




ASP

EUR

ITU Cross Regional Seminar on
 Broadband Access (Fixed, Wireless
 including Mobile) for CIS,
 ASP and EUR
 Chişinău, Moldova,
 4 – 6 October 2011

IMT-Advanced – Trends, Status and Results of ITU-R studies




Presenter:
David Botha
Prepared by:
Colin Langtry
Counsellors,
BR/SGD




International
Telecommunication
Union

Committed to connecting the world



Committed to Connecting the World

Helping the world communicate



- ITU Coordinated development of a global broadband multimedia international mobile telecommunication (IMT) system - 25 years.
- IMT-2000 (3G)- implementation of first family of standards derived from IMT.
- Today 3G is widely deployed and being rapidly enhanced.
- “IMT-Advanced” - a global platform to build next generations of mobile services :-
 - fast data access, unified messaging and broadband multimedia - exciting new interactive services and applications.

..... Chisinau, 4-6 October 2011



What is IMT-Advanced?

IMT-Advanced systems: mobile systems with new capabilities that go beyond IMT-2000 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.
- Support low to high mobility applications and a wide range of data rates in accordance with user and service demands in multiple user environments.
- Provide for high quality multimedia applications within a wide range of services and platforms, providing a significant improvement in performance and quality of service.



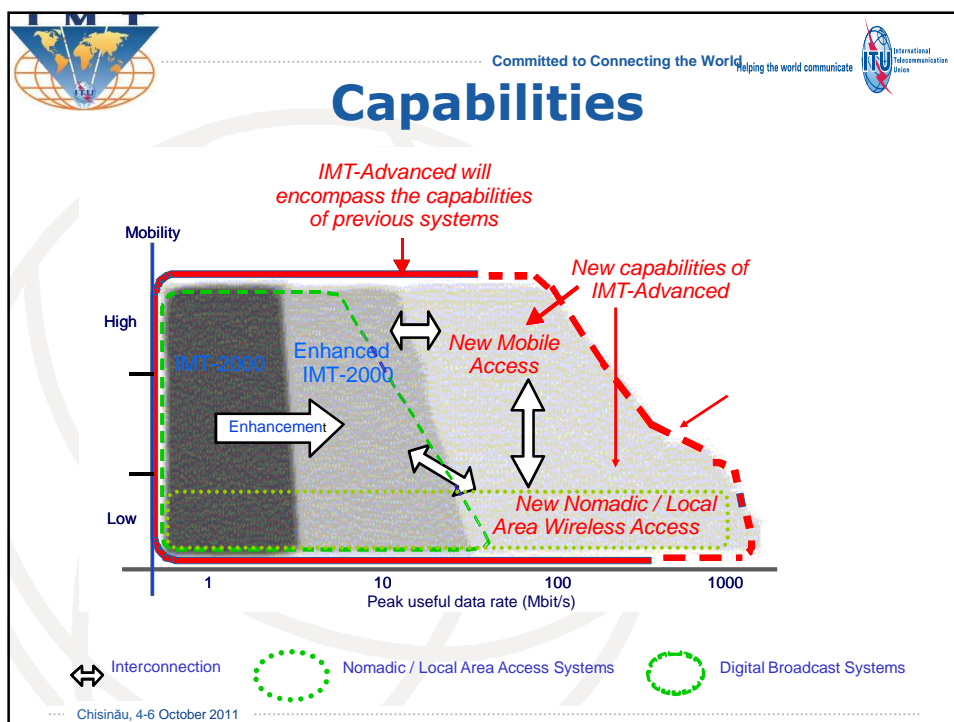
Key features


- high degree of commonality of functionality worldwide but retaining flexibility to support a wide range of services and applications in a cost efficient manner;
- compatibility of services within IMT and with fixed networks;
- capability of interworking with other radio access systems;
- high quality mobile services;
- user equipment suitable for worldwide use;
- user-friendly applications, services and equipment;
- worldwide roaming capability; and,
- enhanced peak data rates to support advanced services and applications (research target: 100 Mbit/s for high and 1 Gbit/s for low mobility).

