4 November 2013 with a view to obtaining States' commitment to implementation of regionally agreed regional air navigation and safety performance objectives, priorities, targets and measuring achievements, for example through the use of the dashboard.

5.14 He finally indicated that the APIRG needed to consider restructuring its own working methods and organization, and the way it does its business within the performance based framework.

6. AGENDA

Agenda Item 0: Election of Chairperson and two Vice-Chairpersons

Agenda Item 1: Follow-up on outcome of APIRG/18 meeting

1.1 Review of the action taken by the ANC on the APIRG/18 report

1.2 Review of status of implementation of APIRG/18 Conclusions and Decisions

1.3 Review of status of implementation of APIRG outstanding Conclusions and Decisions

Agenda Item 2: Flight Safety and Regional Aviation Safety Group for AFI (RASG-AFI Activities – Global and Inter Regional Activities

2.1 Flight Safety and RASG-AFI activities

2.2 Global and Inter regional Activities including results of AN-Conf/12 and PIRG-RASG Global Coordination Meeting

Agenda item 3: Performance framework for Regional Air Navigation Planning and Implementation

3.0 Regional and National Performance Framework

3.1 Aerodrome Operations (AOP)

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

3.3 ATM Safety Management (RVSM Monitoring and Tactical Action Group (TAG))

3.4 Communications, Navigation and Surveillance (CNS)

3.5 Aeronautical Information Management (AIM)

3.6 Meteorology (MET)

3.7 Other Air Navigation Matters

Agenda Item 4: Regional Air Navigation Deficiencies

Agenda Item 5: Terms of Reference, Future Work Programme and Composition of the Group

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 Group's terms of reference, merit directly the attention of States or on which further action will be initiated by ICAO in accordance with established procedures; and

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

7.2 A Follow- up Action Plan on APIRG/19 Meeting Conclusions and Decisions is provided at **Appendix 1B** to this report.

PART II - REPORT ON AGENDA ITEMS

AGENDA ITEM 0: ELECTION OF CHAIRPERSON AND TWO VICE-CHAIRPERSONS AND ADOPTION OF THE AGENDA

Election of Chairperson and two Vice- Chairpersons

0.1 The meeting proceeded to elect the following:

Chairperson:	Mr. John T. Kagoro (Uganda) (re-elected)
First Vice-Chairperson:	Mr. Albert Aidoo Taylor (Ghana)
Second Vice-Chairperson:	Mrs. Paule Assoumou Koki (Cameroon)

Adoption of the Agenda

0.2 The meeting reviewed and adopted the Agenda as indicated in paragraph 6 of the history of the meeting.

AGENDA ITEM 1: FOLLOW-UP ON OUTCOME OF APIRG/18 MEETING

1.1 Review of action taken by the Air Navigation Commission (ANC) on APIRG/18 Meeting Report

1.1.1 The Group noted the action taken by the Air Navigation Commission on the Conclusions and Decisions from its Eighteenth Meeting (APIRG/18) held in Kampala, Uganda, from 27 to 30 March 2012.

1.2 Review of status of implementation of APIRG/18 Conclusions and Decisions

1.2.1 The Group reviewed the actions taken by the States, ICAO and International Organizations on Decisions and Conclusions emanating from the APIRG/18 Meeting. It also noted that a majority of these Conclusions and Decisions had been implemented, while others are being implemented or still require implementation.

1.2.2 The Group particularly reviewed the status of implementation of 12 Conclusions and Decisions and received updates on them by the concerned States and organizations. Those Conclusions and Decisions are addressed under Agenda Item 3 to this report.

1.3 Review of status of implementation of other outstanding Conclusions and Decisions from other APIRG previous meetings.

1.3.1 It was recalled that, in accordance with the terms of reference of the APIRG, the action taken by the Group shall be recorded in the form of Conclusions and Decisions.

1.3.2 Conclusions deal with matters which, in accordance with the Group's terms of reference, merit directly the attention of States, or on which further action is required to be initiated by the Secretary in accordance with established procedures. They are aimed mainly at the furtherance of studies and programmes being undertaken by the Group, its Sub-Groups and other ICAO Groups or meetings. For the implementation of such Conclusions, the Secretary shall:

a) initiate the required action; or
b) through the relevant ICAO Regional Office, invite States and International Organizations or other bodies as appropriate to undertake the tasks called for by the Conclusions concerned; or
c) refer them to Council or the Air Navigation Commission for appropriate action.

1.3.3 Decisions deal with matters related to internal arrangements within the Group and its Sub-Groups.

1.3.4 At its 18th Meeting in March 2012, the APIRG acknowledged that the number of Conclusions and Decisions have become cumbersome to manage effectively and requires a strategy to be developed for their streamlining. Under its Decision 18/01, the APIRG/18 Meeting requested the Sub-Groups should review all APIRG Conclusions and Decisions from APIRG/13 Meeting in 2001 to APIRG/17 Meeting in 2010, with the objective of identifying Conclusions and Decisions with the following characteristics:

a) Those which have been implemented or become obsolete due to developments;
b) Those which have matured to be included in the work Programme of APIRG and its subsidiary bodies as well as the Terms of Reference or Handbook of the Group;
c) Those which are adequately covered by other specific provisions of ICAO including SARPs, Assembly Resolutions and Regional requirements, to be deleted or reformulated to complement such other ICAO provisions; and
d) Those which have since become redundant.

1.3.5 The Group formulated its Decision 18/01 on the Review of APIRG Conclusions and Decisions since APIRG/13 Meeting, and noted the following breakdown thereof:

APIRG Meetings	Number of Conclusions	Number of Decisions
APIRG/13	97	5
APIRG/14	57	8
APIRG/15	85	18
APIRG/16	51	18
APIRG/17	88	19
APIRG/18	48	16
TOTAL	416	84

1.3.6 The Group noted that the Sub-Groups had completed the review and update of the previous Conclusions and Decisions from previous APIRG meetings. Conclusions and Decisions that were still valid had been consolidated or reformulated. Other Conclusions and Decisions concerning more than one technical area needed further consideration and coordination within the Secretariat. A detailed analysis of the Conclusions and Decisions from previous meetings of the APIRG is provided at Appendices to this report on Agenda item 3.

1.3.7 The following Decision was formulated:

DECISION 19/01: CONSOLIDATION OF CONCLUSIONS AND DECISIONS FROM PREVIOUS MEETINGS

That the Secretariat should:

a) finalize the review of the Conclusions and Decisions from APIRG previous meetings, which require further consideration within the Secretariat; and
b) reflect the consolidation of the Conclusions and Decisions that are still valid in the action plan to be derived from the report of APIRG/19 Meeting.

AGENDA ITEM 2: FLIGHT SAFETY AND REGIONAL AVIATION SAFETY GROUP FOR AFI (RASG-AFI) ACTIVITIES – GLOBAL, REGIONAL AND INTERREGIONAL ACTIVITIES

2.1 Flight Safety and RASG-AFI Activities

2.1.1 The APIRG noted that the First Meeting of the Regional Aviation Safety Group (RASG-AFI/1) held in March 2012 in Kampala, Uganda adopted a total of five (5) Decisions and two (2) Conclusions. The meeting was provided with an update on the status of implementation of the actions derived from these Decisions and Conclusions.

2.1.2 The APIRG noted that RASG-AFI was still in a formative stage, and that all RASG-AFI/1 Decisions were geared towards the establishment of the Group and its subsidiary bodies. In this regard, the meeting was further advised that three of the five Decisions had been fully implemented and closed with the remaining two Decisions partially implemented.

2.1.3 Although some progress had been made with respect to the two Conclusions adopted by the RASG-AFI/1 Meeting, these Conclusions remained open as some of the related actions were still outstanding.

2.1.4 The APIRG noted the implementation status and was also informed that the outstanding Decisions and Conclusions had been covered in the relevant papers of the RASG-AFI/2 Meeting for further discussions and guidance.

2.2. Follow-up to recommendations of the AN-Conf/12

2.2.1 The meeting was presented with information on the outcome of, and actions taken by the Council of ICAO on the Twelfth Air Navigation Conference (AN-Conf/12) held in Montreal from 19 to 30 November 2012. The Conference agreed to a number of recommendations which call for further follow-up by ICAO, States, International Organizations and Planning and Implementation Groups (PIRGs) as well as Stakeholders. The proposed actions on the recommendations were presented with a view to seeking confirmation from APIRG that it will make appropriate contributions to follow-up.

2.2.2 The meeting noted that the ICAO Council had considered in March 2013 and approved the report of the AN-Conf/12, as presented by the Air Navigation Commission. In taking action recommended by the Commission, the Council confirmed ICAO's role in the follow up, and called upon States, international organizations, PIRGs and stakeholders to initiate action on specific recommendations as necessary. The meeting also took particular cognizance of Recommendation 6/1 – *Regional performance framework – planning methodologies and tools*, which was expected to have a significant bearing on the future direction and work of the APIRG and individual States in the region. This included the alignment of regional air navigation plans with the Fourth Edition of the Global Air Navigation Plan (Doc 9750, GANP) by May 2014 and the need for States and PIRGs to focus on implementing of ASBU Block 0 Modules according to their operational needs.

2.2.3 Based on the information provided by the Secretariat and noting the action taken by the Council as well as Air Navigation Commission, the meeting adopted the following Conclusion and Decision:

CONCLUSION 19/02: FOLLOW-UP TO AN-CONF/12 RECOMMENDATIONS BY STATES AND INTERNATIONAL ORGANIZATIONS

That the States and International Organizations take follow-up action as appropriate on the applicable recommendations of the AN-Conf/12.

DECISION 19/03: FOLLOW-UP TO AN-CONF/12 RECOMMENDATIONS BY APIRG

That the Sub-Groups of the APIRG examine the recommendations of the AN-Conf/12, initiate the follow-up action and submit the report to the APIRG/20 Meeting.

AGENDA ITEM 3: PERFORMANCE FRAMEWORK FOR REGIONAL AIR NAVIGATION PLANNING AND IMPLEMENTATION

3.0 Regional and Global Air Navigation Reporting

3.0.1 As a follow-up on the need to align the regional air navigation plan with the Fourth Edition of the Global Air Navigation Plan (Doc 9750, GANP) by May 2014 and focus on implementing ASBU Block 0 Modules (AN-Conf/12 Recommendation 6/1a) and b) refers) the meeting was presented with ways to report on the progress of regional implementation through a planned online system referred to as the Regional Performance Dashboard which will also support an annual Global Air Navigation Report. The former was expected to be in place by January 2014 and the inaugural Global Air Navigation Report was slated for March 2014.

3.0.2 The meeting noted that, while PIRGs are progressively identifying a set of regional performance indicators and supporting metrics, States had recognized that data compilation, processing, storage and reporting for the identified regional performance metrics were fundamental to the success of the performance-based approach.

3.0.3 In order to support these ongoing tasks of the States, PIRGs needed to consider allocating the measurement effort to an existing PIRG Sub-Group or forming a new Sub-Group for this purpose. In acknowledging that, an alternative Task Force, taking suitable expertise from existing Sub-Groups, with a limited time frame could be a potential solution. The meeting called upon the two ICAO Regional Directors to investigate such mechanisms, and address a proposal to States as soon as possible and not later than 31 December 2013.

3.0.4 In noting the plan for an online Regional Performance Dashboard and the annual Global Air Navigation Report, the meeting urged States to support the ICAO Regional Offices by providing the requisite information to demonstrate operational improvements; and requested States, that have not yet done so, to establish a performance measurement strategy for their air navigation system.

3.0.5 Regional Priorities and Targets for Air Navigation

3.0.5.1 As PIRGs are progressing with regional performance improvements through implementation of relevant ASBU Block 0 Modules of the GANP, the meeting was presented with an approach to prioritization and methodology to assist developing regional priorities and targets for air navigation. This prioritization exercise could be done first by individual States, depending on their needs and then regionally by the PIRGs. Identifying the homogeneous ATM areas, major traffic flows and international aerodromes and analyzing this data should lead to the identification of opportunities for operational performance improvement.

3.0.5.2 The meeting was also presented with information on a first step to preparing the way forward for this approach; a Planning and Implementation Regional Groups (PIRGs) and Regional Aviation Safety Groups (RASGs) Global Coordination Meeting (GCM), held in Montreal on 19 March 2013 under the Chairmanship of the President of the ICAO Council. The main objective of the meeting was to exchange views on the readiness and ability of the PIRGs and RASGs to set priorities and targets in line with the new versions of the GANP and the Global Aviation Safety Plan (GASP).

3.0.5.3 Based on the information provided by the Secretariat, the meeting agreed to the following Conclusion:

CONCLUSION 19/04: REGIONAL PRIORITIES AND TARGETS FOR AIR NAVIGATION

That:

a) States establish, consistent with Recommendation 6/1 of the Twelfth Air Navigation Conference, priorities and targets for air navigation by May 2014;
b) States share successful initiatives among each other;
c) PIRGs utilize specific interface groups, where required, for addressing the harmonization of air navigation plans in adjacent regions; and
d) The Secretariat develop a coordination mechanism between the APIRG and the RASG-AFI to ensure consistency of action and avoid overlap.

High Level Safety Targets-Abuja 2012 Ministerial Conference

3.0.5.4 The meeting noted that the Ministers responsible for Civil Aviation demonstrated a goodwill and political support at the Ministerial Conference on Aviation Safety (Abuja, Nigeria, 16-20 July 2012) which significantly helped to implement aviation safety in the AFI Region. The political support demonstrated during the Conference is seen as an important element for achieving the Safety Targets within the timelines as indicated in the Plan of Action on Aviation Safety in Africa. In order to systematically and effectively achieve the above Abuja Safety Targets, the Conference developed a Plan of Action on Aviation Safety in Africa to monitor and evaluate the status of implementation of the various issues, conclusions and initiatives. Bearing this in mind, the meeting formulated the following Conclusion:

CONCLUSION 19/05: HIGH LEVEL SAFETY TARGETS-ABUJA 2012 MINISTERIAL CONFERENCE

That:

a) AFI States be urged to strictly adhere to the AFI 2012 Ministerial Conference plan of action for the implementation of the Abuja Safety Targets in conformity with the established timelines;
b) AFI States which have not yet done so should provide information/feedback on the implementation status of the Abuja Safety Targets to enable AFCAC monitor the level of implementation; and
c) APIRG and RASG-AFI be urged to address and coordinate issues related to the implementation of Abuja Safety Targets.

3.0.6 The Evolution of Electronic Tools and DATA

A Strategic Plan for the Creation of a Community-Driven Decision Support Digital Environment for the Global Aviation Community

3.0.6.1 The meeting was presented with an overview of the continued transition of the ICAO's-centred, paper-based, data collection and reporting processes into a set of tools designed to support the implementation of the global strategies, including the Global Aviation Safety Plan (GASP) and the Global Air Navigation Plan (GANP).

