



ITU-D Activities on IMT

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

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Content Breakdown



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.

Goal

The strategic goal of the ITU Telecommunication Development Sector (ITU-D) is threefold, and includes:

- 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
- To provide assistance to developing countries in bridging the digital divide by achieving broader telecommunication/ICT-enabled socio-economic development
- 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.

Objectives

Objective 1:
"To foster international cooperation on telecommunication/ICT issues."

Objective 2:
"To assist in the development on telecommunication/ICT infrastructure."

Objective 3:
"To enhance the deployment and the safe use of ICT applications and services."

Objective 4:
"To create a policy and regulatory environment conducive to telecommunication/ICT development."

Objective 5:
"To build human and institutional capacity and foster digital inclusion."

Objective 6:
"To provide concentrated assistance to LDCs, SIDSS, LLDCs, and assist in disaster management."

Outputs

WTDC
TDAG

RTDC
Study Group Meetings

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

Database and web site management

Assisting members and related tasks

Sharing information and related tasks

Handling of special needs

Financial, operational and strategic planning, control and reporting

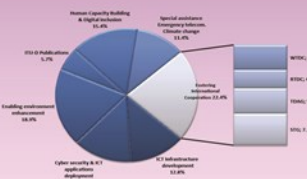
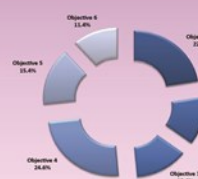
Documentation (preparation, writing and editing)

Research and analysis

Preparation and delivery of training

Resources

| ITU-D Expenses | In thousands of Swiss francs | | | | |
|---------------------------|------------------------------|------------------|---------------------|--------------|-------------|
| | Actual 2010-2011 | Budget 2012-2013 | Estimates 2014-2015 | Variance | |
| | a | b | c | d = c - b | e = d / b |
| WTDC | 1,000 | 0 | 1,367 | 1,367 | - |
| RTDC | 114 | 772 | 0 | -772 | -100.0% |
| TDAG | 224 | 264 | 264 | 0 | 0.0% |
| Study group meetings | 800 | 824 | 824 | 0 | 0.0% |
| Activities and programmes | 10,738 | 11,436 | 11,436 | 0 | 0.0% |
| Bureau | 43,180 | 43,316 | 44,061 | 745 | 1.7% |
| Total | 56,056 | 56,612 | 57,952 | 1,340 | 2.4% |



| "Strategic Plan for 2012-2015" Strategic objectives of ITU-D | In thousands of Swiss francs | | | % of total |
|--|------------------------------|---------------|------------------|--------------|
| | Budget 2014 | Budget 2015 | Budget 2014-2015 | |
| D-1 To foster international cooperation on telecommunication/ICT issues | 8,096 | 4,760 | 12,856 | 3.9% |
| D-2 To assist in the development of telecommunication/ICT infrastructure | 4,222 | 4,539 | 8,761 | 2.7% |
| D-3 To enhance the deployment and the safe use of ICT applications and services | 3,491 | 3,859 | 7,350 | 2.2% |
| D-4 To create a policy and regulatory environment conducive to telecommunication/ICT development | 6,745 | 7,246 | 13,991 | 4.3% |
| D-5 To build human and institutional capacity and foster digital inclusion | 4,350 | 4,607 | 8,957 | 2.7% |
| D-6 To provide concentrated assistance to LDCs, SIDSS, LLDCs, and assist in disaster management | 2,990 | 3,247 | 6,237 | 1.9% |
| Costs of ITU-D Strategic Goal | 29,684 | 28,253 | 57,937 | 17.7% |

ITU-D Regional Presence



Americas

460 million subscriptions

48% penetration

28% CAGR (2010-2013)

