IMT and IMS Technologies In Developing Countries
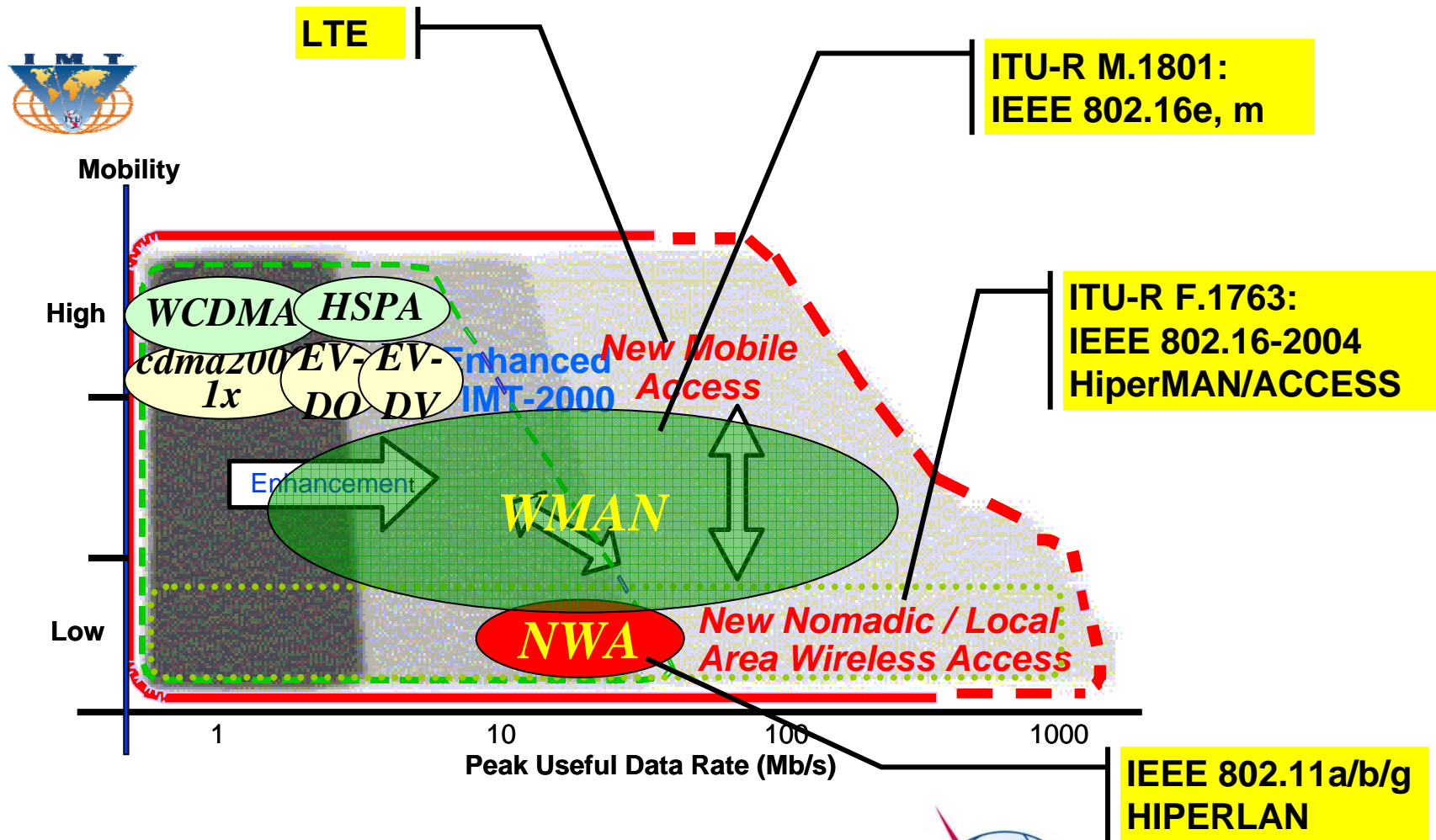
Dr. Asok Chatterjee

Vice President, Ericsson, Inc.