3.0.6.2 To resolve the undesired effects of the ICAO-centric approach to data management, it was found that a transformation to a user-centred approach was necessary. To that effect, ICAO had taken steps towards becoming more "user-centric". These developments, following a set of guiding

principles of access, harmonization, user-centric, focus on aviation, and quality management included:

a) creating a web-based system grouping together different safety-related datasets and allows for effective integrated safety analysis called iSTARS (available at the secure portal https://portal.icao.int/iSTARS);
b) implementing a unique air transport statistical site for both internal and external users, called ICAOdata+ (available at http://www2.icao.int/en/G-CAD/Pages/default.aspx);
c) grouping all tools related to ICAO Standards and Recommended Practices (SARPs) and their implementation on to a single platform called the SARPs Management and Reporting Tool (SMART) (available at www.icao.int/USOAP); and,
d) launching a platform that would become the single entry point for all "Air Navigation" related data at the Twelfth Air Navigation Conference (available at portal.icao.int/SPACE).

3.0.6.3 In order to ensure the sustainability of the digital space, the participation by stakeholders must be needs-based and user-driven and be supported by a healthy funding mechanism.

3.0.6.4 The meeting noted the development of the aviation tools designed to support the implementation of GANP and GASP and expressed support for the roll-out plan of the aviation tools.

3.0.7 Development of an AFI Air Navigation System Implementation Action Plan aligned with the ICAO Aviation System Block Upgrade (ASBU) Methodology

3.0.7.1 The Group noted the ICAO Twelfth Air Navigation Conference (AN-Conf/12) Recommendation 6/1 – *Regional performance framework – planning methodologies and tools*, which – inter alia – requests States and PIRGs to:

a) finalize the alignment of regional air navigation plans with the Fourth Edition of the *Global Air Navigation Plan* (Doc 9750, GANP) by May 2014;
b) focus on implementing aviation system block upgrade Block 0 Modules according to their operational needs, recognizing that these modules are ready for deployment;
c) use the electronic Air Navigation Plans (eANPs) as the primary tool to assist in the implementation of the agreed regional planning framework for air navigation services and facilities;
d) involve regulatory and industry personnel during all stages of planning and implementation of aviation system block upgrade modules; and
e) develop action plans to address the identified impediments to air traffic management modernization as part of aviation system block upgrade planning and implementation activities.

3.0.7.2 The Group was informed that the Council of ICAO had approved the Fourth Edition of the Global Air Navigation Plan (GANP, Doc 9750) on 29 May 2013, and particularly called on the Planning and Implementation Regional Groups (PIRGs) of the ICAO Regions to:

a) develop regional action plans with priorities and targets;
b) determine performance indicators/metrics to measure implementation progress and associated benefits; and
c) identify implementation challenges.

3.0.7.3 As a follow up to the above recommendations emanating from the Twelfth Air Navigation Conference, the ICAO Council and the Global PIRG/RASG Coordination Meeting (March

2013), an initial draft AFI Regional Air Navigation System Implementation Action Plan was developed by the Secretariat and circulated to States for their review and comments.

3.0.7.4 In order to assist in the development of the AFI Regional Air Navigation System Implementation Action Plan, an ICAO Regional Workshop on ASBU took place in Nairobi, from 21 to 25 October 2013**.** The workshop was attended by 88 delegates representing 23 Contracting States and 6 international organizations.

3.0.7.5 The Group reviewed the initial draft AFI Air Navigation System Implementation Action Plan prepared by the ASBU Workshop, and agreed on the priorities, targets and metrics/indicators to measure implementation progress and operational improvements for all the 18 ASBU Block 0 Modules applicable to the AFI Region. 15 Air Navigation Reporting Forms (ANRFs) were developed for recommended modules, and 3 other ANRFs need to be completed for specific modules (B0-ASEP, B0-OPFL and B0-WAKE).

3.0.7.6 The Group identified Block 0 modules (such as B0-APTA, B0-SURF, B0-AMET, B0-ACAS, B0-SNET) which are particularly related to the Safety Key Performance Area (KPA), the implementation of which needs to be coordinated and addressed through regional aviation safety mechanisms (RASG-AFI, AFI Plan) and other relevant safety initiatives for the AFI Region.

3.0.7.7 The Group recognized the importance of providing capacity building through workshops and seminars to AFI States and regional stakeholders as the needs arise at different levels of ASBUs.

3.0.7.8 The Group called upon the African Civil Aviation Commission (AFCAC), Regional Economic Organizations and Financial institutions to provide their support and assist States on the implementation of the AFI Regional Air Navigation System Implementation Action Plan.

3.0.7.9 In view of the above, the following Conclusion was adopted:

CONCLUSION 19/06: ADOPTION OF AFI REGIONAL AIR NAVIGATION SYSTEM IMPLEMENTATION PLAN ALIGNED WITH THE ICAO AVIATION SYSTEM BLOCK UPGRADE (ASBU)

That:

a) AFI States adopt the Regional Air Navigation System Implementation Plan aligned with the 18 Block 0 Modules of the ICAO Aviation System Block Upgrades (ASBU) Methodology, as provided at Appendix 3.0A to this report;

b) That AFI States implement the adopted modules based on their operational needs, the categorization and the prioritization defined in the Action Plan;

c) The Secretariat finalize the implementation targets set for the adopted ASBU Block 0 Modules, and ensure that these targets are aligned with existing regional programmes aimed at enhancing air navigation capacity and efficiency and aviation safety;

d) The APIRG and the ICAO Regional Offices coordinate the implementation of the ASBU Block 0 Modules related to Safety Key Performance Area with regional aviation safety mechanisms (RASG-AFI, AFI Plan) and other relevant safety initiatives for the AFI Region;

e) ICAO continually provide capacity building through workshops and seminars to AFI States and regional stakeholders as the needs arise in the different levels of ASBUs; and

f) The African Civil Aviation Commission (AFCAC), Regional Economic Communities and Financial institutions to provide their support and assist

States the implementation of the AFI Regional Air Navigation System Implementation Action Plan.

3.0.8 Report of the Africa-Indian Ocean Traffic Forecasting Group Seventh Meeting (AFI TFG/7)

3.0.8.1 The Group reviewed the forecasts and analysis prepared by the Seventh meeting of the AFI Traffic Forecasting Group (TFG) which was held in Nairobi, Kenya from 27 to 30 August 2013. It noted that these traffic forecasts developed by the AFI TFG were provided on the basis of major route groups to, from and within the African region, corresponding to the ICAO statistical regions.

Passenger Traffic Forecasts

3.0.8.2 Passenger air traffic to, from and within the African region on the five major route groups for the period 2012-2032 is expected to increase at an average annual rate of 7.2 per cent. The Intra-Africa route group is expected to experience the highest average annual growth rate of 9.4 per cent per annum, followed by Africa-Middle East, Africa-Asia/Pacific, Africa-North America and Africa-Europe route groups with growth rates of 8.6 per cent, 6 per cent, 5.5 per cent and 5 per cent, respectively, for the period considered.

Aircraft Movement Forecasts

3.0.8.3 The total aircraft movements to, from and within the African Region are forecast to increase from some 726.2 thousand in 2012 to about 2, 587 thousand in 2032 at an average annual growth rate of 6.6 per cent. Aircraft movements will grow the fastest within Intra-Africa, followed by Africa-Middle East and Africa-Asia/Pacific.

Scope of the Work of the AFI Traffic Forecasting Group

3.0.8.4 The Group noted that the data provided by the AFI TFG were useful for States and aviation stakeholders. However, the work of the AFI TFG was not aligned with APIRG requirements for traffic forecast data for the homogeneous ATM areas and major traffic flows/routing areas defined in the AFI Region.

3.0.8.5 The Group emphasized the need for States to fully participate in the ICAO Statistics Programme and provide the relevant FIR data identified by the AFI TFG to enable the development of reliable forecasts for traffic flows. It noted that the Tenth Statistics Division Meeting (STA/10, 2009) had decided to discontinue Form L on En-Route Services Traffic Statistics, and had recommended the creation of one harmonized, global aircraft movement database which would enable ICAO to perform traffic analyses that address the changing requirements in air traffic management and air navigation for potential applications; and request ICAO to consider the implementation of an appropriate Form which could help address specific regional needs.

3.0.8.6 The Group took cognizance the ICAO AN-Conf/12, Recommendation 6/11 *(Regional performance framework–Alignment of air navigation plans and regional supplementary procedures)*, which will result in the transfer of seven FIRs Alger, Cairo, Canarias, Casablanca, Khartoum, Tripoli and Tunis FIRs, to EUR and MID ANPs. In view of the above, the following Conclusion was formulated:

CONCLUSION 19/07: INTEGRATION OF THE AFI TRAFFIC FORECASTING GROUP IN THE APIRG

That:

a) the activities of the AFI Traffic Forecasting Group should be integrated in the APIRG, and aligned with the ICAO Aviation Data and Analysis Panel (ADAP) ;
b) the forecasts developed by the AFI TFG should cover the major traffic flows and the routing areas in the AFI Region, as well as other planning requirements of the region;
c) ICAO should implement an improved Form L (En-Route Services Traffic Statistics) to accommodate specific regional needs for traffic analyses in a changing environment; and
d) States should fully participate in the ICAO Statistics Programme and provide the relevant FIR data identified by the AFI TFG to enable the development of reliable forecasts for traffic flows.

3.1 Review of activities of the Aerodrome Operations Planning Sub-Group (AOP/SG)

3.1.1 Under agenda item 3.1, the meeting was presented with the report of the tenth meeting of the Aerodrome Operational Planning Sub-Group (AOP/SG/10), held in Nairobi, Kenya, from 5 to 8 August 2013, and deliberated on it as follows:

Follow up of APIRG/18 Meeting Conclusions and Decisions related to AOP Field

3.1.2 On the status of implementation in the AFI Region of the previous APIRG meetings Conclusions and Decisions; although substantial implementation progress had been achieved, there had been several challenges in particular related to the scarcity of adequately trained and experienced aerodrome inspectors. After discussion, the meeting formulated the following Conclusion:

CONCLUSION 19/08: AERODROME INSPECTOR TRAINING

That:

a) States wishing to get ICAO training (Integrated Safety Management Course, Aerodrome Inspector's Courses and Aerodromes Certification Course) should send requests to ICAO Regional Offices, and where possible coordinate such requests with other States for Region-wide benefit, and that when such courses are organized, States should include participants from the "Regulator", "Aerodrome Operator" and "Airline Operators"; and
b) Regional Safety Oversight Organizations (RSOOs) which have developed Aerodrome Inspector Training Systems should share them with others.

AFI ANP List of International Aerodromes

3.1.3 Regarding the long standing issue with respect to the existence in the AFI ANP List of International Aerodromes of some aerodromes which are not currently receiving and are not planning to receive in the foreseeable future regular international flights, the meeting noted that such aerodromes are not therefore given priority in allocation of resources and are therefore poorly equipped. Consequently such aerodromes continue to remain with deficiencies for a long time. The meeting acknowledged that specific circumstances in Africa sometimes require flights across borders which technically are international flights. Aerodromes from and to which such flights operate are international aerodromes as per the definition of Annex 9 (Facilitation) to the Chicago Convention and some States include them in their list of international aerodromes for AFI ANP purposes.

However, due to the small volume of traffic and in many cases the size of the aircraft used, such aerodromes are not properly equipped.

3.1.4 The meeting urged States to ensure facilities and services are provided at all international aerodromes in accordance with the requirements in the AFI Air Navigation Plan (ANP). The meeting formulated the following Conclusion:

CONCLUSION 19/09: ANP LIST OF INTERNATIONAL AERODROMES

That ICAO should, where it has obtained official communication from the States, proceed with the amendment of the Air Navigation Plan (Doc 7474 Vol. I, AFI Basic ANP) – List of International Aerodromes, in accordance with the procedure for amendment approved by the Council of ICAO.

12th Air Navigation Conference (AN CONF/12) (Montreal, 19-30 November 2012)

3.1.5 The meeting further noted that following the outcome of the 12th Air Navigation Conference (AN-Conf/12, Montreal, 19-30 November 2012) Recommendation 6/11 "Regional performance framework – alignment of air navigation plans and regional supplementary procedures", it was necessary to align the areas of applicability of the Regional Air Navigation Plans (ANPs) with the Regional Supplementary Procedures (SUPPs). The alignment of the areas of applicability of the ANPs and SUPPs will integrate, within each planning and implementation regional group (PIRG). This will provide benefits to States, PIRGs and the ICAO Secretariat to support a more efficient implementation of the Aviation System Block Upgrades (ASBUs) concept in the regions. The meeting therefore noted the changes consequent to this outcome related to the AOP Table I for some States moving from the Africa-Indian Ocean (AFI) ANP (Doc 7474) to the Middle East (MID) ANP (Doc 9708) and from AFI ANP to Europe (ANP Doc 9639).

ICAO Universal Safety Oversight Audit Programme (USOAP)

3.1.6 The meeting acknowledged that the fundamental and time-tested process of identifying deficiencies through the safety oversight audits, encouraging States to develop and implement plans to correct the deficiencies and analyzing the audit results to create a guide for future improvements is the cornerstone for the success of USOAP. The meeting also appreciated the evolvement of USOAP to Continuous Monitoring Approach (CMA) which will monitor the safety oversight capabilities of ICAO Member States on an ongoing basis and carry out various USOAP activities based on an analysis of safety risks. The meeting noted that USOAP results indicate that in all the critical elements of a State's safety oversight system (including in the AGA area) the percentage of Effective Implementation (EI) in the AFI Region is substantially lower than the global average.

3.1.7 The meeting acknowledged and highlighted the problems related to the overlapping of responsibilities and/or sometimes lack of designation of an entity responsible for the overhaul management of the safety of all operations for an airport in some ASECNA States. This issue repeatedly raised during AOP/SG meetings, hampers the certification of aerodromes in the region. An urgent solution is indispensable and the ASECNA Member States must play a major role at the highest level in coordination with other regional bodies (Regional Offices of ICAO, COSCAPs, etc.). The Group formulated the following Conclusion:

CONCLUSION 19/10: UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME (USOAP)

That:

a) In order to realize improved high effective implementation (EI) of the

various Critical Elements, States should ensure aerodrome inspectors are adequately trained, including on-the-job training, specialized training, refresher training etc., to effectively perform all the safety oversight functions;

b) In some AFI States, where several aerodrome operator responsibilities are shared among several entities, the concerned States should identify and clearly designate which entity shall be certified and shall hold that certification on behalf of all the others and shall therefore have accountability on the activities of all the other entities; and

c) ICAO should consider publishing for the use by States technical guidance material on the conduct of aeronautical studies and the use of the results of the aeronautical studies for the evaluation of requests for exemptions.

Runway Safety Programmes

3.1.8 The meeting noted that the ICAO Global Runway Safety Symposium (GRSS) held in Montreal, Canada, from 24 to 26 May 2011 was an important first step in coordinating a global effort for improving runway safety by identifying what a State can do to improve runway safety, including determining a common framework for the enhancement of runway safety. The GRSS recommended the holding of Regional Runway Safety Seminars (RRSS), and so far there have been two RRSS in the AFI region, in Cape Town, South Africa from 29 to 30 October 2012, and in Agadir, Morocco from 10 to 12 April 2013.

3.1.9 The meeting noted that during these Regional Runway Safety Seminars, ACI committed to support AFI States by providing free training related to SMS and basics of Annex 14 to the Chicago Convention and in particular aerodrome signage and marking, as well as facilitating knowledge sharing and information. CANSO, on the other hand, committed to facilitate communication with ATC to obtain their commitment and to provide guidance material and ICAO committed to develop a Runway Safety Team Handbook.