Europe

422 million subscriptions

68% penetration

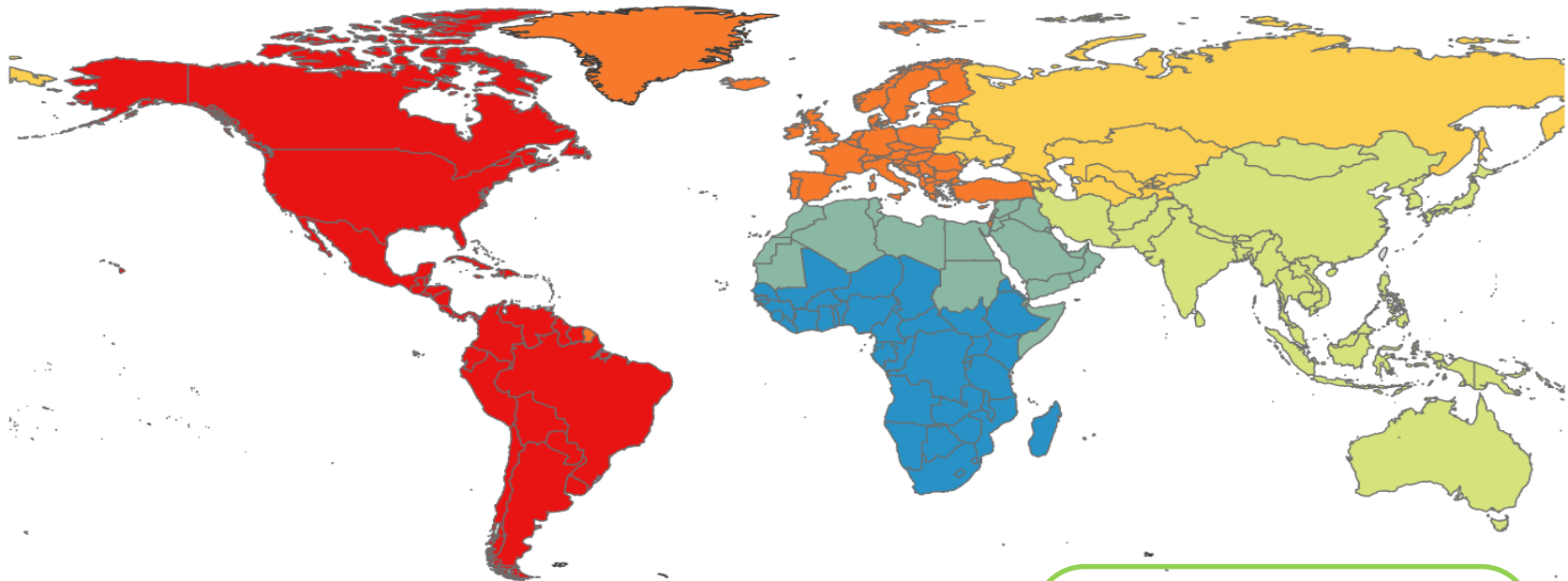
33% CAGR (2010-2013)

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

ITU-D Asia-Pacific Membership



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 LCDs, 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

ITU-D Study Groups (SG)



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 on 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
-

ITU-D SG-2 : Q 25/2 – Issues of Study



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

7. Provide information on IMT-Advanced systems based on the advice of Working Party 5D of ITU-R Study Group 5.

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

Report issued in October 2013

➤ **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

SM Related ASP Actions in 2013



| Activity | Details | IMT Relation |
|---|---|---|
| Terrestrial Map for Asia-Pacific | <ul style="list-style-type: none"> ➤ Launched ITU UNESCAP Interactive Map for Long Distance Optical Fiber Cable Systems (Terrestrial) in Asia-Pacific. | Backbone readiness |
| Strengthening Telecom / ICT Infrastructure | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ 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



| Item | Status |
|-------------------------------------|--|
| Spectrum Allocation Level | No issues prevail in ASP (ITU-R region 3), as mobile has been a co-primary allocation already for quite some time. |
| Spectrum Assignment Level | <ul style="list-style-type: none">➤ 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 MHz 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. |

