



ITU Regional Forum for Arab Region: IMT Systems Technology, Evolution and Implementation

Tunis, 7-9 May 2013

ITU-D Activities and Deliverables on IMT in support of Developing Countries

<http://www.itu.int/en/ITU-D/Technology/Pages/MobileCommunications.aspx>

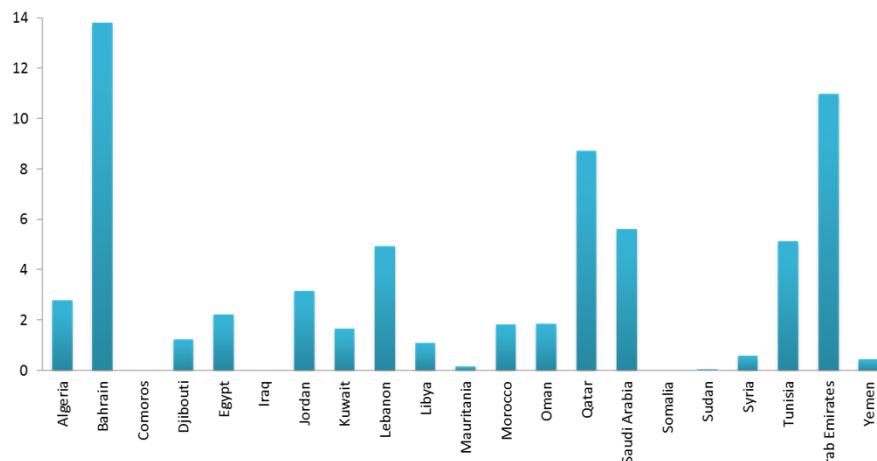
Riccardo Passerini

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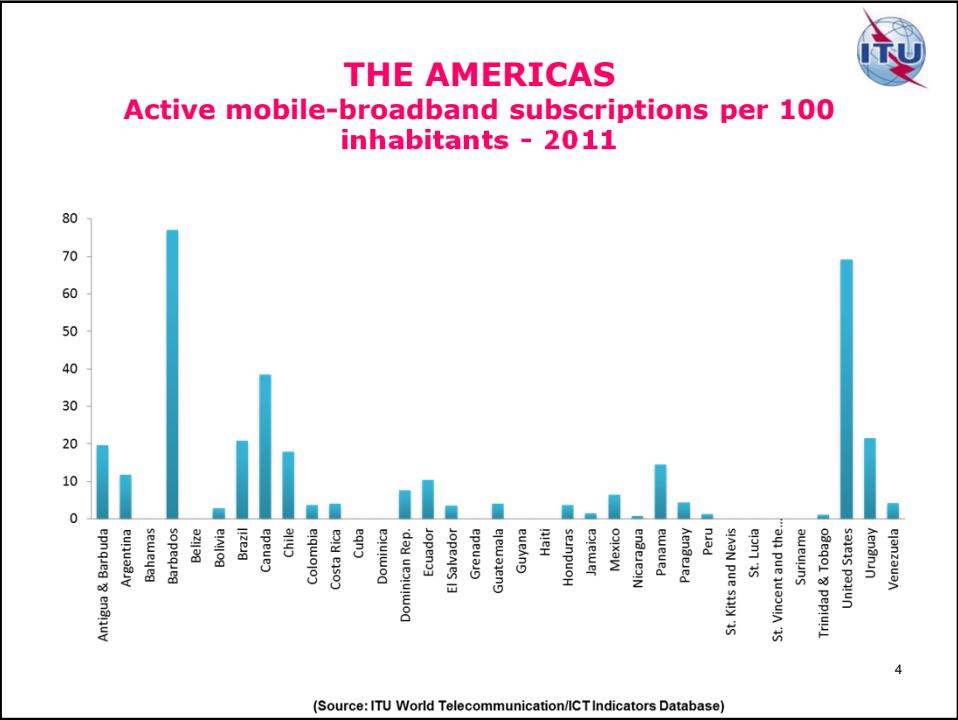
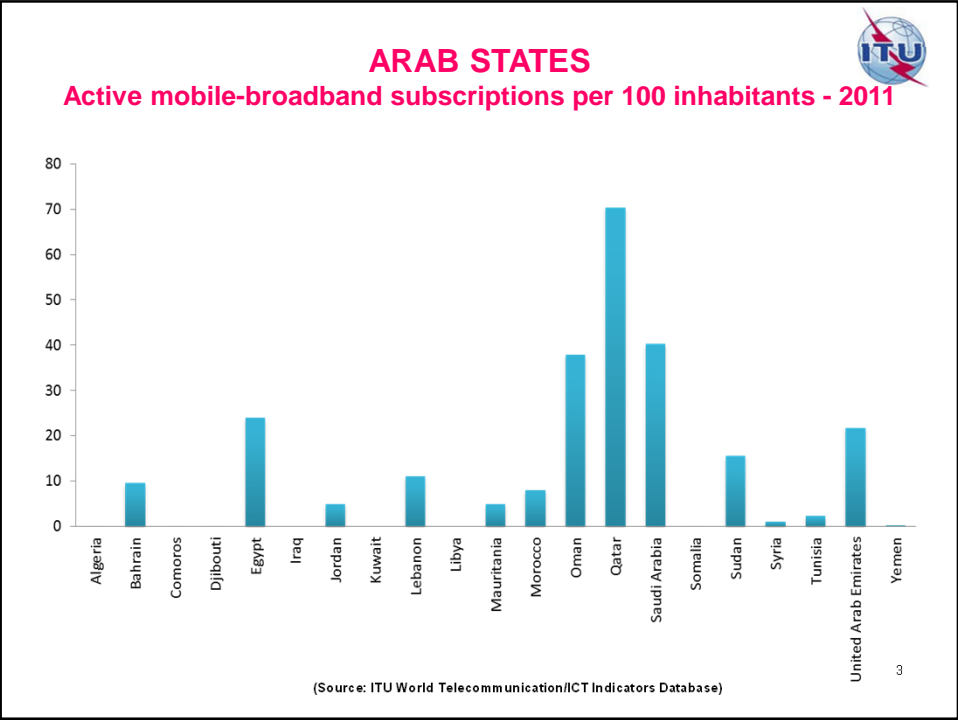
ARAB STATES

