ITU-D Activities on IMT

Asia-Pacific Regional Seminar on IMT towards 2020 and Beyond
Technology & Spectrum

11th February 2014, Ho Chi Minh City, Vietnam

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1. ITU-D
2. Study Groups and COEs
3. ITU-D IMT related Activities
4. Conclusion and Ways forward
ITU: International Telecommunication Union

- Founded in 1865; Responsible for issues that concern Information and Communication Technologies.
- 193 Member States, 567 Sector Members, 159 Associates, and 60 Academia.
- HQs in Switzerland, Geneva; and 4 Regional Offices & 7 Area Offices.

**ITU-R**

ITU’s Radio-communication Sector that globally manages radio-frequency spectrum and satellite orbits that ensure safety of life on land, at sea and in the skies.

**ITU-T**

ITU's Telecommunication Standardization Sector that enable global communications by ensuring that countries’ ICT networks and devices are speaking the same language.

**ITU-D**

ITU’s Development Sector that fosters international cooperation and solidarity in the delivery of technical assistance and in the creation, development and improvement of telecommunication/ICT equipment and networks in developing countries.
ITU-D Global

ITU-D Mission

To foster international cooperation and solidarity in the delivery of technical assistance and in the creation, development and improvement of telecommunication/ information and communication technology (ICT) equipment and networks in developing countries. ITU-D is required to discharge the Union’s dual responsibility as a United Nations specialized agency and executing agency for implementing projects under the United Nations development system or other funding arrangements, so as to facilitate and enhance telecommunication/ICT development by offering, organizing and coordinating technical cooperation and assistance activities.

Objectives

1. To foster international cooperation on telecommunication/ICT issues.
2. To assist in the development of telecommunication/ICT infrastructure.
3. To enhance the development and the safe use of ICT applications and services.
4. To create a policy and regulatory environment conducive to telecommunication/ICT development.
5. To build human and institutional capacity and foster digital inclusion.
6. To provide concentrated assistance to LDCs, SIDSs, LLDCs, and assist in disaster management.

Outputs

- WTDC
- RTDC
- TDAG
- ICT infrastructure development
- Cyber security and ICT applications deployment
- Enabling environment enhancement
- ITU-D Publications
- Human capacity building and digital inclusion
- Special assistance, emergency telecommunications and climate change

Activities

- Creation of tools and guidelines
- Project management and coordination
- Financial, operational and strategic planning, control and reporting
- Database and web site management
- Documentation (preparation, writing and editing)
- Assisting members and related tasks
- Research and analysis
- Sharing information and related tasks
- Preparation and delivery of training

Resources

<table>
<thead>
<tr>
<th>ITU-D</th>
<th>Expenditure</th>
<th>Actual</th>
<th>Budget</th>
<th>Estimates</th>
<th>Variance</th>
<th>d - c/b</th>
<th>e - d/b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2015-2016</td>
<td>2015-2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTDC</td>
<td>1,000</td>
<td>0</td>
<td>1,267</td>
<td>1,267</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTDC</td>
<td>1,16</td>
<td>0</td>
<td>772</td>
<td>772 -100.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDAG</td>
<td>2,81</td>
<td>2,51</td>
<td>2,96</td>
<td>2,96</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Study group meetings</td>
<td>880</td>
<td>824</td>
<td>1,208</td>
<td>1,208</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Activities and programmes</td>
<td>50,749</td>
<td>50,749</td>
<td>50,749</td>
<td>50,749</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Bureau</td>
<td>4,130</td>
<td>4,130</td>
<td>4,130</td>
<td>4,130</td>
<td>746</td>
<td>1.76%</td>
<td>1.76%</td>
</tr>
<tr>
<td>Total</td>
<td>52,109</td>
<td>52,109</td>
<td>52,109</td>
<td>52,109</td>
<td>3,290</td>
<td>2.43%</td>
<td>2.43%</td>
</tr>
</tbody>
</table>

Goal

The strategic goal of the ITU Telecommunication Development Sector (ITU-D) is threefold, and includes:
1. To promote the availability of infrastructure and foster an enabling environment for telecommunication/ICT infrastructure development and its use in a safe and secure manner.
2. To provide assistance to developing countries in bridging the digital divide by achieving broader telecommunication/ICT-enabled socio-economic development.
3. To expand the benefits of the information society to the membership in cooperation with public and private stakeholders, and to promote the integration of the use of telecommunications/ICTs into the broader economy and society as drivers of development, innovation, well-being, growth and productivity globally.
## ITU-D Regional Presence

