

ITU ACTIVITIES IN DIGITAL BROADCASTING TRANSITION

JO, GueJo

Senior Engineer
On Spectrum Management and Broadcasting
ITU BDT

**ITU-ABU REGIONAL WORKSHOP
ON FREQUENCY PLANNING
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Content

- Why digital ?
- Mega trend and digital broadcasting
- ITU outputs for digital broadcasting
- ITU cooperation with broadcasting organizations
- Digital Broadcasting roadmap project
- What to consider in making digital broadcasting transition roadmap ?

Why digital ?

- Greater control over channel performance
- High quality video and audio
- A greater range and diversity of services
- New commercial opportunity
- New income and new service through saved spectrum

Mega Trend & Digital Broadcasting/1

- Convergence/Multimedia/Ubiquitous ?
 - Any terminal, any infra/media, any contents
 - What is the impact ?
 - : Provide users with higher accessibility to infra/media and contents
 - : Economy of scope
 - : Promote competition and cooperation between broadcasting & telecommunication companies

Chance to jump to new infra and service through new MEDIA POLICY

Mega Trend & Digital Broadcasting/2

- Globalization from the aspects of education and culture
 - Education is essential factor for strengthening global competition (required to establish more effective way to deliver info. & knowledge)
 - Increasing importance of preserving and developing own culture and understanding other cultures

These have been important roles of broadcasting and more active leadership is required for new era

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Mega Trend & Digital Broadcasting/3

- The policy for digital broadcasting and new media is
 - not only technical issues
 - but also political, economy and industry issues
- Its policy making requires
 - not partial
 - but comprehensive approach

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ITU outputs for digital broadcasting transition

ITU outputs/1

Global and regional spectrum allocation

- WRC / RRC-06

Spectrum Management Guideline (SG1)

- Handbook and Recommendation SM 1047-1 "National Spectrum management"
- Recommendation SM 2012-1 "Economic Aspect of Spectrum Management"
- Handbook on Computer Aided Techniques for Spectrum Management
- Handbook on Spectrum Monitoring
- SMS4DC (**S**pectrum **M**anagement **S**ystem for **D**eveloping **C**ountries)

SMS4DC/ Main Functions/ 1

- Administrative Functions : Relational database management;
 - Record frequency application, frequency assignment, licensing, coordination data, import data from BRIFIC & SRS
 - Produce electronic notices, print license, invoice & spectrum fee
 - Security features: Multi level access enables system administrator to define users and groups with different access levels.

SMS4DC/ Main Functions/ 2

- Engineering Analysis Function : Enhanced analysis tools for frequency arrangement, assignment, coordination and interference calculation
 - Propagation models based on ITU-R latest recommendations;
 - Coverage area, field strength, field strength contour, M/W link calculations, M/W link availability, network coverage and best server calculation.

SMS4DC/ Main Functions/3

- Geographic Map Display Function
 - User friendly interface, displaying of Digital Terrain Model, capability of importing standard mapping formats including Globe map and displaying of geographical maps
 - Online latitude, longitude and altitude presentation, overlaying, Scrolling and Zooming functionality capability of handling vectors
- Provide multiple entry functions, menu items, assign new stations on map and search and display a station or group of stations on map

SMS4DC/ Annual licensing fee

Annual licensing fee
in Swiss francs:

Catalogue Price (software) annual licensing fee: CHF 4,410.-
(for a single workstation)

Member State Administrations and Sector Members: -15%
Administrations of the Least Developed Countries: -80%
Libraries of educational institutions: -80%

Price for software installed on one single or multiple workstation(s)

Number of workstations*	1 <input type="checkbox"/>	2-3 <input type="checkbox"/>	4-5 <input type="checkbox"/>	6-10 <input type="checkbox"/>
Annual licensing fee (in Swiss francs)	4 410.-	6 615.-	7 497.-	8 820.-

* Please tick the appropriate box

ITU outputs/2

Wave Propagation recommendation (SG3)

- Recommendation ITU-R P.1546 "Method for point to area prediction for terrestrial services in 30MHz-3000MHz"

Report of the Rapporteur on transition (SG6/WP6A)

- Revision 2 to Document 6D/6-E (7 May 2008) "On transition from analogue to digital terrestrial broadcasting"
<http://www.itu.int/md/R07-WP6A-C-0006/en>

ITU outputs/3

Digital broadcasting transition

- ITU-D Question 11-2/2 "Examination of terrestrial digital broadcasting technologies, and systems, including cost/benefit analysis, interoperability of digital terrestrial system with existing analogue networks, and methods of migration from analogue terrestrial techniques to digital techniques"

SG activities for developing countries

- ITU-D Study Group 2's Report on question 9-2/2 "Identification of study topics in the ITU-T and ITU-D study groups which are of particular interest to developing countries"

ITU cooperation with Broadcasting Organizations

- WBU : Cooperation agreement under preparation
- ABU : Close cooperation in transition from analogue to digital
- AIBD : ITU/AIBD workshops on digital technologies
- EBU : Signed cooperation agreement

Digital Broadcasting Roadmap Project

Feasibility Study on Digital Broadcasting roadmap in Africa/1

- Brief Introduction
 - Period : January – July 2008
 - Budget : US\$ 45,000
 - Contribution : Republic of Korea
 - Implementing Agency : ITU
 - Beneficiary countries : African countries
 - Objective of project :
conduct a feasibility study as a preparation for the project of making digital broadcasting roadmap for African countries

Why started from Africa ?

