**ITU BDT ACTIVITIES
IN
DIGITAL BROADCASTING**

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Digital Terrestrial Television Broadcasting**
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Content

- Why digital
- Strategies of migration
- Stages of migration
- ITU activities in digital broadcasting
- ITU/D cooperation with broadcasting organizations
- Digital Broadcasting roadmap in Africa
- Regional presence of the ITU

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

Regulatory issues

- Setting up a new media policy
 - introduction of new digital broadcasting media like digital terrestrial broadcasting, mobile broadcasting, IPTV…
 - liberalization? privatization?
- Development of essential regulation is required for a fair competitive environment between media

Technical issues

- Spectrum allocation & frequency assignment
- Selection of suitable standard
- Nationwide broadcasting network plan
- Training for qualified experts

Strategy of migration/1

- Concept 1 : 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 and the poor
  - take time for scale of economy

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Strategy of migration/2

- Concept 2 : 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 broadcasting
- subsidy to the consumers in buying receiving terminal
- fast way providing universal service

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Strategy of migration/3

- Concept 3: Phased introduction of digital broadcasting
- 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

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Choosing the strategy of migration

- Mixing of concepts
  - e.g. Concept 2+ Concept 3

Stages of migration/1

- 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 explorered

Stages of migration/2

- Phase Two : The simulcast period
  - The 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/3

- Phase three: Analogue Cut-off
  - all current broadcasters will need to be migrated to a digital platform
  - households will need to have upgrade their 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

Explanatory and organizational activities of administration

- Provision of public understanding
- A voluntary switching phase is of fundamental importance for migration
- A compulsory phase will have to follow in order to complete switch over
- Administration should
  - explain to citizens why analogue broadcasting needs to be switched off
  - clearly communicate to citizens the time scale
  - providing assistance e.g. in subsidizing set-top boxes

ITU activities/1

ITU-R

- RRC-06
- WRC-07

Spectrum Management (SG1)

- Recommendation SM 1047-1 "National Spectrum management"
- Recommendation SM 2012-1 "Economic Aspect of Spectrum Management"
- Handbook on National Spectrum Management, 2005
- Handbook on Computer Aided Techniques for Spectrum Management, 2005
- Handbook on Spectrum Monitoring, 2002

ITU activities/2

Wave Propagation (former 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 activities/3

ITU-D activities
- ITU-D Question 11-2/2 "Examination of terrestrial digital sound and television 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"
- 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"
- SMS4DC

ITU/D cooperation with broadcasting organizations

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

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Digital broadcasting in Africa

- RRC-06

- agreement for digital broadcasting services in the frequency band 174-230MHz and 470-862MHz

- transition period from 17 June 2006 to 17 June 2015, allowing some countries an additional five-year extension for the VHF band

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- 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 the national, regional, interregional and global level, making utmost use of its resources

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Feasibility study on Digital Broadcasting roadmap in Africa

- Period : January – May 2008 (first phase)
- Budget : US$ 45,000
- Contribution : Republic of Korea
- Implementing Agency : ITU-D
- 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
- Project manager: Mr. JO, GueJo (Gue-Jo.Jo@itu.int), BDT/PRI/TND

- **Expected output of the study**
  - Analysis of current broadcasting situation and plan for digital broadcasting transition through a survey
  - Identification of pilot countries for next roadmap project
  - Developing of project document including scope, budget and work plan for making roadmap of digital transition
- **Current status of the study**
  - The Official letter to ask to nominate a counterpart from ITU-D Director to Ministers was sent in mid of March
  - 22 countries appointed their counterpart and they are filling out survey (the deadline was 30 April)
  - Based on this survey, some pilot countries will be chosen to be assisted to make their digital broadcasting transition roadmap.

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ITU Activities in Asia Pacific

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The ITU Policy on regional presence is designed:

To enable the ITU to be as close as possible to its Members and to implement BDT activities to meet the ever-increasing and diverse needs of the developing countries and regions.