SM Related ASP Actions in 2013



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
-

COEs in ASP



Spectrum Management
(Ministry of ICT, Iran)

Policy & Regulation
Pakistan Telecommunication
Authority

Technology Awareness
Pusan National University
Rep. of Korea

Business Management
Ministry of ICT, Thailand

Broadcasting
Asia Pacific Institute
for Broadcasting
Development

Rural ICT Development
Universiti Utara Malaysia

Related ASP COE Trainings in 2013



FACE TO FACE TRAININGS

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

Related ASP COE Trainings in 2013



ONLINE TRAININGS

| Event | Venues | Centres | Partners |
|--|----------------|----------------|----------|
| Universal Service Funds: Operation and Management | UUM, Malaysia | UUM, Malaysia | DBCDE |
| Spectrum Management and National Frequency Allocation Table | TCI, IRan | TCI, IRan | |
| Licensing and provision of services under CVAS regime with Pakistan experience | PTA, Pakistan | PTA, Pakistan | |
| Broadband QoS: Technical standards and measurements | PNU, Kore R.O. | PNU, Kore R.O. | PNU |

Others



1. Report on Question 18-1/2: Implementation aspects of IMT-2000 and information sharing on systems beyond IMT-2000 for developing countries (2010)
2. Handbook: Deployment of IMT-2000 Systems (2003 Edition)
3. Migration to IMT-2000 Systems - Supplement 1 (Revision 1) of the Handbook on Deployment of IMT-2000 Systems (2011 Edition)
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
6. Guidelines on the smooth transition of existing mobile networks to IMT-2000 for developing countries (GST) (2006 Edition)
7. Supplement to Guidelines on the Smooth Transition of existing mobile networks to IMT-2000 (GST) for developing countries (2010) SG2 Q.18-1/2, produced by ITU-D
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.....