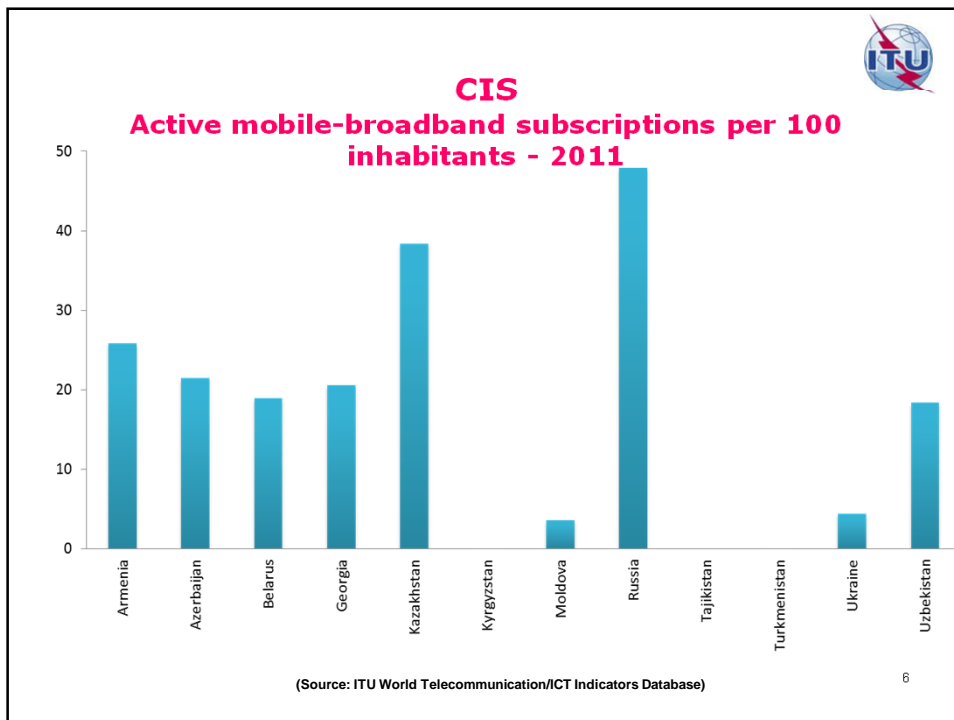
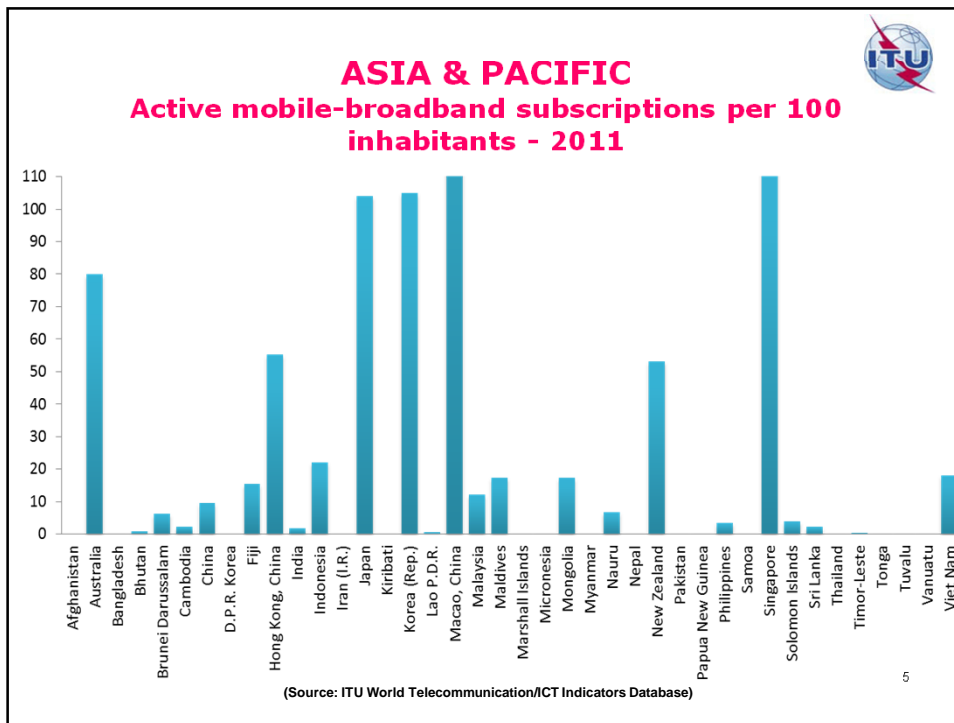
Fixed (wired)-broadband subscriptions per 100
inhabitants - 2011

