

## ITU Regional Development Forum for the Africa Region: "Spectrum and Broadcasting" Banjul (Gambia), 14-16 July 2010

### Summary of the Forum

The opening ceremony was followed by three sessions on 'Modern Spectrum Management' (SM), three sessions on 'Transition from Analogue to Digital Broadcasting - Trends and Technologies, a panel 'How to use the spectrum more efficiently' and closing ceremony.

1. Chapter 1 summarises the presentations and discussions on SM;
2. Chapter 2 summarises the presentations and discussions on Broadcasting;
3. Chapter 3 summarises the eight sessions;
4. Chapter 4 summarises the concluding Panel Discussion.
5. Conclusion
6. Annexes

### **1. Presentations and Discussions on Spectrum Management**

#### Session 1: SM theory and practice; automation and engineering tools

##### Presentations:

- **Istvan Bozsoki, ITU:** gave an introduction of SM activities of ITU/BDT, where developing countries may be joining in and looking for assistance in building their SM capacity and international involvement
- **Dr. Haim Mazar, Israel (BDT Expert):** reviewed the roles and tasks of the national SM authorities, offered some visions on how developing nations could be quickly closing the SM capacity gap with developed countries, through identifying and replicating most suitable of existing solutions; innovate but not invent.
- **Jan Verduijn, Netherlands (BDT field expert):** showed the essence of spectrum monitoring as an essential and integral part of the overall SM structure, first as the backbone of enforcement function, but also the important data source for other functions: frequency management and licensing.
- **Cedric Gonzalez, LS Telcom, France:** offered a vision of highly automated future SM arrangement;
- **Istvan Bozsoki, ITU:** gave a detailed introduction of SMS4DC tool.

##### Main points in ensuing discussions:

- How to derive the best value of automated (not completely automated) spectrum management systems (either SMS4DC or commercial);
- Importance of having interface between SMS4DC and monitoring equipment of various operators;
- How to approach challenges in international coordination in order to avoid interference;
- Fees issue as a part of SM policy;
- How to organise efficient type approval process and lab testing, without delaying the import of wireless equipment and penetration of new technologies;
- Capacity building in monitoring, multi-country pooling of resources.

## **Session 2: Ensuring access to the spectrum, SM processes; future trends/techniques**

### Presentations:

- **Dirk-Olivier Von der Emden, Switzerland (BDT Expert):** reviewed the essential principles and mechanisms of the international SM set-up and processes, and showed how a single nation such as Switzerland could be irrevocably tied up within such international arrangements and follow the road of harmonised development;
- **Tonny Thabani Khupe, Intel:** gave the manufacturers vision for the importance of developing Broadband Wireless Access systems and outlined the requirements for timely provisioning of the necessary spectrum resources;
- **Wladimir Bocquet, Orange FT:** described the structure and functioning of the WRC process and gave an update of the preparations for WRC-2012.

### Main points in ensuing discussions:

- The importance of technological neutrality in spectrum assignments;
- Possibility for operators to support the SM capacity building of national regulator;
- How the experience of international cooperation in ITU Region 1 (European CEPT) can be brought into the context of African countries.

## **Session 3: SM solutions, spectrum sharing opportunities and country experiences**

### Presentations:

- **Mouhamadou Awallou, Cameroun:** described the historic background and the recent advancement of institutional SM capacity building in Cameroun, also reviewing the typical challenges faced by the regulator and offering vision for addressing those challenges;
- **Marc Le Devendec, CEPT ECO:** recapped the institutional structure and functioning of the CEPT and how this organisation addressed the recent challenges in re-arranging of the UHF band including the associated sharing studies, with focus on addressing band 790-862 MHz;
- **Dr. Arturas Medeisis, Lithuania (BDT expert):** reviewed the results of two recent SM case studies performed for ITU in Sierra Leone and Zimbabwe, offering some visions for most important tasks to be addressed in supporting the SM capacity building in developing nations;
- **Dirk-Olivier Von der Emden, Switzerland:** described the theoretical approaches to spectrum re-farming within the context of economic incentive building for spectrum users;
- **Wladimir Bocquet, Orange FT:** presented the development vision and the associated spectrum requirements for the mobile broadband services;
- **Justin Aime Tsanga Ebode, Cameroun:** described the case of treating the provisioning of spectrum for broadband mobile services in the socio-economic context of their country.

### Main points in ensuing discussions:

- How to best address the resolution of border interference cases and international coordination challenges, establishment of multi-country coordination agreements;
- What are the appropriate fee levels and policy;
- The process for coordinating the spectrum fees with all involved players;
- Ensuring transparency and technological neutrality of national SM operations.

## 2. Presentations and Discussions on Transition from Analogue to Digital Broadcasting

### Session 4: Transition from analogue to digital broadcasting

#### Presentations:

- **Russell Southwood (Balancing Act):** provided the overview about state of the digital transition in Africa. Few countries have started the implementation yet;
- **Jan Verduijn (Spectrum Research Consultancy):** reviewed the monitoring of the broadcast station which becomes more important during the simulcast period. Radio Regulations limits are set for the maximum deviation of a FM broadcasting emission. He outlined the FM band monitoring methodology and focused on addition of extra elements which can increase the emission.
- **Cédric González (LS Telecom SAS):** called for attention for initial steps for efficient planning of digital TV network, which are more important than ever before.
- **Abossé Akue-Kpakpo (Togo Telecom Manager):** reviewed the functions and role of the organization which are necessary for successful digitalization.

#### Main points in ensuing discussions:

- Which could be the best digital terrestrial technology for African countries;
- How to finance (subsidize) the digital switchover;
- The process for coordinating the spectrum fees with all involved players.

