

Spectrum Management and Broadcasting



Spectrum Management Tool (SMS4DC)

- A computer program to assist the administrations of developing countries
- On technical and regulatory procedures for managing spectrum
- around 50 subscribers



The Guidelines for DTTB Transition

- for the smooth transition to Digital Terrestrial Television Broadcasting (DTTB)
- On policy, technologies, network planning, customer awareness and business planning
- Worldwide revision published in 2014



National Roadmaps for Digital Broadcasting Transition

ITU has helped over 30 countries around the world since 2009 for establishing national goals, strategies, key activities and so forth



Direct assistance in spectrum management

- Assistance in Cross Border Frequency Coordination (HCM4A in Africa)
- Spectrum management assessment
- Establishment of spectrum master plans
- Spectrum monitoring
- Consulting to specific issues (e.g. spectrum fee, NTFA)





- > DSO database on status of the transition to Digital Terrestrial TV Broadcasting
- Spectrum Management Training Program (SMTP)
- ITU-D Study Group Questions (Q8/1, Resolution 9, Q7/2)
- WSIS Action Lines (C2, C3, C7 e-science, C9)

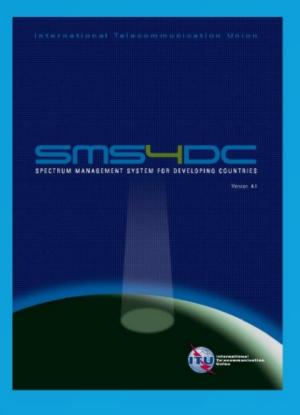




Spectrum Management and Broadcasting - summary

- Spectrum management
 - Spectrum Management Tool for Developing Countries (SMS4DC)
 - Assistance in Cross Border Frequency Coordination (HCM4A)
 - Spectrum Management Assessment, SM Master Plans
 - Spectrum Management Training Program (SMTP)
- Broadcasting
 - Guidelines for Transition to Digital Broadcasting (E, F, S)
 - Assistance for the preparation of national roadmap (more than 40 countries since 2009)
 - DSO database
- Others
 - ITU-D Study Group Questios (Q2/1, Q5/1, Q7/2, Q4/2)
 - WSIS Action Lines (C2, C3, C7 e-science, C9)

Spectrum Management Tool (SMS4DC)



- ☐A computer program to assist the administrations of developing countries
 - On technical and regulatory procedures for managing spectrum
 - A software package on CD containing a digital terrain map (only 1 km resolution!)
- ☐ Known as Spectrum Management System for Developing Countries (SMS4DC)
 - Made available in 2007, current version is 5.1
 - Subscribers: around 50 countries

SMS4DC subscribers



Cross Border Frequency Coordination

- Harmonized Coordination Method for Africa (HCM4A)
 - Set a standard on a mutually beneficial approach by consensus
 - Provide a solid basis for bilateral and mutual agreements
 - Oblige each country to take account of other stations
- ☐ Implementation of HCM4A in four phases
 - 1. Assessment of existing administrative and technical procedures
 - 2. Multilateral agreement proposal by technical working group
 - 3. Validation workshop to adopt draft agreement
 - 4. Development of HCM4A software
- ☐ HCM4A involves 4 sub regions
 - · Central, East, Southern and West Africa

CRASA-ITU Workshop on Cross Border Frequency Coordination

Windhoek, Namibia, 15-19 August 2016

- Objective: Providing Cross-border frequency coordination training
- 29 delegates attended the workshop from six (6) Southern African Development Community (SADC)
 countries, namely, Angola, Botswana, Lesotho, Malawi, Namibia and South Africa as well as from
 various organisations and CRASA partners including Ericsson and LS Telcom.
- The trainers were from the ITU as well as HCM experts from OFCOM (Switzerland) and Federal Network Agency (Germany).

The workshop focused on:

- Need for cross border coordination in spectrum allocation;
- Understanding the appropriate principles of interference resolving along the border areas;
- Understanding the various procedures, agreements and tools which were available for ease of cross border coordination;
- Understanding the course of action or steps in calculating of harmful interference as well as
 resolving interference between stations of fixed and/or land mobile services in the border areas;
- Understanding the models for computer-based interference range calculations to aid for optimised spectrum usage and accurate interference field strengths calculations.

