

# INTERNATIONAL CIVIL AVIATION ORGANIZATION



## Third Meeting of the AFI Frequency Management Group

(AFI/FMG/3)

(Nairobi, Kenya, 22 – 24 July 2013)

## FINAL REPORT

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## **PART I – HISTORY OF THE MEETING**

### **1. Introduction**

1.1 The Third Meeting of the AFI Frequency Management Group (AFI/FMG/3) was held at the ICAO Regional Office of Nairobi, Kenya from 22 to 24 July 2013.

### **2. Objectives**

2.1 The main objective of the meeting was inter alia, to assess the status of implementation of the conclusions and decisions of the second meeting of the group (AFI/FMG:2), review the outcome of ICAO 12<sup>th</sup> Air Navigation Conference pertaining to the area of aeronautical spectrum.

The meeting also examined the conclusions and decisions of APIRG/17 and 18 meetings dealing with the subjects within the competence of the group and the recent activities of ICAO Aeronautical communication Panel Working Group F (ACP WG F) and the future developments in the field of the management and the protection of the aeronautical frequencies spectrum.

2.2 For this reason, the meeting leaned in particular on the Finals Acts of ITU World Radiocommunication Conference held in Geneva during the first quarter of year 2012 pertaining to aeronautical spectrum and on the preparatory activities of AFI region by the Africa telecommunication Union (ATU) for the International telecommunication union (ITU) World Radiocommunication Conference envisaged to be held in Geneva from 2 to 27 November 2015.

Finally the meeting reviewed and amended the Terms of Reference and Future Work Programme of AFI/FMG Group.

### **3. Attendance**

3.1 The meeting was attended by Eighteen (18) participants from nine (09) Contracting States, one (01) Regional Air Navigation Service Providers (ASECNA) representing 18 Contracting States. A list of participants is provided at **Appendix A**.

### **4. Officers and Secretariat**

4.1 The meeting elected **Mr. Bissa SOUGUE**, Aeronautical Telecommunications Manager, ASECNA Headquarters as Rapporteur. **Mr. Francois-Xavier SALAMBANGA**, Regional Officer, Communications, Navigation and Surveillance (CNS) from the ICAO Regional Office for Western and Central Africa (Dakar), acted as Secretary of the Frequency Management Group, and was assisted by **Mr. Prosper ZO'O MINTO'O**, Regional Officer, Communications, Navigation and Surveillance from the ICAO Eastern and Southern Africa Office (Nairobi), Secretary of the APIRG Communications, Navigation and Surveillance Sub-group (CNS/SG).

### **5. Working language**

5.1 The meeting was conducted in English and the meeting documentation was issued in this language.

### **6. Opening**

6.1 The meeting was opened by **Mr. Prosper ZO'O MINTO'O** on behalf **Mr. Boitshoko SEKWATI**, ICAO Deputy Regional Director for Eastern and Southern Africa.

### **7. Agenda**

7.1 The meeting adopted the following agenda:

**Agenda Item 1:** Election of Rapporteur for the Group

**Agenda Item 2:** Follow up of the conclusions and decisions of the second meeting of AFI Frequency Management Group (AFI/FMG/2)

**Agenda Item 3:** Follow up APIRG/18 outcomes pertaining to Frequency Management

**Agenda Item 4:** Review of the Recommendations of ICAO 12<sup>th</sup> Air Navigation Conference pertaining to Aeronautical Frequency spectrum Management and protection

**Agenda Item 5:** Review and Follow up of the Final Acts of the last ITU World Radiocommunication Conference (ITU-WRC-12)

**Agenda Item 6:** Preparation of the future ITU World Radiocommunication Conference (ITU-WRC-15)

- *Agenda item 6.1: ICAO Position for WRC 15 and Activities of ACP WG F*
- *Agenda item 6.2: Report on ATU 1<sup>st</sup> preparatory meeting (February 2013)*
- *Agenda item 6.3: Report on ITU specialized study groups meetings*

**Agenda Item 7:** AFI Aeronautical Spectrum Management in the framework of ICAO ASBU concept

**Agenda Item 8:** Terms of Reference and future Work Programme of AFI/FMG

**Agenda Item 9:** Any other business

## 8. Conclusions and decisions

The following conclusions and decisions were formulated by AFI/FMG/3 meeting:

Number	Title
<b>Agenda Item 1</b>	<b>Election of the Rapporteur of the Frequency Management Group</b>
<b>Draft Decision 3/01</b>	<b>Election of the Rapporteur</b>
	That: The <i>Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar</i> (ASECNA) is maintained as Rapporteur of the Africa-Indian Ocean (AFI) Planning and Implementation Regional Group (APIRG) Frequency Management Group (AFI/FMG).
<b>Agenda Item 2</b>	<b>Follow up of the conclusions and decisions of the second meeting of AFI Frequency Management Group (AFI/FMG/2)</b>
<b>Draft Decision 3/02</b>	<b>Updating Com list 1, 2 and 3</b>
	That: An update of the data base on Com Lists 1, 2 & 3 be undertaken and completed by end of December 2013; States/Organization to a) forward the relevant data under the collection format attached at <b>Appendix B</b> no later than 31 October 2013 for compilation and update of the AFI Com List data base b) Ensure that the assigned aeronautical frequencies are duly protected in coordination with their Telecommunication Regulation Authorities
<b>Draft Conclusion 3/03</b>	<b>Aviation systems Security</b>
	That: States give due consideration to security aspects when implementing/operating air navigation automated systems
<b>Agenda Item 3</b>	<b>Follow up APIRG/18 outcomes pertaining to Frequency Management</b>
	NIL
<b>Agenda Item 4</b>	<b>Review of the Recommendations of ICAO 12<sup>th</sup> Air Navigation Conference pertaining to Aeronautical Frequency spectrum Management and protection</b>
<b>Draft Conclusion 3/04</b>	<b>Coordination between CAAs and Telecommunication regulatory bodies/authorities</b>
	That: 1. Strong coordination between CAAs and Telecommunication regulatory bodies/authorities be established to ensure the protection of aeronautical telecommunication bands. 2. AFI states CAAs actively participate in their respective national preparatory meetings for the upcoming WRC-15. 3. The ICAO position for WRC-15 be delivered to telecommunication regulatory bodies.
<b>Draft Conclusion 3/05</b>	<b>Coordination Framework and procedures between CAAs and National Telecommunication Regulation Authorities</b>
	That; The Secretariat assist States in establishing a coordination framework and procedures between National CAAs and Telecommunication Regulation Authorities to facilitate efficient dialogue and resolution of issues related to the provision, the optimum operation and protection of aeronautical telecommunications spectrum taking due account of their specific institutional arrangements.
<b>Draft Conclusion 03/06</b>	<b>Monitoring and Reporting of interference from IMTs</b>
	That: With reference to participation in studies called upon by Resolution 154 of WRC12, States are encouraged to record and provide information regarding interference caused by IMTs to their VSATs operating within the band 3.4 – 4.2 GHz and in adjacent bands.