### Americas
- **460 million** subscriptions
- **48%** penetration
- **28%** CAGR (2010-2013)

### Europe
- **422 million** subscriptions
- **68%** penetration
- **33%** CAGR (2010-2013)

### CIS
- **129 million** subscriptions
- **46%** penetration
- **27%** CAGR (2010-2013)

### Arab States
- **71 million** subscriptions
- **19%** penetration
- **55%** CAGR (2010-2013)

### Africa
- **93 million** subscriptions
- **11%** penetration
- **82%** CAGR (2010-2013)

### Asia-Pacific
- **895 million** subscriptions
- **22%** penetration
- **45%** CAGR (2010-2013)

*High Potential*
Members of ITU from ASP total 38 including

**13 LDCs:**
1) Afghanistan  
2) Bangladesh  
3) Bhutan  
4) Cambodia  
5) Kiribati  
6) Lao PDR  
7) Myanmar  
8) Nepal  
9) Solomon Islands  
10) Timor-Leste  
11) Tuvalu  
12) Vanuatu  
13) Samoa

**13 SIDS:**
1) Fiji  
2) Kiribati  
3) Maldives  
4) Marshall Islands  
5) Micronesia  
6) Nauru  
7) PNG  
8) Samoa  
9) Singapore  
10) Solomon Islands  
11) Tonga  
12) Tuvalu  
13) Vanuatu

**5 LLDCs:**
1) Afghanistan  
2) Bhutan  
3) Lao PDR  
4) Mongolia  
5) Nepal

**REGIONAL INITIATIVES**

- **Unique ICT Needs for LDCs, SIDS, and Land-Locked Developing Countries**
- **Emergency Telecommunications**
- **Digital Broadcasting**
- **Broadband Access and Uptake in Urban and Rural Areas**
- **Telecommunications/ICT Policy and Regulation in the Asia-Pacific Region**

**ITU Regional Office for Asia and the Pacific**
Bangkok, Thailand

**ITU Area Office for South-East Asia**
Jakarta, Indonesia
ITU-D Study Groups (SG)

The ITU-D Study Groups were established in order to deal with specific telecommunication questions of general interest to developing countries, according to Resolution 2 of WTDC-94

Purpose:
• Devise innovative solutions to specific problem areas per WTDC
• Focus telecoms development strategies
• No technical standards

Scope Update:
The terms of reference, the procedures to be applied by the Study Groups, the Questions under Study have been amended through the successive WTDCs

http://www.itu.int/ITUD/study_groups/index.html
SG 1: Telecommunication development strategies and policies
National telecommunication policies and regulatory strategies which best enable countries to benefit from the impetus of telecommunications as an engine of economic, social and cultural development. Finance and economics, including World Trade Organization (WTO) issues, tariff policies, case studies, application of accounting principles as developed by ITU-T Study Group 3, private-sector development and partnership.

SG 2: Development and management of telecommunication services and networks and ICT applications
Methods, techniques and approaches that are the most suitable and successful for service provision in planning, developing, implementing, operating, maintaining and sustaining telecommunication services which optimize their value to users.

Resolution : 9
Study period 2010-2014 is focused on issues related to various field of Spectrum management in order to provide the necessary information on activities carried out by ITU-D Study Group 2, ITU-R Study Group 1 and relevant BDT programmes. Revised Report available since October 2013
ITU-D SG-2 : Questions 2010-2014

- **Q 9-3/2**: Identification of study topics in the ITU-T and ITU-R study groups that are of particular interest to developing countries
- **Q 10-3/2**: Telecommunications/ICT for rural and remote areas
- **Q 11-3/2**: Examination of terrestrial digital sound and television broadcasting technologies and systems, interoperability of digital terrestrial systems with existing analogue networks, and strategies and methods of migration from analogue terrestrial techniques to digital techniques
- **Q 14-3/2**: Information and Telecommunications/ICTs for e-Health
- **Q 17-3/2**: Progress on e-government activities and identification of areas of application of e-government for the benefit of developing countries
- **Q 22-1/2**: Utilization of telecommunications/ICTs for disaster preparedness, mitigation and response
- **Q 24/2**: ICT and climate change
- **Q.25/2**: Access technology for broadband telecommunications **including** IMT, for developing countries
- **Q.26/2**: Migration from existing networks to next-generation networks for developing countries: technical, regulatory and policy aspects
STUDY & IDENTIFY