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Objectives of Regional Presence

- Technical and logistical support to the ITU activities
- Act, as far as possible, as a link for exchange and dissemination of information on the activities of the Radiocommunication and Standardization Sectors in the mutual interests of the Union and the countries of the region.
- Cover the four basic functions of the Development Sector, namely: specialized agency, executing agent, resource mobilization and information centre.
- Ensure that the specific requirements of each region are met and that they are the subject of a detailed evaluation, in the light of results obtained, the changing requirements of the developing countries and the telecommunication environment, as well as the resources available to the Union
- Represent, as and when required, the Secretary General and the Directors of the Bureau of the three Sectors

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- ITU's regional presence (Regional and Area offices)

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Asia-Pacific Regional and Area Offices

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E-mail : aurora.rubio@itu.int

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ITU State Members: Asia-Pacific (38 + 1)

- Afghanistan
- Bangladesh
- Bhutan
- Brunei
- Cambodia
- China/Hong Kong
- DPR Korea
- India
- Indonesia
- Iran
- Israel
- Japan

- Lao
- Malaysia
- Maldives
- Mongolia
- Myanmar
- Nepal
- Pakistan
- Philippines
- R.O. Korea
- Singapore
- Sri Lanka
- Thailand
- Vietnam

- Australia
- Fiji
- Kiribati
- Marshall Islands
- Micronesia
- Nauru
- New Zealand
- Papua New Guinea
- Solomon Islands
- Samoa
- Tonga
- Tuvalu
- Vanuatu
- Timor Leste *

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ITU Asia-Pacific
Regional Initiatives

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Regional Initiatives	Partners & Donors
RI 1: Telecommunication/ICT policy and regulatory cooperation in the Asia-Pacific region	CHINA, AUSTRALIA, SINGAPORE, EUROPEAN COMMISSION, THAILAND, MALAYSIA ETC.
RI 2: Rural Communications – Infrastructure development	ADB, UPU, JAPAN INDUSTRY, ETC.
RI 3: Next Generation Networks (NGN) planning	APT, PITA, PIFS, ESCAP, INDUSTRY ETC.
RI 4: The unique telecommunication/ICT needs of Pacific islands and small island developing states (SIDS) in the Asia-Pacific region	**AUSTRALIA, EUROPEAN COMMISSION, PITA, APT, ESCAP, WORLD BANK ETC.**
RI 5: Strengthening the collaboration between ITU-T and ITU-D	APT, ESCAP, INDUSTRY ETC.

Through PPP

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ITU Asia-Pacific
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Regional Projects (Funds-in-Trust)

Australian Government
Department of Communications,
Information Technology and the Arts

Some 2.5 million USD

- **ICT Policy & Regulatory Cooperation in the Asia-Pacific Region and addressing the unique ICT needs of the Pacific Island Countries**

- **Telecommunication/ICT Governance in the Asia-Pacific Region**

- **Effective Use of Telecommunications/ICT in Disaster Management**

- **Assistance for the Establishment of Sector Governance in Telecommunications in East Timor**

European Commission Some 2.5 million Euro

- **Capacity Building and ICT Policy, Regulatory and Legislative Frameworks Support for Pacific Island States**

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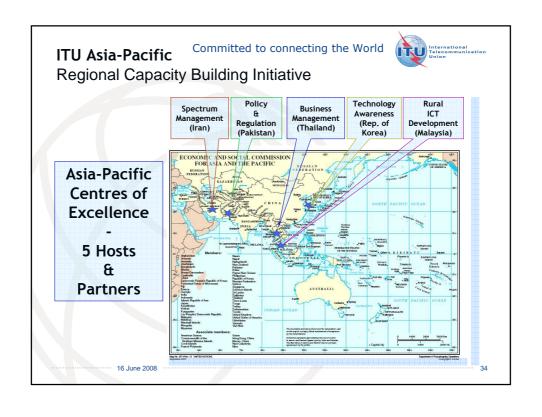### Regional Projects on Disaster Communications

✓ **Project:** "Effective Use of Telecommunications/ICTs in Disaster Management"

✓ **Partners:** Australian Government, Inmarsat, Thuraya, Iridum etc.