Number	Title
Agenda Item 5	Review and Follow up of the Final Acts of the last ITU World Radiocommunication Conference (ITU-WRC-12)
Draft Conclusion 03/07	Participation in the Working party meetings in preparation for the World Radio Communication Conference (WRC)
	<p>That:</p> <p>In order to enable adequate implementation of ITU Resolution 154(WRC-12 ):</p> <p>a) AFI/FMG through the ICAO Regional Offices encourage the States regulatory bodies to invite CAAs/ANSPs to actively and positively contribute in ITU joint tasks groups and working party meeting/study groups covering different aeronautical agenda items.</p> <p>b) States arrange for regular participation of AFI FMG focal points in the ITU joint task groups and working party meetings.</p>
Agenda Item 6	Preparation of the future ITU World Radiocommunication Conference (ITU-WRC-15)
Draft Conclusion 03/08	Support to ICAO position for WRC-15
	<p>That;</p> <p>In accordance with ICAO Assembly Resolution A32-13, AFI States support ICAO position developed for WRC-15 by:</p> <p>a) Incorporating the ICAO position in the national position to WRC-15</p> <p>b) Coordinating this position with the aviation stakeholders (ANSPs, Airlines, Airport Operators, etc.); and</p> <p>c) Ensuring the full involvement of Civil Aviation Representatives in WRC-15 preparatory activities and the participation of AFI/FMG focal points of contact in the Conference.</p>
Draft Decision 03/09	Roadmap to WRC-15
	That the draft Roadmap to WRC-15 as presented at <b>Appendix C</b> be reviewed by CNS/SG/5 for submission to APIRG/19.
Draft Decision 03/10	Establishment of the AFI/FMG focal points
	That States nominate their AFI/FMG focal points of contact tasked according to the Term of Reference proposed at <b>Appendix D</b> to this report.
Draft Conclusion 03/ 11	Draft WRC-15 Resolution for the protection of the C band operated by the aeronautical VSAT networks
	<p>That:</p> <p>a) The AFI/FMG Rapporteur in coordination with ICAO ESAF and WACAF offices elaborate and circulate to the AFI/FMG focal points of contact a draft resolution for inputs and comments;</p> <p>b) The final draft Resolution be submitted to the WRC-15 as per ITU-R established procedures;</p> <p>c) AFI States/Organizations support the above Draft resolution in order to ensure the protection of the C band operated by the aeronautical VSAT networks and achieve the safe operation of aircraft and reliable distribution of meteorological information in AFI region.</p>
Draft Conclusion 03/12	Organization and participation in the WRC-15 preparatory meetings
	<p>That:</p> <p>AFI States/Organizations take the necessary steps to:</p> <p>a) Organize workshops/seminars to properly prepare the stakeholders (ANSPs, CAAs...) for the next WRC-15; and</p> <p>b) Actively participate in the national, regional and international preparatory meetings</p>
Draft Conclusion 03/13	Participation in the ITU Working Party meetings in preparation for the World Radio Communication Conference 2015 (WRC-15)
	<p>That:</p> <p>In order to enable the adequate implementation of the Resolution 154(WRC-12 ):</p>

Number	Title
	<p>a) AFI/FMG through the ICAO Regional Offices encourage the States regulatory bodies to invite CAAs/ANSPs to actively and positively contribute in ITU joint tasks groups and working party meeting/study groups covering different aeronautical agenda items.</p> <p>b) States arrange for a regular participation of APIRG FMG focal points in the ITU joint task groups and working party meetings.</p>
<b>Agenda Item 7</b>	AFI Aeronautical Spectrum Management in the framework of ICAO ASBU concept
	NIL
<b>Agenda Item 8</b>	Terms of Reference and future Work programme of AFI/FMG
<b>Draft Conclusion 03/14</b>	Revised Terms of Reference, composition and Future Work programme of AFI/FMG
	<p>That:</p> <p>Taking into consideration the provision of the 4<sup>th</sup> Edition of the Global Air Navigation Plan (GANP, Doc. 9750) developed in accordance with the Recommendation of ICAO 12<sup>th</sup> Air Navigation Conference, AFI/FMG Terms of Reference, Composition and Work Programme be revised as presented in <b>Appendix E</b> to this report.</p>
<b>Agenda Item 9</b>	Any other business

## **PART II – REPORT ON AGENDA ITEMS**

### **Agenda Item 1: Election of the Rapporteur of the Frequency Management Group**

1.1 Under this agenda item the meeting considered the Term of Reference of AFI/FMG and elected ASECNA as Rapporteur of the Group.