1. Examine wired and wireless broadband access technologies, including IMT, and their future trends;
2. Identify methodologies for migration planning and implementation of broadband wired and wireless technologies, taking into account existing networks, as appropriate;
3. Consider trends of broadband access technologies; deployments, services offered and regulatory considerations;

IMPLEMENTATION STRATEGIES

4. Continue to identify ways and means of implementing IMT, using terrestrial links and satellites;
5. Identify key elements to be studied in order to facilitate the possible deployment of systems integrating satellite and the terrestrial component of IMT (see Recommendation 206 (WRC-07));
6. Provide information on the specific impact of the implementation of broadband wired and wireless means, including IMT, on underserved populations, including persons with disabilities;

REPORT

ITU-D SG-2: Q25/2 – Report Highlights

- **Broadband issues including**
  - Socio-Economic Benefits based on country experiences (e.g., Impact on GDP etc.)
  - Broadband Applications
  - Gender issues
  - Access to BB for Persons with Disabilities

- **Policy issues including** best practices of regulators in
  - Deployment
  - Adoption
  - USF
  - Spectrum issues

- **Technical Issues Including**
  - Technologies (both terrestrial and Satellite)
  - Example roll out scenarios
  - Efficiency comparison of Macro and Micro cells
  - Backhauling issues (Terrestrial, wireless, Fiber, Satellite, Undersea cable Backhaul)

- **Annexes**
  - Country Experiences/Studies
  - Reference to relevant recommendations and reports

*Report issued in October 2013*
COEs in ASP

- Spectrum Management (Ministry of ICT, Iran)
- Technology Awareness
  Pusan National University
  Rep. of Korea
- Policy & Regulation
  Pakistan Telecommunication Authority
- Business Management
  Ministry of ICT, Thailand
- Broadcasting
  Asia Pacific Institute for Broadcasting Development
- Rural ICT Development
  Universiti Utara Malaysia
Cross border frequency coordination

Harmonized Calculation Method (HCM) Agreement

1. Co-ordination request and all technical characteristics of radio network/equipment sent to all administrations affected to enable accurate assessment of interference

2. Administrations affected assess possibility of interference to own stations; → no possibility of interference: obliged to agree to request

3. If assessments produce different results, → administrations can agree to operation on a trial basis; field strength calculations replaced with agreed field strength measurements

4. Administrations exchange lists of co-ordinated assignments with technical characteristics, administrative reference data, conditions

HCM4A based on HCM agreement in Europe
### SM Related ASP Actions in 2013

<table>
<thead>
<tr>
<th>Activity</th>
<th>Details</th>
<th>IMT Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Terrestrial Map for Asia-Pacific</strong></td>
<td>Launched ITU UNESCAP Interactive Map for Long Distance Optical Fiber Cable Systems (Terrestrial) in Asia-Pacific.</td>
<td>Backbone readiness</td>
</tr>
</tbody>
</table>
| **Strengthening Telecom / ICT Infrastructure**| - Supported 12 countries (e.g., Bangladesh, Bhutan, Cambodia, Fiji, Indonesia, Mongolia, Myanmar, Nepal, Viet Nam, Pakistan, Papua New Guinea, & Samoa).  
- 3 regional forums on broadband & Satellite Launching and Coordination.  
- Developed guidelines for migration from to Next Generation Networks (NGN) in Bangladesh, India, Sri Lanka, & Philippines; Broadband over Powerline in Bhutan.  | Development of required network infrastructure |
| **Digital Broadcasting Roadmaps**             | Supported 18 countries (e.g., Bangladesh, Cambodia, Fiji, Indonesia, Lao PDR, Maldives, Micronesia, Mongolia, Myanmar, Nepal, Papua New Guinea, Philippines, Sri Lanka, Thailand, Timor-Leste, Tonga, Vanuatu, and Vietnam) in developing the roadmap reports on digital broadcasting transition.  
- Updated Guidelines on Transition from Analogue to Digital Terrestrial Television Broadcasting including Cable, Satellite, and IPTV.  
- Improved awareness through Seven regional workshops with partners (e.g. ABU, AIBD, MIC-Japan, NBTC-Thailand).  | Spectrum Availability           |
| **Improving Spectrum Management framework**   | Supported 7 countries (e.g., Brunei Darussalam, Indonesia, Kiribati, Laos, Myanmar, Papua New Guinea, & Thailand).                                                                                       | Framework in-line with WRC outcomes |
| **Enhancing Conformity, interoperability, Type Approvals** | - Organized forum/workshop on Conformity Assessment (2013), Myanmar; & Bridging the Standardization Gap (2013), Myanmar & Sri Lanka.  
- Supported type approval in Mongolia.  | Harmonization                   |
### ASO and 700 MHz band in ASP