✓ **Scope of assistance:**
  - Assessment of post-disaster impact to telecommunication/ICT infrastructure
  - Satellite phones and broadband terminals loaned to Member countries in response or preparedness for disasters/emergencies for a limited period with airtime paid by ITU
  - Assistance in assessing national disaster management plan/policy and developing a National Emergency Telecommunication Plan as part of a National Disaster Management Plan

✓ **Countries assisted in Asia-Pacific:**
  - Post-tsunami (2004) technical and expert assistance to **Indonesia, Bangladesh, Maldives, Sri Lanka, Thailand** (e.g. equipment loans, post-disaster assessment, training, etc.)
  - Post-earthquake (2005) technical and expert assistance to **Pakistan** (e.g. equipment loan, technical training, etc.) *and Indonesia in 2006 (satellite imaging system and related training)*
  - Expert assistance to **Maldives, Sri Lanka, Thailand, Philippines, Mongolia, Indonesia** in assessing, reviewing, and developing necessary plans/policies concerning Emergency Telecommunications (e.g. organizing workshops, developing national emergency telecommunication plans, conduct studies on telecom/ICT aspect of disaster management
  - Response to recent Cyclone in **Myanmar** & earthquake in **China** by providing satellite phones/terminals and expert assistance in time.
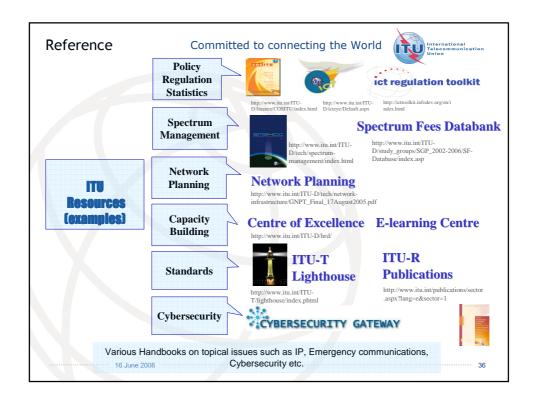
ITU Events: Asia-Pacific

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No	Title	Dates	Potential Venues
1.	**Global ICT Industry Leaders Forum & Global Symposium for Regulators**	**Mar 10-13**	**Thailand**
2.	ITU-MII Seminar on Telecom/ICT Policy and Regulation	TBD	China
3.	ITU-IDA Executive Training Program	July 21-25	Singapore
4.	Gender Balance in Digital Economy of Asia-Pacific	July (TBC)	R.O. Korea
5.	ITU/ABU Workshop on Digital TV	July (TBC)	Malaysia
6.	Asia-Pacific Regional Workshop on Cyber-security	July 16-18	Australia
7.	Asia-Pacific Regional Meeting on TAS	July 15	Australia
8.	**TELECOM Asia**	**Sep 2-5**	**Thailand**
9.	ITU Regional Development Forum: Bridging the ICT Standardization Gap	Sep. 15-17	Vietnam
10.	WTSA-08 Preparation (APT)	Sep. 18-19	Vietnam
11.	Sub-regional Telecommunication Meeting for CLMV	[October]	Cambodia
12.	Connecting the Pacific and SIDS	September	Pacific
13.	Regional Workshop on HRM Tools and Practices in the Asia-Pacific Region	October	[India]
14.	ITU-MCMC Asia-Pacific Seminar on Regulation in a Converged Environment	December (TBC)	Malaysia
15.	Regional Workshop on Strategic HRM for the Pacific	October	Samoa

Additional Asia-Pacific Events are expected through external contributions from Australia and EC.

ITU Assistances: Asia-Pacific [1]

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No	Title	Beneficiary
1	Universal Service Program for Afghanistan	Afghanistan
2	Policy and Regulatory Assistance	Myanmar
3	Emergency Communication Backup through Radio Broadcasting	Tonga
4	Access to ICT in Remote Area	Marshall Is
5	Remote ICT Access in Nauru	Nauru
6	Implementation of MCTs in Papua New Guinea	PNG
7	Formulation of National Disaster Communication plan	Bhutan
8	Rural Broadband Communication Development	Nepal
9	Frequency Band Plan Allocation and Spectrum Pricing	Kiribati
10	Rural Communication Master Plan	Vanuatu
11	Telecommunication Institutional Strengthening for Lao PDR	Lao PDR