Committed to Connecting the World
Helping the world communicate

IMT-Advanced improvements

- **increased spectrum efficiency** - more users at higher data rates per radio channel
- **fully packet-based architecture** - reduced costs, comprehensive support for broadband wireless data
- **lower latency** - more responsive Internet and multimedia applications
- **improved radio resource management and control** - enhanced quality of service.
- **new capabilities for the physical layer of the radio interface** - including wideband radio channels, MIMO smart antennas and flexible deployment options.




Committed to Connecting the World Helping the world communicate 

Resolution ITU-R 57

- The work on IMT-Advanced is guided by Resolution ITU-R 57, which was approved by the Radiocommunication Assembly in 2007.
- Resolution ITU-R 57 on the “Principles for the process of development of IMT-Advanced” outlines the essential criteria and principles which will be used in the process of developing the Recommendations and Reports for IMT-Advanced, including Recommendation(s) for the radio interface specifications.

Chisinau, 4-6 October 2011

Committed to Connecting the World Helping the world communicate 

The IMT-Advanced Process

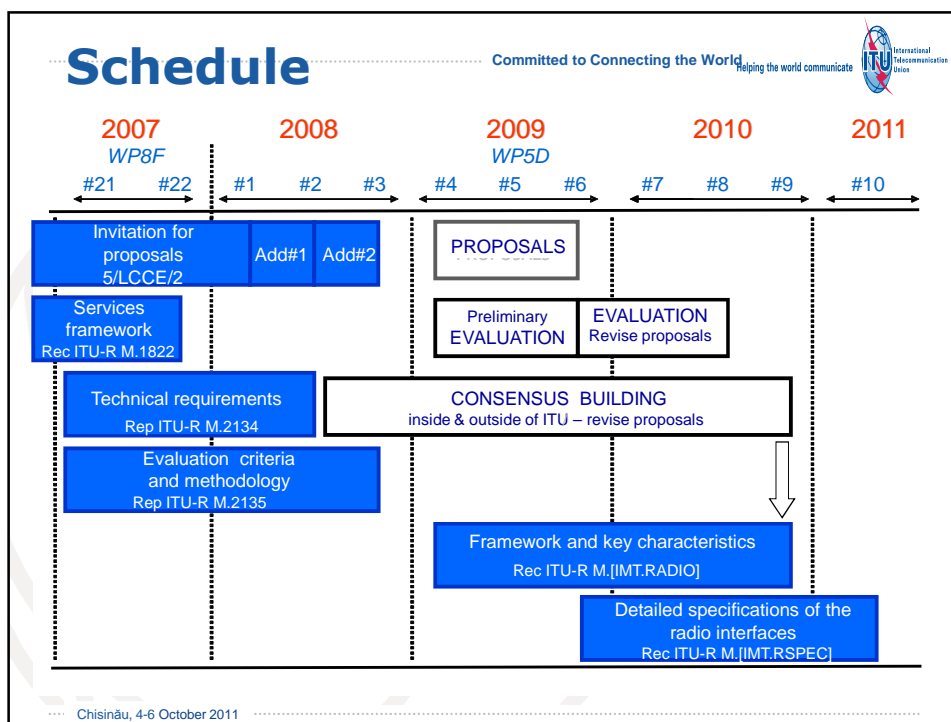
	✓	✓	✓	✓	✓
	Vision Rec ITU-R M.1645	Market/ Services view Technology view Spectrum view Name	Spectrum identification Process definition Open invitation for proposals	Proposals, Evaluation, & Consensus Building	Radio Framework & Core Specifications
	2002-2003	2005-2007	2006-2008	2008-2010	2010-2011