### Session 5: Transition from analogue to digital broadcasting –Activities of International Organizations for Digital Broadcasting Transition

#### Presentations:

- **Istvan Bozsoki (ITU/BDT):** informed about ITU activity for transition. Software packages for spectrum management, Guidelines and Roadmaps for the transition from analogue to digital broadcasting are available for African countries.  
**David Botha (ITU/BR):** reviewed the regulation of LF/MW, HF, Band II, III, IV, V bands, and provided the overview about web based tools.
- **Péter Vári (Széchenyi István University):** described the background of Hungarian Digital Switchover Strategy which does not focus only to the terrestrial broadcasting.

#### Main points in ensuing discussions:

- Available receivers and technologies (MPEG 2 versus MPEG 4);
- Digital dividend;
- Role of analogue broadcasters during the digitalization point of view of legislation.

### Session 6: Frequencies issues of the transition

#### Presentations:

- **David Botha (ITU/BR):** provided a brief historical overview RRC06 (GE06). He informed about modifications and notifications procedures. He reviewed the digital dividend re-planning.
- **Ross Bateson (GSMA):** provided brief historical overview on GSMA. He reviewed the role of mobile segment in economic recovery. He also presented the usage of the RF band (698-960 MHz) in the regions of the World.

- **Dr. Haim Mazar (Ministry of Communication of Israel):** compared the different TV platforms by their benefits. He presented the different technologies which are used worldwide. He provided a brief overview on the digital dividend in Israel. He analysed the potential interference of digital TV to the Mobile and Fixed services.
- **Jonathan Pinifolo (Malawi Communication):** presented the reviewed Regional Frequency Allocation Plan of SADC region. He reviewed the results of the last SADC meetings where he tried to define the technology of terrestrial broadcasting (DVB-T, ISDB-T).
- **Dirk Oliver Von der Emden (OFCOM):** gave an overview about co-primary allocation of the band 790-862 MHz to the mobile service in Region 1 and initiatives in Europe. European Commission gave the mandate to CEPT in order to harmonize of dividend. At EU level there is no uniformity regarding the use of the digital dividend.

Main points in ensuing discussions:

- Harmonization and interference issues.

### 3. Overall Summary of Presentations and Discussions

Based on the presentations and discussions during the spectrum management sessions at this RDF, the following SM issues could be identified as seemingly most critical ones as seen through the eyes of African regulators:

1. The question of setting appropriate fees, with proper consideration of the:
  - a. type of radiocommunications services (mobile, fixed, broadcasting);
  - b. type of users (commercial operators, embassies, UN agencies, etc);
  - c. RF band use context (e.g. re-farming incentive or compensation).
2. Practical guidance to resolve interference cases and cross-border coordination;
3. The need (!) of individual regulation and standards to each country;
4. Free circulation of equipment, type approval process and national laboratory tests.
5. Institutional SM capacity building: from spectrum monitoring to strengthening of secondary legislation (in particular the National Frequency Allocation Tables);
6. Preferring the RF allocation to the land mobile services at V/UHF RF bands.
7. Choosing the right spectrum assignment policies: technological neutrality, transparency.

Based on the presentations and panel discussions about broadcasting the following items have been identified which are necessary to be managed in the future:

1. Usability of the digital dividend in African countries;
2. Alternative ways (cable TV and Satellites) to provide digital TV
3. Harmonisation related to the digital dividend;
4. The available and most appropriate standards;
5. Launching the digital radio services and necessity of switch of the analogue radio broadcasting (!);
6. Available support from ITU in order to successful digital switchover

The speakers gave a general overview about the spectrum management and its available tools. The spectrum is a narrow resource therefore handling it properly is of the highest importance. The RRC06 plan defines the technical rules of the introduction of digital TV broadcasting, but recently new challenges have appeared which need to be dealt with within the frame of RRC 06 plan.

The digital broadcasting is not only a technical question because digitalization concerns everyone. It is a social phenomenon, and it has economic effects as well. Digitalization is a complex process which is necessary to be handled uniformly at country level.

#### **4. The concluding Panel Discussion**

The importance of free circulation between countries was emphasised .Europe is a good example. Bilateral and multi-lateral agreements will ease the circulation of telecommunications equipment. It will advance the penetration of new technologies, without unnecessary delays.

#### **5. Conclusion**

The Forum achieved its main goals; it provided an exceptional opportunity for experts and participants from regulatory, technology and legal areas of spectrum management to share the current trends, existing best practices of RF management experiences and views on how RF spectrum management could best evolve in the future. The forum also provided ITU members with information that would assist in the planning process and facilitate decision making on how-best the countries in the region could prepare themselves for transition to digital broadcasting. Issues pertaining to developing a roadmap (what, how and when to do?), action plan for digital broadcasting transition on a national level were discussed cautiously. Diverse visions on the role of various stakeholders were explored. International trends and migration experiences, activities of international organizations related to digital broadcasting transition and digital broadcasting technologies trends were discussed.

#### **6. Annexes**

1. The Forum Program and presentations appear at [http://www.itu.int/ITU-D/tech/DevelopmentForums/2010/AFR/RDF10\\_AFR\\_Program.html](http://www.itu.int/ITU-D/tech/DevelopmentForums/2010/AFR/RDF10_AFR_Program.html) ;
2. The list of Participants appears at [http://www.itu.int/ITU-D/tech/DevelopmentForums/2010/AFR/RDF10\\_AFR\\_ParticipantsList.pdf](http://www.itu.int/ITU-D/tech/DevelopmentForums/2010/AFR/RDF10_AFR_ParticipantsList.pdf) ;
3. Photos are found at [http://people.itu.int/~mazar/Banjul\\_GAMBIA.html](http://people.itu.int/~mazar/Banjul_GAMBIA.html) .