(Co-Chair WP1, ITU-T SG13

&

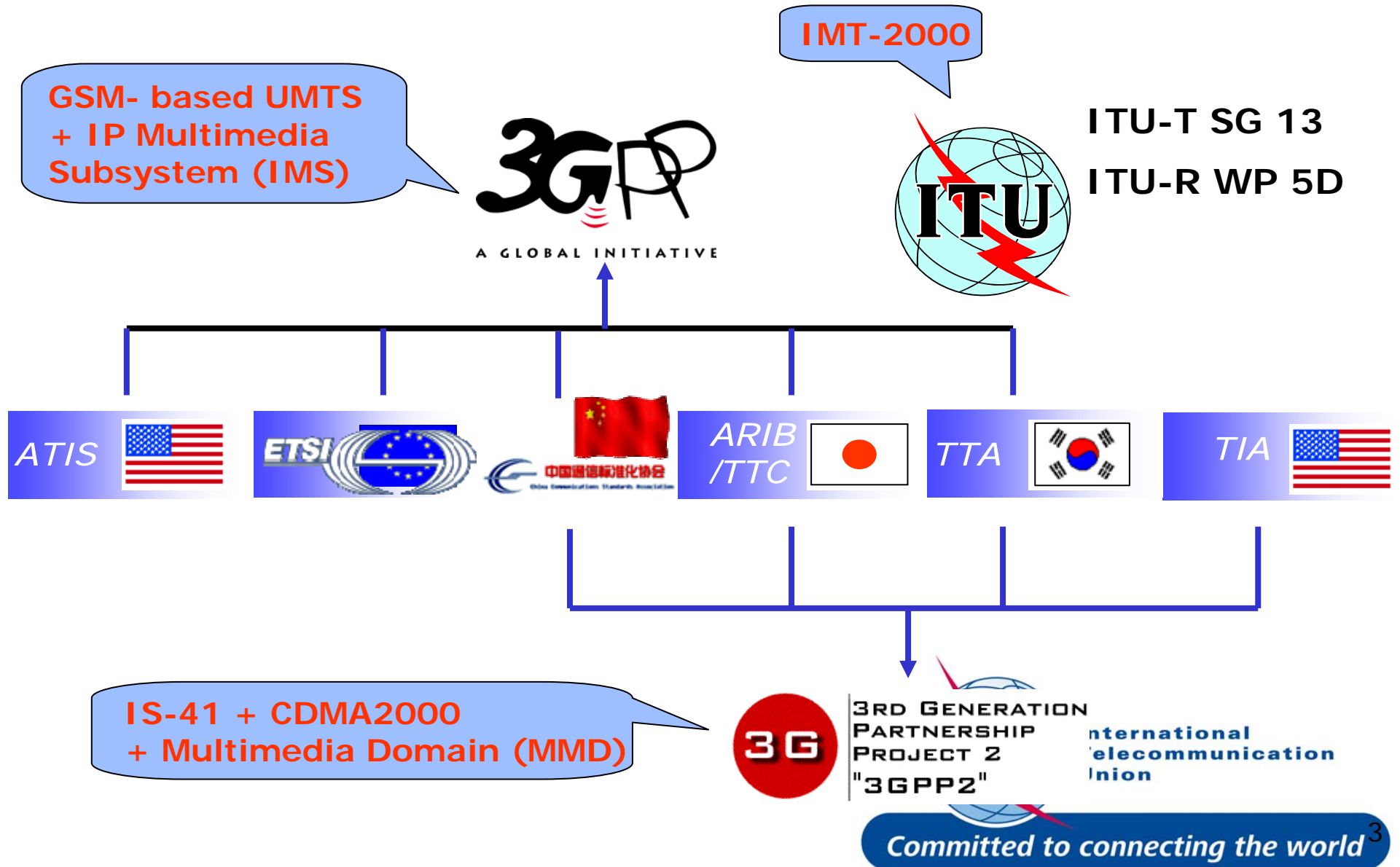