<table>
<thead>
<tr>
<th>Item</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spectrum Allocation Level</strong></td>
<td>No issues prevail in ASP (ITU-R region 3), as mobile has been a co-primary allocation already for quite some time.</td>
</tr>
</tbody>
</table>
| **Spectrum Assignment Level**       | - Countries that have auctioned the full APT 700 MHz band plan for mobile (FDD): **Australia** (2013), **New Zealand** (2013), **Taiwan** (2013).  
- Countries that have assigned or will assign part of the APT 700 band plan to mobile (FDD): **Japan** 2x30 MHz (NTT, KDDI, eMobile, commencing in 2015 ), **South Korea** 2x20 MHz  
- Countries committed to implement 700 MHz APT band plan (FDD) but are yet to implement it: **Indonesia**, **Malaysia**, **India**, **Singapore**, **Brunei**, **Papua New Guinea**, **Tonga**.  
- Countries committed to implement 700 MHz APT band plan on TDD: **China**                                                                 |
| **Complete Analogue switch off**    | Countries that have switched off analogue TV: **Australia** (2013), **New Zealand** (2013), **Japan** (2011), **Taiwan** (2012), **South Korea** (2012) |
| **Others**                          | Some ASP countries have ASO dates around 2015, others 2017 while others have yet to adopt relevant policy.                              |
Regional Initiatives & Projects:

- ITU-KCC (MSIP, Rep of Korea) projects on wireless broadband Master plan and digital broadcasting,
- ITU-MIC (Japan) project on digital broadcasting,
- ITU-NBTC Thailand projects related to digital broadcasting, frequency planning for TV and digital radio, & 1800 MHz utilization
- ITU-Comms (Australia) project on Asia-Pacific Regional Initiatives
## Related ASP COE Trainings in 2013

### FACE TO FACE TRAININGS

<table>
<thead>
<tr>
<th>Event</th>
<th>Venues</th>
<th>Centers</th>
<th>Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative Applications for Rural Broadband Community</td>
<td>Kuala Lumpur</td>
<td>UUM, Malaysia</td>
<td></td>
</tr>
<tr>
<td>Infrastructure Sharing Models and Practices</td>
<td>Bangkok</td>
<td>MICT, Thailand</td>
<td>DBCDE</td>
</tr>
<tr>
<td>Mobile Security</td>
<td>Bangkok</td>
<td>IMPACT</td>
<td>NBTC</td>
</tr>
<tr>
<td>New value chain in mobile application services</td>
<td>Viet Nam</td>
<td>Viettel / MIC, Viet Nam</td>
<td>PNU</td>
</tr>
<tr>
<td>IPv6 Network Security</td>
<td>Bangkok</td>
<td>MICT, Thailand</td>
<td>APNIC</td>
</tr>
<tr>
<td>Social Network: Ethical use of technology</td>
<td>Kuala Lumpur</td>
<td>UUM, Malaysia</td>
<td>Intel</td>
</tr>
<tr>
<td>Advanced ICT Convergence</td>
<td>Busan</td>
<td>PNU</td>
<td>PNU</td>
</tr>
<tr>
<td>NGN: Interconnection and convergence issues</td>
<td>MICT, Thailand</td>
<td>DBCDE</td>
<td></td>
</tr>
<tr>
<td>Spectrum Monitoring</td>
<td>Iran</td>
<td>TCI, Iran</td>
<td>TCI</td>
</tr>
<tr>
<td>Digital Television Broadcasting</td>
<td>India</td>
<td>AIBD</td>
<td>MIC Japan</td>
</tr>
<tr>
<td>Wireless Broadband Planning &amp; QoS</td>
<td>Pacific</td>
<td>UUM, Malaysia / PTA, Pakistan</td>
<td>DBCDE</td>
</tr>
<tr>
<td>High level strategic planning for telecom sector</td>
<td>Pacific</td>
<td>UUM, Malaysia</td>
<td></td>
</tr>
<tr>
<td>Licensing of international services e.g. Submarine, Satellite, Gateway</td>
<td>Bangkok</td>
<td>[PTA, Pakistan]</td>
<td>NBTC</td>
</tr>
<tr>
<td>ICT applications relating to mitigating natural disaster</td>
<td>Viet Nam</td>
<td>Viettel / MIC, Viet Nam</td>
<td>Viettel</td>
</tr>
<tr>
<td>Policy and regulation in broadband environment</td>
<td>Bangkok</td>
<td>[PTA, Pakistan]</td>
<td>NBTC</td>
</tr>
</tbody>
</table>
# Related ASP COE Trainings in 2013