The following Draft decision was formulated:

#### **Draft Decision 3/01: Election of the Rapporteur**

**That:**

**The *Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar* (ASECNA) be maintained as Rapporteur of the Africa-Indian Ocean (AFI) Planning and Implementation Regional Group (APIRG) Frequency Management Group (AFI/FMG).**

### **Agenda Item 2: Follow up of the conclusions and decisions of the second meeting of AFI Frequency Management Group (AFI/FMG/2)**

2.1 Under this agenda item the meeting assessed the status of implementation of the conclusions and decisions of the second meeting of AFI/FMG held in Dakar from 18 to 19 April 201.

2.2 The group noted that a lot of work has been done. However it recognized that a number of conclusions needed to be reviewed, updated and implemented such as the development of a model of a national coordination framework between appropriate authorities, the implementation of HF forecast software, the update of AFI COM Lists.

2.3 The secretariat reported on the low pace of transmission by States/Organizations of their frequencies operated in the aeronautical spectrum and the meeting agreed on the necessity to complete the update of the frequency data base in order to facilitate the automation of frequency assignment and the maintenance of the data base.

The following draft decision was formulated:

#### **Draft Decision 3/02: Updating the Com list 1, 2 and 3**

**That:**

- a) **An update of the data base on Com Lists 1, 2 and 3 be undertaken and completed by end of December 2013:**
- b) **States forward the relevant data under the collection format attached at **Appendix B** no later than 31 October 2013 for compilation and update of the AFI Com List data base; and**
- c) **Ensure that the assigned aeronautical frequencies are duly protected in coordination with their Telecommunication Regulation Authorities.**

2.4 The meeting noted that, with the automation of aviation systems including spectrum assignment and management software, issues related to system security have become a challenge which needs to be duly considered.

The secretariat reported on the ongoing work undertaken by the Aeronautical Communication Panel appropriated working groups.

The meeting formulated the following Draft conclusion:

#### **Draft Conclusion 3/03: Aviation systems Security**

**That:**

**States give due consideration to security aspects when implementing/operating air navigation automated systems**

**Agenda Item 3: Follow up APIRG/18 outcomes pertaining to Frequency Management**

3.1 The meeting reviewed the status of implementation of the Recommendation, conclusion and decision of the AFI Air Navigation Regional meetings ( SP AFI RAN 08, APIRG/17&18 ) pertaining to Frequency Management, with emphasis on issues of relevance to the group, exchanged views and made proposals concerning further action to be taken to achieve full implementation.

**Agenda Item 4: Review of the Recommendations of ICAO 12<sup>th</sup> Air Navigation Conference pertaining to Aeronautical Frequency spectrum Management and protection**

4.1 Under this agenda item the meeting was provided with the Recommendations of the ICAO 12<sup>th</sup> Air Navigation. The meeting noted that the Conference formulated three Recommendations related to general spectrum requirement and Fixed Satellite Service band provision for UAS and VSAT and three Recommendations with the aim to prevent/mitigate the global navigation satellite system vulnerabilities:

- **Recommendation 1/10 – *Development of the aeronautical frequency spectrum resource***
- **Recommendation 1/11 – *Potential use of fixed satellite service spectrum allocations to support the safe operation of remotely piloted aircraft systems***
  - **Recommendation 1/12 – *Long-term very small aperture terminal spectrum availability and protection***
  - **Recommendation 6/7–*Assistance to States in mitigating global navigation satellite system vulnerabilities***
    - **Recommendation 6/8–*Planning for mitigation of global navigation satellite system vulnerabilities***
    - **Recommendation 6/9–*Ionosphere and space weather information for future global navigation satellite system implementation***

4.2 The meeting also noted the need for aeronautical spectrum managers to deliver the following strategic objectives in order to meet the radio regulatory processes:

- a) Timely availability and appropriate protection of adequate spectrum to create a sustainable environment for growth and technology development to support safety and operational effectiveness for current and future CNS systems and allow for the transition between present and next generation technologies;
- b) Demonstrate efficient use of spectrum allocated through efficient frequency management and use of best practices;
- c) Develop credible arguments to support aeronautical spectrum use; and
- d) Minimize the impact of market mechanism on aviation.

4.3 The meeting noted that the opinion of the Conference on the strategy to be worked out to meet this requirement was that this strategy should include:

- 1) Continued access to protected spectrum for legacy systems;
- 2) Access to protected spectrum to expand legacy systems when required;
- 3) Access to protected spectrum for future systems in line with ASBU CNS roadmaps;
- 4) Special protection requirements of aeronautical safety services from interference;
- 5) Ensure efficient spectrum management both for future and legacy CNS systems; and
- 6) Transition strategy from legacy to future system including frequency demand during transition.

4.4 The meeting agreed on the necessity to establish a strong coordination between CAAs and Telecommunication regulatory bodies/authorities to ensure the protection of aeronautical telecommunication bands.

The following draft conclusion was formulated:

**Draft Conclusion 3/04: Coordination between CAAs and Telecommunication regulatory bodies/authorities That:**

- 1. Strong coordination between CAAs and Telecommunication regulatory bodies/authorities be established to ensure the protection of aeronautical telecommunication bands.**
- 2. AFI states CAAs actively participate in their respective national preparatory meetings for the upcoming WRC-15.**
- 3. The ICAO position for WRC-15 be delivered to telecommunication regulatory bodies.**

4.5 The meeting confirmed the need for the establishment of a coordination framework and procedures between National CAAs and Telecommunication Regulation Authorities in order to ensure that the concerns of civil aviation on spectrum provision operation and protection are taken into consideration at a national level.

The following draft conclusion was formulated.

