
CROSS BORDER FREQUENCY COORDINATION

**NATIONAL SPECTRUM MANAGEMENT WORKSHOP
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(HIPSSA PROJECT)
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Cross border frequency coordination (1)

- **Purpose:**

- To prevent mutual harmful interference to radio communication services and optimizing the use of the frequency spectrum through mutual agreement;
- Each country obliged to take account of other stations before putting own into operation;
- The harmonization set an standard that all the countries involved accept on a mutually beneficial approach by consensus;
- Procedures agreed in the Agreement



Frequency Coordination (Frequency categories)

- **Frequencies requiring co-ordination:**
 - Frequencies which Administrations are required to co-ordinate with the other Administrations affected before a station is put into service
- **Preferential frequencies**
 - Frequencies which the Administrations concerned may assign, without prior co-ordination, on the basis of bi- or multilateral agreements under the terms laid down therein;
- **Shared frequencies**
 - Frequencies which may be shared without prior co-ordination, on the basis of bi- or multilateral agreements under the terms laid down therein.
- **Frequency Register**

The Frequency Register shall be made up of lists set out by every Administration indicating its co-ordinated frequencies, its assigned preferential frequencies and its shared frequencies

The agreement

- Agreement is the coordination framework made by neighbouring countries bi lateral or multilateral countries for resolving harmful cross border frequency interference.
- Basically it may contain:
 - Definitions of the terms used;
 - General provisions;
 - Technical provisions;
 - Procedure;
 - Reporting harmful interference;
 - Revision of the agreement;
 - Accession to the agreement;
 - Withdraw from the agreement;
 - Entry into force;



The agreement

The rationale of having agreement

- Optimise spectrum usage by accurate interference field strength calculations;
- Modification of general parameters, improvement and supplementation of technical provisions, individual restrictions;
- Establishment of models for computer-aided interference range calculations;
- Harmonised parameters: Objectively predictable and transparent decisions.



Frequency Co-ordination (Advantages)

- Optimise spectrum usage and address social and political concerns
- Quick assessment of interference through data exchange;
- Quick assignment of preferential frequencies;
- Transparent decisions through agreed; assessment procedures;
- Administrations obliged to ensure harmonised application of technical provisions;

Frequency Co-ordination (Disadvantages)

- Increase in administrative work and costs (complex procedures, longer turnaround times, topographical database);
- Detailed input data required from operators (geographical data, antenna parameters);
- Complex operational conditions assignments subject to diverging conditions;
- Customers affected by changes in usage rights: Various consequences

Frequency Coordination

[The Procedure (1)]

- Co-ordination request and all technical characteristics of radio network/equipment sent to all administrations affected to enable accurate assessment of interference;
- Administrations affected assess possibility of interference to own stations; no possibility of interference: obliged to agree to request;
- If assessments produce different results, administrations can agree to operation on a trial basis; field strength calculations replaced with agreed field strength measurements


Frequency Coordination

[The Procedure [2)]


- Administrations draw up and exchange lists of co-ordinated assignments with technical characteristics, administrative reference data, conditions;
- Aim: basis for co-ordinators' planning and calculations, validation of assessment results

Case study in EAC (HIPSSA PROJECT)

Frequency Coordination [HIPSSA PROJECT]

- Survey was conducted on cross border frequency coordination in 2010/2011 under HIPSSA project.
- In East African Countries 9 Countries participated in this survey by filling questionnaires.

- Countries participated are Kenya, Tanzania, Uganda, Rwanda, Sudan, Djibouti, Eritrea, Mauritius and Seychelles.
- The survey assessed the existed cross border frequency management in the above mentioned countries

Frequency Coordination [HIPSSA PROJECT]


- The report also looks at the internal capacity in relation to tools used for frequency management i.e. National Table of Frequency Allocation, Spectrum Management Software and Fixed and Mobile frequency equipment- .
- These are tools that help to manage and reduce levels of cross border interferences.