3.1.10 The meeting further acknowledged that as a follow up, the ESAF Regional Office is collaborating with AVIASSIST and the Civil Aviation Safety and Security Regional Safety Oversight Agency (CASSOA) for the East African Community (EAC) to hold a seminar on runway safety at Entebbe, from 4 to 8 November 2013. The seminar Programme will include establishment of a Runway Safety Team (RST) at Entebbe International Airport and the participants from the five EAC Partner States are expected to commit to the establishment of RSTs in their States subsequent to the seminar. The meeting formulated the following Conclusion:

CONCLUSION 19/11: RUNWAY SAFETY PROGRAMMES

That:

a) States, which have not yet done so, establish Runway Safety Teams (RSTs) at all international aerodromes; and

b) The RSTs established should be appropriately mandated to monitor the runway incursion and excursion incidents and accidents and propose mitigation measures proactively.

Aviation System Block Upgrades (ASBUs) Concept

3.1.11 The meeting noted the discussion of the AOP Sub-Group on the information regarding the introduction of the ICAO Aviation System Block Upgrades (ASBU) concept and supporting technology roadmaps based on the ICAO Global Air Navigation Plan (GANP, Doc 9750), as discussed under Agenda Item 3.0, with focus on ASBU Block 0 Modules for the AFI region under the Performance Improvement Area 1 (Airport Operations)

ICAO-ACI Airport Excellence (APEX) in Safety Programme

3.1.12 The meeting noted the progress of the ICAO-ACI APEX Programme announced at the ICAO Global Runway Safety Symposium in Montreal in May 2011 whose aim is to assist aerodrome operators with the improvement level of safety and compliance with ICAO Standards and Recommended Practices. The procedure of the APEX in Safety Programme is based on a Memorandum of Cooperation (MoC) between ACI and ICAO to provide a framework in order to jointly pursue the highest possible levels of safety at aerodromes worldwide.

3.1.13 The meeting acknowledged the benefits associated with the ICAO-ACI APEX Programme through access to experts, training, workshops and seminars, working groups at local, regional and international levels. These benefits result to the State oversight capabilities receiving a boost, as the airport participating in the APEX in Safety Programme will display a greater level of compliance with SARPs and the national regulations applicable. The aerodromes being reviewed benefit from ACI best practices, operational expertise from peer aerodromes and other Programme partners, and contribution from ICAO.

3.1.14 The meeting appreciated the activities being conducted within COSCAP-UEMOA allowing it to obtain extensive experience in the region and knowledge of the subsequent problems. It noted that COSCAP-UEMOA will continue to provide technical assistance to all the UEMOA Member States and Mauritania. The objectives being to certify in the medium term the international aerodromes. The meeting therefore formulated the following Conclusion:

CONCLUSION 19/12: ICAO-ACI APEX PROGRAMME

That States:

a) Support the use of the APEX in Safety Programme at aerodromes in the AFI region;
b) Encourage airport operators to approach ACI for assistance through the APEX in Safety Programme; and to recommend aerodrome operators in the AFI region to participate in the APEX Safety Reviews Programme and share relevant information on safety;
c) In the framework of APEX Programme, encourage the pooling of experts of States to carry out aerodrome certification audits, given the lack of human resource capacity at the national level;
d) Encourage the sharing of experiences among ICAO States, the COSCAP projects and Regional Civil Aviation Safety Oversight Organizations (RSOOs); and
e) Encourage the participation of these Organizations in the ICAO/ACI APEX Programme.

Review of the AOP/SG terms of reference in support of the ICAO strategic objectives

3.1.15 The meeting noted the proposal to amend the AOP/SG terms of reference (ToR) and future work Programme with a view to incorporating ICAO's emphasis on ensuring that all activities support the ICAO Strategic Objectives. The meeting noted the amendment of item 1.3 of the ToR to include the Sub-Group's contribution towards the ASBU concept, aerodrome planning and design and runway safety.

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

3.2.1 The Group considered the outcome of the thirteenth meeting of the Air Traffic Management/Aeronautical Information Management/Search and Rescue Sub-Group (ATM/AIM/SAR SG/13) which was held in Nairobi, Kenya from 16-19 September 2013.

Follow-up on SP AFI RAN Recommendations, APIRG Conclusions and Decisions within the Framework of APIRG relevant to the ATM/AIM/SAR SG

3.2.2 The Group noted that pursuant to APIRG Decision 18/01: *Review and Update of APIRG Conclusions and Decisions*, 179 Conclusions and Decisions from the APIRG/13 Meeting in 2001 to the APIRG/18 in 2012 had been reviewed. The Group agreed that of these, 129 had become redundant (overtaken by events, action completed, included in other documents, duplicated in other APIRG Conclusions or Decisions, etc.). As such the Group endorsed the retention or reformulation of 50 Conclusions and Decisions as at **Appendix 3.2A** to this report. In addition, the Group endorsed the action items listed at **Appendix 3.2B** to this report**,** arising from the report of the ATM/AIM/SAR Sub-Group.

3.2.3 Taking into consideration the standards for classification of ATS airspaces, related Regional requirements and previous implementation efforts, the Group formulated the following Conclusion to address the harmonized implementation of air traffic control service in the AFI Region:

CONCLUSION 19/13: IMPLEMENTATION OF AIR TRAFFIC CONTROL SERVICE

That,

by 26 June 2014, AFI States that have not already done so, establish Class A airspace in accordance with Section 2.6 of Annex 11 to the Chicago Convention, and implement air traffic control service in the lower airspace as follows:

- **a) establish Class A airspace above FL145 for all ATS routes referred to in Table ATS 1 of the AFI Air Navigation Plan (Doc 7474) as amended;**
- **b) establish Class A airspace above Flight Level 195 elsewhere within the FIR; and**
- **c) implement effective and sustained air traffic control service in all terminal control areas (TMA) and control zones (CTR).**

***Note**: This Conclusion is to supersede all previous Conclusions of APIRG relating to the implementation of ATC, including Conclusions 13/31, 13/41, 14/20, 14/26, 15/45 and 16/45.*

3.2.4 The Group noted that in recent years there had been rapid changes in planning methodologies and tools made available, as a result of which the Regional CNS/ATM planning Document, Doc 003 had not been kept up to date. However, the Group was of the view that the Document continues to have importance, and as such requested the Secretariat to take necessary action to revive at least aspects of Doc 003 which continue to be relevant.

Review and Update of the AFI SSR Code Allocation Plan

3.2.5 The Group recalled that at its Fourteenth meeting in June 2003 it had adopted Conclusion 14/25 on the updated SSR Code Allotment Plan. It was agreed that the Plan had become due for update in order to continue serving the Region adequately. Accordingly the meeting formulated the following Decision to establish a working group for the review and update of the Plan.

DECISION 19/14: ESTABLISHMENT OF THE AFI SSR CODE ALLOCATION AND ASSIGNMENT WORKING GROUP

That, the AFI SSR Code Allocation and Assignment Working Group (ASCAA WG) be established with the terms of reference as at Appendix 3.2B to this report, to review and update the AFI SSR Code Allotment Plan and code assignment principles.

CNS/ATM Coordination

3.2.6 The Group noted that, while CNS implementation strategies established within APIRG took into consideration operational requirements, in many cases the planning and implementation of CNS investments at national level did not reflect the desired consultation and coordination to ensure that investments in CNS infrastructure are in support of operational requirements. Amongst others, there were cases where radar surveillance (SSR) was being used for "monitoring" of procedural ATC separation. In this regard, States and ANSPs were urged to ensure the required coordination and in particular to establish collaborative decision making (CDM) processes in which effective consultation with users (ATC, AIS/Message Handling, etc.) can be achieved prior to introducing CNS technologies. In addition, the application of existing and planned technologies such as SSR should be optimized; taking into consideration the PBN related operational improvements (efficiency, airspace capacity, safety and environmental protection) that can benefit immediately from such technologies.

CNS support to air traffic services

3.2.7 The meeting noted that the AFI Tactical Action Group (TAG) had recorded a high number of Unsatisfactory Condition Reports (UCRs) including AIRPROXs, in which lack of/or poor communication had been a cause or contributing factor. Some FIRs were still relying solely on High Frequency (HF) communication for air/ground and ATS/DS, while some had gaps in the coverage of communication with aircraft. The Group urged States and ANSPs to take necessary action without further delay in order to address the communication deficiencies identified by the TAG.

PBN and AFI ATS Route Network

3.2.8 In order to facilitate coordinated implementation, the Group agreed on the AFI Optimized Route Trajectories and Airspace (AORTA) to provide for the identification of specific elements of implementation carried over from the work done under the 3rd Edition of the GANP and the Regional Performance objectives, to the 4th Edition of the GANP. AORTA will comprise a package of specific end to end (departure to arrival) operational improvements which will be phased for implementation at specific target dates on a Regional (AFI) basis. The processes of development will follow the criteria and prioritization as at **Appendix 3.2C** to this report.

3.2.9 The Group reviewed and updated the AFI ATS Route Catalogue AARC template as at **Appendix 3.2D** to this report, to reflect targeted benefits for the specific operational improvement, and agreed on the following Conclusion:

CONCLUSION 19/15: AFI ATS ROUTE CATALOGUE (AARC)

That, in order to facilitate the review and implementation of user ATS route requirements:

a) the AARC Template is revised as at Appendix 3.2D to this report; and
b) AFI States and concerned international organizations be urged to review the Catalogue every six (6) months (January and July), note developments, and take action as applicable.

3.2.10 The Group requested ICAO to arrange PBN implementation workshops entailing increased hands on practice based on existing airspaces. In addition, States should participate actively in such workshops by sharing experiences and Regional expertise.

3.2.11 The Group agreed on the reactivation of CNS/ATM Implementation Coordination Groups (ICGs). However, the terms of reference thereof should be expanded to include ATM operational coordination issues. In this regard, the Group formulated the following Decision:

DECISION 19/16: REACTIVATION AND REVIEW OF THE TERMS OF REFERENCE OF CNS/ATM IMPLEMENTATION COORDINATION GROUPS (ICGs)

That, in order to facilitate coordination in the planning and implementation of CNS systems for ATM, as well as the harmonized implementation of ATM performance improvements:

a) the Implementation Coordination Groups (ICGs) as established in the AFI CNS/ATM Implementation Plan (Doc 003) be reactivated;
b) the activities of the ICGs be expanded to include ATM coordination tasks that had been carried out in informal ATM Coordination Meetings;
c) the number and alignment of the ICGs take into consideration the added tasks, in particular those that are sub-regional in nature; and
d) the terms of reference of the ICGs be revised as at Appendix 3.2E to this report.

3.2.12 The Group proposed the revised terms of reference of the PBN Route Network Development Work Group as at **Appendix 3.2F** to this report in order to adequately reflect the assignment by APIRG/18 of tasks relating to environmental protection.

AFI Flight Procedure Programme

3.2.13 The Group noted the successful establishment of the AFI Flight Procedure Programme (FPP) to support the implementation of PBN in the Region pursuant to Assembly Resolution A37-11. It was noted that the FPP, which is located in Dakar, Senegal, was launched under the initial sponsorship of three (3) years by the French Civil Aviation Directorate (DGCA) and ASECNA. Among others, the French DGCA has provided part of the funding and procedure design software, while ASECNA has provided facilities, expertise and other levels of staff. With regard to its organization, the meeting noted that the FPP is an ICAO non-profit Programme providing expertise and services in the field of PBN implementation. Specific details regarding the organization, operation, services and products are provided at **Appendix 3.2G** to this report.

3.2.14 The meeting recalled that all AFI States are invited to participate in the FPP as beneficiaries and/or in support roles that the success of the FPP depends on the participation of States. In this regard, information was provided on various ways with which States may participate.

3.2.15 With regard to queries that had been raised during the ATM/AIM/SAR SG/13 with respect to liability associated with the products and services, as well as the regulatory authority under which the training would be provided, the following explanations were provided:

Liability: the liability associated with products and services such as flight procedures designed by the FPP will remain with the State. The FPP will take necessary action to verify the appropriateness of data provided for the instrument flight procedures requested. However, the FPP may not guarantee the accuracy of data provided by the State, unless where the FPP has been assigned by the State to collect such data within the State and under conditions agreed by the two parties.

Training: The training provided by the FPP to personnel from States will not be under the regulatory authority of a State. However, the meeting noted that the provision of training by the FPP will be guided by and conform to ICAO SARPs, PANS and supporting guidance as well as the ICAO policies on training.

3.2.16 In response to inquiries on FPP's support to implement WGS-84, the meeting recalled that the implementation of WGS-84 is a prerequisite for the implementation of PBN including

approach procedures. In this regard it was noted that the FPP would be able to provide such assistance on request and based on a mutual agreement between the requesting State and FPP. The meeting highlighted the need for Memoranda of Understanding (MOUs) to facilitate the participation of States in the FPP. The meeting also acknowledged that AFCAC supported the establishment of FPP and would be in a position to facilitate the establishment of MOUs where necessary.

3.2.17 In view of the above, the Group supported the establishment of the FPP and accordingly formulated the following Conclusion:

CONCLUSION 19/17: AFI FLIGHT PROCEDURE PROGRAMME (AFI-FPP)

That:

a) AFI States be invited to:

i). indicate their needs for PBN procedure design to the AFI FPP as soon as possible, noting that the deadline in the State Letter Ref.: AN 11/45.2.1-13/18 dated 28 February 2013 from the Secretary General of ICAO has long elapsed; and

ii). participate actively in the AFI-FPP activities by providing financial and/or in-kind support; and

b) the Secretariat follows up on State responses relating to State Letter Ref.: AN 11/45.2.1-13/18 dated 28 February 2013.

Safety Management

3.2.18 The Group noted the output of the AFI Tactical Action Group (TAG/5), as well as safety issues that had been identified and addressed in a series of informal ATM coordination meetings arranged by the ICAO ESAF and WACAF Regional Offices.

3.2.19 More specifically, the Group noted that from the Tenth ATS Incident Analysis Group meeting (AIAG/10) and the TAG/5 meeting convened in March 2013 (Johannesburg, South Africa), it had been identified that there was a similar pattern of causal and contributing factors to ATS incidents in most FIRs. The Group acknowledged that the issue of ATC competence warranted special attention and in this regard agreed on the following Decision:

DECISION 19/18: ESTABLISHMENT OF THE ATS COMPETENCIES STUDY GROUP

That, the ATSCSG be established with the Terms of Reference as at Appendix 3.2G to this report, in order to:

a) study the shortcomings in ATC training including States' (and ANSPs) training programmes and plans; and
b) establish and provide recommendations that would address issues relating to lack of competency of ATS personnel.

Strategic Lateral Offset Procedures (SLOP)

3.2.20 The meeting acknowledged the critical role of SLOP in reducing the risk of collision. However, it was noted that only 11 of the 30 AFI FIRs had given effect to Conclusion 17/43: *Implementation of Strategic Lateral Offset Procedures (SLOP) in the AFI Region*. Given the critical importance of SLOP in reducing the risk of collision, the Group stressed that States and ANSPs that had not already done so should give effect to Conclusion 17/43 without further delay and forward

copies of aeronautical publications for the implementation of SLOP, to ICAO ESAF and WACAF Regional Offices by 31 December 2013.