Spectrum Management Assessment

- ☐ Case studies funded mainly by Canada
 - Europe: Hungary (Benchmark study)
 - ASP: Timor-Leste, Cambodia, Lao PDR
 - Africa: Sierra Leone, Zimbabwe, Gabon
 - America: Suriname, Barbados
- Areas considered
 - Country Background, National Telecom Market, Legal Framework, Institutional Structure, Spectrum Allocation, Licensing processes, Spectrum pricing, Interference Management, Type Approval, Crossborder coordination, stakeholder participation, Research Collaboration
- Assistance in establishing Spectrum Management Master plan (funded by MSIP Korea)
 - Selected 6 Asia Pacific and Caribbean countries for assessment and recommendation in the area of spectrum management

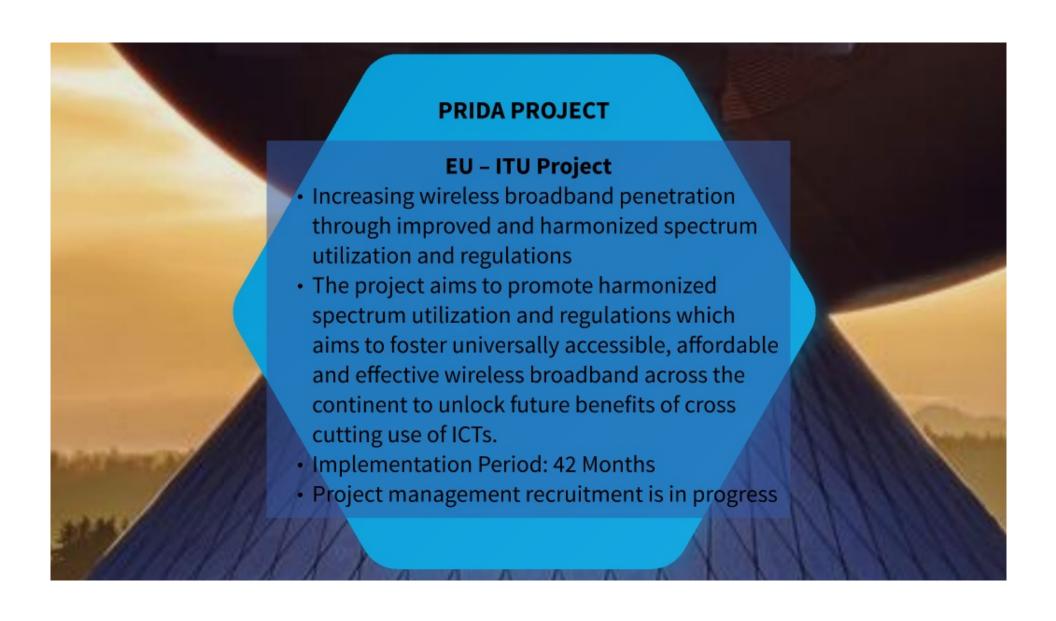
28/11/2016

Macedonia and Polant

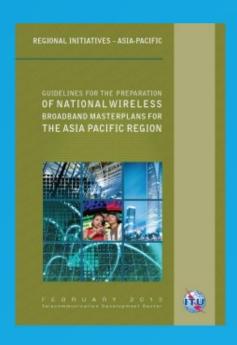


Recent Activities on Spectrum Management

- > Spectrum Management Master Plan (SM MP)
- ➤ Spectrum Management Software (SMS4DC)
- Master Plans for and country assistance in Spectrum Management
- Other activities
- > Trainings, workshops



Wireless Broadband Master plans & Broadband Policy

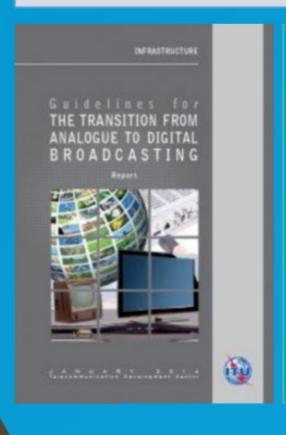


- In order to facilitate wireless broadband development and implementation
 - Assessment of existing policy and regulatory framework
 - Recommendation on key policy issues including licensing, spectrum access, etc.
- ☐ ITU has helped 20 countries since 2010
 - Guidelines for ASP countries
 - Wireless Broadband Master plan: 8 countries in ASP and Africa
 - National Broadband Policy: 12 countries in ASP and AMS