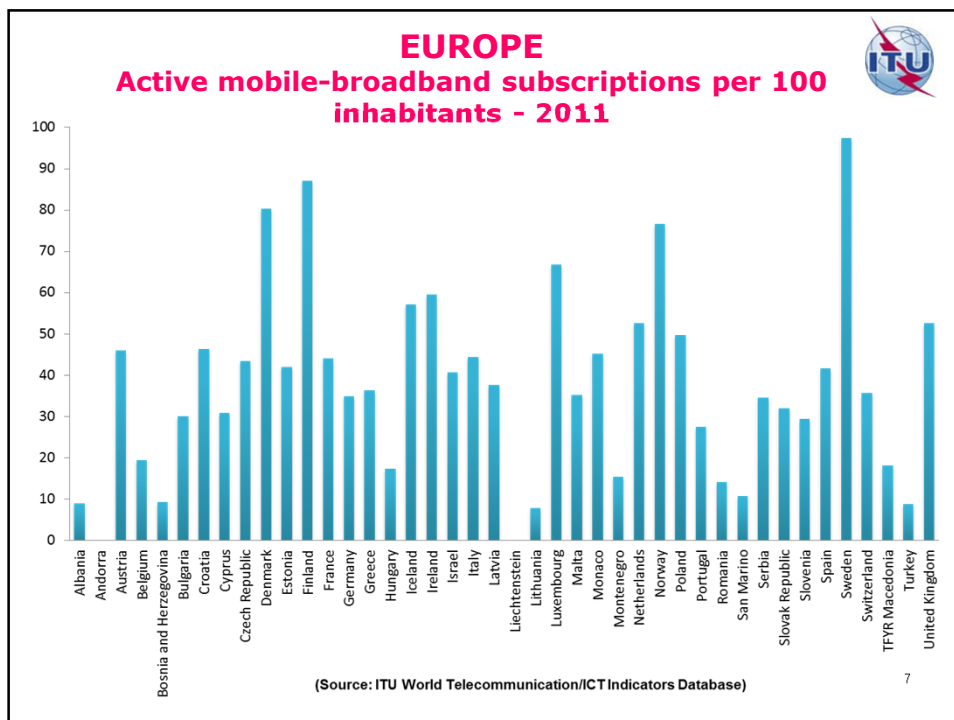


(Source: ITU World Telecommunication/ICT Indicators Database)