ITU Assistances: Committed to connecting the World
Asia-Pacific [2]

No	Title	Beneficiary
12	Development and Deployment of e-Health	Nepal
13	Training on New Technologies for DPR Korea	DPR Korea
14	ICT Master Plan	Thailand
15	ITU-UPU-India project to assist Afghanistan in establishing e-services	Afghanistan
16	Cost Modeling for Tariffs and Interconnection	Kiribati
17	Different Schemes for Rural Communication Development	ASP
18	Youth Incentive Scheme in ASP Region	ASP
19	Establishment of ICT Training Facility	Mongolia
20	Interconnection determination	PNG
21	Partnership on Access to ICT through donated PCs/Laptops for Asia-Pacific countries	ASP
22	Regulation on VoIP and NGN	Bhutan

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Regional Capacity Building Initiative

Spectrum Management (Iran)

Policy & Regulation (Pakistan)

Business Management (Thailand)

Technology Awareness (Rep. of Korea)

Rural ICT Development (Malaysia)

Asia-Pacific Centres of Excellence - 5 Hosts & Partners

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ITU Asia-Pacific — Committed to connecting the World

Centre of Excellence Programs 2008

No	Course Title	Dates (2008)	Delivery Mode	Host
1	Porting Process Guidelines and Regulations for Mobile Number Portability	Jan 14- Feb 29	Online	PTA, Pakistan
2	Spectrum Management and Advanced Spectrum Management	Jan 14 - Feb 29	Online	MICT, Iran
3	Efficient Utilization of Spectrum for Mobile Networks	April 20 -24	Face to Face	MICT, Iran
4	Fundamentals of IPv6	March 24 - May 9	Online	PNU, Rep of Korea
5	Distance Learning on Rural Broadband Technologies and USO	August	Online	UUM, Malaysia
6	Spectrum Management and Advanced Spectrum Management (Repeat Course)	April 28 - June 6	Online	MICT, Iran
7	Ubiquitous Technology: Concepts and Applications	July 1-4	Face to Face	PNU, Rep of Korea
8	Fundamentals of IPv6 (Repeat Course)	Sep 1- Oct 17	Online	PNU, Rep of Korea
9	Porting Process Guidelines and Regulations for Mobile Number Portability (Repeat Course)	June 2- July 6	Online	PTA
10	ICT for Disaster Management	August	Face to Face	UUM, Malaysia
11	Spectrum Pricing	August 25-28	Face to Face	MICT, Iran
12	Business Management (TBC)	August 19-22	Face to Face	MICT, Thailand
13	Mobile Quality of Service	October 14-17	Face to Face	PTA, Pakistan
14	NGN Planning and Applications	November 11 - 14	Face to Face	PNU, Rep of Korea
15	CIO Capacity Building and Development	November 25-28	Face to Face	MICT, Thailand
16	Designing Rural Broadband Plan	December 2- 5	Face to Face	UUM, Malaysia
17	CIO Capacity Building and Development	December	Online	MICT, Thailand

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ITU Resources (examples)

Policy Regulation Statistics
- http://www.itu.int/ITU-D/finance/COSITU/index.html
- http://www.itu.int/ITU-D/icteye/Default.aspx
- **ict regulation toolkit** — http://icttoolkit.infodev.org/en/index.html

Spectrum Management
- http://www.itu.int/ITU-D/tech/spectrum-management/index.html
- **Spectrum Fees Databank** — http://www.itu.int/ITU-D/study_groups/SGP_2002-2006/SF-Database/index.asp

Network Planning
- **Network Planning** — http://www.itu.int/ITU-D/tech/network-infrastructure/GNPT_Final_17August2005.pdf

Capacity Building
- **Centre of Excellence** — http://www.itu.int/ITU-D/hrd/
- **E-learning Centre**

Standards
- **ITU-T Lighthouse** — http://www.itu.int/ITU-T/lighthouse/index.phtml
- **ITU-R Publications** — http://www.itu.int/publications/sector.aspx?lang=e&sector=1

Cybersecurity
- **CYBERSECURITY GATEWAY**

Various Handbooks on topical issues such as IP, Emergency communications, Cybersecurity etc.

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Thank you for your attention !

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