ATM Contingency Arrangements

3.2.21 The Group noted with concern that, while at its 17th Meeting in 2010. APIRG had adopted a contingency plan (CP) template to complement the support provided by the Regional Offices, many States were yet to develop or update their CPs. In addition, many States had not included elements relating to public health emergencies in their CPs, and required additional guidance. Accordingly, the Group agreed on the modification of the APIRG CP Template to guide States in this regard. The Group also highlighted the importance of consultation with users in the development of CPs, pursuant to Section 2.30 of Annex 11 to the Convention on International Civil Aviation.

3.2.22 Pursuant to APIRG Conclusion 18/14, the Group adopted a volcanic ash contingency plan (VACP) and agreed that it should be part of the ATM contingency plan as an appendix thereto. Given that part of the initial tasks of the ATM/MET Task Force had been achieved, the terms of reference of the Task Force were revised and the following Conclusion formulated:

CONCLUSION 19/19: INTEGRATION OF THE VOLCANIC ASH CONTINGENCY PLAN TO THE AIR TRAFFIC MANAGEMENT CONTINGENCY PLAN

That, the AFI Volcanic Ash Contingency Plan at Appendix 3.2J to this report be integrated as an Appendix to the AFI ATM Contingency Plan.

DECISION 19/20: REVISED ATM/MET TASK FORCE TERMS OF REFERENCE

That, the Terms of Reference of the ATM/MET Task Force be updated as at Appendix 3.2I to this report.

Search and Rescue (SAR)

3.2.23 The Group noted the continuing lack of implementation of SAR provisions as well as the long outstanding deficiencies in the AFI region and requested ICAO to explore high level measures to sensitize States' authorities with regard to SAR provisions and requirements.

3.2.24 The Group also requested ICAO to develop a SAR webpage, with the objective of capturing and publishing information on SAR implementation as well as sensitizing the States' SAR authorities, and accordingly agreed on the following Conclusion:

CONCLUSION 19/21: SAR DATA COLLECTION AND DEVELOPMENT AND MANAGEMENT OF AN AFI SAR WEB PAGE

That:

a) AFI States provide SAR implementation information reflected in the questionnaire at Appendix 3.2K to this report , not later than 31December 2013, to the ICAO ESAF and WACAF Regional Offices;
b) ICAO develop and manage a webpage under ESAF and WACAF websites, to post information from AFI States on SAR implementation and activities; and
c) AFI States forward to the ICAO Regional Offices regular information on their SAR activities, for posting on the website.

CONCLUSION 19/22: ESTABLISHMENT OF A TEAM OF SAR EXPERTS

That, in order to support the implementation of SAR services in AFI States

a) ICAO establish a SAR Team of Experts that could, at the request of a State, be called upon to assist the State in the establishment of SAR systems including legislation frameworks and operational documentation; and
b) AFCAC be requested to establish a SAR Support Project that will take over from the SAR Team of Experts to provide structured support to States.

3.2.25 In order to enhance the effectiveness of the SAR Task Force and the support provided to States' SAR service providers, the Group endorsed initiatives of joint activities between the AFI and APAC SAR Task Forces.

3.2.26 The Group reviewed the SAR performance objectives and updated the terms of reference of the ASSI Task Force as at **Appendix 3.2L** and **Appendix 3.2M** to this report, respectively.

Civil/Military Cooperation

3.2.27 The Group noted that a Civil/Military Cooperation Seminar is being organized and scheduled to be convened in Nairobi, Kenya from 25 to 28 November 2013. States' civil aviation authorities are urged to coordinate with their military counterparts in order facilitate the most optimum participation of the military counterparts in the Seminar. International humanitarian organizations such as the World Food Programme (WFP) are also encouraged to participate.

ICAO 2012 Flight Plan Format – Post Implementation

3.2.28 The Group noted with appreciation that the NEW ICAO model flight plan was successfully implemented in the AFI Region along with other ICAO Regions on 15 November 2012, following intensive AFI-wide efforts by the Flight Plan Transition (FPLT) Task Force and the ESAF and WACAF Regional Offices.

3.2.29 The Group also noted that while the rate of missing flight plans was slightly reduced towards and during the launch of the NEW ICAO flight plan, the rate of missing flight plans started to increase again shortly after 15 November 2012, with various impacts on safety and efficiency.

3.2.30 Given the dissolution of the FPLT Task Force, the meeting agreed that the ATM/AIM/SAR and CNS Sub-Groups should continue looking into and addressing the flight plan related challenges.

3.2.31 The Group agreed that one of the solutions for the reduction of missing flight plans is for States to effectively implement Annex 2 standards on flight plans. The Group also acknowledged that the active involvement of users was paramount.

3.2.32 The Group noted the concern of users regarding actions that might be instituted by ANSPs in discouraging acceptance of flights without flight plans, which might impact negatively on safety. States were urged to continually ensure safety in the provision of services.

3.2.33 Based on the above, the meeting formulated the following Conclusion and Decision:

CONCLUSION 19/23: RESOLUTION OF THE ISSUE OF MISSING FLIGHT PLANS

That, in order to support the effective implementation of international standards relating to flight plan:

a) operators and ANSPs should, take necessary measures to ensure that, prior to departure, flight plans are correctly filed and accepted;
b) AFI States and Air Navigation Service Providers be urged to ensure that international flights are not released for departure without correctly filed flight plans;
c) in the event of routine or repetitive non-receipt of standard flight plans, the appropriate ATS authority assess the risk and as necessary, arrange for the non-acceptance of subsequent, related operations over the territory of the State concerned. The operator(s) and adjacent ATS units will be informed in advance of this action being taken; and
d) AFI States regulatory bodies take necessary action to ensure effective implementation.

DECISION 19/24: DISSOLUTION OF THE AFI FLIGHT PLAN TRANSITION (FPLT) TASK FORCE

That:

a) the AFI Flight Plan Transition Task Force is hereby dissolved; and
b) the ATM/AIM/SAR and CNS Sub-Groups should take necessary action to follow up on the post-implementation issues of the NEW ICAO Flight Plan format.

Review of Air Navigation Deficiencies in the ATM and SAR Fields

3.2.34 It was recalled that APIRG/18 had adopted a list of minimum reporting areas for ATM–and SAR. The meeting encouraged all civil aviation stakeholders to report deficiencies and make optimum use of the established minimum reporting areas.

Review of the ATM/AIM/SAR Sub-Group Terms of Reference and Future Work Programme

3.2.35 The Group reviewed and updated the terms of reference (TOR) and the Work Programme of the ATM/AIM/SAR Sub-Group as reflected in **Appendix 3.2N** to this report.

3.3 RVSM Operations and Monitoring

3.3.1 The meeting recalled that the AFI Regional Monitoring Agency (ARMA), is established to meet the provisions of Annex 11 to the Chicago Convention and ICAO Document 9937-*Operating Procedures and Practices for Regional Monitoring Agencies in Relation to the Use of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive*. In this regard, the ARMA provided APIRG with annual reviews on the RVSM risk within the AFI Region.

3.3.2 The Group endorsed the amendments to the AFI RVSM Safety Policy, as at **Appendix 3.2C** to this report and accordingly requested the relevant ICAO Regional Offices to circulate the amended document to AFI States.

3.3.3 The Group noted that the tasks pertaining to the AFI Scrutiny Group were incorporated into the tasks of the TAG and the ATS Incident Analysis Group (AIAG) and that this arrangement adequately meets the requirements of the Scrutiny Group.

RVSM Approvals survey

3.3.4 The Group noted that out of a total of 73230 flights assessed in December 2012, 46 aircraft were found to be non-RVSM approved, which is a reduction from 2011 where 104 aircraft were found to be non-RVSM approved. In this respect, States and ANSPs were urged to support ATM

coordination activities between area control centres (ACCs)/Flight Information Regions (FIRs) when non-RVSM approved State aircraft are being transferred with 2000 feet separation, and where non-RVSM approved aircraft request higher flight level after transfer of control. States and ANSPs were also urged to inform the ARMA of suspected non-RVSM approved flights in order for appropriate action to be taken.

3.3.5 The Group noted information provided on Altimetry System Error (ASE) results collected using primarily the GMU (GPS-based monitoring unit) height monitoring system which is now being incorporated into the AFI RVSM Collision Risk Assessment. It was further noted that of 538 aircraft that should be monitored 255 (48%) aircraft still require height monitoring in accordance with Annex 6 to the Chicago Convention. Moreover, significant ASEs were noted with regard to the following aircraft: B727, FA10, H25A, H25B and GLF2. The Group urged States' civil aviation authorities to ensure that operators comply with the Annex 6 Standard for height monitoring and maintain contact with ARMA with the objective of ensuring that States meet their obligation with respect to the height monitoring Standard.

AFI RVSM Collision Risk Assessment (CRA)

3.3.6 The Group recalled that the AFI CRAs are, *inter alia*, carried out by making use of the monthly RVSM safety assessment traffic data submitted to the ARMA by Area Control Centers (ACCs), to monitor RVSM system safety and risk, as well as Unsatisfactory Condition Reports (UCRs) collected and shared with the AFI Tactical Action Group (TAG).

3.3.7 The Group reviewed information on the sixth Collision Risk Assessment (CRA/6) conducted in 2011, which is the third AFI Region RVSM post-implementation assessment. It was noted that there had been a decrease in the rates of improper crossings at waypoints or navigational facilities where aircraft are at the correct same semi-circular rule flight level but with standard RVSM separation being broken. The Group however, noted with concern that in too many cases, the required aircraft separation had been broken and only restored as a result of ACAS intervention. In this regard, it was emphasized that ACAS is only a safety net and should not be relied up as a primary means of aircraft separation. States should take necessary measures without delay, to ensure adequate and effective air traffic control in the airspaces in which they are responsible for the provision of ATS.

3.3.8 With regard to the vertical collision risk, the Group noted that the Technical Vertical Collision risk estimate was found to be met by a factor of approximately 21 below the agreed Target Level of Safety (TLS). However, it was noted with concern that, while the estimate of the Technical Vertical Collision Risk was calculated to be below the Technical Vertical TLS of 2.5×10^{-9} fatal accidents per flight hour, the estimate of the Total Vertical Collision Risk still exceeded the Total Vertical TLS of 5×10^{-9} fatal accident per flight hour by a factor of 4.7. The result of the Total Vertical Collision Risk was largely influenced by the risk of aircraft levelling off at a wrong opposite- or same-direction flight level. The main contributing factors to the Total Vertical Risk estimate not meeting the TLS were as follows:

a) Human Factors; either ATC or flight deck originated;
b) Lack of or improper coordination between ATC sectors and FIRs, which continues to be a dominant cause; and
c) Safety events resulting from unreliable communications.

3.3.9 The Group urged AFI States and ANSPs to take effective measures to ensure that the causal factors are addressed, in particular those relating to air traffic coordination failures between area control centers (ACCs). The meeting reiterated the need for all concerned States and ANSPs to implement Strategic Lateral Offset Procedure (SLOP) as per APIRG Conclusion 17/43. Due to the positive impact of this navigation technique on reducing RVSM risk States and ANSPs are urged to respond timely to surveys conducted by the Regional Offices in this regard. Further to this the meeting noted that the formal implementation of SLOP by issuing an Integrated Aeronautical Information

Package (IAIP) enables the inclusion of SLOP in the CRA. Furthermore, States/ANSPs that still had deficiencies in the requirements for provision of data to the ARMA were urged to take necessary action to eliminate such shortcomings.

RVSM system deficiencies

3.3.10 The Group reviewed the list of deficiencies related to RVSM which contained information updated as of 6 September 2013 and called for States to provide updates on their status to the ESAF and WACAF Regional Offices or ARMA for necessary update of the deficiency list. The meeting also agreed that the RVSM deficiency list should be incorporated into the AFI Deficiency List.

3.4 Communication, Navigation and Surveillance (CNS)

Reviewed the report on the Fifth meeting of the APIRG Communication Navigation and surveillance Sub-Group

3.4.1 The Fifth Meeting of the APIRG Communications, Navigation and Surveillance Sub-Group (CNS/SG/5) held in Nairobi, Kenya from 16 to 19 September 2013 was reported to be attended by twenty two (22) delegates from ten (10) Contracting States and one (1) International Organization representing 16 other Contracting States.

Review of APIRG previous conclusions and decisions pertaining to CNS

3.4.2 In accordance with APIRG Decision 18/01(Review and Update of APIRG Conclusions and Decisions), the Sub-Group reviewed the conclusions and decisions of APIRG previous meetings (from APIRG/13 to APIRG/17) related to CNS, as shown in **Appendix 3.4A** to this report. Out of a total of 137 conclusions and decisions, 74 are no longer valid or redundant, 37 remain valid and 26 which are related to more than one discipline (e.g. CNS/ATM related) need further coordination with other APIRG Sub-Groups.

Status of implementation and performance of the Aeronautical Fixed Service (AFS):
Aeronautical Fixed Telecommunications Network (AFTN) and Air Traffic Services Direct Speech (ATS/DS)

3.4.3 The meeting reviewed the status of implementation and performance of AFS requirements, as contained in the AFI Air Navigation Plan (ANP), FASID Tables CNS 1A (AFTN Rationalized Plan) and CNS 1D (ATS/DS Plan). It was noted that most of the AFI Air Navigation Plan requirements for Aeronautical Fixed Service had been implemented by the States. However, some of the required ATS/DS circuits (e.g. Bujumbura/Kinshasa, Kigali /Kinshasa) were yet to be implemented.

3.4.4 The meeting noted that the implementation of aeronautical satellite telecommunications networks had significantly improved AFTN circuits' availability in the Region. The specified minimum availability rate of 97% stated in the AFI Air Navigation Plan (AFI/7 Recommendation 9/3) was met by most of the circuits.

Addressing Missing flight plans

3.4.5 The Group discussed the longstanding issue of missing flight plans in the AFI Region. Mindful on the inherent safety risks, the Group identified a number of contributing factors as discussed under the report on Agenda Item 3.2.

3.4.6 The Group noted a study conducted by ASECNA on missing flight plans in twelve (12) ATS centres from August 2012 to April 2013, as a follow up to APIRG Conclusions 18/17 and

18/18. Out of a total of 49594 flights which had been monitored during this period, 41887 flight plans (84%) were received and 7707 flight plans (16%) were missing. The analysis showed the breakdown of received/missing flight plans according to ICAO regions, ATS centres and air operators. 61.09% of the missing flight plans were not sent to appropriate ATS units due to lack of knowledge of airspace structure/ATS responsibilities, 38.57% were not investigated due to lack of information from ATS centres, and 0.34% were not filed by operators.

3.4.7 The Group noted successful implementation by ASECNA of investigation procedure and mitigation measures at its managed centres, with positive results on the reduction of the number of missing flight plans. The Secretariat was requested to circulate these investigation procedures and mitigation measures to AFI States.

Use of Voice over Internet Protocol (VoIP) for ATS/DS

3.4.8 The Group recognized that in the AFI Region, the ATS/DS network is based on point to point circuits, and that the implementation of ATS voice switching and signaling system would facilitate the automation of backup links for ATS/DS which are currently provided through satellite telephone or public telephone switched network (PSTN) links. The meeting therefore encouraged the States to gradually implement ground-ground communications using Voice over Internet Protocol (VoIP), and conduct coordinated trials prior to operational implementation. The following Conclusion was formulated:

CONCLUSION 19/25: IMPLEMENTATION OF VOICE OVER IP FOR ATS/DS

That:

AFI States implement Voice over IP (VoIP) as an evolution of the current point-to-point ATS/DS system, and conduct coordinated trials on VoIP prior to operational use.