- RRC-06
 - Agreement for digital broadcasting services in the frequency band 174-230/470-862MHz
 - Transition period from 17 June 2006 to 17 June 2015, allowing some countries an additional five-year extension for the VHF
- World Telecommunication Development Conference 2006(WTDC-06)
 - African region decided introduction of new digital broadcasting technologies as one of the important regional initiatives
 - Ask ITU to implement at national, regional, interregional and global level, making utmost use of its resources

Feasibility Study on Digital Broadcasting roadmap in Africa/2

- Expected output of the study
 - Analysis of current broadcasting situation and plan for digital broadcasting transition
 - Identification of pilot countries for roadmap project
 - Developing of project document for making roadmap
- What will be the next project?
 - General Guideline for making digital broadcasting transition roadmap
 - Customization of some pilot countries' roadmap

What to consider in making digital broadcasting roadmap ?

Regulatory and Legislative matters

- Setting up a new media policy
 - Introduction of new digital broadcasting media like digital terrestrial broadcasting, mobile broadcasting, IPTV...
 - Liberalization? privatization? competition?
- Development of essential regulation is required for a fair competitive environment between media
- Ownership of multiplex
- Licensing of broadcasters, network operators and multiplex operators
- Frequency related issues

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Strategy of migration(1) : Who will lead the migration ?

- To give a key role to market
 - Minimize government's burden on budgets and give broadcasters maximum flexibility
 - No link with national objectives to advance digital infrastructure construction
 - Deepen digital divide between the rich/the poor
- Managed market take up strategy
 - In case if there is no clear market demand
 - Impose a moratorium on analog roll out and announce cut off date for analogue
 - Subsidy to the consumers in buying set-top
 - Fast way providing universal service

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Strategy of migration(2) : All region at once or Phased introduction ?

- Most countries introduce new services in metropolitans first and later expand to the rest of the country
- Satellite technology could be used for expansion into underserved rural area

Stages of migration/Phase one

- Starting introduction of digital television transmission
 - No further analogue license issued for terrestrial broadcasting
 - Regulation should be reviewed to reflect the implication of digital transmission
 - Special frequency channels will be allocated to the current broadcasters to provide simulcasting in digital format
 - The possibilities relative to infrastructure-sharing arrangements involving a number or all operators will be explored

Stages of migration/Phase Two

- The simulcast period
 - Broadcaster will be encouraged to establish a migration plan
 - National broadcasts will be transmitted as must carry, free-to-view, on any digital terrestrial platform that may be available

Stages of migration/Phase three

- Analogue Cut-off
 - All current broadcasters will need to be migrated to a digital platform
 - Households will need to have upgrade TV sets to digital e.g. by set top boxes or new TV sets
 - Depending on the migration option selected by the broadcasters/regulators and the market reaction to the introduction of DTTV

Technology

Different types of technology are available for providing digital broadcasting

- Study and choose on the available standards, frequency allocation, consumer requirements and costs
- Identify the costs associated with development of the required broadcast facilities :network infra, compression options, transmission standards, upgrading studio facilities
- Cost calculations on network infrastructure is linked to coverage predictions regarding options on network type (SFN or MFN), the modulation scheme and data rates

Equipment availability

- Information of ensuring the necessary equipment is available
- the development of policy need to create the necessary organisational structures for ensuring the smooth roll out of digital services e.g., provision of simulcasting, availability of digital consumer equipment, training and availability of antenna installers
- This is linked to the logistics of rolling out a digital network and provision of digital services

Broadcasting network planning

- network or broadcast company need to plan the digital terrestrial broadcasting network covering both network infrastructure and studio requirements
- Take into consideration government policy on simulcasting, digital switchover and replication of analogue coverage
- Include issues like coverage predictions, extension of coverage or capacity from the GE06 Plan entitlements
- Address the implications of implementing SFN or MFN infrastructures

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Customer awareness

- Programme availability, reception issues including antenna, STB, quality of service
- Develop the organisation processes that need to be put in place by the government, including related legislation
- Ensure the public are prepared for the introduction of digital services
- Public should know what needs to be done to receive digital broadcasting services
- Subsidise the purchase of set-top boxes

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Thank you for your attention !

JO, GueJo

Senior Engineer
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