**Draft Conclusion 3/05: Coordination Framework and procedures between CAAs and National Telecommunication Regulation Authorities**

**That:**

**The Secretariat assist States in establishing a coordination framework and procedures between National CAAs and Telecommunication Regulation Authorities to facilitate efficient dialogue and resolution of issues related to the provision, the optimum operation and protection of aeronautical telecommunications spectrum taking due account of their specific institutional arrangements.**

4.6 The meeting recognized that Recommendation 1/12 is of particular importance for the sustainability of the frequency spectrum and the safe operation of the C band VSAT based Networks operating in the tropical Regions primarily in the AFI Region (AFISNET, CAFSAT, SADC/2; NAFISAT).

4.7 These networks being the cornerstone of the implementation of the communication infrastructure in line with the CNS Roadmaps developed in the new GANP as backbone for the transmission and exchange of Communication, Navigation and Surveillance data in the framework of the Aviation System Bloc Upgrades (ASBU) concept. States/Organizations were encouraged to record and provide information regarding interference by IMTs, to their VSATs operating within the band 3.4 – 4.2 GHz and in adjacent bands.

The following draft conclusion was formulated:

**Draft Conclusion 03/06: Monitoring and Reporting of interference from IMTs**

**That:**

**With reference to participation in studies called upon by Resolution 154 of WRC12, States are encouraged to record and provide information regarding interference by IMTs, to their VSATs operating within the band 3.4 – 4.2 GHz and in adjacent bands.**

**Agenda Item 5: Review and Follow up of the Final Acts of the last ITU World Radiocommunication Conference (ITU-WRC-12)**

5.1 Under this agenda item, the meeting reviewed the Finals Acts of ITU World Radiocommunication Conference held in Geneva during the first quarter of year 2012 with focus on the results gained by ICAO during this Conference.

5.2 The secretariat reported on the effort deployed by States/Organizations partners and all stakeholders to attain these results. In particular the actions undertaken by the Rapporteur of the Group to coordinate the activities before, during and after the Conference was recognized by the meeting.

Envisaged follow up actions on the implementation of Resolution 154 WRC-12 on C Band protection were presented for consolidation by the meeting.

5.3 The meeting encouraged States/Organizations to populate WRC-12 outcome on issues related to the provision of spectrum for civil aviation and consider this Resolution 154-WRC 12 when implementing AFI aeronautical spectrum strategy at national level. The following draft conclusion was formulated:

**Draft Conclusion 03/07: Participation in the Working party meetings in preparation for the World Radio Communication Conference (WRC).**

**That:**

**In order to enable the adequate implementation of ITU Resolution 154 (WRC-12):**

- a) **AFI/FMG through the ICAO Regional Offices encourage the States regulatory bodies to invite CAAs/ANSPs to actively and positively contribute in ITU joint tasks groups and working party meetings/studies groups covering different aeronautical agenda items.**
- b) **States arrange for regular participation of APIRG FMG focal points in the ITU joint task groups and working party meetings.**

**Agenda Item 6 - Preparation of the future ITU World Radiocommunication Conference (ITU-WRC-15)**

**Agenda item 6.1: ICAO Position for WRC 15 and Activities of ACP WG F**

6.1.1 The Secretariat provided the meeting with ICAO position for ITU World Radiocommunication Conference scheduled to take place from 2 to 27 November 2015 (**WRC 15**).

This position was circulated to States under ICAO State letter referred **E 3/5.15-13/57** dated 2 July 2013.

6.1.2 The meeting particularly noted ICAO's support to possible technical and regulatory measures in the AFI and other regions to ensure protection of VSATs used for the transmission of aeronautical and meteorological information in the 3.4 – 4.2 GHz frequency band from other services operating in the band and encouraged States/Organization to bring this position to the attention of their National telecommunication Regulation Authorities.

The following draft conclusion was formulated:

**Draft Conclusion 03/08: Support to ICAO position for WRC-15**

**That:**

**In accordance with ICAO Assembly Resolution A32-13, AFI States support ICAO position developed for WRC-15 by:**

- a) **Incorporating the ICAO position in the national position to WRC-15**
- b) **Coordinating this position with the aviation stakeholders (ANSPs, Airlines, Airport Operators, etc.); and**
- c) **Ensuring the full involvement of Civil Aviation Representatives in WRC-15 preparatory activities and the participation of AFI/FMG focal points of contact in the Conference.**

6.1.3 The meeting also noted that in order to attain positive results in the conference, an early preparation was necessary.

It was agreed that an AFI roadmap to WRC 15 was therefore to be developed and the Secretariat was tasked by the meeting to consolidated and submit a Draft Roadmap to be reviewed by CNS/SG/5. This Roadmap is attached at **Appendix C**.

The following Draft Conclusion was formulated:

**Draft Conclusion 03/09: AFI Roadmap to WRC-15**

**That the draft Roadmap to WRC-15 as presented at **Appendix C** be reviewed by CNS/SG/5 for submission to APIRG/19.**

6.1.4 The meeting also noted that coordination activities were encountering hurdles from States and organizations due essentially to a low pace of feedback and the lack focal points. It was therefore agreed to establish an initial list of AFI/FMG focal points made of States participants to the AFI/FMG/3 meeting. The Secretariat was tasked to request other AFI States not represented to provide the names and details of their designated AFI/FMG focal points. Based on this the Secretariat developed the draft Terms of Reference as attached at Appendix D in order to assist States/organizations focal points of contact in their daily task.