Review of the report of the Second Meeting of the AFI AMHS Implementation Task Force

3.4.9 The meeting reviewed the report of the Second Meeting of the AFI ATS Message Handling System Implementation Task Force (AFI AMHS/I/TF/2) by the Sub Group, which was held at the ICAO Western and Central Regional Office, Dakar, Senegal from, from 30 to 31 May 2013, back to back with a Regional Workshop on ATS Message Handling System which took place from 28 to 29 May 2013.

3.4.10 The Group assessed the status of implementation of AMHS in the AFI Region and noted the progress made by States and Organizations, meeting the performance criteria established for AFI ATN backbone centres. The Group was informed on the on-going projects such as ASECNA plans to implement ATS Message Handling Systems (AMHS) in ten (10) operated centres (Dakar, Brazzaville, Niamey, Ndjamena, Antananarivo, Cotonou, Lomé, Ouagadougou, Bamako and Nouakchott), and at their Training Centre (EAMAC) located in Niamey.

3.4.11 It was noted that AFI States had been implementing AMHS on a national basis only, although implementation guidelines for international AMHS links were already available. The meeting accordingly reiterated the need for AFI States to conclude bilateral and/or multilateral agreements using the model developed by the AMHS Task Force, and conduct trials to ascertain interoperability of their implemented AMHS systems.

AFI AFTN Routing Directory

3.4.12 The meeting took note of the review and update of the AFI AFTN Routing Directory by the second meeting of the AMHS Implementation Task Force for States in attendance. The

Secretariat will finalize the next edition of the AFI AFTN Routing Directory based on additional updates from the States that have not yet provided the required data**.**

Future Work of the AMHS Implementation Task Force

3.4.13 The meeting discussed further work to be carried out by the AMHS Implementation Task Force, including the development of an AFI AMHS Manual as well as Guidelines for Internet Protocol (IP) tests and AMHS Training. These guidelines are intended to facilitate interconnection and interoperability of States' AMHS and the development and implementation of States' training programmes and training plans. States were encouraged to take advantage of the available training centres in the AFI Region, training activities conducted by ICAO as well as the EUR ATS Messaging Management Centre (AMC) online training platform. The following Decision was formulated:

DECISION 19/26: DRAFT GUIDELINES FOR THE IMPLEMENTATION OF AMHS SYSTEMS IN THE AFI REGION

That:

a) The AMHS Implementation Task Force should complete its work on the Draft AFI AMHS Manual, Draft Guidelines on Internet Protocol (IP)–based Infrastructure Tests and Draft AMHS Training Guidelines by 30 March 2014; and

b) The Secretariat circulate the Draft Guidelines to be developed by the AMHS Task Force (when available), as an interim measure to facilitate trials by States, pending their submission to the next APIRG meeting for formal adoption.

3.4.14 The Group agreed to amend the terms of reference, composition and work Programme of the AFI AMHS Implementation Task Force as shown in **Appendix 3.4B** to this report.

Status of implementation and performance of the Aeronautical Mobile Service (AMS)

Very High Frequency Communications (VHF)

3.4.15 The meeting acknowledged the significant improvement in the extension of VHF radio coverage in most flight information regions (FIRs).

Results of the IATA Regional Survey (2013)

3.4.16 The Group recalled APIRG Conclusion 16/20 calling upon States to cooperate and provide their support to VHF coverage surveys to be carried out by IATA in the AFI Region, initially every 18 months. Accordingly, the Group reviewed the results of the regional survey conducted by IATA on Aeronautical Mobile Service (AMS) from 8 to 29 July 2013. 11 air operators provided 2903 reports concerning 38 air traffic services (ATS) units. The survey included air-ground very high frequency (VHF), high frequency (HF) and controller-pilot data link (CPDLC) communications. The results of the regional survey are provided at **Appendix 3.4C** to this report. The Group noted with concern the low performance of air-ground communications in Khartoum, Kinshasa, Luanda, Mogadishu and Kano FIRs, and urged the concerned States to expedite the implementation of AMS improvements within these FIRs, using appropriate technologies, preferably existing VSAT infrastructure. The following Conclusion was formulated:

CONCLUSION 19/27: IMPROVEMENT OF AMS IN AFI FIRs

That:

Angola, the Democratic Republic of the Congo (DRC), Nigeria, Somalia and Sudan should expedite the implementation of AMS improvements in their respective FIRs using existing VSAT networks by no later than 30 June 2014, and report progress made to the relevant ICAO Regional Offices and to next meeting of the APIRG.

Controller-Pilot Data Link Communications (CPDLC)

3.4.17 The meeting noted that thirteen (13) AFI States have implemented controller-pilot data link communications (CPDLC) procedures, and nine (9) other States have plans to implement the same in 2014 and 2015, in order to enhance air-ground communications in oceanic and remote continental airspace, and to mitigate the geographical challenges limiting VHF radio coverage extension, as well as the limitations inherent to HF radio communications.

Navigation systems

Status of implementation and performance of Aeronautical Radio Navigation Systems

3.4.18 The Group reviewed the status of implementation and the performance of conventional terrestrial radio navigation aids (VOR, DME, ILS) in the AFI Region since APIRG/18 meeting in March 2012. It was noted that little progress had been achieved since APIRG/18 meeting in the elimination of deficiencies

3.4.19 In the implementation of the above terrestrial based navigational aids solutions, AFI States were reminded of the Technology Roadmaps for Communications, Navigation, Surveillance, Information Management and Avionics in Appendix 5 of the 4th Edition of the Global Air Navigation Plan (Doc 9750). In view of the vulnerability of GNSS signals to interference, the roadmap for Navigation emphasizes that in spite of current advances in aircraft navigation capabilities leading to evolution to performance based navigation (PBN), there is the need to retain some conventional navigational aids or provide alternative navigation solutions as a backup to GNSS. Recommendations 1/8 and 6/10 of ANConf/12 highlight the need for the rationalization of terrestrial navigation aids. Recommendation 6/10 states that "in planning for the implementation of performance-based navigation, States should:

a) assess the opportunity for realizing economic benefits by reducing the number of navigation aids through the implementation of performance-based navigation;
b) ensure that an adequate terrestrial navigation and air traffic management infrastructure remains available to mitigate the potential loss of global navigation satellite system service in their airspace; and
c) align performance-based navigation implementation plans with navigation aid replacement cycles, where feasible, to maximize cost savings by avoiding unnecessary infrastructure investment".

3.4.20 This could be achieved in principle by aligning PBN implementation plans with navigational aids replacement cycles where feasible. To this end, the ICAO Air Navigation Commission has included the development of guidance for the rationalization of conventional navigational aids in the work Programme of the Navigation Systems Panel.

3.4.21 Considering that the implementation of ASBU modules, particularly those on PBN applications, remains a global priority for the aviation community, AFI States were therefore urged to evaluate their operational needs, capabilities, stakeholders' needs and PBN implementation plans to inform their decision to decommission or install new terrestrial aids.

Global Navigation Satellite Navigation System (GNSS)

3.4.22 The APIRG meeting recognized that GNSS services were being introduced throughout the AFI Region to support the implementation of Performance-Based Navigation (PBN) in accordance with the regional strategy adopted by APIRG. Considering that GNSS has the potential to meet performance requirements for all phases of flight and improve safety and efficiency of air navigation, it is essential that the air navigation service providers using GNSS identify the vulnerabilities of this system; and develop the necessary mitigations.

3.4.23 The meeting discussed the GNSS vulnerabilities, including interference due to low power signals received from core satellite constellations or satellite-based augmentation systems, intentional corruption of the navigation signals to cause aircraft to deviate and follow a false flight path (spoofing), ionospheric and other atmospheric effects, system failure or human factors. Guidance was provided to the States based on ICAO provisions contained in Annex 10–Aeronautical Telecommunications, Volume 1 (Radionavigation Aids), and GNSS Manual (ICAO Doc 9849). The APIRG meeting recalled its Conclusion 16/22 on Recording of GNSS parameters, and formulated the following Conclusion:

CONCLUSION 19/28: ASSESSMENT AND MITIGATION OF GNSS VULNERABILITIES

That States providing GNSS services should:

a) Assess and report GNSS vulnerabilities in their airspace, including:
i). unintentional and intentional interference;
ii). ionospheric scintillation in equatorial regions;
iii). other vulnerabilities as may be identified; and

b) Implement appropriate mitigation measures depending on:
i). the airspace in question; and
ii). the operations that must be supported.

3.4.24 The Group requested the ICAO Secretariat to develop further guidance to assist States in the implementation of the above Conclusion.

3.4.25 The APIRG meeting noted that the current PBN/GNSS Task Force was not designed to address specific technical issues related to GNSS such as GNSS vulnerabilities or related spectrum requirements. It therefore agreed to include in its proposed work Programme provision of assistance to States in addressing technical aspects of GNSS.

Satellite Based Augmentation System (SBAS)

3.4.26 The Group noted that its Conclusion 18/33 on the funding of an AFI GNSS/SBAS cost benefit analysis had not been implemented. It agreed that this Conclusion needed to be reformulated for more clarity and to reflect the need for an impact analysis covering operational, technical, environmental and economic aspects of the introduction of SBAS in the AFI Region. AFCAC indicated that some States in the AFI Region are in the process of implementing SBAS within the framework of cooperation between the European Union (EU) and Africa, Caribbean and Pacific (ACP). However, this information had not been shared with the Secretariat. The Group reformulated Conclusion 18/33 as follows:

CONCLUSION 19/29: IMPACT ANALYSIS OF THE IMPLEMENTATION OF GNSS/SBAS IN THE AFI REGION

That:

in order to enable States to make informed decision and to facilitate dialogue among stakeholders, concerning the implementation of GNSS satellite-based augmentation system (SBAS) in the AFI Region, the ICAO Regional Offices should facilitate the search for the funding of an impact analysis related to SBAS, that covers operational, technical, environmental and economic aspects of this GNSS augmentation system.

Ground-Based Augmentation System (GBAS)

3.4.27 The meeting was apprised by ASECNA on feasibility study on the implementation of Ground Based Augmentation System (GBAS) Category I operations at Dakar Leopold Sedar Senghor (L**SS**) International Airport, in Senegal. The study showed that GBAS CAT-I performance was achievable. The next step of the study will include the implementation of an automatic monitoring system for GNSS performance at LSS Airport.

Surveillance systems

Review of the status of implementation of the current aeronautical surveillance plan

3.4.28 The meeting reviewed the status of implementation of surveillance systems and related projects as reported by the AFI Aeronautical Surveillance Implementation Task Force (AFI/AS/I/TF/3). The status of implementation of Secondary Surveillance Radar (SSR). It was reported that thirteen (13) AFI States have implemented automatic dependent surveillance–contract (ADS-C) procedures, and that nine (9) other States have plans to implement the same in 2014 and 2015, in order to enhance situational awareness in oceanic and remote continental airspace.

3.4.29 The meeting further noted that ATS air-ground data link applications supporting surveillance service were being implemented without proper coordination of systems performance monitoring and reporting of anomalies. Based on experience gained in the South Atlantic (SAT) area, the Group identified the need to explore the establishment of a Data Link Central Monitoring Agency (DL/CMA) for data link applications in the AFI Region. The following Conclusion was formulated:

CONCLUSION 19/30: ESTABLISHMENT OF A DATA LINK CENTRAL MONITORING AND REPORTING AGENCY (DL/CMRA)

That:

The ICAO Regional Offices explore with States and relevant organizations the available options for the establishment of a Data Link Central Monitoring and Reporting Agency (DL/CMRA) to ensure effective operation, monitoring and reporting of ATS data link applications in the AFI Region.

Review of the report of the Third meeting of the AFI Surveillance Implementation Task Force

3.4.30 The meeting was provided with the summary of the report on the Third meeting of the AFI Surveillance Implementation Task Force in light of the technology Roadmap developed by the 12th Air Navigation Conference, and incorporated in the Global Air Navigation Plan. It noted the potential benefits of the emerging space-based Aeronautical Dependent Surveillance – Broadcast (ADS-B) technology for the AFI Region.

3.4.31 The meeting was apprised of ongoing implementation of ADS-B by States/Organization and successful trials ADS-B such as those conducted in the Indian Ocean Region by ASECNA in cooperation with airspace users, and of the plans of Air Traffic and Navigation Services (ATNS) of South Africa to conduct similar trials on ADS-B and Multilateration.

3.4.32 The Group commended such initiatives and encouraged States to pursue the implementation of aeronautical surveillance requirements in accordance with the regional strategy adopted by the APIRG. In so doing, they should give due consideration to interoperability criteria to achieve an integrated surveillance system and seamless ATM operation within the areas of routing identified in the region.

3.4.33 The Group acknowledged that the implementation of an integrated surveillance system meeting interoperability requirements could be facilitated with the support from regional/sub-regional economic integration institutions. The following Conclusion was formulated.

CONCLUSION 19/31: INTEROPERABILITY OF AFI AERONAUTICAL SURVEILLANCE SYSTEMS

That, in order to enable seamless ATM operation within the AFI Region:

a) States and service providers take the necessary steps to ensure interoperability of the existing aeronautical surveillance systems and facilitate surveillance data sharing;
b) AFCAC be requested to support the continuous provision of aeronautical surveillance services along the areas of routing identified by the APIRG through an integrated surveillance system; and
c) ICAO continue to assist AFI States' initiatives towards the implementation of an integrated aeronautical surveillance system, through seminars, workshops and technical coordination meetings

Terms of reference and future work Programme of the Aeronautical Surveillance Implementation Task Force

3.4.34 The meeting endorsed the revised terms of reference and work Programme of the AFI Surveillance Implementation Task Force as provided in **Appendix 3.4D** to this report.

Aeronautical spectrum

Review of the Report of the Third Meeting of the AFI Frequency Management Group (AFI/FMG/3)

3.4.35 The meeting was informed on activities conducted by the AFI Frequency Management Group (AFI/FMG) through the Report of its third meeting which took place in Nairobi, Kenya, from 18 to 19 July 2013. After considering the terms of reference of the FMG as defined by APIRG/18, and the relevant activities of ICAO Aeronautical Communication Panel Working Group F, the FMG assessed progress made in the implementation of the Conclusions and Decisions from its previous meetings and from APIRG/18 meeting. The Group also reviewed the outcome of the ITU WRC-2012. The entire report of AFI/FMG/3 can be downloaded from the ICAO public website (*www.icao.int/esaf*, *www.icao.int/wacaf*). The following Conclusions were formulated:

3.4.36 The Group reiterated the need for a permanent coordination framework between national Civil Aviation and Telecommunications Authorities. It also discussed the implementation of WRC-12 Resolution 154 on the protection of the Frequency Band 3.400 – 4.200 MHz (C-Band) operated by aeronautical VSAT in the AFI Region and other ICAO Regions. The following Conclusions were formulated:

CONCLUSION 19/32: COORDINATION BETWEEN CAAs AND NATIONAL TELECOMMUNICATION REGULATORY AUTHORITIES

That:

States establish a coordination framework and procedures between national Civil Aviation Authorities and Telecommunications Authorities with the assistance of the ICAO Regional Offices as required, in order to facilitate efficient provision, operation and protection of aeronautical frequency spectrum.