The Guidelines for Transition to Digital Broadcasting



- ☐ Intended to provide information and recommendation
 - On policy, technologies, network planning, customer awareness and business planning
 - for the smooth transition to Digital Terrestrial Television Broadcasting (DTTB) and introduction of Mobile Television Broadcasting
- Prepared in 2010 for Africa
 - 1st Revision (2012) for ASP adding a section on archives migration
 - 2nd revision (2014) for global including Satellite TV, Cable TV, IPTV



National Roadmaps for Digital Broadcasting

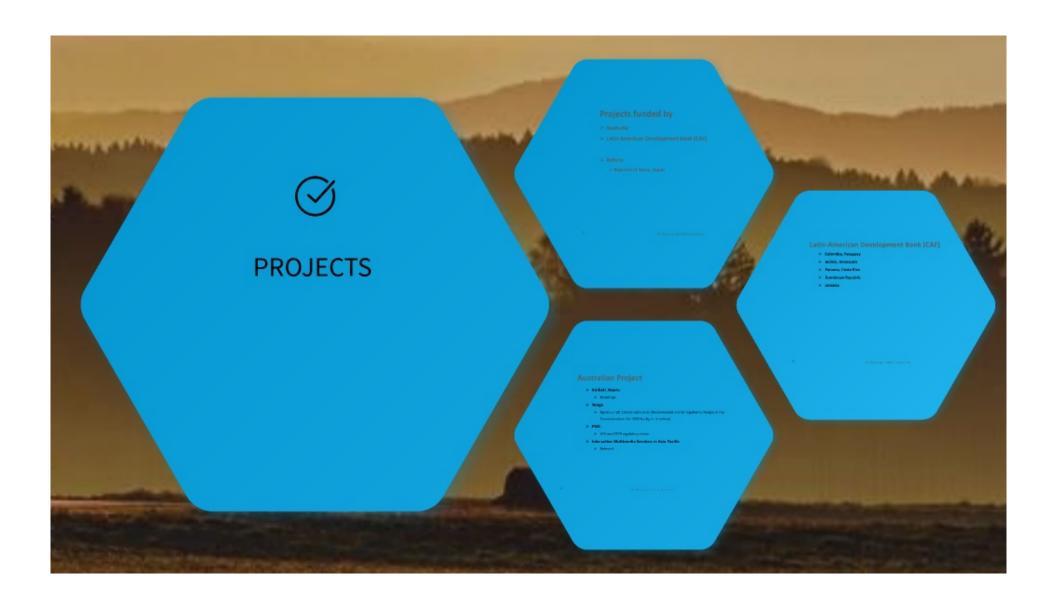
- Assisted a number of Member countries in developing roadmap for transition from analogue to digital broadcasting
- ☐ ITU has helped more than 40 countries since 2009 for establishing national goals, strategies, key activities and so forth
 - Africa Region: Angola, Ethiopia, Mali, Gabon, DRC, Equatorial Guinea
 - ASP Region: Afghanistan, Bangladesh, Bhutan, Cambodia, Fiji, Indonesia, Kiribati, Lao PDR, Maldives, Micronesia, Mongolia, Myanmar, Nauru, Nepal, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Vanuatu and Vietnam
 - AMS: Guyana, 13 other (8 from CAF fund)
 - Projects funded by Republic of Korea, Japan, Australia, CAF (Latin-American Development Bank)
 - BDT direct assistance