The following draft decision was formulated:

**Draft Decision 03/10: Establishment of the AFI/FMG focal points**

**That States nominate their AFI/FMG focal points of contact tasked according to the Draft Term of Reference proposed at **Appendix D** to this report.**

***Agenda item 6.2: Report on the 1<sup>st</sup> ATU preparatory meeting for WRC-15 (February 2013)***

6.2.1 The Secretariat reported to the meeting on the outcome of the ATU 1<sup>st</sup> preparatory meeting held in February 2013 in Dakar. This meeting gave an opportunity to present ICAO draft position on WRC-15 Agenda Items of particular importance to civil aviation (**1.1; 1.5; 1.17 and 9.1.5**) as well as ICAO specific views on the other various Agenda Items in particular agenda items **1.4; 1.6; 1.7; 1.10; 1.11; 1.12; 1.16; 4; 8; 9.1.1; 9.1.6 and 10.**

6.2.2 The meeting noted that the ATU members were sensitized on the issues related to Civil Aviation and commended a recommendation taken by the ITU meeting which:

- 1) encourages Air Navigation Service Providers (**ANSPs**) and Civil Aviation Authorities (**CAAs**) to inform the Telecommunication Regulators as soon interferences on Aeronautical spectrum occur for urgent and immediate actions,
- 2) invites countries that have experienced such interferences to investigate and share the results with all Administrations through the ATU Secretariat, in order to share experience to facilitate timely intervention by other Administrations; and
- 3) requests ATU members states to reinforce their support to the existing and future FSS earth stations in the 3 400-4 200 MHz band used for satellite communications related to safe operation of aircraft and reliable distribution of meteorological information by participating in the studies for possible technical and regulatory measures called upon by Resolution 154 (WRC-12).

6.2.3 The Secretariat reported on the side meeting organized with the CAAs present at the ATU meeting and involving satellite industry in order to harmonize views and prepare the next WRC. The idea of the establishment of an association of **African Users of Satellite for Civil Aviation (AUSCA)** as a forum tasked to review issues on satellite spectrum for civil aviation networks was shared and supported.

6.2.4 The meeting agreed on the principle of establishment of AUSCA and proposed that the activities to be conducted in the framework of AUSCA be included in the Work programme of AFI/FMG.

6.2.5 Based on the experience of WRC-12, the meeting discussed on strategies for efficient preparation of WRC-15 and agreed that a close collaboration between CAAs, ANSPs, Airlines, Airport Operators and Industry may strongly help to gain support to ICAO position in particular to the draft WRC-15 Resolution for the protection of the C band operated by the aeronautical VSAT networks.

The following conclusion was formulated:

**Draft Conclusion 03/ 11: Draft WRC-15 Resolution for the protection of the C band operated by the aeronautical VSAT networks**

**That:**

- a) **The AFI/FMG Rapporteur in coordination with ICAO ESAF and WACAF offices develop and circulate to the AFI/FMG focal points of contact a draft WRC-15 Resolution for the protection of the C band operated by the aeronautical VSAT networks, for their inputs and comments as necessary;**
- b) **The final draft Resolution be submitted to the WRC-15 as per ITU-R established procedures;**
- c) **AFI States/Organizations support the above Draft resolution in order to ensure the protection of the C band operated by the aeronautical VSAT networks and to achieve the safe operation of aircraft and reliable distribution of meteorological information in AFI region.**

***Agenda item 6.3: Report on ITU specialized study groups meetings***

6.3.1 Under this agenda item, the meeting was informed on the mechanisms of work adopted by ITU R between WRC sessions. It was reported the participation of ICAO HQ in WP4A meeting in April 2013. The meeting recalled the necessity for States/Organizations to hold workshops/seminars to properly prepare the stakeholders (ANSPs, CAAs, Airlines, Regulators...) and actively participate in the national, regional and international preparatory meetings for WRC-15.

The following draft conclusion was formulated:

**Draft Conclusion 03/12 Organization and participation in the WRC-15 preparatory Meetings**

**That:**

**AFI States/Organizations undertake the necessary actions to:**

- a) **Organize workshops/seminars to properly prepare the stakeholders (ANSPs, CAAs...) for the WRC-15;**
- b) **Actively participate in the national, regional and international preparatory meetings**

6.3.2 The meeting was briefed on action taken by the AFI/FMG Rapporteur (ASECNA) and the Secretariat with respect to the studies being carried out by ITU specialized Working Parties (WP) in preparation for WRC-15. Coordination action as undertaken to obtain the endorsement of the draft contribution from AFI/FMG by AFI States before submission to WP4A meeting. It appeared that with the time constraint and the ATU procedures could not be met for the endorsement of the submission. The meeting recognized the importance of being involved in these activities and encouraged the AFI/FMG Rapporteur to accordingly continue its coordinating role within the region.

The following Draft conclusion was formulated:

**Draft Conclusion 03/13: Participation in the ITU Working Party meetings in preparation for the World Radio Communication Conference (WRC).**

**That;**

**In order to enable the adequate implementation of the Resolution 154 (WRC-12):**

- a) **AFI/FMG through the ICAO Regional Offices encourage the States regulatory bodies to invite CAAs/ANSPs to actively and positively contribute in ITU joint tasks groups and working party meeting/study groups covering different aeronautical agenda items; and**
- b) **States arrange for regular participation of AFI/FMG focal points in the ITU joint task groups and working party meetings.**

6.3.3 Based on the difficulties reported above the meeting agreed to encourage Sates/Organization to work in collaboration with to the sub regional National Telecommunication Regulators Associations (**WATRA, CATRA,CRASA**) with the support of Regional economic integration communities such as ECOWAS, CEMAC, SADC to ensure the sub regional support.

The assignment of responsibilities in the Terms of Reference of AFI FMG was updated accordingly as follows:

**Coordination with Sub Regional Telecommunication Regulators associations:**

- a) **WATRA: <http://www.watra.org>  
Team Leader: Nigeria**

**Support: ECOWAS/UEMOA AFI/FMG Members**

**b) CATRA: <http://www.artac.cm>  
Team Leader: Cameroon  
Support: CEMAC AFI/FMG Members**

**c) CRASA: <http://www.crasa.org>  
Team Leader: Botswana  
Support: SADC AFI/FMG Members**

**Agenda Item 7: AFI Aeronautical Spectrum Management in the framework of ICAO ASBU concept**

7.1 Under this Agenda Item, the meeting was briefed on ICAO Aviation System Blocks Upgrade Methodology. The ASBU Performance Improvement Areas, Blocks and Modules were introduced to the meeting with emphasis on those related to applications requiring aeronautical spectrum.