CONCLUSION 19/33: MONITORING AND REPORTING OF CASES OF INTERFERENCE TO AERONAUTICAL SPECTRUM

That:

States support the studies called for under ITU WRC-12 Resolution 154 by:

a) ensuring that their operated aeronautical frequencies are duly registered in the ITU Master International Frequency Register through Telecommunications Authorities and notified to the ICAO Regional Offices for inclusion in the global and regional frequency databases; and
b) monitoring and reporting to ITU all cases of interference caused to aeronautical frequencies, such as interference from International Mobile Telecommunications (IMTs) in the frequency band 3.4 – 4.2 GHz (C-Band) used by aeronautical VSATs, for consideration by ITU WRC Working Parties.

Review of ICAO position, including updates and preparations for the ITU-WRC -2015

3.4.37 The meeting was informed that the ICAO Council, at the 4th meeting of its 199 Session on 27 May 2013, had approved the ICAO position on issues of critical concern to aviation which are on the agenda of the International Telecommunication Union (ITU) World Radiocommunication Conference (2015) (WRC-15). The ICAO position was sent to ICAO Contracting States under a State letter E 3/5.15-13/57 dated 2 July 2013, requesting States to consider the ICAO position when developing their national positions, and to support the ICAO position during ITU WRC-15.

3.4.38 The meeting's attention was drawn to the fact that the ICAO position would be submitted to the ITU WRC-15 as an information paper. As such, active support from States was deemed to be the only means to ensure that the results of the WRC-15 reflect civil aviation's need for spectrum (ICAO Assembly Resolution A36-25-*Support of the ICAO Policy on radio frequency spectrum matters* refers).

3.4.39 The meeting was briefed on WRC-15 preparatory activities undertaken by ICAO and within the Region, including AFI Frequency Management Group activities, the 1st African Telecommunication Union (ATU) Preparatory Meeting and the ICAO Regional Preparatory Workshop and the 29th Meeting of the Aeronautical Communication Panel Working Group F (ACP-WG/F/29) held in Nairobi, Kenya from 3 to 11 September 2013. The CNS Sub-Group discussed further action to be taken to promote ICAO position for WRC-15, mindful of ICAO Assembly Resolution A36-25. The following Conclusion was formulated:

CONCLUSION 19/34: SUPPORT TO ICAO POSITION FOR WRC-15

That:

States support the ICAO position for ITU WRC-15 by:

a) incorporating the ICAO position in the national position to WRC-15;
b) coordinating this position with all aviation stakeholders (CAAs, ANSPs, Air Operators, Airport Operators, etc.); and
c) Ensuring regular and active participation of Civil Aviation Representatives dealing with aeronautical spectrum issues (such as AFI FMG focal points) in WRC-15 preparatory activities at regional/global level and during the Conference.

VSAT systems

Best Practices and Sustainability for VSAT Networks

3.4.40 The meeting reviewed the status of implementation of the best practices for aeronautical VSAT networks, as adopted by APIRG/18 Meeting and noted the launch in 2013 of a project on the audit and re-engineering AFISNET network under the coordination of ICAO. Similarly, a Joint Technical Team was established in 2013 to develop proposals for the modernization and re-engineering of the CAFSAT network.

3.4.41 The Group noted that AFI VSAT Networks Managers had initiated consultations with Intelsat to explore available solutions to meet the requirement for a contingency plan for the space segment of aeronautical satellite communications. In this connection, Intelsat attended the first meeting of the IRTI Task Force and provided comprehensive information on civil aviation satellite capacity usage, challenges, C-band (3.4-4.2 GHz) spectrum risks and protection, Intelsat global infrastructure and Intelsat new generation satellites.

VSAT Performance Monitoring and Reporting

3.4.42 The meeting recalled that APIRG/18 Meeting had agreed to a four levels approach to VSAT performance monitoring and reporting (including the space segment, radiofrequency equipment, multiplexers/interfaces and end user equipment), and endorsed Performance Data Collection Forms (PDCFs) for use by States. The Group was informed that these forms were further reviewed by States through AFISNET, CAFSAT, NAFISAT and SADC VSAT coordination meetings, and therefore requested the Secretariat to finalize and circulate them to the States for implementation as from 1st January 2014. The Group also agreed that the use of PDCFs by the States should be part of the best practices for VSAT performance monitoring and reporting. The following Decision and Conclusion were formulated:

DECISION 19/35: IMPLEMENTATION OF PERFORMANCE DATA COLLECTION FORMS

That the best practices adopted by APIRG for Aeronautical Fixed Services (AFS) be amended to include the Performance Data Collection Forms (PDCFs) shown at Appendix 3.4E1 to this report.

CONCLUSION 19/36: HARMONIZATION OF THE COLLECTION OF THE STATISTICS ON THE PERFORMANCE OF THE VSAT NETWORKS

That as from 1 January 2014, in order to harmonize the monitoring, collection and Reporting of technical and operational data on Aeronautical Fixed Services (AFS) characteristics and performance, States should:

a) Apply the four-level assessment model including space segment, radiofrequency equipment, modulators/demodulators, end-user equipment; and
b) use the software tools available in their processing systems to increase accuracy of the reported data, and facilitate comparative analysis of these data.

Integrated Regional Telecommunication Network Project

3.4.43 The Group reviewed the activities undertaken by the CNS Sub-IRTI Task Force towards the development of an integrated telecommunication infrastructure for the AFI Region, in accordance with its terms of reference.

3.4.44 The Group reviewed the work completed by the AFI VSAT Networks Managers between 2011 and 2012, including the design of an initial ATN overlay architecture based on existing networks (AFISNET, CAFSAT, NAFISAT and SADC VSAT/2), the development of a technical solution for the overlay network and the determination of related cost estimates. The work of the AFI VSAT Networks Managers was adopted by the APIRG/18 meeting in March 2012. The fundamental criteria underlying the initial technical solution included the following:

a) all four networks have made substantial investment in existing infrastructure, which must be retained and utilized;
b) three of the four networks operate on the same satellite i.e. IS 1002 which will ensure seamless operation;
c) a single satellite access method is proposed for the technical solution to ensure interoperability;
d) although the ATN network will mainly support IP based applications, legacy protocols must continue to be supported; and
e) the overlay network must be secured.

3.4.45 It was agreed to review the AFI ATN Architecture Plan adopted by the APIRG/18 Meeting, and developed an Action Plan taking into consideration latest developments related to ATN, including:

a) ICAO Standards and Recommended Practices (SARPs) contained in Annex 10, Volumes II and III;
b) relevant guidance material in ICAO Doc 9880 (Manual on Detailed Technical Specifications for the ATN using ISO/OSI Standards and Protocols) and Doc 9896 (Manual on the ATN using Internet Protocol Suite (IPS) Standards and Protocols);
c) ICAO Aviation System Block Upgrades (ASBUs) and supporting Technology Roadmaps for Communications, Navigation and Surveillance (CNS), Information Management (IM) and Avionics;
d) alignment of regional air navigation plans (ANPs) and regional supplementary procedures (SUPPs) in accordance with Recommendation 6/11 of the ICAO Twelfth Air Navigation Conference; and
e) status of implementation by States of the ATN infrastructure and supported applications.

3.4.46 The Group was apprised on ASECNA plans to implement ATS Message Handling Systems (AMHS) in ten (10) operated centres: Dakar, Brazzaville, Niamey, Ndjamena, Antananarivo, Cotonou, Lome, Ouagadougou, Bamako and Nouakchott, and at their Training Centre (EAMAC) located in Niamey.

3.4.47 The Group also noted that Ethiopia had implemented an ATS Message Handling System (AMHS) in Addis Ababa, meeting the performance criteria established for AFI ATN backbone centres, and has equipped its CAA Training Centre with an AMHS facility. Accordingly, the IRTI Task Force agreed to develop an amendment proposal to the AFI ATN Architecture by including Addis Ababa/Johannesburg and Addis Ababa/Cairo as trunk backbone routes.

3.4.48 The Group endorsed the Action Plan developed by the IRTI Task Force as shown in **Appendix 3.4E2** to this report. **Appendix 3.4E2** also contains the administrative and legal principles adopted by the Task Force.

Future work Programme of the IRTIF Task Force

3.4.49 The Group agreed that the activities related to the development of an integrated regional telecommunication infrastructure should be pursued based on the Action Plan and the recommendations developed by the IRTI Task Force as endorsed by the CNS Sub-Group. It accordingly reviewed and proposed amendments to the terms of reference, work Programme and composition of the IRTI Task Force as shown at **Appendix 3.4F** to this report. The following Decision was formulated:

DECISION 19/37: TERMS OF REFERENCE, FUTURE WORK PROGRAMME AND COMPOSITION OF THE IRTI TASK FORCE

That:

a) the activities related to the development of an integrated regional telecommunication infrastructure should be pursued based on the Action Plan shown at Appendix 3.4E to this report; and

b) the terms of reference, future work Programme and composition of the IRTI Task Force be amended as proposed in Appendix 3.4F to this report.

Planning and Implementation of ATN applications

3.4.50 The Group recognized that the issues related to the ATN and supported applications (such as AMHS, CPDLC, ADS) were being dealt with by different bodies without proper coordination among them, while other applications (AIDC, VoIP) were not assigned to existing bodies. The following Decision was formulated:

DECISION 19/38: PLANNING AND IMPLEMENTATION OF ATN APPLICATIONS

That the CNS Sub-Group should address all aspects of the planning and implementation of the Aeronautical Telecommunication Network (ATN) applications including ATS ground-ground and air-ground data link applications, in order to ensure systems interoperability through a coordinated and harmonized framework.

Implementation of Integrated CNS Programmes

3.4.51 The Group encouraged partnership within the aviation industry for developing and implementing integrated solutions for CNS infrastructure components, according to agreed performance targets and priorities within the ATM areas of routing and major traffic flows, and called on ICAO, AFCAC and other relevant regional economic and financial institutions to facilitate the funding arrangements necessary for integrated programmes aimed at enhancing the regional

infrastructure, including human resource aspects, based on the CNS technology roadmaps. The following Conclusion was formulated:

CONCLUSION 19/39: DEVELOPMENT OF INTEGRATED PROGRAMMES BASED ON MAJOR ATM ROUTING AREAS AND AIR TRAFFIC FLOWS

That:

a) The ICAO Regional Offices should coordinate with States the identification and development of integrated programmes for the CNS infrastructure, aligned with the ASBU methodology, and based on major ATM routing areas and air traffic flows in the AFI region; and

b) ICAO, AFCAC and other relevant regional economic and financial institutions should facilitate the funding arrangements for such integrated programmes.

Global survey on aircraft equipage

3.4.52 With respect to avionics, the meeting was presented with the results from a global survey conducted by IATA in 2012, 283 airline fleets and 4874 aircraft, showing the level of equipage and global trends for airborne systems. Only 2 out of 86 airspace users contributed equipage data. APIRG reiterated the necessity for AFI States, Air Navigation Service Providers and Airport Operators to support and participate in global and regional surveys conducted on airborne systems and air navigation systems' capabilities, in accordance with APIRG Conclusions 17/59 and 18/23.

Review of the conclusions and decisions of the Eighteenth Informal Meeting on the improvement of air traffic services over the South Atlantic (SAT/18) pertaining to CNS

3.4.53 The meeting was informed of the outcome of the SAT/18 meeting of relevance to the CNS Sub-Group. It particularly noted cooperative initiatives taken by SAT States to ensure a coordinated and harmonized implementation of CNS systems (such as AHMS, CPDLC, ADS-C) through memoranda of understanding, and recommended that AFI States participating in SAT activities should promote such initiatives in the AFI Region.

CNS Deficiencies

3.4.54 The APIRG reviewed the list of deficiencies affecting CNS systems in the AFI Region and proposed remedial action as shown at **Appendix 3.4G** to this report.

NAVISAT Project

3.4.55 The Group was provided with updated information on the NAVISAT Project by Egypt. It recalled its Decision 16/25 requesting the APIRG to monitor with MIDANPIRG the development concerning this project, and referred it the CNS Sub-Group for further assessment.

Review of the future Work Programme and Composition of the CNS Sub-Group

3.4.56 The CNS Sub-Group reviewed and proposed its future Work Programme and composition as shown in **Appendix 3.4H** to this report.

3.5 Aeronautical Information Management (AIM)

Review of the Report of ATS/AIM/SAR/13 Meeting

3.5.1 The Group reviewed the report of ATM/AIM/SAR SG/13 meeting on issues related to AIM and took action on the draft Conclusions/Decisions formulated by the Sub-Group.

3.5.2 The Group was informed about the outcome of the Second Meeting of the APIRG AIM Implementation Task Force (AFI AIM TF/2) held in Nairobi, Kenya from 17-19 December 2012. It also reviewed the information on the outcomes related to Aeronautical Information Services and Aeronautical Information Management emanating from the APIRG/18 meeting, the 12th Air Navigation Conference (AN-Conf/12) and the Fifth and Sixth Meetings of the AIS-AIM Study Group (AIS-AIM/SG/5&6).

3.5.3 The Group then noted the follow-up action on previous APIRG/17 and 18 Conclusions/Decisions related to AIM (Conclusions/Decisions: 17/86, 17/88, 17/89,17/90, 17/91, 17/92: 17/93, 17/94, 17/95, 17/97, 18/35, 18/36, 18/37 18/38) as per **Appendix 3.5A** and agreed on the validity of these Conclusions/Decisions for continuous actions as consolidated under one single conclusion. Accordingly, the meeting endorsed the following Conclusion:

CONCLUSION19/40: REGIONAL AND STATE PLANNING AND IMPLEMENTATION OF THE TRANSITION FROM AIS TO AIM

That:

a) the Region develop performance goals for the transition from AIS to AIM in line with the AFI Transition Roadmap from AIS to AIM and Aviation System Block Upgrades methodology;
b) the Region and States identify achievable milestones in relation to the Transition Roadmap phases 1, 2 and 3;
c) the Region and States develop and implement progress reporting structures, processes and frequency in terms of the Transition Roadmap phases 1, 2 and 3;
d) States develop implementation action plans addressing the transition from AIS to AIM in line with the AFI AIS to AIM Transition Roadmap phases 1, 2 and 3 as well as aviation system block upgrades; and
e) States review and amend as required the AIS/AIM training programmes to encompass the required skills, competences and knowledge to transition from AIS to AIM in line with the AFI AIS to AIM Transition Roadmap.

3.5.4 The proposed amendments to the AFI ANP/FASID Doc. 7474 Vol.I and Vol.II with major changes in comparison to the previous versions were noted and that opportunity has been taken to change the title of FASID Tables from AIS to AIM to reflect the future direction on the provision of aeronautical information in the context of the Global ATM Operational Concept and associated Information Management.

3.5.5 The proposed amendments as reflected in the FASID Tables AIM-1 to AIM-9 were highlighted to ensure that the required data are populated in the new FASID AIM Tables for the development of Regional e-ANPs which would be made available through the ICAO GIS website as per **Appendices 3.5B1 to 3.5B9.**

3.5.6 The requirement for States to develop national plans for transition to AIM was reflected and details are to be shown in the AFI FASID. The meeting then noted, as appropriate, the information at **Appendix 3.5C** concerning the National Plans submitted by States in accordance with

the Transition Roadmap from AIS to AIM and the current status in the AFI Region as per WACAF State circular letter ref. T 2/7-0725 dated 7 August 2012.