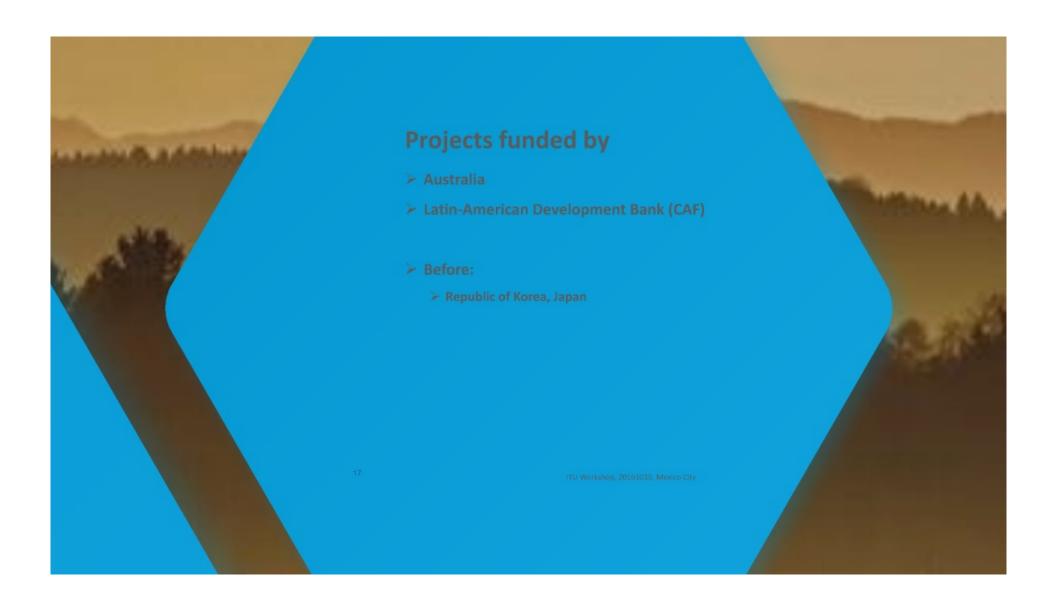
Recent Broadcasting Related Activities

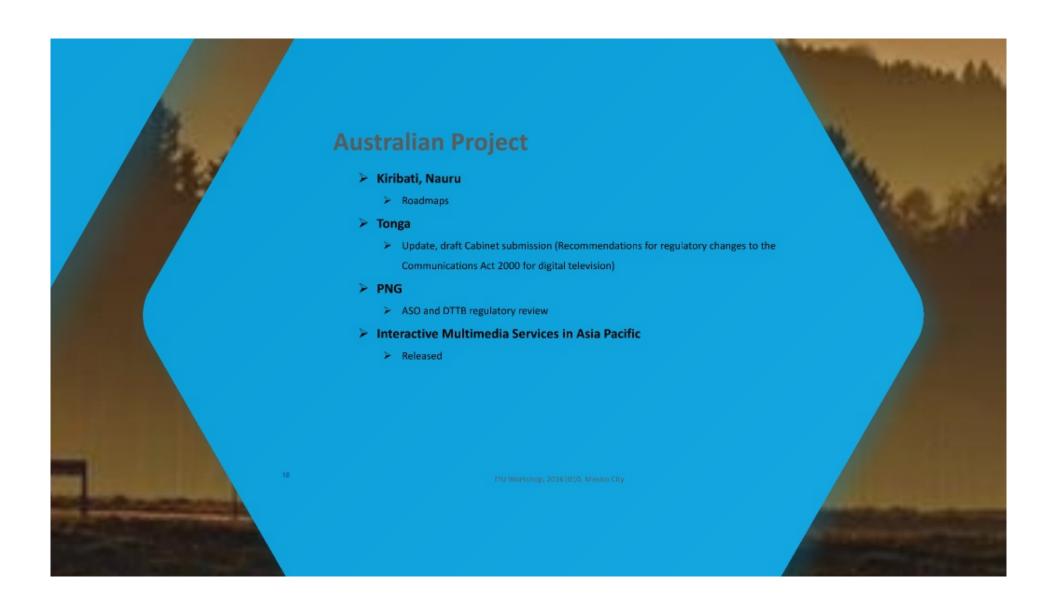
- ➤ Projects
- ➤ Country assistance
- Country case studies and reports
- ➤ Others