- The results of the survey indicated that, there are three regional organizations namely SADC, COMESA and EAC within the area covered by the study.
- In these organizations, the regulators have formed associations which among their objectives is to collaborate on issues pertaining to cross border frequency management

Frequency Coordination [HIPSSA PROJECT]

- These associations provide good platform to establish coordination framework, agreements and develop harmonized calculations methods.
- Other important factors for achieving cross border frequency coordination and is to have published National Frequency Table of Allocation (NFTA) ;
- To have converged Regulatory Authority.
- Such actions reduce the possibilities of cross border frequency interferences while portraying transparency in allocation of the spectrum.

Frequency Coordination

[EACO and CRASA]

- East Africa Regulators Association (EACO) have cross border coordination frameworks.
- The Cross border frequency coordination is for
 - GSM (after receiving complains of forced roaming) 
 - Digital terrestrial television broadcasting.
- CRASA has coordination framework for GSM;
- The two frameworks dot not provide for preferential frequencies, shared frequencies and the register to record the results;
- The frameworks are much dwelt on administrative procedure for resolving cross border interferences

HIPSSA Governance and Steering Committee

- Co-chairmanship

AUC

ITU

- Pan-African organizations (AU body and UN agency)

ATU

UNECA

- Regional Economic Organizations (REC)

West Africa

Central Africa

East Africa

Southern Africa

ECOWAS

ECCAS

IGAD

COMESA

EAC

SADC

- Regional Integration Organizations (RIO)

West Africa

Central Africa

East Africa

UEMOA

CEMAC

IOC

- Regional Regulators' Associations (RRA)

West Africa

Central Africa

East Africa

Southern Africa

WATRA

ARTAC

ARICEA

EACO

CRASA



Challenge

- **The challenge is difficulties which may be experienced by operators not willing to comply to the agreed technical parameters.**



Recommendation

Recommendations

- **Involve operators in the process of making the agreement.**
- **Otherwise Africa needs Harmonized Calculation Method to be domesticated to African environments'.**



Texts taken from the following references

- Presentation on Support for Harmonization of the ICT Policies in Sub-Sahara Africa (HIPSSA) by Mr. Jean-François Le Bihan. EuroAfrica ICT Forum 4 February 2010. Addis Ababa (Ethiopia) extracted from: <http://www.slideshare.net/movingtarget/hipssa-presentation-euro-africa-ict-frum-february-2010>
- Presentation on Introduction on International Radio Frequency Co-ordination extracted from: [http://hcm.bundesnetzagentur.de/ Presentation on Introduction on International Radio Frequency Co-ordination](http://hcm.bundesnetzagentur.de/Presentation%20on%20Introduction%20on%20International%20Radio%20Frequency%20Co-ordination) extracted from: [http://englisch/verwaltung/index_berliner vereinbarung.htm](http://englisch/verwaltung/index_berliner_vereinbarung.htm)
- Text on HIPSSA Project - Support for Harmonization of ICT Policies in Sub-Sahara Africa. Extracted from [http://ua-ue-frontend.irislink.com:8080/alfresco/d/d/workspace/SpacesStores/f32c4370-03e2-11de-a48b-3f61803b677/HIPSSA Project.doc](http://ua-ue-frontend.irislink.com:8080/alfresco/d/d/workspace/SpacesStores/f32c4370-03e2-11de-a48b-3f61803b677/HIPSSA%20Project.doc)
- Text on Support for Harmonization of the ICT Policies in Sub-Sahara Africa (HIPSSA) ITU-EC ACP HIPSSA.htm.extracted from:[www.itu.int/ITU-D/projects/ITU EC ACP/hipssa/](http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/)
- Text ITU-EC HIPSSA Activities in Southern Africa.mht. Extracted from: [www.itu.int/ITU-D/projects/ITU EC ACP/hipssa/Activities/SA/sa-2.2.html](http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/Activities/SA/sa-2.2.html)



Contacts

Thank you for your attention

For more information: http://www.itu.int/ITU-D/projects/ITU_EC_ACP/index.html

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