7.2 The meeting noted that the efficient implementation of ASBU modules supported by applications consuming spectrum will need an efficient frequency spectrum management.

7.3 The meeting was also provided with a summary of the CNS technologies Roadmaps for ICAO ASBU developed by the ICAO 12<sup>th</sup> Air navigation Conference. It was agreed that the strategy and plan of provision, operation and protection of aeronautical spectrum in the AFI Region should be aligned with the CNS Roadmap.

**Agenda Item 8: Terms of Reference and future Work programme of AFI/FMG**

8.1 Under this Agenda, item the meeting reviewed and proposed amendments to the Terms of Reference and the future work programme of the AFI/FMG in line with the guidelines contained in ICAO Handbook on Radio Frequency spectrum requirements for Civil Aviation (Doc; 9718). These amendments take into consideration the Recommendations of ICAO 12<sup>th</sup> Air Navigation Conference related to spectrum and the provision of the 4<sup>th</sup> edition of the Global Air Navigation Plan (GANP Doc. 9750).

The following draft decision was formulated:

**Draft Decision 03/14: Revised Terms of Reference, Composition and Future Work Programme of AFI/FMG**

**That:**

**Taking into consideration the provision of the new Global Air Navigation plan (GANP Doc. 9750) developed in accordance with Recommendation 6/1 of ICAO 12<sup>th</sup> Air Navigation Conference, AFI/FMG Terms of Reference, Composition and Work Programme be revised as presented in **Appendix E****

**Agenda Item 9: Any other business**

9.1 Under this agenda item, the meeting was updated on the ongoing and planned work of the Aeronautical Communication Panel Working Group F (ACP WG F).

9.2 The meeting was informed that the ICAO ESAF Regional Office will host a Regional Spectrum Workshop and the 29<sup>th</sup> meeting of ACP WG F from 03 to 12 September 2013, and States and Organizations were strongly encouraged to attend.

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## APPENDIX A

## Third Meeting of the AFI Frequency Management Group (AFI/FMG/3) (Nairobi, Kenya, 22-24 July 2013)

## LIST OF PARTICIPANTS

STATES	NO.	NAMES	OFFICIAL TITLE / DESIGNATION / EMAIL / CONTACTS
BOTSWANA	1.	Mr. Samuel Chiliwa Mbaakanyi	Chief ANS Inspector CAA Botswana, Gaborone Tel: +267 688 8200; Fax: +267 393 0165 Email: <a href="mailto:smbaakanyi@caab.co.bw">smbaakanyi@caab.co.bw</a> ; <a href="mailto:s_mbaakanyi@yahoo.com">s_mbaakanyi@yahoo.com</a>
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KENYA	6.	Eng Shadrack Wesechere	Manager, Engineering Services Kenya Civil Aviation Authority Tel: +254 20 827107; Cell: + 254 721517968 Fax: +254 20 822300

## AFI/FMG/3 – Nairobi July 2013

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	9.	Mr. Lukman Sanni	Aviation SaFety Inspector (CNS) Nigerian Civil Aviation Authority Tel.: +234 802 315 3611; Email: <a href="mailto:slukman1980@yahoo.com">slukman1980@yahoo.com</a>
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	11.	Mr. Jama Ahmed Muse	CNS Technician CACAS, ICAO-Somalia Tel.: +254 20 762 2785/6 Fax: 254 20 762 2775 Email: <a href="mailto:musej@icao.unon.org">musej@icao.unon.org</a>
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AFI/FMG/3 – Nairobi July 2013

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			Tel: + 255 22 219 8100; + 255 22 2844300 Email: <a href="mailto:cmpili@caaa.go.tz">cmpili@caaa.go.tz</a>
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**APPENDIX B**

**AFI Com Lists 1, 2 and 3 Data collection Table**

**(See separate attachment to the report)**

## APPENDIX C

### Roadmap for WRC-15

#### 1. Introduction

1.1 At WRCs, convened about every three - four years, changes are made to the ITU Radio Regulations, including the Table of Frequency Allocations (Article 5 of the ITU Radio Regulations), on the basis of proposals made by States.

1.2 The international civil aviation community, under the technical guidance of ICAO brings its needs through ICAO position, as developed by the Air Navigation Commission, reviewed by all ICAO States, and agreed by the ICAO Council.

Xx The forthcoming WRC is scheduled to take place in Geneva from 2 to 27 November 2015. Based on the experience gained by the AFI aviation community during the past Conferences (**WRC-07 and WRC-12**), it is recommended initiate preparatory activities at an early stage in order to support ICAO's position, including the concerns raised by the AFI Aeronautical VSAT networks managing bodies on interferences from non-aeronautical users and threat by IMTs on a the safe operation of the 3400-4200MHZ C-Band. These activities need to be conducted according to a regional Roadmap in order to ensure an efficient coordination.

#### 2. Objectives

2.1 The main objective of the AFI Roadmap for WRC-15 is to properly prepare and attend WRC-15 meetings and Conference in order to ensure that the spectrum requirement for civil aviation is taken into consideration by all stakeholders at national, sub-regional and regional levels.

2.2 In the Framework of the work programme of the AFI Frequency Management Group, the Roadmap should establish a close coordination between Civil Aviation Authorities, Air Navigation Service Providers, Airlines, Airports Operators and Industry of aeronautical Communication Navigation and Surveillance facilities to support ICAO position to WRC-15 and bring to the attention of the African Telecommunication Union (ATU) the specific concerns that could be raised by AFI/FMG members.