3.5.7 The meeting then agreed that an AIM/SWIM Seminar be organized in the AFI Region, in order to provide States with a better understanding of the planning and implementation issues related to the transition from AIS/AIM to Information Management/SWIM, and expedite the implementation of the AIM/SWIM requirements in a harmonized manner. In view of the above the meeting endorsed the following Conclusion:

CONCLUSION19/41: AIM/SWIM SEMINAR FOR THE AFI REGION

That, in order to support States with regard to the planning and implementation related to the transition from AIS/AIM to Information Management/SWIM, and expedites the harmonized implementation of the AIM/SWIM requirements; the ICAO ESAF and WACAF Regional Offices organize an AIM/SWIM Seminar in 2014/2015.

3.5.8 Considering the 4th Edition of the Global Air Navigation Plan, it was agreed that the Concept of AFI-CAD when implemented, will offer all AIM related tasks including even the classic AIM services to reduce the ANSPs efforts and timelines needed by the States on their way to the AIS/AIM Transition process. This is also in line with Recommendation 3/8 (c) of the 12thAN Conference which states:

Recommendation 3/8 (c): State actions relating to service improvement through aeronautical information management as well as digital air traffic management information

That States:

Engage in intra-regional and interregional cooperation for an expeditious transition from aeronautical information service (AIS) to aeronautical information management (AIM) in a harmonized manner and to using digital data exchange and consider the regional or sub regional AIS databases as an enabler for the transition from AIS to AIM.

3.5.9 To this effect, the Group noted that ASECNA is progressively developing and plans to implement in accordance with the AFI-CAD Concept, a Regional AIS Database to accommodate all its Member States and other States in the AFI Region as per **Appendix-3.5D**. The meeting also noted that South Africa has invited AFI States to join the South African Regional AIS Database as an alternative to enhance the AIM implementation process with the AFI Region as per **Appendix 3.5E**. The meeting then endorsed the possibility of AFI States migrating to the ASECNA Regional AIS Database or to the South African Regional AIS Database in accordance with the AFI-CAD Concept.

3.5.10 In view of the above, the Group endorsed the formation of a Working Group with terms of reference as per **Appendix 3.5F** to implement ASECNA's development of a Regional AIS Database intended to accommodate all its member States and ATNS' development of a Regional AIS Database intended to accommodate AFI States wishing to enhance the AIM implementation process.

3.5.11 The meeting noted that the 6th Meeting of the 198th Session of the Council of ICAO adopted Amendment 37 to Annex 15, effective 14 November 2013 and incorporating all Phase 2 AIS/AIM Roadmap transition steps.

3.5.12 The meeting was informed that with the implementation of the future Amendment 38, the total revision and restructure of Annex 15 will be complete. A new PANS-AIM Document will focus on procedures and practices, and revisions to Doc. 8126 will focus on the development of an AIS organization from an AIM perspective, and contain guidance on meeting the requirements of the SARPs and PANS. The meeting was also informed about the anticipated AIM Divisional Meeting to be held in

Montreal in February 2015. This Meeting will review and finalize the Draft PANS-AIM Document, Draft Amendment 38 and SWIM elements.

3.5.13 The Secretariat provided an update on AIS-AIM related Air Navigation Deficiencies in the AFI Region. The Phase 1 Steps became effective on 18 November 2010, in line with the effective date of Amendment 36 to Annex 15. Several States reporting in accordance with the AFI Region State Letter Ref.: T 2/7-0725 dated 7 August 2012, have not completed all Phase 1 steps. Many States have failed to report any AIM implementation progress at all. It is considered that the AIS-AIM related deficiencies list should be updated to record deficiencies where States have reported that they have not yet completed the Phase 1 Steps or where they have failed to provide any reports of progress. The list of proposed AIS-AIM related deficiencies is provided at **Appendix3.5G**. The meeting further noted the potential deficiencies arising when Amendment 37 to Annex 15 comes into effect on 14 November 2013, including the AIS-AIM Transition Phase 2 Steps. A summary of AIS-AIM related deficiencies anticipated after 14 November 2013 based on implementation of Roadmap steps is provided at **Appendix 3.5H.**

3.5.14 Finally, the meeting noted the AIS-AIM related transition outcomes in the region, the regional AIS-AIM transition progress, the criticality of AIM to ATM safety, efficiency and capacity improvements required to manage increasing demand, including *inter alia* RNP approach procedures, PBN based separation and route structures, CCO, CDO, ATFM and airspace management. The Group then agreed on the adoption of strategies to promote the profile of AIS/AIM within States and ANSPs and to ensure the necessary organizational focus and resources are applied to AIM implementation.

3.6: Aeronautical Meteorology (MET)

3.6.1 The Group was presented with the report of the eleventh meeting of the Meteorology Sub-Group (MET/SG/11), held in Nairobi, Kenya, from 8 to 10 July 2013, and deliberated on it as follows.

Review of APIRG Conclusions and Decisions in the MET field

3.6.2 APIRG/19 Meeting reviewed the draft Conclusions and Decisions formulated by previous MET/SG meetings and adopted by APIRG. The meeting further reviewed the updated APIRG Conclusions and Decisions related to MET since APIRG/13 meeting as per APIRG/18 Decision 18/01. The Group noted actions taken and progress made by States/Organizations so far on the implementation of the Conclusions and Decisions. With respect to Leopold Sedar Senghor International Airport (Dakar, Senegal), the Group particularly noted that the requirement to measure and report runway visual range (RVR) corresponds to Category I instrument approach and landing operations, instead of Category II operations as previously considered by the MET/SG. Consequently, APIRG/19 Meeting adopted the updated list as given in **Appendix 3.6A** to this report.

The World Area Forecast System (WAFS), International Airways Volcano Watch (IAVW) and Tropical Cyclone in the AFI Region

3.6.3 The Group reviewed the status of the implementation of the World Area Forecast System (WAFS), International Airways Volcano Watch (IAVW) and Tropical Cyclone Programme in the AFI Region on the basis of the reports from the seventh meeting of WAFS Operations Group (WAFSOPSG/7), the eighteenth meeting of the Satellite Distribution System for information related to air navigation (SADIS) Operations Group (SADISOPSG/18), the seventh meeting of the IAVW (IAVWOPSG/7) and the summary report of the Tropical Cyclone Advisory Centre (TCAC) of the AFI Region in La Reunion.

3.6.4 The Group was pleased to note that WAFCs, London and Washington, made available harmonized forecasts, in GRIB2 format, of CB cloud, icing and turbulence via Secure SADIS FTP and WAFS Internet Files Service (WIFS) and related guidance material on the following WAFSOPSG website: (http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/GuidanceMaterial.aspx) including a computer based initial training material which will be developed and made available on the WAFSOPSG website.

3.6.5 The APIRG/19 Meeting took note of the endorsement by the SADISOPSG meeting of the extension of the provision of the satellite based service (SADIS 2G) until November 2019 with a view to withdraw thereafter, including a hardware refresh of the ground segment equipment to be undertaken late 2015/early 2016. The Group was also pleased to note the increase of the Secure SADIS FTP bandwidth from 4 Mbit/sec to 16 Mbit/sec.

3.6.6 The Group noted that an IAVW roadmap for the provision of information services will be developed in support of the aviation system block upgrade (ASBU) methodology and additional guidance material on the use of the volcano observatory notice for aviation (VONA) for inclusion in Doc 9766 *Handbook On The International Airways Volcano Watch* (IAVW). The Group was pleased to note that Toulouse Volcanic Ash Advisory Centre (VAAC) serving the AFI region had made efforts to improve the modeling of volcanic pollutants and an establishment of a network of LIDARs in order to collect data on aerosols and volcanic ash, and to develop a 4-channel discrimination ash/water algorithm. The meeting further noted that between June 2011 and May 2013, the VAAC, Toulouse had issued 187 operational advisories in both text and graphical formats, and conducted 11 VA advisory exercises between June 2011 and end of 2012.

3.6.7 Regarding the operations of La Reunion TCAC which serves the AFI region, the meeting noted that it was the first TCAC to produce and disseminate advisories of cyclones in graphical form. The meeting was pleased to note that the TCAC continually strives to improve the quality of its cyclone forecasts.

Review of the Recommendations of AFI OPMET Management Task Force Fourth and Fifth Meetings (MTF/4 and MTF/5)

3.6.8 The Group was presented with the fourth and fifth meeting reports of the AFI OPMET Management Task Force (MTF/4 and MTF/5) respectively held in Pretoria, South Africa, from 9 to 10 September 2012 and in Nairobi, Kenya from 3 to 5 July 2013 as reviewed by the MET/SG/11 meeting.

3.6.9 The Group expressed concern that some States were not implementing the AMBEX scheme appropriately and agreed that is was necessary to have a list of OPMET Focal Points for the AFI region as well as adjacent Interregional OPMET Gateways (IROGs). The meeting was pleased to note that the Task Force formulated Decision 5/01 to establish OPMET focal points. To increase the availability of required OPMET data in the AFI RODBs through a regular OPMET monitoring process as indicated in the AMBEX Handbook, the Group agreed that a set of actions and measures be developed and implemented. In this regard, the Group formulated the following Conclusion:

CONCLUSION 19/42: PROCEDURE FOR AFI OPMET DATA MONITORING

That,

a) Dakar and Pretoria RODBs:

i) conduct within their respective areas of responsibilities, the monitoring of OPMET received from AFI BCCs;

ii) analyze the monitoring results and identify shortcomings and deficiencies;

iii) develop and forward to the concerned BCCs on a quarterly basis, the

monitoring results and the recommendations to be implemented;

iv) collaborate directly with the concerned States to assist addressing the shortcomings which can be resolved quickly; and

v) issue on a semester basis, a report on the above four actions to be forwarded to ICAO Dakar and Nairobi regional Offices.

b) ICAO Dakar and Nairobi Regional Offices:

i) distribute the reports through State Letters to AFI States with particular emphasis on the concerned States with the deficiencies; and

ii) visit the concerned States during State missions to provide further advice and awareness.

iii) organize when required, training workshops for the personnel of the AMBEX Centres (RODBs, BCCs and NOCs), to assist the States concerned to address deficiencies related to the implementation of the AMBEX scheme.

3.6.10 The Group was informed that SIGMET Tests were conducted in November 2011 and 2012 in accordance with Recommendation 1/12 b) of the MET Divisional Meeting (2002). The reports on the Tests showed that in 2012, 22 MWOs (61%) in the AFI region, were still not issuing SIGMETs at the time of the tests. However, there was an increased level of participation by States in the tests as well as improvements relating to issuance, dissemination and formatting of SIGMETs.

3.6.11 The meeting was informed that an AFI State, following request from users, proposed an amendment to the AFI Air Navigation Plan (Doc 7474) to enable willing States issue and distribute meteorological information (AIRMET, GAMET etc.) in support of low level flight operations in the AFI region. In this regard the Group formed an Ad-hoc Group to investigate the issue and report back to the MET/SG on its 12th meeting.

3.6.12 The Group was informed that the MET/SG agreed to review and amend the SIGMET Guide with respect to minor changes introduced by the amendment of FASID MET Tables. The Secretariat of the MET/SG was therefore, requested to publish the AFI SIGMET Guide given in **Appendix 3.6B** to this report on the ICAO website in October 2013.

3.6.13 The Group was informed that MTF/4 and MTF/5 meetings had identified a number of inconsistencies of the AMBEX Handbook with the SADIS user Guide and a low implementation by States. The Group was further informed of the need for alignment of the Handbook with regard to Recommendation 6/11 of the 12th Air Navigation Conference (AN-Conf/12) which called for Regional Air Navigation Plans (ANPs) to be aligned with those of respective Regional Supplementary Procedures. In this regard, the MET/SG/11 formulated Decision 11/06 calling for the AMBEX Handbook given in **Appendix 3.6C** to this report to be expeditiously finalized by the Core Team on the AMBEX and to be distributed to AFI States by the Secretariat of the MET/SG as the AMBEX Handbook Amendment 3. The Handbook was consequently amended accordingly, distributed to States and placed on the AFI website in October 2013.

3.6.14 The Group was pleased to learn that the implementation status reports of Dakar and Pretoria RODBs indicated that many actions had been taken to improve on the implementation of the AMBEX scheme in accordance with Decisions of MTF, MET/SG and APIRG meetings as well as APIRG Conclusions. The Group was pleased to note that the OPMET data catalogue given in **Appendix 3.6D** to this report, has been expeditiously finalized and distributed to States in accordance with Conclusion 18/46 of APIRG/18 Meeting.

3.6.15 The Group was informed that the MTF has taken a step to develop the backup procedures of the AFI ROBDs in line with the existing backup procedure between the Europe

Regional OPMET centres (ROCs) in Brussels, Vienna and Toulouse by recommending the following measures to be implemented by AMBEX centres: Dakar and Pretoria RODBs implement and maintain an identical OPMET bulletins catalogue, implement the AFI Interface Control Document (ICD), conduct monitoring activities in order to ensure that the databanks contain required OPMET data at all times; the Bulletin Compiling Centres (BCCs) disseminate OPMET data to both Dakar and Pretoria RODBs using appropriate AFTN addresses, and the MTF to include AFTN addresses of both RODBs in the AFI ICD. In this regard, the Group formulated the following Conclusion:

CONCLUSION 19/43: IMPLEMENTATION OF AFI RODB BACK UP PROCEDURES

That,

a) Dakar and Pretoria RODBs implement

i). and maintain an identical OPMET bulletins catalogue;
ii). the AFI Interface Control Document (ICD);
iii). the same data validation criteria; and
iv). conduct monitoring activities in order to ensure that the databanks contain required OPMET data at all times.

b) the bulletin compiling centres (BCCs) disseminate OPMET data to both Dakar and Pretoria RODBs using appropriate AFTN addresses; and
c) the MTF include AFTN addresses of both RODBs in the AFI ICD.

3.6.16 APIRG/19 was informed that the SADISOPSG/18 meeting recalled that the requirements by States and users for aerodrome routine meteorological reports (METAR), aerodrome special meteorological reports (SPECI) and aerodrome forecasts (TAF) to be broadcast on the SADIS were given in Annex 1 to the SADIS User Guide (SUG) also known as FASID MET Table 2A.

3.6.17 APIRG/19 meeting was briefed of the developments on the aeronautical meteorological requirements for the future air navigation System, and noted the important role the Regional Databank provider States would play in the envisaged digital data exchange environment. The Group encouraged the AFI Data bank provider States to develop the necessary handling capacity. In this regard the Group endorsed the following Conclusion:

CONCLUSION 19/44: DEVELOPMENT OF CAPABILITIES OF HANDLING OPMET INFORMATION IN DIGITAL FORMAT

That both Pretoria and Dakar RODBs Provider States be invited to:

a) start developing capability of handling OPMET data in digital format as soon as possible, after November 2013;
b) test the codes based on OPMET data in digital format (XML/GML) for METAR/SPECI, TAF and SIGMET with a view to fine tuning over the first year (2014); and
c) take a leading role over the transition aspect to XML/GML and provide technical assistance as required to other AFI States in implementing OPMET data in digital format.