*Q. 229-2/5
2000-2003-2008*


Setting the stage for the future:
Vision, spectrum, and technology views

Defining the
technology

Chisinau, 4-6 October 2011



Decision

Committed to Connecting the World Helping the world communicate 

- **LTE-Advanced** and **WirelessMAN-Advanced** technologies successfully met all ITU-R criteria for the first release of IMT-Advanced.
- **LTE-Advanced** : developed by 3GPP as LTE Release 10 and Beyond.
- **WirelessMAN-Advanced**: developed by IEEE as the WirelessMAN-Advanced specification incorporated in IEEE Std 802.16 as of IEEE Std 802.16m.
- Rep. ITU-R M.2198:- Full details of submissions and evaluation process
- Rec. ITU-R M.[RSPEC] (to be finalised in 2011) contains detailed technical specifications of these radio interfaces.

Chisinau, 4-6 October 2011

Committed to Connecting the World
Helping the world communicate

<http://www.itu.int/ITU-R/go/rsg5-imt-advanced>

Radiocommunication Sector (ITU-R) - IMT-Advanced submission and evaluation process - Microsoft Internet Explorer

Home : ITU-R : Study-Groups : IMT-Advanced submission and evaluation process

Radiocommunication Sector (ITU-R) | ITU Sectors | Newsroom | Events | Publications | Statistics | About ITU

IMT-Advanced submission and evaluation process

Introduction

ITU-R has commenced the process of developing ITU-R Recommendations for the terrestrial components of the IMT-Advanced radio interface(s). This work is guided by Resolution ITU-R 57. This web page has been established to facilitate the development of proposals for the terrestrial components of the radio interface(s) for IMT-Advanced and their subsequent evaluation.

Background

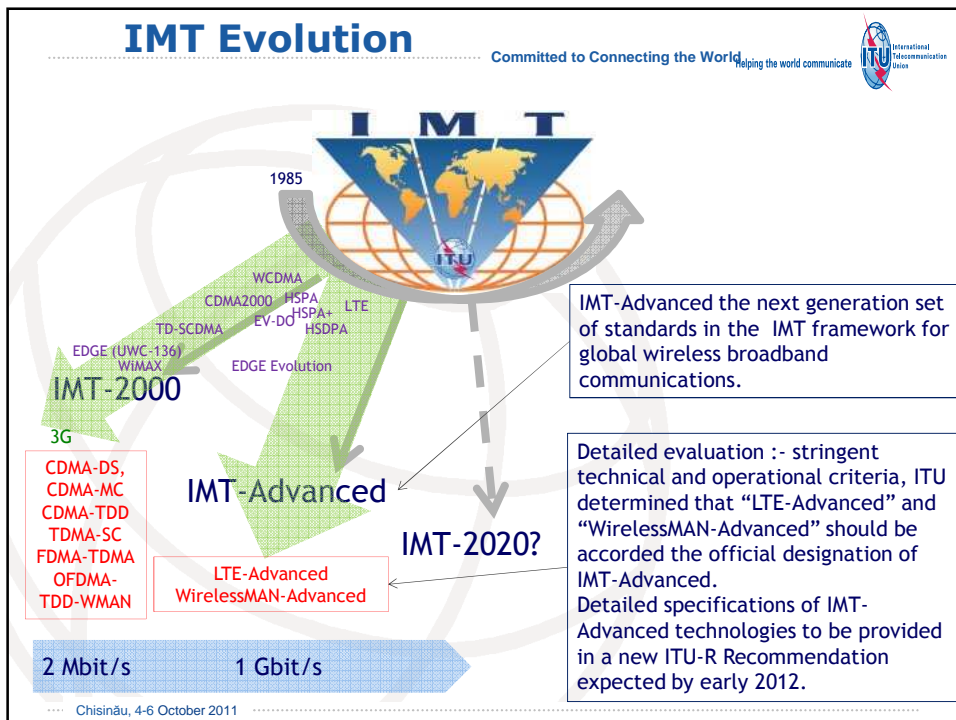
- ▶ Background on IMT-Advanced - (Doc. IMT-ADV/1)