#### 3. Key Tasks

##### 3.1 Preparatory activities

- Consideration by CAAs of activities related to ICAO position for WRC-15 in their annual planning;
- Formal transmission by CAAs of ICAO position to the National Telecommunication Regulation Authorities;
- Sharing of ICAO position with national stakeholders (Air Navigation Service Providers, Airlines, Airports Operators and involved Industry);
- Participation to the national preparatory meetings for WRC-15;
- Attendance to sub-regional and regional preparatory meetings organized by WATRA, CATRA, CRASA and ATU;
- Organization/participation to workshops/seminars on aeronautical spectrum;
- Participation in Conference Working Parties and to Conference Preparatory Meetings (CPMs).

##### 3.2 Conference session activities

- Participation to WRC-15;
- Participation to ATU side meetings during the conference;
- Participation to Working Groups meeting during the Conference;
- Participation to side meetings initiated by ICAO during WRC 15;

#### 4. Planning

**State planning to be developed and aligned with the activities schedule.**

## APPENDIX D

### Focal points of contact for the coordination for AFI/FMG activities

#### 1-Terms of Reference of AFI/FMG Focal points

The AFI/FMG focal points are nominated by States and Organization in accordance with the Terms of Reference and Work Programme of the AFI Frequency Management Group (AFI/FMG) in order to ensure the follow up of the implementation of the APIRG conclusions and decisions pertaining to spectrum. In particular the focal points are tasked to:

1. Update maintain the national aeronautical frequency COM Lists 1, 2 and 3 and additional lists of frequency spectrum operated by Civil Aviation facilities such as Satellite base VSAT, GNSS and Surveillance infrastructure;
2. Ensure that the aeronautical frequencies are duly registered in ITU data base through the National Authority of Regulation of Telecommunication and recorded in ICAO Global Frequency Data Base through ICAO Regional Offices;
3. Ensure that national spectrum requirement for Civil Aviation is taken into consideration by the National Authority of Regulation of Telecommunication;
4. Ensure that ICAO position for ITU World Radiocommunication Conferences (**ITU WRC**) is shared at the national level by the CAA, Airlines, Airports operators, Air navigation Service Providers and included in the national position of the State to ITU WRC
5. Coordinate, when tasked, with the sub regional Associations of Telecommunication Regulation Authorities (**WATRA, CATRA, CRASA**)\* in order to assist develop the regional position for ITU WRC;
6. Prepare and participate in meetings workshops and seminars on spectrum organized by **ITU, ICAO, ATU**, Telecommunication Regulation Authorities, Air Navigation Service Providers, Airlines, communication facilities industry etc...
7. Undertake all actions which could help to guarantee the availability of spectrum for civil Aviation
8. Report to AFI/FMG

\* **Note:** The following States are proposed by the last AFI/FMG meeting to be tasked to closely work with the sub regional Associations of Telecommunication Regulation Authorities:

- a) **Nigeria:** WATRA - <http://www.watra.org>
- b) **Cameroon:** CATRA-<http://www.artac.cm>
- c) **Botswana:** CRASA-<http://www.crasa.org>

#### 2. Focal points contact details (to be filled and return to the rapporteur with copy to WACAF Office)

<b>State/Organization</b>	
<b>Focal point 1</b>	
<i>First Name</i>	
<i>Family Name</i>	
<i>E-mail</i>	
<i>Office phone</i>	
<i>Mobile phone</i>	
<i>Assigned AFI FMG Tasks</i>	
<b>Focal Point 2</b>	
<i>First Name</i>	
<i>Family Name</i>	
<i>E-mail</i>	
<i>Office phone</i>	
<i>Mobile phone</i>	
<i>Assigned AFI FMG Tasks</i>	

## APPENDIX E

### TERMS OF REFERENCE OF THE AFI FREQUENCY MANAGEMENT GROUP (AFI FMG)

#### Terms of Reference:

- 1) Ensure that the allocation and operation of aeronautical frequency meet ICAO Standards and Recommended Practices for the provision and operation of Aeronautical spectrum application as specified in Annex 10 Volume V[5], and the provision of the Handbook on Radio Frequency Spectrum Requirements for Civil Aviation, Doc. 9718;
- 2) Promote and support with developed credible arguments, ICAO position for the World Radiocommunication Conference of the International Telecommunication Union;
- 3) Ensure timely availability and appropriate protection of adequate spectrum to create a sustainable environment for growth and technology development to support safety and operational effectiveness for current and future CNS systems and allow for the transition between present and next generation technologies;
- 4) Coordinates within and across the AFI region on spectrum management activities to present consistent and robust rationale and ensure that appropriate AFI regional protection criteria for aeronautical systems are defined and implemented;
- 5) On the basis of the above, develop and coordinate AFI strategy and plan for the provision, the operation and the protection of aeronautical spectrum within the AFI Region in the framework of ICAO Global Air Navigation Plan (**GANP, Doc.9750**) and in accordance with relevant additional ICAO provisions.