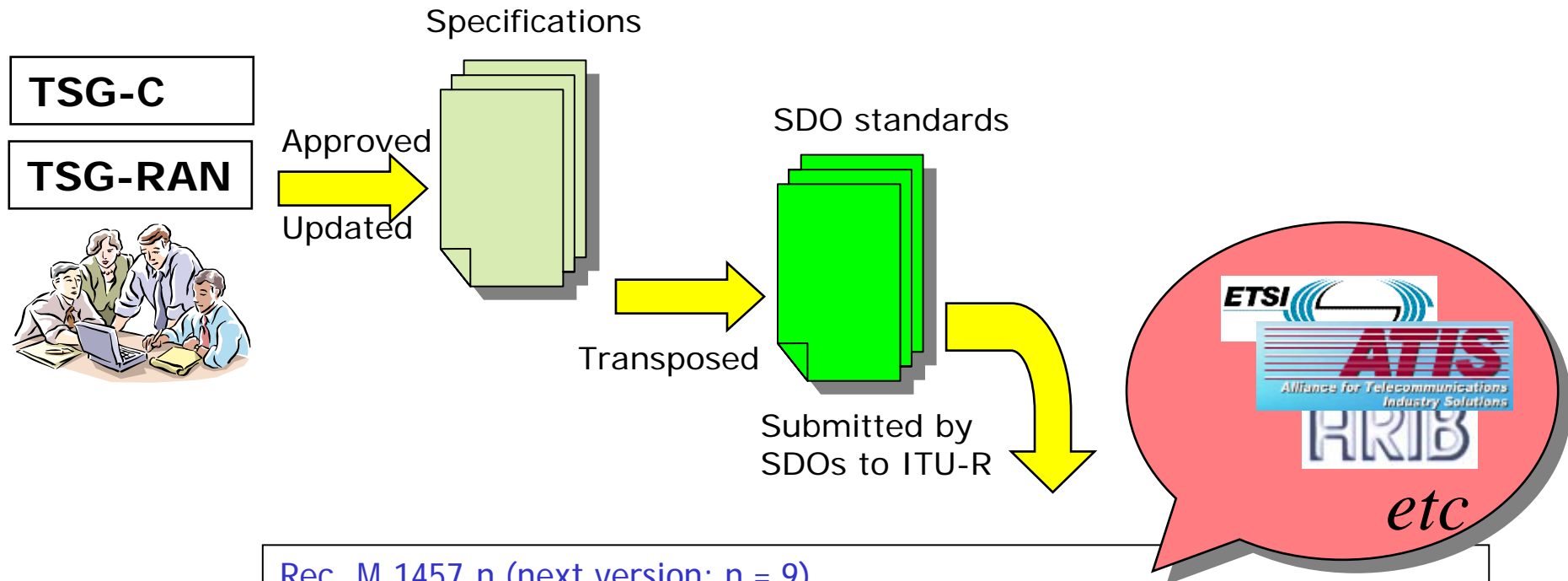Chairman, Proj Co-ord Grp of 3GPP)