3.6.18 APIRG/19 meeting was informed that Dakar and Pretoria RODB managers participated in a meeting/workshop held in EUROCONTROL (Brussels, Belgium) on the preparation of migration from the representation of the OPMET (METAR, SPECI, TAF and SIGMET) data in the present alphanumeric format to the XML format. A roadmap for the migration codes to the XLM format for the period 2013 to 2019 was developed by the meeting held in Brussels, Belgium with the

following stages:

- 2010 : endorsement of XML for OPMET by ANC;
- 2010 – 2012 : finalization of « code tables » for XML ;
- 2013 : enabling clauses to use XML in Annex 3 ;
- 2014 : endorsement of XML by the MET DIV Meeting ;
- 2016 – 2019: the long period of transition to accommodate developing countries;
- 2019: mandatory use of XML in Annex 3.

3.6.19 The Group was pleased to note that ASECNA had developed an Action Plan for the implementation of the OPMET exchange in XML format. The meeting however, agreed that the AFI transition plan be developed after the MET Divisional meeting scheduled for July 2014.

3.6.20 The Group noted that the MET/SG/11 meeting had endorsed the updated work Programme of the MTF through its Decision 11/10. The Group recalled that MTF meetings are held annually while the venues are Dakar and Pretoria RODB host cities or rotational basis. The Group noted that following the evaluation of the activities of the two RODBs during the MTF/4 meeting, the Task Force considered that the RODBs were well established and running as expected and therefore it was no longer necessary to visit the RODBs during each MTF meeting. Therefore, the MTF decided to convene the annual meetings at the ICAO Regional Offices Dakar and Nairobi unless States are willing to host.

3.6.21 The Group was informed that a significant number of runway excursions, due to the presence of water puddles on the runway, are experienced in some ASECNA International Airports. ASECNA had therefore, undertaken work on this issue in Lome (Togo), and made available its experience through an internal procedure to provide solution on this issue. Based on this experience, ASECANA proposed to include in METAR/SPECI to contribute in solving issues related to runway safety. In this regard, and to contribute in resolving runway safety issues in the AFI region, the Group endorsed the following Conclusion calling for the inclusion of status of runway reports in METAR/SPECI issued in the AFI region:

CONCLUSION 19/45: INCLUSION OF STATE OF RUNWAY REPORTS IN METAR/SPECI ISSUED IN THE AFI REGION

That, the AFI Air Navigation Plan (Doc 7474) be amended to include in METAR/SPECI, the report on observations of the State of the runway in terms of depth of water deposit measurements on the runway as provided by the appropriate Airport Authority.

Air Navigation Deficiencies in the MET field

3.6.22 The List of deficiencies in the MET field was reviewed and updated based on the uniform methodology approved by Council for identification, assessing, tracking and reporting of deficiencies of air navigation systems. The review also took into account remedial action from States concerned and inclusion of additional deficiencies identified since APIRG/18 Meeting. The updated list of deficiencies in the MET field adopted by the Group is at **Appendix 3.6E** to this report.

New Challenges facing AFI Meteorological Services: Future Developments with regards to OPMET information

3.6.23 The Group recalled the Global Air Traffic Management (ATM) operational concept and the MET information that will be tailored to meet the future ATM requirements, and on the Aviation System Block Upgrades (ASBU) methodology including the module related to meteorology. The plans for the introduction to the transition to table-driven data representation (XML/GML) for METAR/SPECI, TAF and SIGMET were also recalled. The meeting reviewed the draft report on the

preparation of the MET related regional air navigation implementation action plan, based on the ASBU methodology, as recommended by the PIRG-RASG Global Coordination meeting and the 12th Air Navigation Conference.

3.6.24 The meeting was informed that ASBU was a methodology to facilitate interoperability of different technologies, accommodate different procedures, cover all elements of Air Navigation systems (ATM, CNS, AGA, AIM and MET) and provide harmonization thus leading to seamlessness across regions. This would be achieved through progressive, cost effective and cooperative implementation of air navigation systems worldwide. The Block upgrades will allow the use of meteorological (MET) information in a Net-centric ATM environment and satisfying the foreseen performance requirements for MET will have an impact on the information that needs to be made available and exchanged between information providers and users. The Group was informed that the meteorological support to tomorrow's ATM will be a transition of Meteorological (MET) products into MET information supporting collaborative, knowledge-based, decision making through free-flowing information exchange trajectory/performance based operations.

3.6.25 The meeting was further informed that the outcome of the ICAO Global Planning and Implementation Groups (PIRG) and Regional Aviation Safety Groups (RASG) coordination meeting held in March 2013 as well as Recommendation 6/1 of the 12th Air Navigation Conference (AN-Conf/12) required every PIRG to develop a Regional Air Navigation Implementation Action Plan, based on the ASBU methodology.

3.6.26 In this regard, the APIRG Secretary urged all APIRG Sub-Groups including MET/SG to include this activity in their agenda in preparing for the APIRG/19 Meeting. To this end, the MET/SG was requested to provide a report to be submitted to APIRG/19 for the preparation of the MET related AFI Regional Air Navigation Implementation Action Plan. As requested by the APIRG Secretary, the said report was structured as follows:

1) Introduction,
2) Analysis of the current situation,
3) Identification of regional priorities and targets,
4) Determination of implementation and benefit indicators/metrics;
5) Identification of implementation challenges; and
6) Alignment with the ASBU Methodology.

3.6.27 Based on the above-mentioned structure, the MET/SG prepared the relevant inputs to the AFI Air Navigation System Implementation Action Plan aligned with the ASBU Methodology as discussed under the report on Agenda Item 3.0.

Regional meteorological procedures

3.6.28 The Group noted that regional procedures in the AFI ANP/FACID were reviewed as proposed by WAFSOPSG and IAVWOPSG meetings and following approval by concerned States.

Terms of reference, work Programme and composition of the MET/SG

3.6.29 The Group reviewed and endorsed the changes proposed by the Sub-Group on its work Programme and composition of the MET/SG. In this regard, the Group formulated the following Decision:

DECISION 19/46: FUTURE WORK PROGRAMME OF THE MET/SG

That, the updated work Programme of the MET/SG given in Appendix 3.6F this report, be endorsed.

Any Other Business of the MET/SG/11 Meeting

3.6.30 The Group recalled the Conclusion 7/104 of APIRG/7 meeting calling for AFI States to submit a formal application to the ICAO WACAF office, for enrollment to the CODEVMET project. The Group was informed that a Project Coordinator has been recruited by the ICAO Technical Cooperation Bureau (TCB) to implement the project from 15 October 2012 based at its Headquarters in Banjul, The Gambia. The meeting was further informed that the Project Coordinator had already developed the so-called "Core Services" consisting of aeronautical meteorology (MET) generic regulations/rules; procedures manual for MET safety oversight and Quality Management System (QMS) implementation and surveillance; generic MET Inspector/trainer's Handbook for the contributing States, and has also conducted basic and advanced training courses for MET inspectors. In addition, the meeting was informed that four Members of CODEVMET were effectively contributing and therefore benefiting from the project outputs. The meeting was reminded that the membership was open to all AFI States and that the contribution for "core Services" was 45,500USD. The amount needed for the so-called "Services on request" depended on the services/products required by the concerned State/MET Service Providers. The project document was then distributed to all participants in the meeting. The World Meteorological Organization (WMO) was requested to assist in circulating the information to its member States in Africa.

3.6.31 The meeting was informed that, to demonstrate compliance with Paragraph 2.2.3 of Annex 3 to the Convention on International Civil Aviation, WMO in conjunction with ICAO had informally considered and agreed that the following ISO 2001:2008 requirements could be taken as a minima:

1) Availability of Quality Policy, Quality Manual and complete set of work instructions/process descriptions at all workplaces, and familiarity of staff with these documents;
2) Documented evidence of user consultation and feedback (publications, questionnaires, records of user meetings, actions stemming from these);
3) Evidence of corrective and preventive action processes; and
4) An internal audit plan, audit reports and documented follow-up decided by a Management Review meeting.

3.7 Other Air Navigation Matters

Best Capable Best Served (MCBS) Approach

3. 7.1 IATA presented the concept of "Most Capable Best Served" to the Group, and requested its endorsement by the States. The concept is intended to generate return on air operators' investments while enabling a safer and more efficient ATM system. The Group took cognizance of the concept and agreed to refer it to its ATM Sub-Group for further consideration, in coordination with stakeholders such as IFALPA and IFATCA

Benefits of Aviation and need for consultation process with users

3.7.2 The Group was reminded the relevant ICAO provisions as contained in the ICAO Policies on Taxation in the Field of International Air Transport (Doc 8632), ICAO Policies on Charges for Airports and Air Navigation Services (Doc 9082/9) and ICAO Manual on Air Navigation Services Economics (Doc 9161) and the need for consultation with airspace users before implementing major changes to the air navigation system. Ghana requested the Secretariat to consider including adherence to those Recommendations as a key performance indicator (KPI) when conducting State missions. The following Conclusion was formulated by the Group:

CONCLUSION 19/47: NEED FOR CONSULTATION WITH USERS PRIOR TO MAJOR CHANGES TO THE AIR NAVIGATION SYSTEM

That:

a) States should:

i). ensure the aviation stakeholders adhere to the ICAO Policies on Taxation in the Field of International Air Transport (Doc 8632), ICAO Policies on Charges for Airports and Air Navigation Services (Doc 9082/9) and ICAO Manual on Air Navigation Services Economics (Doc 9161) when considering the introduction of major changes to the air navigation system;

ii). establish effective economic regulations for the provision of air navigation services (ANS) that include collaboration with users; and

b) the Secretariat include adherence to the above ICAO policies when conducting State missions.

AGENDA ITEM 4: REGIONAL AIR NAVIGATION DEFICIENCIES

Review and update of the list of deficiencies in the Air Navigation Fields

4.1 Issues related to deficiencies have been addressed under Agenda Item 3.

AGENDA ITEM 5: FUTURE WORK PROGRAMME

Terms of reference, Future Work Programme and Composition of the Group

5.1 The Group recalled that the ICAO Special Regional Air Navigation Meeting (SP AFI RAN 2008) adopted a performance-based approach to regional and national air navigation planning in the AFI Region, aligned with the *Global Air Navigation Plan* (Doc 9750, GANP).

5.2 The SP AFI RAN 2008 recognized the need to have a clearly defined strategy to implement ATM systems as well as the need to align work programmes of the States, regions and ICAO Headquarters. The SP AFI RAN 2008 agreed that APIRG should review its structure to determine if changes would be beneficial in light of the performance-based approach to air navigation planning being proposed. It also felt that the structure and organization of regional air navigation plans (ANPs) should be reviewed on a global basis with a view to aligning the regional ANPs with the Global Air Navigation Plan and the performance-based approach to planning. The meeting therefore, agreed to adopt the following Recommendations:

RECOMMENDATION 6/3: RE-ORGANIZATION OF THE REGIONAL AIR NAVIGATION PLAN

That ICAO, at the global level and in coordination with regional offices, review the regional air navigation plans and propose changes to their structure, organization and format to ensure alignment of the regional air navigation plans with the Global Air Navigation Plan and the performance-based approach to air navigation planning.

RECOMMENDATION 6/4: RE-ORGANIZATION OF APIRG

That APIRG review its working methods and organization and consider making adjustments to better support the ICAO performance framework in its planning and implementation activities.

5.3 The Group agreed that the performance - based approach adopted by the ICAO SP AFI RAN 2008 applies to the AFI Regional Air Navigation System Implementation Plan aligned with the ASBU Methodology as discussed under the report on Agenda item 3.0.

5.4 Within the ASBU framework, due consideration should be given to planning, implementation, monitoring and reporting aspects.

5.5 These considerations should – inter alia - include the following:

Planning aspects

- Align the Regional Air Navigation Plans (ANPs) with ASBUs
- Project based approach for ASBUs to be applied to APIRG Subgroups/Task Forces as necessary
- Changing roles of Regional Offices and Work Plans: Oriented to performance improvements
- Involvement of users and regulators
- Commitment through regional plans

Implementation aspects

- Categorize and determine priority for ASBU Block 0 Modules at regional/interregional/global levels
- Disseminate ASBU Block 0 Modules details
- Training/Workshops/Seminars/Computer-Based Training (CBT)
- APIRG Deficiency List according to aligned ANPs
- Mission to States (CAAs, Service Providers)
- ASBU oriented approach for missions to States (CAAs, Service Providers) based on Safety and Air Navigation priorities

Monitoring aspects

- Key Performance Indicators (KPI) /Supporting metrics for ASBUs
- Geographic Information System (GIS) based reporting for global Air Navigation Report
- Reporting mechanism/Webpage for Regions/Dashboard Reporting
- Performance Targets/Indicators/Collection of data
- Air Navigation Reporting Forms (ANRFs)
- Reporting on Mission to States/ASBU oriented reporting (based on ANRF template)
- Continuous Monitoring Approach (CMA)/Mapping to ASBUs for oversight
- Use of tools for ASBU monitoring

Implications for the PIRGs under the new ICAO Global Plan

5.6 The ICAO Planning and Implementation Regional Groups (PIRGs) process are in the process of adopting the ASBU Modules through regional agreements. In so doing, PIRGs should ensure that all required supporting procedures, regulatory approvals and training capabilities are set in place. These supporting requirements need to be reflected in regional online Air Navigation Plans (eANPs) developed by the PIRGs, ensuring strategic transparency, coordinated progress and certainty of investment.

5.7 To support States' efforts, the development of business cases for any operational benefit will be facilitated with the detailed information available in the Global Plan's technology roadmaps and Module descriptions.

5.8 PIRGs function primarily on the basis of regular consultations with States and industry to align the specific measures and initiatives that they integrate into Regional Air Navigation Plans.

5.9 PIRGs are additionally responsible under the performance framework work Programme for coordinating the reporting from States and industry that feeds into later analysis activities, the annual Air Navigation Capacity and Efficiency Report, and any required tactical work Programme revisions.

5.10 Performance reviews are to be conducted via annual reports that will be developed by each ICAO Regional Office/PIRG in collaboration with local industry stakeholders. These are to be supported by data submission by States with respect to Block Upgrade Modules' metrics.

5.11 As a result, PIRG schedules will need to be revised in order to be effectively synchronized with the annual reporting schedule. Similarly, as the standardization effort is completed at the global level, PIRGs which have not yet transitioned will need to rationalize their Sub-Groups away from technologies and toward operational performance.

5.12 In view of the above and mindful of ICAO SP RAN 2008, the following Decision was adopted.

DECISION 19/48: RE-ORGANIZATION OF APIRG

That:

a) The APIRG review its working methods and organization using project management principles and other methodologies as and when necessary, and consider making adjustments to better support the ICAO performance framework in its planning and implementation activities aligned with the Aviation System Block Upgrades (ASBUs); and

b) The Secretariat:

i). develop a revised structure of the APIRG taking due account of best practices/benchmarking, established regional targets and priorities, and the need for synergies between similar or complementary activities; and

ii). Accordingly call for an APIRG extraordinary meeting on this issue in 2014.

5.13 The Group noted CANSO's support to the implementation of the ASBU in the AFI Region through workshops, such as the ASBU Workshop which was scheduled for 13-14 November 2013 in Mozambique.

AGENDA ITEM 6: ANY OTHER BUSINESS

Date and Venue of the next meetings:

6.1 The dates and venues for the APIRG Extraordinary Meeting and the APIRG/20 Meeting will be coordinated by the Secretary in consultation with the Chairperson.

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