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

ICT and
climate change



Digital
Cities



Smart
Grids



Security in
Cyberspace



Fully Networked
Car



e-commerce



e-education



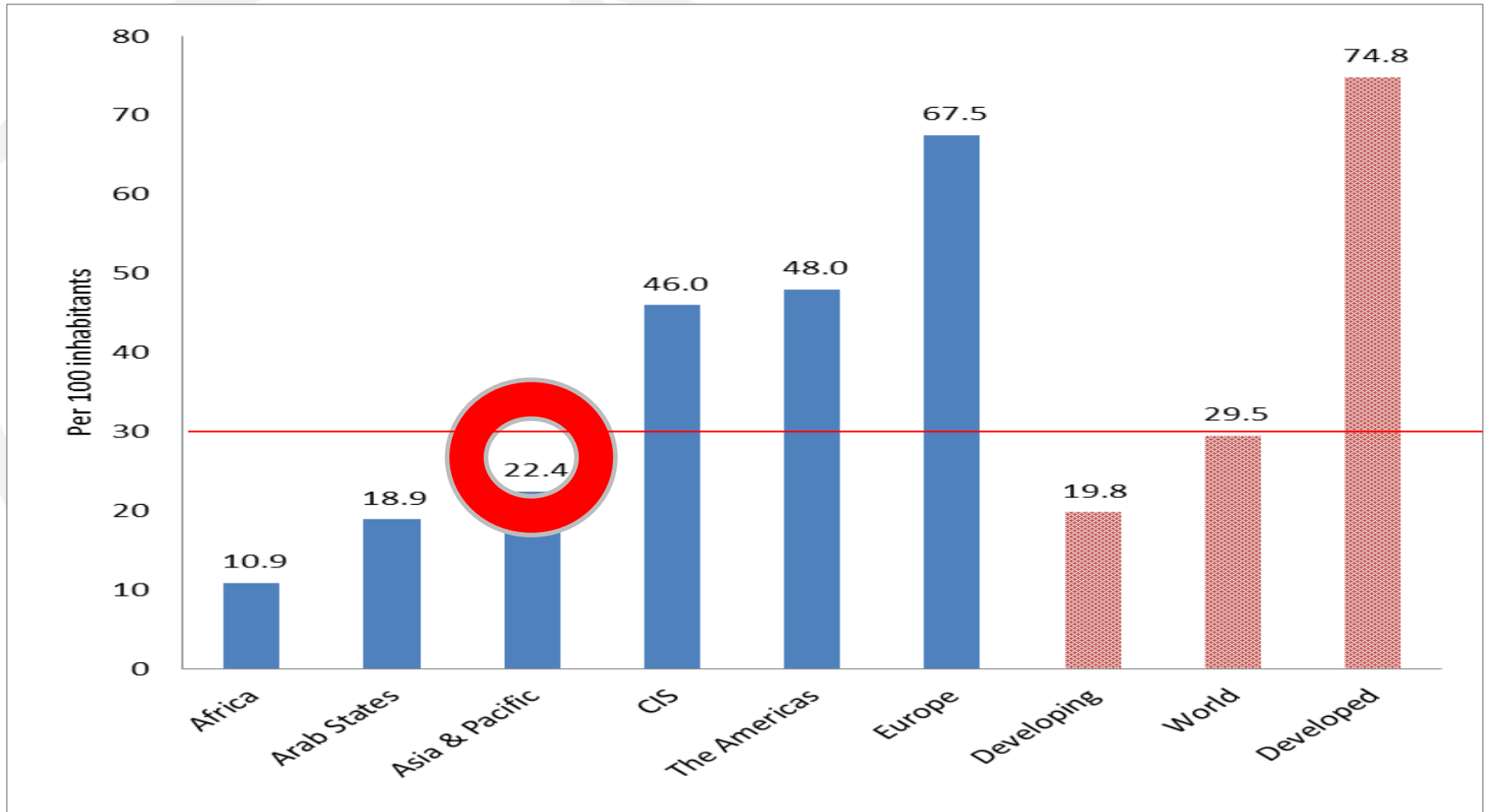
e-governance



e-health

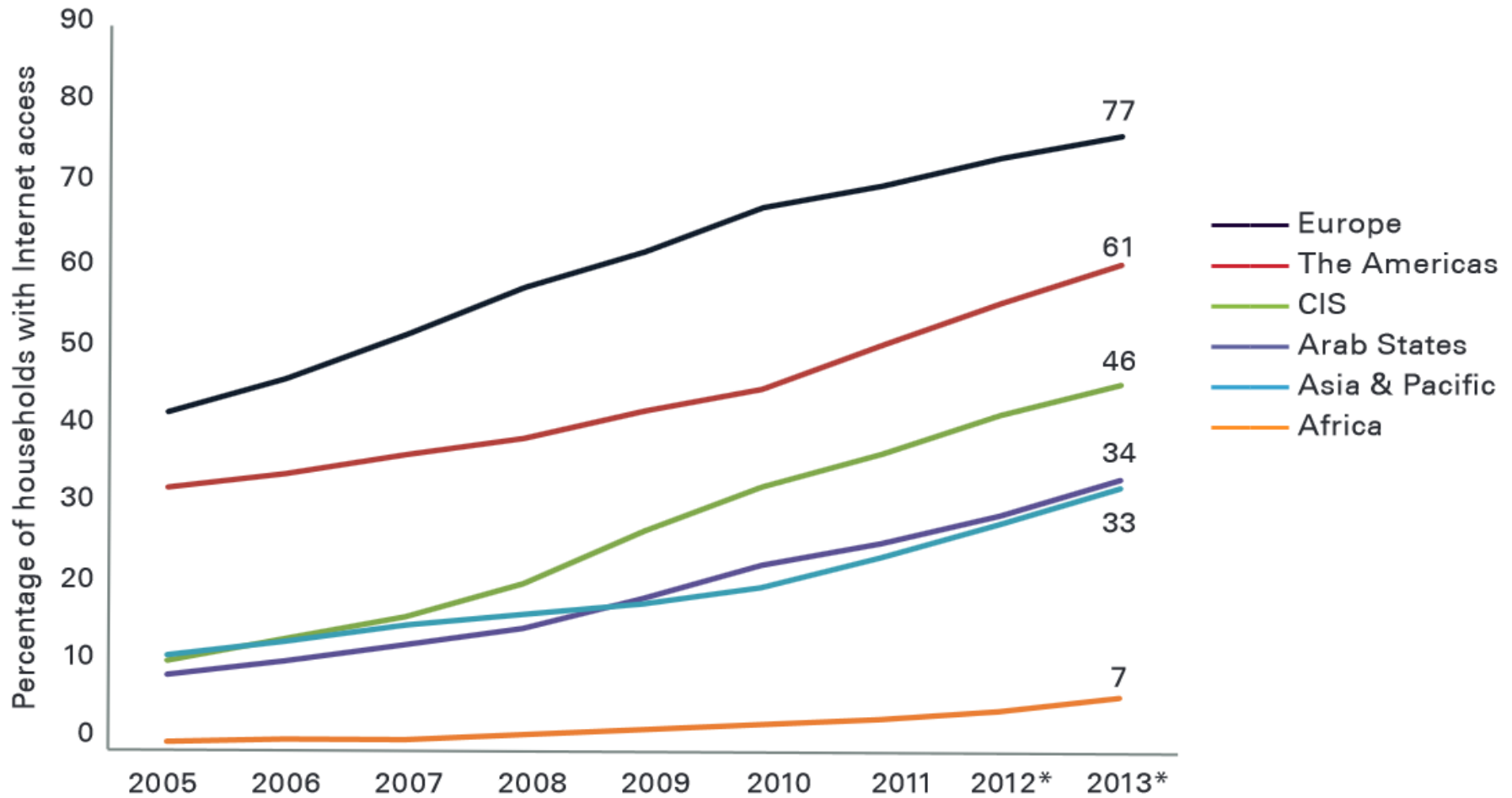
IMT as enabler for a converged information & Smart Society **Ways forward**

Asia-Pacific = DIGITAL GAP !



Active ICT/mobile-broadband subscriptions/penetration (2013)

Asia-Pacific = Market Opportunity



Source: ITU World Telecommunication /ICT Indicators database
Note: * Estimate

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](#))

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



Ministry of Internal Affairs & Communications, Japan



European Commission



Australian Government
Department of Communications



한국정보화진흥원



MSIP
Ministry of Science, ICT and Future Planning



National Broadcasting and Telecommunications Commission (NBTC), Thailand



UNESCO
United Nations Educational, Scientific and Cultural Organization



Servei de Telecomunicacions d'Andorra



UNODC
United Nations Office on Drugs and Crime



Telecom Regulatory Commission Sri Lanka



中华人民共和国工业和信息化部
Ministry of Industry and Information Technology of the People's Republic of China



Say it your way



UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific



Asian Development Bank



INTERNATIONAL MULTILATERAL PARTNERSHIP AGAINST CYBER THREATS

**And Many More from the Industry!!
Others are welcome to be our Partner!**



➤ **INFORMATION**

Project signing Multi-stakeholder Partnership session in Connect Asia Pacific Summit 2013 between ITU and Ministry of Science, ICT and Future Planning (MSIP), R.O.K

➤ **OBJECTIVE**

Assist developing countries in the Asia-Pacific (ASP) region to establish new spectrum management framework.

➤ **Scope**

- Assessment of the existing situation,
 - Advisory of development of relevant policies, legislations, regulations based on request and interest of the countries.
 - Build capacity and provide guidance during implementation of new frameworks
-

I T hank U “Committed to connecting the WORLD”

Regional Office for Asia and the Pacific

ITU Asia-Pacific Regional Seminar on IMT towards 2020 and Beyond

11 Feb 2014



WTDC-14