Invitation


- ▶ Invitation for submission of proposals for candidate radio interface technologies for the terrestrial components of the radio interface(s) for IMT-Advanced and invitation to participate in their subsequent evaluation - (Circular Letter 5/LCCE/2)
 - Addendum 1 - to Circular Letter 5/LCCE/2
 - Addendum 2 - to Circular Letter 5/LCCE/2

Requirements, evaluation criteria and submission templates for the development of IMT-Advanced

Requirements, evaluation criteria and submission templates for the development of IMT-Advanced
Report ITU-R M.2133



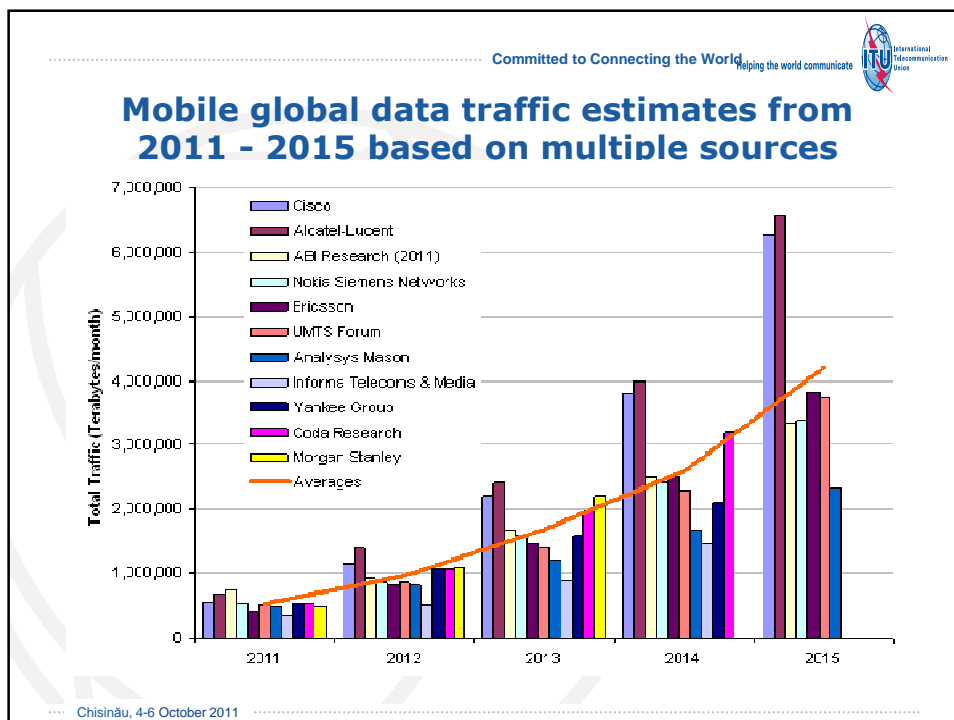
Committed to Connecting the World
Helping the world communicate



Future spectrum needs

- Voice traffic on mobile networks grows at a relatively constant rate;
- Volume of data traffic - very rapid increase;
- Advanced multimedia devices and applications accelerates of data traffic;
- ITU studies indicate that the overall amount of spectrum for IMT **does not meet** the amount of spectrum estimated as required by 2020;
- No harmonization of the frequency bands on a global basis in some cases.

..... Chisinău, 4-6 October 2011



Committed to Connecting the World
Helping the world communicate



Spectrum identified for IMT

Frequency bands identified for IMT in the Radio Regulations (RR):

Band (MHz)	RR Footnotes identifying the band for IMT
450-470	5.286AA
698-960	5.313A, 5.317A
1 710-2 025	5.384A, 5.388
2 110-2 200	5.388
2 300-2 400	5.384A
2 500-2 690	5.384A
3 400-3 600	5.430A, 5.432A, 5.432B, 5.433A

Chisinau, 4-6 October 2011

ERROR: ioerror
OFFENDING COMMAND: image

STACK: