

# 11<sup>th</sup> World Telecommunication/ICT Indicators Symposium (WTIS-13)

Mexico City, México, 4-6 December 2013



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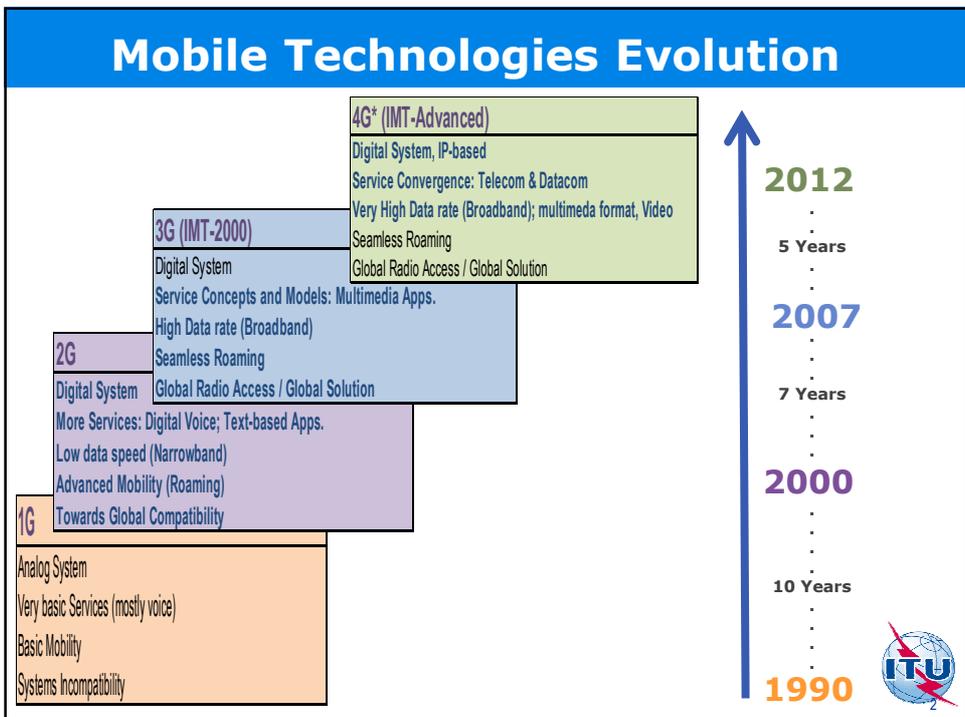
**SOURCE:** ITU

**TITLE:** Emerging issues in measuring telecommunication infrastructure

## Emerging issues in measuring telecommunication infrastructure

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## IMT Concept\*

*From: Recommendation ITU-R M.1224-1*

International Mobile Telecommunications (IMT) systems are mobile systems that provide access to a wide range of telecommunication services including advanced mobile services, supported by mobile and fixed networks, which are increasingly packet-based

IMT systems support low to high mobility applications and a wide range of data rates in accordance with user and service demands in multiple user environments. IMT also has capabilities for high quality multimedia applications within a wide range of services and platforms, providing a significant improvement in performance and quality of service.

\* IMT encompasses both IMT-2000 & IMT-Advanced



## IMT Key Features

*From: Recommendation ITU-R M.1224-1*

1. A high degree of commonality of functionality worldwide while retaining the flexibility to support a wide range of services and applications in a cost efficient manner;
2. Compatibility of services within IMT and with fixed networks;
3. Capability of interworking with other radio access systems;
4. High quality mobile services;
5. User equipment suitable for worldwide use;
6. User-friendly applications, services and equipment;
7. Worldwide roaming capability;
8. Enhanced peak data rates to support advanced services and applications.

These features enable IMT to address evolving user needs and the capabilities of IMT systems are being continuously enhanced in line with user trends and technology developments



## IMT vs. xG

### IMT:

Devised within ITU through the work of *ITU Study Groups* (worldwide participation, amongst all stakeholders: regulators, operators, manufactures, universities and R&D Centers, Regional Organizations, etc.)

Unique set of Definitions and Specifications (through ITU-R publications)

### xG:

Devised by operators and mobile community.

There is no unique set of definitions and specifications.

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**IMT-2000 and 3G:** there was consensus about matching both these concepts and associated specifications.

**IMT-Advanced and 4G:** no consensus has been yet reached:

- Some Regulators demand that a 4G brand must comply with IMT-Advanced specifications.
- Other Regulators recognize 4G as those technologies providing an enhanced performance in comparison to IMT-2000 Specifications.



## IMT Technical Indicators

INDICATORS	NATIONAL DEPLOYMET OF MOBILE BROADBAND (IMT)
USERS	Subscriptions/Subscribers of broadband mobile (IMT Systems)
BANDS	IMT Bands (decided by WRCs) being brought into service for mobile broadband (IMT Systems)

This technical indicators might be joined to other info (economic, social, etc.) to merge new key indicators (e.g. Broadband price Basket, etc.)

Also important to review spectrum authorized for particular license-exempted devices (General Use License), as: Wi-Fi



## IMT INDICATORS: Info to Collect

		Implemented or Planned? (yes/ no)	Commercially available (yes/no)	Subscribers/ subscriptions	Frequency Bands (and Bandwidth)
<b>From Rec. ITU-R M.1457-11 (02/2013) (IMT-2000; also known as 3G)</b>					
1- IMT-2000 CDMA Direct Spread	W-CDMA UMTS UTRA FDD, E-UTRA FDD				
2- IMT-2000 CDMA Multi-Carrier	CDMA 2000 1xRTT, EV-DO, EV-DV, UMB				
3- IMT-2000 CDMA TDD	TD-CDMA UMTS UTRA TDD, E-UTRA TDD				
4- IMT-2000 TDMA Single-Carrier	UWC 136 (ATIS/TIA); EDGE				
5- IMT-2000 FDMA/TDMA	DECT				
6- IMT-2000 OFDMA TDD WMAN	WiMAX IEEE Standard 802.16e				
<b>From Rec. ITU-R M.2012 (01/2012) IMT-Advanced</b>					
1- LTE-Advanced	LTE Release 10 and Beyond				
2- WirelessMAN-Advanced	IEEE Standard 802.16m				
<b>Other (please specify)</b>					
<b>Mobile Broadband (IMT) Licensing</b>					
Band (MHz)	Licensed BW (MHz)	coverage obligations included in the licence? (geographic/ population both)	Price paid for the licence*	year of licensing	License term (years)
450-470					
698-960					
1710-2025					
2110-2200					
2300-2400					
2500-2690					
3400-3600					
<b>License-Exempted (General use License)</b>					
Band (GHz)	Frequency Range (Fmin, Fmax), GHz	Year			
2.4 - 2.5					
5.1 - 5.9					
Other Bands (Please specify)					

\* Local Currency excluding common sector annual fees as: USO, Spectrum, Licensing, etc.



ITU Radio Regulations and ITU-R Rec. are available free of charge for general public:

[http://www.itu.int/en/ITU-R/Documents/BD\\_Flyer\\_A4\\_E.pdf](http://www.itu.int/en/ITU-R/Documents/BD_Flyer_A4_E.pdf)



**THANKS**

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