IMT2000 Systems and beyond

Mobility

LTE

ITU-R M.1801:
IEEE 802.16e, m

ITU-R F.1763:
IEEE 802.16-2004
HiperMAN/ACCESS

High

WCDMA   HSPA

cdma2000 1x   EV-DO   EV-DV   Enhanced IMT-2000   New Mobile Access

Enhancement

WMAN

Low   NWA   New Nomadic / Local Area Wireless Access

1   10   100   1000

Peak Useful Data Rate (Mb/s)

IEEE 802.11a/b/g
HIPERLAN

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IMT-2000 Standards:
3G Partnerships

IMT-2000

GSM- based UMTS + IP Multimedia Subsystem (IMS)

ITU-T SG 13

ITU-R WP 5D

ATIS

ETSI

ARIB /TTC

TTA

TIA

IS-41 + CDMA2000 + Multimedia Domain (MMD)

3G 3RD GENERATION PARTNERSHIP PROJECT 2 "3GPP2"

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3

3GPPs and ITU-R WP 5D

TSG-C

TSG-RAN

Approved

Updated

Specifications

SDO standards

Transposed

Submitted by
SDOs to ITU-R

ETSI

ATIS
Alliance for Telecommunications
Industry Solutions

ARIB

etc
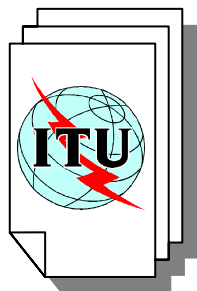
Rec. M.1457.n (next version: n = 9)

- **High level description of air interfaces**
- **References SDOs' standards (ETSI, ATIS, ARIB, TTA, CCSA, etc.)**

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ITU-T Gives Mobile Systems Prominence

o WTSA-2000 created the Special Study Group (SSG)
   on "IMT-2000 and systems beyond"

o Based on the accomplishments of the SSG and the continuing growth of mobile networks, WTSA-2004 upgraded SSG to a regular SG: SG 19 "Mobile telecommunication networks"

o Considering the closed cooperation on mobile systems and mobility by co-located SG meetings of SG13 and SG19 for the whole study period 2005-2008 WTSA-2008 merged SG13 and SG19.

IMT-2000 in ITU-T

o Users will only get "service" if there are both:
  - Radio access interfaces
  - A suitable core network infrastructure

o Hence need for ITU-R and ITU-T to continue to work closely together to ensure a "complete package"
  - It's not only about radio access, "wired" users expect broadband access, too!
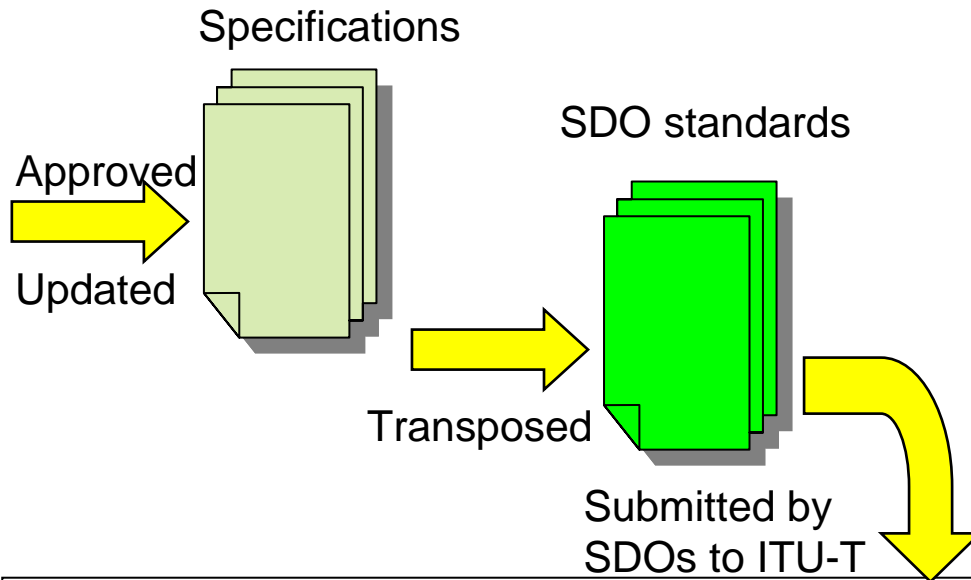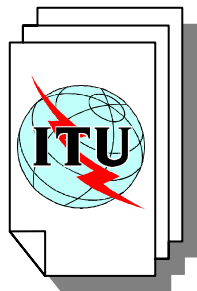
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IMT-2000: 3GPPs & ITU-T SG13

Q.174x.y Series Recommendations

o "IMT-2000 references to release to GSM evolved UMTS core network with UTRAN access network Release <#>"

- Q.1741.1   Release 1999
- Q.1741.2   Release 4
- Q.1741.3   Release 5
- Q.1741.4   Release 6
- Q.1741.5   Release 7
- *Q.1741.6   Release 8 (in preparation 10/09)*

o "IMT-2000 references to ANSI-41 evolved core network with cdma2000 access network (as of <date>)"

- Q.1742.1   as of 17 Jul 2001
- Q.1742.2   as of 11 Jul 2002
- Q.1742.3   as of 30 Jun 2003
- Q.1742.4   as of 30 Jun 2004
- Q.1742.5   as of 31 Dec 2005
- Q.1742.6   as of 31 Dec 2006
- Q.1742.7   as of 30 Jun 2008

Q.10/13 - Identification of evolving IMT-2000 systems and beyond

o   Determination of architectures and detailed specifications produced by recognised SDOs which make up the evolving IMT systems and beyond

o   Facilitating the recognition of those systems and their adoption by the broader ITU community

Mobile networks as integral part of NGN access
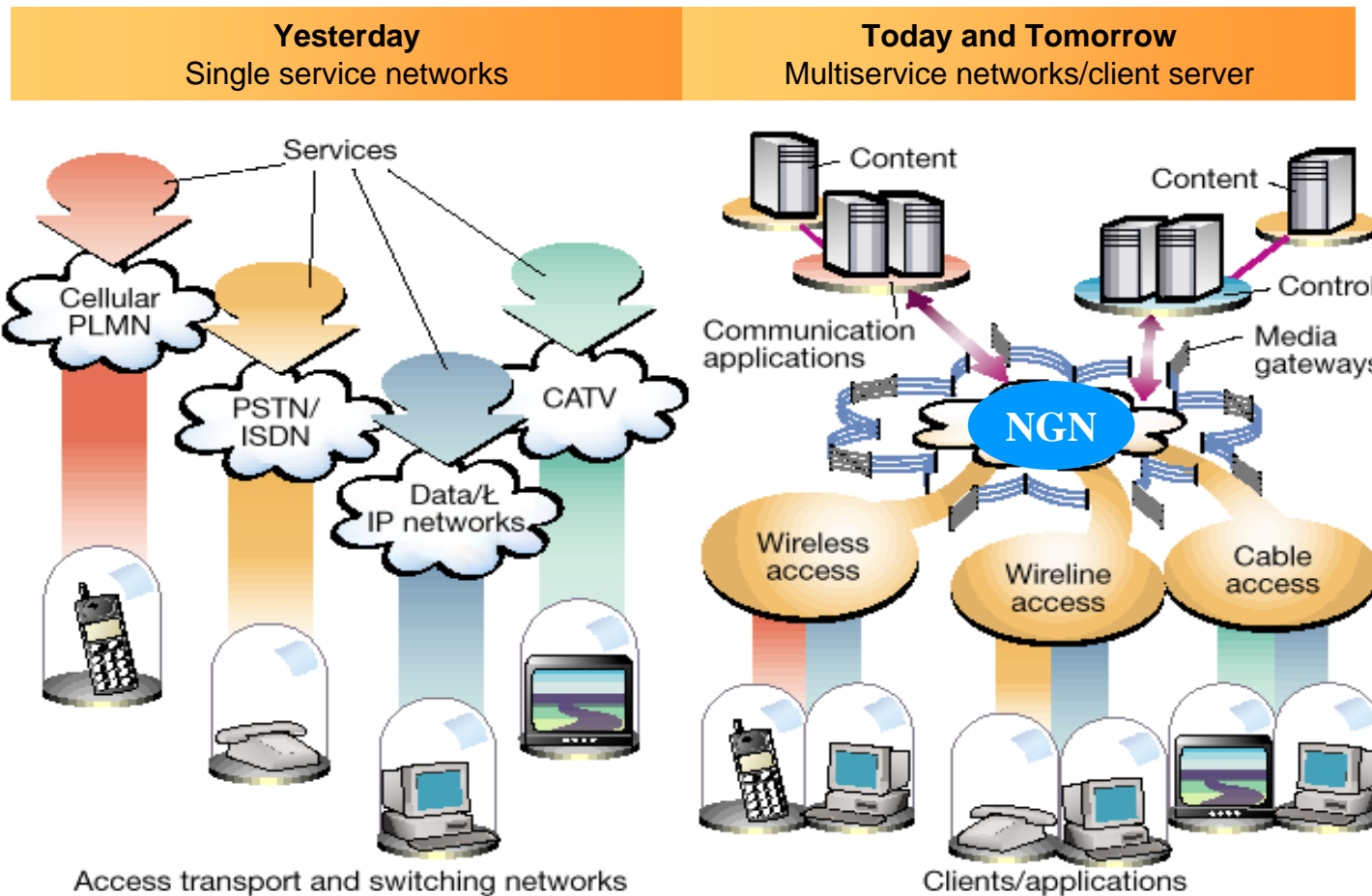
=> **Key issue mobility**

IP Multimedia Subsystems (IMS)

o The world of telecommunications is increasingly going packet-based digital, based on Internet Protocol (IP)

o IMS is an architectural framework for delivering IP-based multimedia services

o IMS does not standardize applications, but uses IETF protocols (e.g. SIP) to aid access of services from wireless and wireline terminals (separates applications from modes of access)

o It can be viewed as a tool to get to FMC

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Development of IMS

o IMS was originally designed by 3GPP for mobile networks

o It is now enjoying support from various sectors of telecommunications industry

o Some core aspects of IMS are now being developed in close cooperation between 3GPP, 3GPP2, wireline, and cable industries

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Resolution 44 - Bridging the standardization gap between developing and developed countries

Motivation

o Many mobile subscribers are in developing countries

o Mobile networks are much more than radio access, and require sound network infrastructure to connect to

o Mobility has become such an important issue that it needs to be studied carefully

o Issues around IMT and IMS need to be well understood, especially in developing countries, for the desired level of success in deployment and implementation

o There is a need for developing countries to have a greater say in the ongoing evolution of NGN networks

Hence Question 15/13 (Applying IMS and IMT in developing country mobile telecom networks) was adopted to address the above issues.

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Q15/13 Expected outcomes

o Document summarizing the findings of a gap analysis on the current status and trends of IMS and IMT in customer user needs, technology, market, and standardization requirements, if any, from the view-point of telecom networks in developing countries

o Collection of scenarios in terms of services and deployments for applying IMS and IMT in the mobile telecom networks in developing counties

o Requirements in terms of services and deployments for applying IMS and IMT in the mobile telecom networks in developing countries

Collaboration with External Industry Organizations

o The real world experiences are available only from the organizations that represent the industry

o Contacts established with GSM Association (GSMA), CDMA Development Group (CDG), WiMAX Forum

o Issues being discussed

- User requirements
- Technical requirements
- Roadmap/Migration
- Interoperability scenarios
- Operations/Product support

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Collaboration with ITU-D

o ITU-D has always been in the forefront of supporting developing countries for their future telecommunications needs

o Both ITU-R and ITU-T coordinate with ITU-D regarding deployment of IMT and IMS systems in developing countries

o Between the three sectors of ITU, full support is available to the global community.

To learn more...

For more information please visit the web site

http://www.itu.int

and SG13 web page in particular

http://www.itu.int/ITU-T/studygroups/com13/index.asp

or contact

asok.chatterjee@ericsson.com

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Thank you for your attention!