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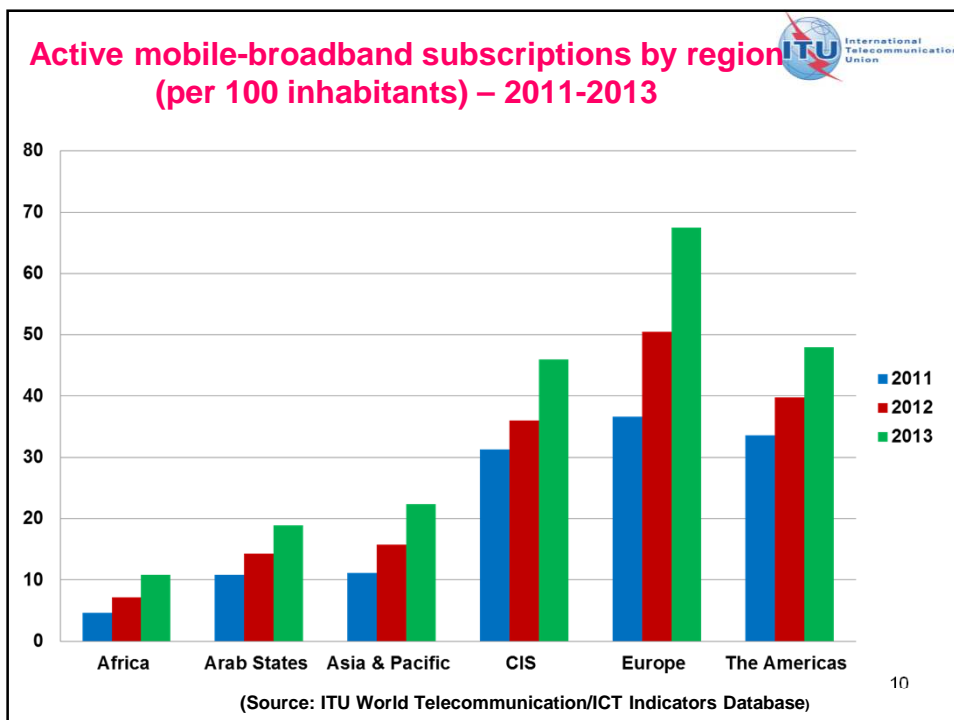
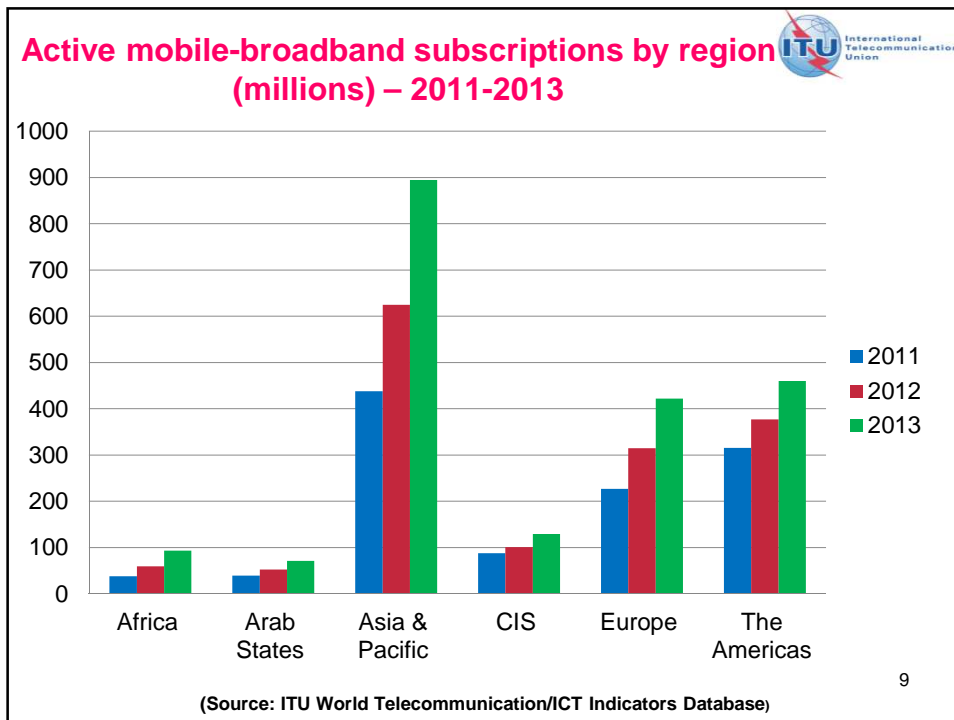


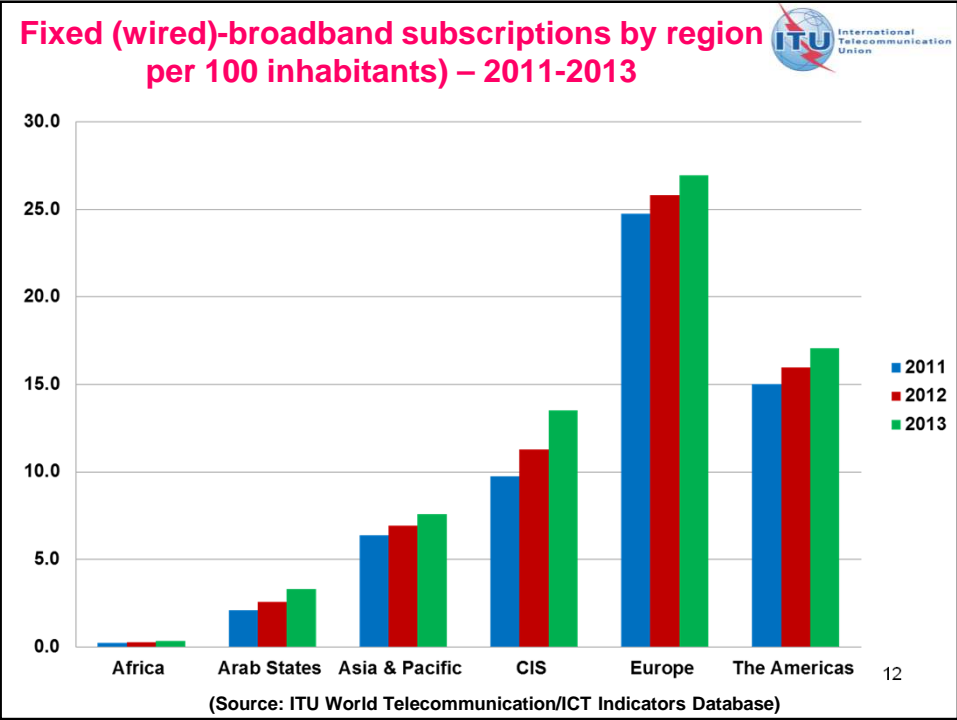
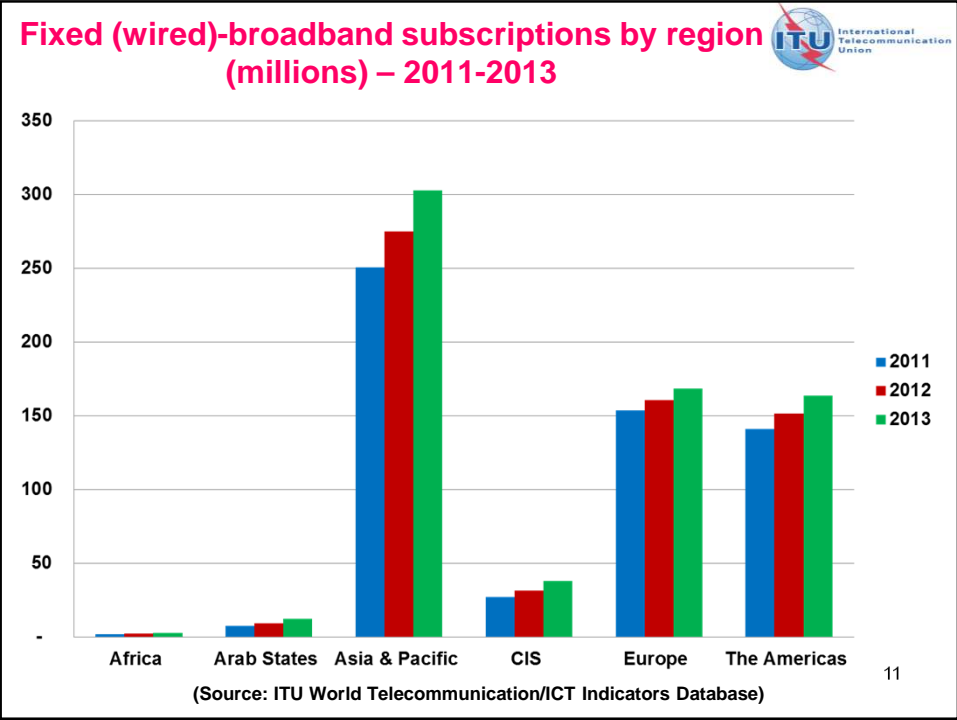


The growth of mobile cellular services

	(millions)				Per 100 inhabitants			
	2010	2011	2012*	2013*	2010	2011	2012*	2013*
Active mobile-broadband subscriptions								
Africa	14	38	60	93	1.8	4.7	7.1	10.9
Arab States	18	39	53	71	5.1	10.8	14.3	18.9
Asia & Pacific	286	438	625	895	7.4	11.2	15.8	22.4
CIS	62	87	101	129	22.3	31.3	36.0	46.0
Europe	176	227	314	422	28.7	36.6	50.5	67.5
The Americas	213	315	377	460	22.9	33.6	39.8	48.0
Fixed (wired)-broadband subscriptions								
Africa	1	2	2	3	0.2	0.2	0.3	0.3
Arab States	7	8	10	12	1.9	2.1	2.6	3.3
Asia & Pacific	214	251	275	303	5.5	6.4	6.9	7.6
CIS	23	27	32	38	8.2	9.8	11.3	13.5
Europe	145	154	161	168	23.6	24.8	25.8	27.0
The Americas	131	141	152	164	14.1	15.0	16.0	17.1

(Source: ITU World Telecommunication/ICT Indicators Database)





ITU-D Study Groups: The History



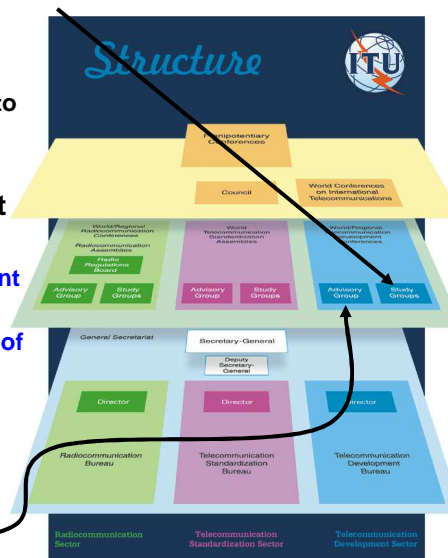
- The ITU-D Study Groups were established in order to deal with specific telecommunication questions of general interest to developing countries, according to [Resolution 2 of WTDC-94](#) that was held in Buenos Aires, 21-29 March 1994
- The terms of reference, the procedures to be applied by the Study Groups, the Questions under Study have been amended through the successive WTDCs: [WTDC-98 \(Valletta 23 March-1 April 1998\)](#), [WTDC-2002 \(Istanbul 18-27 March 2002\)](#), [WTDC-06 \(Doha 7-15 March 2006\)](#), [WTDC-10 \(Hyderabad 24 May-4 June 2010\)](#)

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ITU-D: Study Groups, TDAG



- ITU-D:
 - Purpose: devise innovative solutions to specific problem areas per WTDC
 - No technical standards
 - SGs focus: telecoms development strategies
 - SG 1 - Telecommunication development strategies and policies
 - SG 2 - Development and management of telecommunication services and networks and ICT applications
- http://www.itu.int/ITU-D/study_groups/index.html
- TDAG: Advisory Group



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ITU-D STUDY GROUPS



- **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. This work will include specific emphasis on telecommunication network security, mobile communication and communications for rural and remote areas, with particular focus and emphasis on applications supported by telecommunications

The implementation and technical application of information and communication technology, using studies by the others Sectors, taking into account the special requirements of the developing countries

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ITU-D Study Group 1

Telecommunication development strategies and policies

http://www.itu.int/ITU-D/study_groups/index.html

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SG1: QUESTIONS UNDER STUDY



- Q 7-3/1: Implementation of **universal access to broadband services**
- Q 10-3/1: The impact of the licensing and authorization regime and other relevant regulatory measures on competition in a converged telecommunication/ICT environment
- Q 12-3/1: **Tariff policies, tariff models** and methods of determining the costs of services on national telecommunication networks, including next-generation networks
- Q 18-2/1: Enforcing national policies and regulations on consumer protection notably in a converging environment
- Q 19-2/1: Implementation of IP telecommunication services in developing countries
- Q 20-1/1: Access to telecommunication/ICT services by persons with disabilities and with special needs
- Q 22-1/1: Securing information and communication networks: Best practices for developing a culture of cybersecurity
- Q 23/1: Strategies and policies concerning human exposure to electromagnetic fields
- Q 24/1: Strategies and policies for the proper disposal or reuse of telecommunication/ICT waste material

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ITU-D STUDY GROUP 2

***Development and management of
telecommunication services and networks
and ICT applications***

http://www.itu.int/ITU-D/study_groups/index.html

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SG2: QUESTIONS UNDER STUDY

- **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**
- **Resolution 9 (Rev. Hyderabad , 2010):** Participation of countries, particularly developing countries, in **spectrum management**¹⁹



Reports from the former Study Period 2006-2010

- **SG2:**
 - *Question 18-1/2: Implementation aspects of IMT-2000 and information-sharing on systems beyond IMT-2000 for developing countries*

18-1/2 Implementation aspects of IMT-2000 and information sharing on systems beyond IMT-2000 for developing countries



ISSUES FOR STUDY

- a) **Identify ways of implementing IMT-2000, using satellites, as appropriate, for some countries and regions,**
- b) **Identify the key elements to be studied in order to provide efficient and cost effective implementation of IMT-2000 and its evolution in developing countries.**
- c) **Propose useful content for the development of training modules by ITU-D for users of IMT-2000 services and applications,**
- d) **Provide information on the specific impact of the implementation of IMT-2000 on women, youth, indigenous people and people with disabilities,**
- e) **Provide information on systems beyond IMT-2000.**

OUTPUT

- **Guidelines on the smooth transition of existing mobile networks to IMT-2000 for developing countries (GST)**
- **Mid-Term Guidelines (MTG) on the smooth transition of existing mobile networks to IMT 2000 for developing countries**
- **Supplement to the Guidelines on the Smooth Transition of Existing Mobile Networks to IMT-2000 for Developing Countries (GST)**

FINAL REPORT OF Q18 1/2 (INCLUDING GUIDELINES WHERE PERTINENT)



This Final Report **provides facts about the various mobile systems and technologies and it is intended for use of telecom operators, policy-makers and regulators to facilitate their understanding of implementation aspects of IMT-2000 and systems beyond IMT-2000.** This Report intends to present an objective and neutral view of the issues to be addressed regarding implementation aspects and has been prepared in response to the specific mandate of Q.18-1/2 from the WTDC.

It contains seven chapters as follow:

1. Definitions
2. Abbreviations / Glossary
3. Introduction
4. **Ways of implementing IMT-2000, using satellites, as appropriate, for some countries and regions, taking into consideration ITU-R studies on integrated systems of IMT-2000. (Based on Countries experiences and Contributions)**
5. **Key elements to be studied in order to provide efficient and cost-effective implementation of IMT-2000 and its evolution in developing countries**
 - a. key elements for regulators, **including licencing aspects,** on implementing IMT-2000 networks, services and applications (Based preferably on Developed and Developing Countries contributions)
 - b. **IMT-2000 services and applications,** opportunities for developing countries
 - c. **Economics of implementation of IMT-2000**
 - i. Market analysis
 - ii. Economies of scale (including terminals)
 - iii. Business plans and services
6. **Information on the specific impact of the implementation of IMT-2000 on women, youth, indigenous people and people with disabilities**
6. bis. **Information on the specific impact of the implementation of IMT-2000 on environmental issues**
7. **Information on IMT-advanced systems**
8. **Countries' experiences**

Supplement to the Guidelines on the Smooth Transition of Existing Mobile Networks to IMT-2000 for Developing Countries (GST)

It contains eleven chapters as follow:

1. Introduction [Note: include Res. ITU-R 56]
2. Update on "From existing mobile networks to IMT-2000"
3. Update of IMT-2000 Terrestrial Technologies
4. Information on IMT-2000 Satellite Technologies
5. Update to Standards Development Organizations dealing with IMT-2000
6. IMT-2000 Service Offerings
7. Spectrum Requirements
 - Update on Spectrum Identification from WRC-07
 - Update on Frequency Arrangements
8. Update on "Interoperability with existing networks and among IMT-2000 technologies"
9. Update on "Transition Paths"
10. Miscellaneous Issues
 - a) Satellite Backhaul
 - b) Update of Definitions and Abbreviations and Glossary based on content
 - c) Update Annex 1 to include case studies for IP OFDMA TDD WMAN
11. Introduction to IMT-Advanced

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New ITU-D Study Period 2010-2014

- **Q.25/2: Access technology for broadband telecommunications including IMT, for developing countries** (merging former Question 18-1/2 Implementation aspects of IMT-2000 and information-sharing on systems beyond IMT-2000 for developing countries and Question 20-2/2 Examination of access technologies for broadband telecommunications)

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Q.25/2: Access technology for broadband telecommunications including IMT, for developing countries



ISSUES FOR STUDY

- a) Examine **wired and wireless broadband access technologies** and their future trends;
- b) Identify methodologies for **migration planning and implementation of broadband wired and wireless technologies**, taking into account existing networks, as appropriate;
- c) Consider trends of broadband access technologies; **deployments, services offered and regulatory considerations**;
- d) Continue to identify ways and means of implementing **IMT, using terrestrial links and satellites**;
- e) 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));
- f) Provide information on the specific **impact of the implementation of broadband wired and wireless means, including IMT**, on underserved populations, including persons with disabilities;
- g) Provide information on **IMT-Advanced** systems based on the advice of Working Party 5D of ITU-R Study Group 5.

OUTPUT

- a) **Yearly progress report on the above study items including a matrix of different broadband access technologies**, both wired and wireless, terrestrial and satellite, with yearly updates;
 - b) **Analysis of the factors influencing the effective deployment of broadband access core technologies**;
 - c) **A set of guidelines for broadband access deployment** that could be delivered *inter alia* through training seminars in accordance with the BDT Programme 4;
 - d) **A handbook on IMT deployment in developing countries to replace the Handbook on Deployment of IMT-2000 systems (2003)**. This handbook will be the result of study group collaboration between ITU-R Study Groups 4 and 5, ITU-T Study Group 13 and the Rapporteur's Group dealing with this Question as part of ITU-D Study Group 2;
 - e) **Draft Recommendation(s)**, as appropriate and if justified.
- **Last Rapporteur's Group Meeting:** [4 April 2013, Switzerland \(Geneva\)](#).
- **Work program and Status Report for Question 25/2**

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Question 25/2: Access technology for broadband telecommunications including IMT, for developing countries

Revised working document towards the Report of Question 25/2:
[RGQ25/2/37\(Rev.1\)-E Version 5 April 2013](#)

"The number of mobile broadband subscribers around the world surpassed that of fixed broadband at the end of 2010. The extraordinary growth rate in mobile broadband adoption means that within four years, mobile broadband will compose about 80 percent of total broadband subscriptions and become the dominant means of Internet connectivity. In emerging markets, mobile broadband is expected to increase from 37 to 79 percent of all broadband subscriptions between 2010 and 2015".

The Final report to be approved in September 2013 will provide the developing countries with an understanding of the different technologies available for broadband access using both wired and wireless technologies for terrestrial and satellite telecommunications, **including International Mobile Telecommunications (IMT)**. This Report covers technical issues involved in deploying broadband access technologies by identifying the factors influencing the effective deployment of such technologies, as well as their applications. This Report aims to examine future trends of wired and wireless broadband access technologies, identify methodologies for migration planning and implementation, consider trends including deployments, services offered and regulatory considerations, identify key elements to be studied in order to facilitate the deployment of systems integrating satellite and terrestrial components of IMT, and provide information on implementation impact, and provide information on IMT-Advanced.

Q.25/2 Final Report (September 2013) on Access technology for broadband telecommunications including IMT, for developing countries

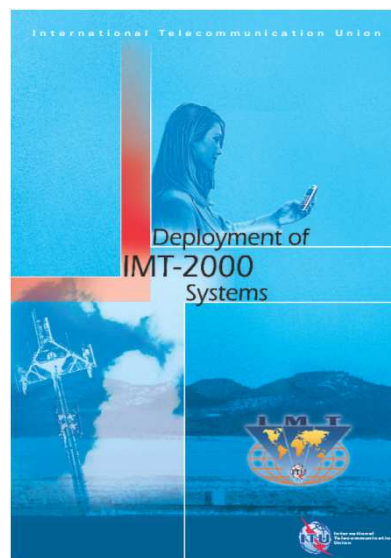
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Handbook: Deployment of IMT-2000 Systems

Edition 2003

This handbook addresses a variety of issues related to the deployment of IMT-2000 systems, to inform and guide key decision-makers on critical aspects concerning third-generation mobile communication systems, to facilitate decisions on the selection of options and strategies for the introduction of their IMT-2000 networks.

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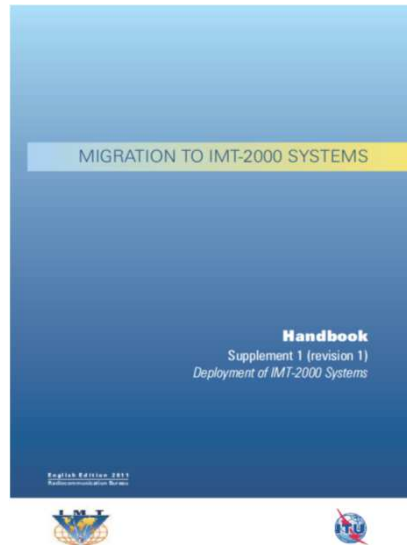


Migration to IMT-2000 Systems - Supplement 1 (Revision 1) of the Handbook on Deployment of IMT-2000 Systems

[Supplement 1 \(Revision 1\),
Edition of 2011](#)

This revised Supplement expands on the first edition of the ITU Handbook - Deployment of IMT- 2000 Systems and updates much of the work that has occurred since the release of the Handbook. It addresses the subject of evolution and migration from current mobile systems towards IMT-2000. ITU-R has developed this work in response to ongoing liaison and interaction with the ITU-D and ITU-T Sectors and sees this material as the natural extension of the information presented in the Handbook.