<table>
<thead>
<tr>
<th>Event</th>
<th>Venues</th>
<th>Centres</th>
<th>Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Service Funds: Operation and Management</td>
<td>UUM, Malaysia</td>
<td>UUM, Malaysia</td>
<td>DBCDE</td>
</tr>
<tr>
<td>Spectrum Management and National Frequency Allocation Table</td>
<td>TCI, IRan</td>
<td>TCI, IRan</td>
<td></td>
</tr>
<tr>
<td>Licensing and provision of services under CVAS regime with Pakistan experience</td>
<td>PTA, Pakistan</td>
<td>PTA, Pakistan</td>
<td></td>
</tr>
</tbody>
</table>
4. “Mid-Term Guidelines (MTG) on the smooth transition of existing mobile networks to IMT-2000 for developing countries” produced by ITU-D SG2
5. Q.18/2: Strategy for migration of mobile networks to IMT-2000 and beyond, ITU-D Publication
8. ITU and European Commission launched a global project to provide “Support for the establishment of harmonized policies for the ICT market in the ACP states” end 2008
9. SMS4DC
10. SMTP (Spectrum Management Training Program)

And many more.....
IMT as enabler for a converged information & Smart Society

Ways forward

- Fully Networked Car
- Digital Cities
- Smart Grids
- Security in Cyberspace
- e-health
- e-governance
- e-education
- e-commerce
Asia-Pacific = DIGITAL GAP!

Active ICT/mobile-broadband subscriptions/penetration (2013)
Asia-Pacific = Market Opportunity

Source: ITU World Telecommunication /ICT Indicators database
Note: * Estimate
Asia-Pacific = Investment Opportunity

Investment on Broadband by Governments in Asia Pacific 2011 - 2015

Note: ITU-ASP internal study based on data available in public domain
**Connect Asia-Pacific Summit**

**18 November 2013, Bangkok, Thailand**

Official Website

http://www.itu.int/en/ITU-D/Conferences/connect/Asia-Pacific/Pages/default.aspx

- Some 625 participants from 37 ITU Asia-Pacific Member States, including 7 Heads of State/Government, 30 Ministers, deputy ministers, and Ambassadors
- **Leaders’ Vision** | Asia-Pacific 2020: Smart DIGITAL
- **Summit Communiqué** | Asia-Pacific 2020: Smart DIGITAL
- About 82 initiatives/projects announced and/or calling for partnerships (see [Projects & Initiatives Publication](http://www.itu.int/en/ITU-D/Conferences/connect/Asia-Pacific/Pages/ProjectsExpressionofInterest.aspx))

**ITU calls for ‘Expression of Interest’ in the initiatives/projects**

Please visit:

http://www.itu.int/en/ITU-D/Conferences/connect/Asia-Pacific/Pages/ProjectsExpressionofInterest.aspx
ITU’s Partners for Asia-Pacific

And Many More from the Industry!!
Others are welcome to be our Partner!
Regional Office for Asia and the Pacific

ITU Asia-Pacific Regional Workshop on Satellite Launching & Coordination

11 Feb 2014