15

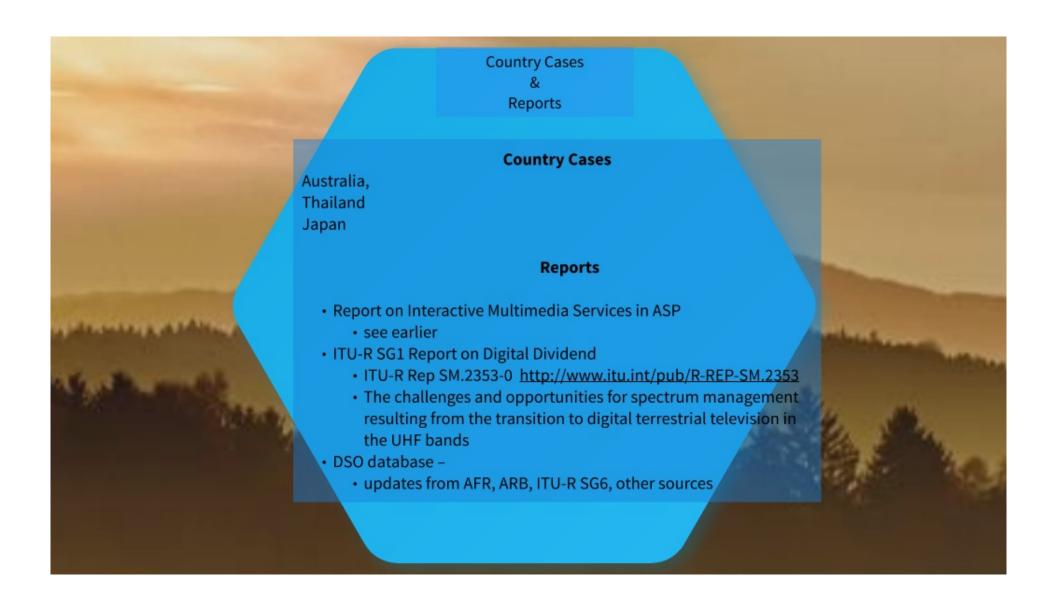
ITU Workshop, 20161010, Mexico Cit







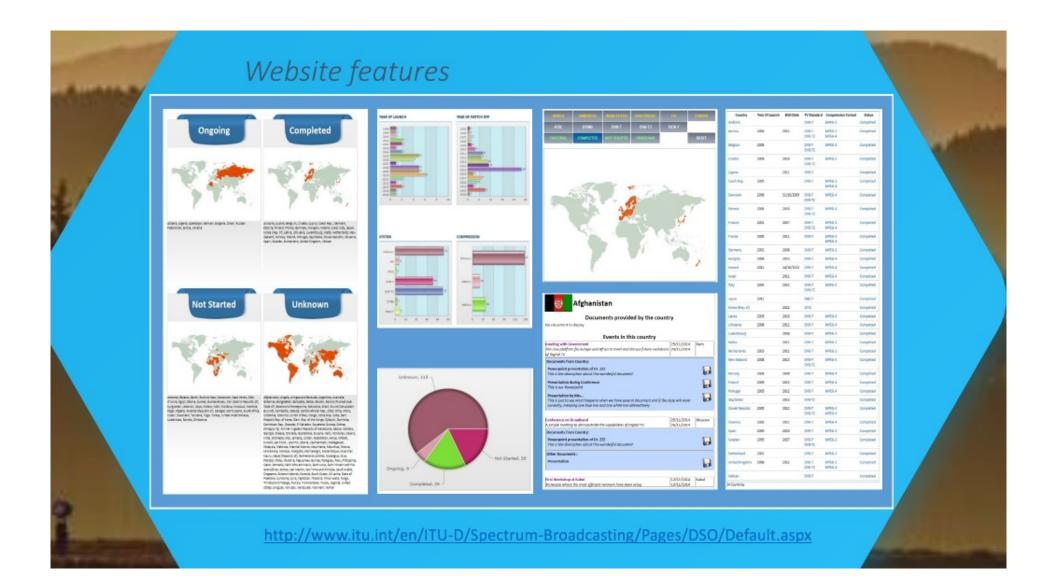


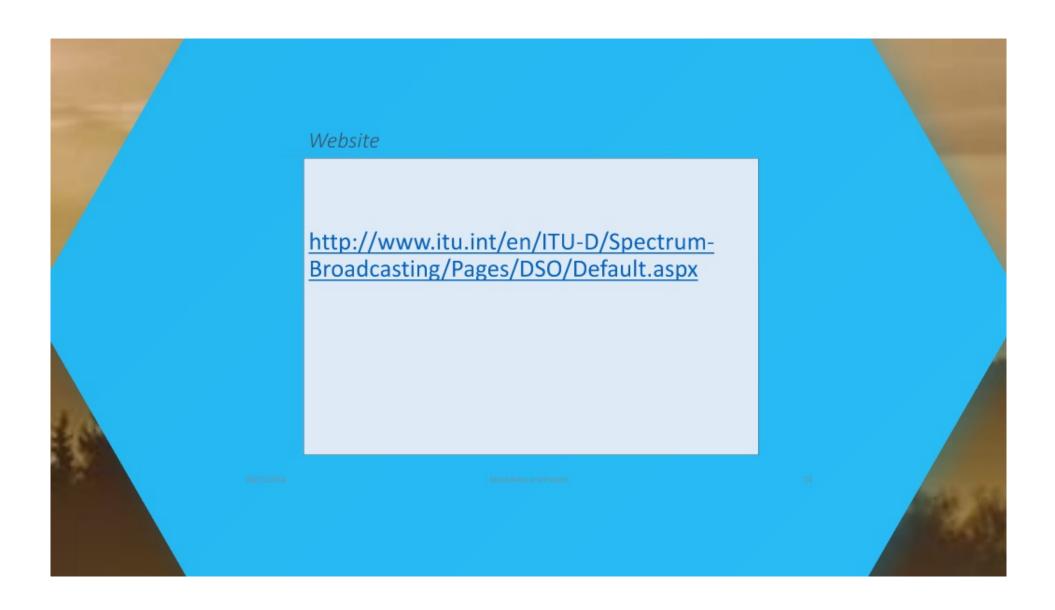




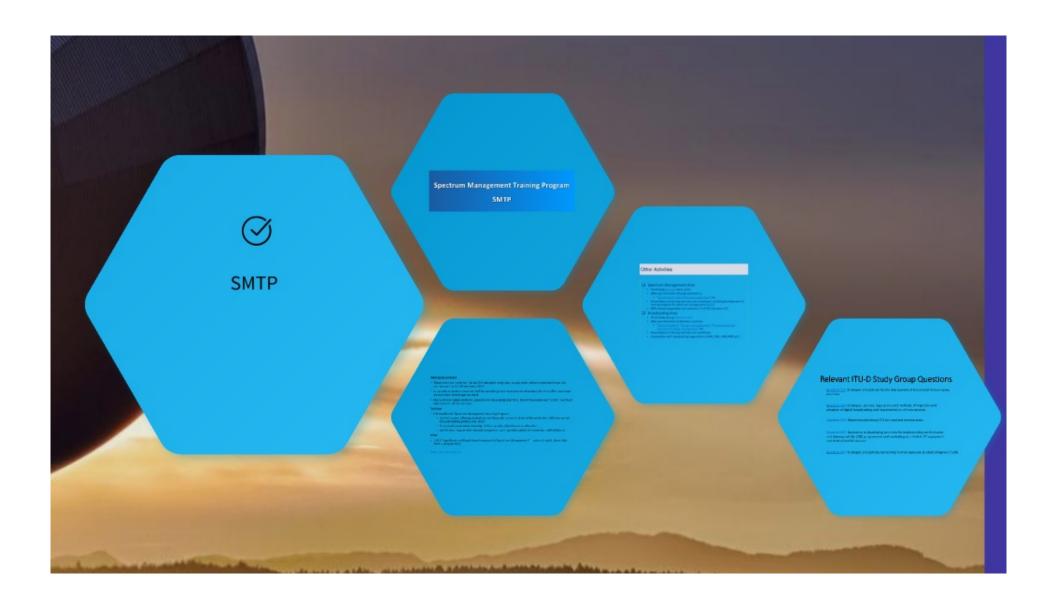
ITU/BDT













Addressed problem

- Today there are no formal holistic SM education programs, except some ad hoc commercial or public courses such as ITU BR seminars, USTTI
- Large administrations train SM staff by seconding them to experienced workers, but this offers narrowed vision and no formal quality check
- Many smaller administrations, especially in developing countries, do not have even such option, but must rely solely on ad hoc courses

Solution

- ITU established Spectrum Management Training Program:
 - Unified course, offering students across the globe access to state-of-the-art holistic SM training and forward-looking professional vision
 - · Formalised assessment ensuring minimal quality of professional education
 - · Certification to give international recognition, with possible option of university credits/diploma

Pilot

 OM1 "Legal Basis and Regulatory Framework of Spectrum Management" – online, English, December 2014 – January 2015

https://academy.itu.int

Other Activities Spectrum Management Area ITU-D Study Group 1 Q2/1, Q7/2 · Offering information through publications • "Guidelines for radio-frequency usage fees", etc. · Presentation at training seminars and workshops / assisting development of training program for spectrum management (SMTP) • EMF related cooperation and activities ITU-D SG2 Question 7/2 Broadcasting Area • ITU-D Study Group 1 Question 8/1 Offering information to Member countries • "Digital Dividend", "Trends in Broadcasting", "The Guidelines for Transition to Digital Broadcasting", etc. · Presentation at training seminars and workshops · Cooperation with broadcasting organizations (WBU, EBU, ABU/AIBD etc.)

Relevant ITU-D Study Group Questions

Question 1/1: Strategies and policies for the deployment of broadband in developing countries

Question 2/1: Strategies, policies, regulations and methods of migration and adoption of digital broadcasting and implementation of new services

Question 5/1: Telecommunications/ICTs for rural and remote areas

Question 4/2: Assistance to developing countries for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices

Question 7/2: Strategies and policies concerning human exposure to electromagnetic fields