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Mid-Term Guidelines (MTG) on the smooth transition of existing mobile networks to IMT 2000 for developing countries

[Edition 2005](#)

The purpose of the MTG is to provide telecommunication operators, policy-makers and regulators from developing countries with an understanding of viable transition paths – including economic aspects – to change smoothly their pre-IMT-2000 networks towards IMT-2000. The reflection induced by this MTG should help to perceive the pros and cons of the possible solutions towards IMT-2000 and to take adequate decisions. With the upsurge of global wireless personal communications, these guidelines represent a complement to the ITU Handbook on the Deployment of IMT-2000 Systems where more detailed technical information can be found.

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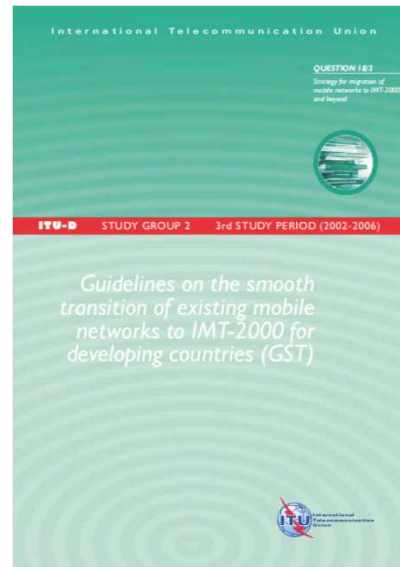


Guidelines on the smooth transition of existing mobile networks to IMT-2000 for developing countries (GST)

Edition 2006

To streamline the MTG to a concise Guidelines format was in itself another challenge. These Guidelines for the Smooth Transition (GST) from the Existing Mobile Networks to IMT-2000 have been conceived to provide essential information for those who are concerned with this transition. The reader will find three threads running through the Guidelines: 1) development of policies for the transition of existing networks to IMT-2000, 2) possible transition paths, and 3) economic aspects of the transition to IMT 2000. They also provide references to related literature and ITU Recommendations

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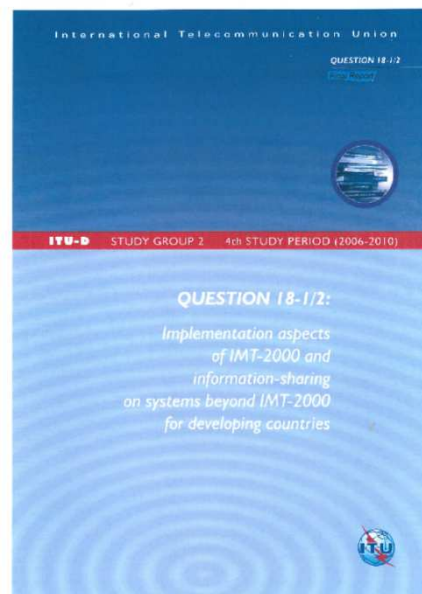


Question 18-1/2 Implementation aspects of IMT-2000 and information-sharing on systems beyond IMT-2000 for developing countries

Final Report (2010)

This Final Report address those aspects not been completed in the MTG and GST and to incorporate new information on IMT-2000 and systems beyond IMT-2000. This Final Report is intended for use of telecom operators, policy-makers and regulators to facilitate their understanding of implementation aspects of IMT-2000 and systems beyond IMT-2000. This document provides facts about the various mobile systems and technologies that might help the reader in implementing IMT-2000 and systems beyond IMT-2000.

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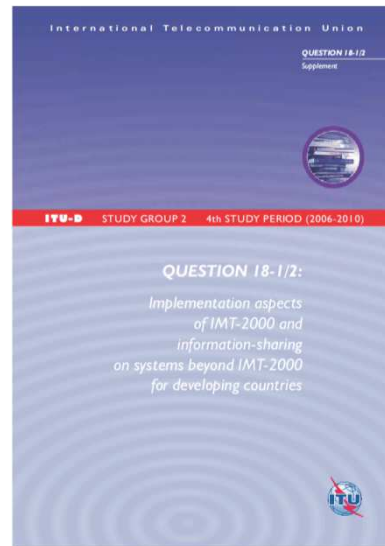


Supplement to Guidelines on the Smooth Transition of existing mobile networks to IMT-2000 (GST) for developing countries

[Edition 2010](#)

The document contains a Supplement to Guidelines on the Smooth Transition of existing mobile networks to IMT-2000 (GST) for developing countries.

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New Handbook: Global Trends in IMT

Anticipated: February 2014

Working Party 5D (SWG IMT Handbook):
[Working document towards a Handbook on Global Trends in IMT](#)

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Detailed Workplan

THANK YOU FOR YOUR ATTENTION!

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