#### Considerations:

In addressing these terms of reference, the Group should consider, inter alia, the following aspects:

- a) Efficient use of aeronautical spectrum allocated through efficient frequency management and use of best practices;
- b) Continued access to protected spectrum for legacy systems;
- c) Access to protected spectrum to expand legacy systems when required;
- d) Access to protected spectrum for future systems in line with ASBU CNS roadmaps;
- e) Special protection requirements of aeronautical safety services from interference;
- f) Efficient spectrum management both for future and legacy CNS systems;
- g) Strategy from legacy to future system including frequency demand during transition
- h) The aeronautical frequency assignment criteria in the AFI Region could differ from those applicable in other ICAO Regions and accordingly provide recommendable Regional action with global goals;
- i) Inter and intra-regional issues taking into consideration ICAO Aviation System Block Upgrades (ASBU) planning requirements;
- j) Personnel training for safe spectrum operation;
- k) Minimized impact of market mechanism on aviation spectrum allocation and operation

### 3. WORK PROGRAMME

Task No.	ASBU Performance Improvement Area and Block0 Modules	Subject	Target date
1	PIA: 1-2-3-4 Bloc 0 Modules: All supported by AFS; AMS; ARNS; ASS	<p><b>Review of ICAO SARPs and Guidance Material</b></p> <p><i>Team Leader: Secretariat</i>  <i>Team members: All AFI/FMG Core members</i>  <i>References:</i></p> <ul style="list-style-type: none"> <li>• ICAO Annex 10 (Vol. 5)</li> <li>• ICAO Doc 9718</li> </ul>	CNS/SG/5 Deliverable:
2	PIA: 1-2-3-4 Bloc 0 Modules: All supported by AFS; AMS; ARNS; ASS	<p><b>AFI Aviation Spectrum requirements: Monitor and report to APIRG the status of available capacity in the various aviation bands</b></p> <p><i>Team Leader: Secretariat</i>  <i>Team members: All AFI/FMG Core members</i>  <i>References:</i></p> <ul style="list-style-type: none"> <li>• ICAO Annex 10 (Vol. 5)</li> <li>• ICAO Doc 9718</li> </ul>	CNS/SG/5 Deliverable:
3	PIA: 1-2-3-4 Bloc 0 Modules: All supported by AFS; AMS; ARNS; ASS	<p><b>Frequency planning and assignment: Ensure the effective coordination process for new frequency assignments</b></p> <p><i>Team Leader: Secretariat</i>  <i>Team members: All AFI/FMG Core members</i>  <i>References:</i></p> <ul style="list-style-type: none"> <li>• ICAO Annex 10 (Vol. 5)</li> <li>• ICAO Doc 9718</li> <li>• AFI COM Lists 1,2&amp;3</li> </ul>	CNS/SG/5 Deliverable:
4	PIA: 1-2-3-4 Bloc 0 Modules: All supported by AFS; AMS; ARNS; ASS	<p><b>Development of regional strategies and coordination between States and stakeholders in preparation to ITU WRCs</b></p> <p><i>1. Coordination with ITU</i>  <i>Team Leader: Secretariat</i>  <i>Support: AFI/FMG Rapporteur</i></p> <p><i>2. Coordination with Regional Telecommunication Regulators Union (ATU)</i>  <i>Team Leader: AFI/FMG Rapporteur</i>  <i>Support: Secretariat</i></p> <p><i>3. Coordination with Sub Regional Telecommunication Regulators associations:</i></p> <p><i>a) WATRA: <a href="http://www.watra.org">http://www.watra.org</a></i>  <i>Team Leader: Nigeria</i>  <i>Support: ECOWAS/UEMOA AFI/FMG Members</i></p>	CNS/SG/5 Deliverable:

		<p>b) <b>CATRA:</b> <a href="http://www.artac.cm">http://www.artac.cm</a>  <i>Team Leader: Cameroon</i>  <i>Support: CEMAC AFI/FMG Members</i></p> <p>c) <b>CRASA:</b> <a href="http://www.crasa.org">http://www.crasa.org</a>  <i>Team Leader: Botswana</i>  <i>Support: SADC AFI/FMG Members</i></p> <p>4. <b>Coordination with stakeholders for the establishment of the AFI Users of Satellite Communication for Civil Aviation (AUSCA)</b>  <i>Team Leader: AFI/FMG Rapporteur</i>  <i>Team members: All AFI/FMG Core members</i></p>	
5	<p><b>PIA: 1-2-3-4</b>  <b>Bloc 0 Modules: All supported by AFS; AMS; ARNS; ASS</b></p>	<p><b>Review and update AFI database COM Lists</b>  <i>Team Leader: Secretariat</i>  <i>Team members: All APIRG States members</i>  <i>References:</i></p> <ul style="list-style-type: none"> <li>• <i>Template on the collection of Aeronautical Frequency</i></li> <li>• <i>COM List 1, 2 &amp;3 Data base</i></li> </ul>	CNS/SG/5 Deliverable:
6	<p><b>PIA: 1-2-3-4</b>  <b>Bloc 0 Modules: All supported by AFS; AMS; ARNS; ASS</b></p>	<p><b>Training on Aeronautical frequency spectrum allocation, operation and management</b>  <b>Organization of seminars/workshops on frequency spectrum allocation, operation and management</b>  <i>Team Leader: Secretariat</i>  <i>Support: ANSPs (ASECNA, ATNS, GCAA, NAMA) Regional /International Organization (ECOWAS/UEMOA, CEMAC, SADC, ITU, ATU, AFCAC) Industry (Intelsat, SITA, IATA...)</i>  <i>References:</i></p> <ul style="list-style-type: none"> <li>• <i>Report on AFI/FMG and APIRG meetings</i></li> <li>• <i>ICAO Annex 10 (Vol. 5)</i></li> <li>• <i>ICAO Manual on Radio frequency Spectrum for Civil Aviation , Doc. 9718 (Vol. &amp; 2)</i></li> <li>• <i>ICAO Training Manual (Doc. 7192 Part E-2 - Air Traffic Safety Electronic Personnel (ATSEP)</i></li> </ul>	CNS/SG/5 Deliverable:

### 3-COMPOSITION

ANGOLA; BOTSWANA; BURUNDI; CAMEROON; ETHIOPIA; GAMBIA; GHANA; KENYA; MADAGASCAR; MALI; MAURITANIA; NIGERIA; RWANDA; SENEGAL; SOUTH AFRICA; TANZANIA; UGANDA; ASECNA; ROBERTS FIR