

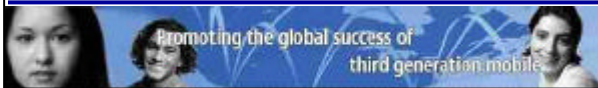


TECHNOLOGY OPTIONS FOR EVOLUTION FROM EXISTING MOBILE SYSTEMS TO IMTS-2000

Bosco Eduardo Fernandes

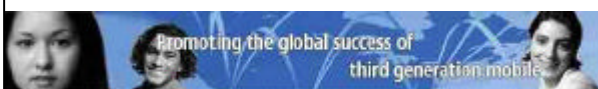
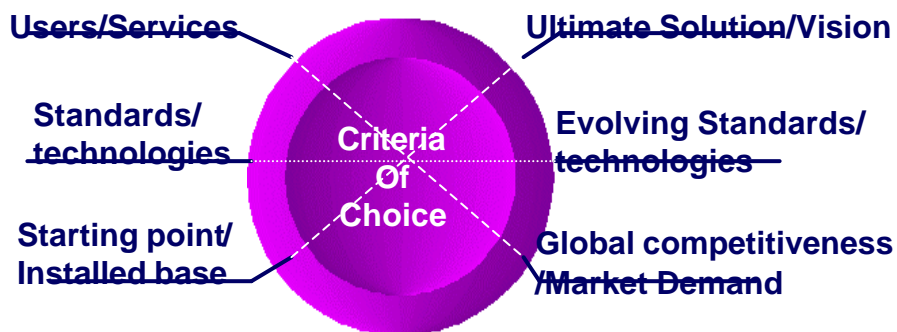
Chair ICTG (IT-Media) and
Manufacturers Sector
Group UMTS Forum

www.umts-forum.org



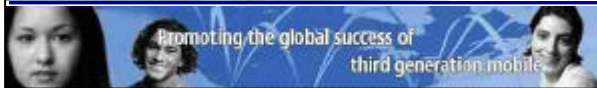
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Spheres of Influences



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The Roadmap to one User preceived Service Delivery

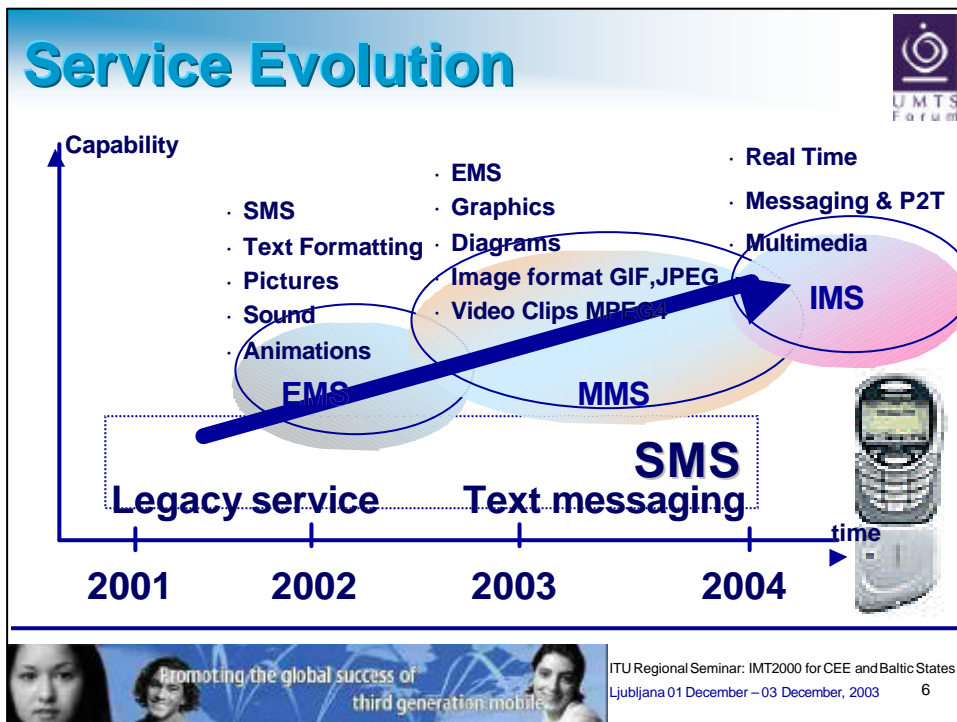
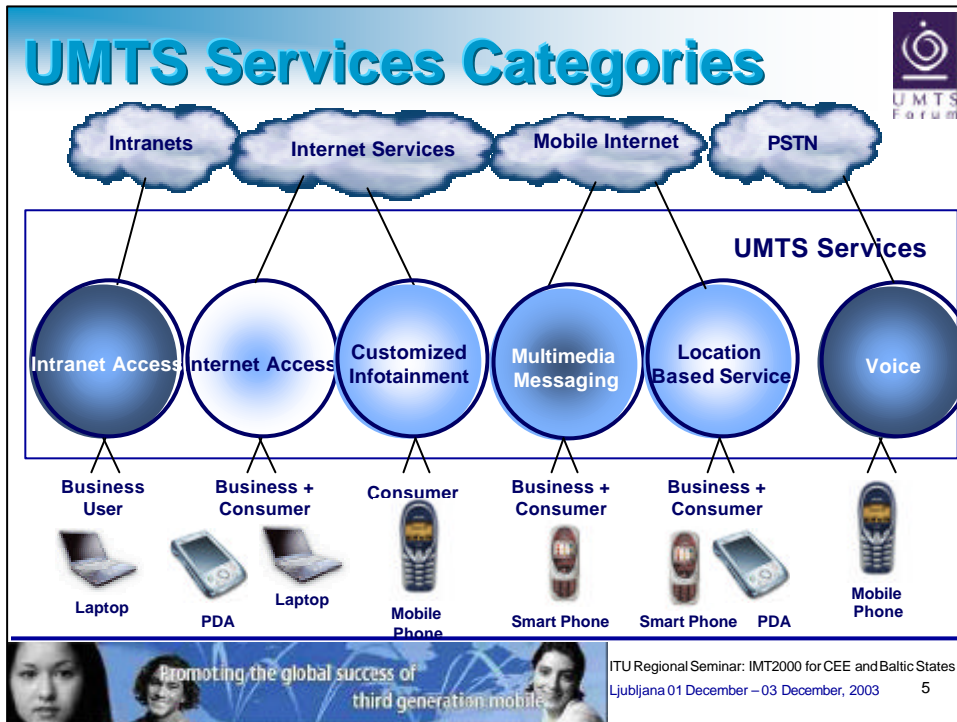


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Services



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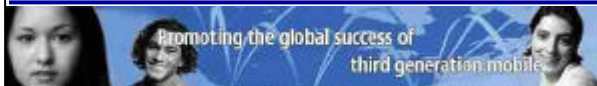
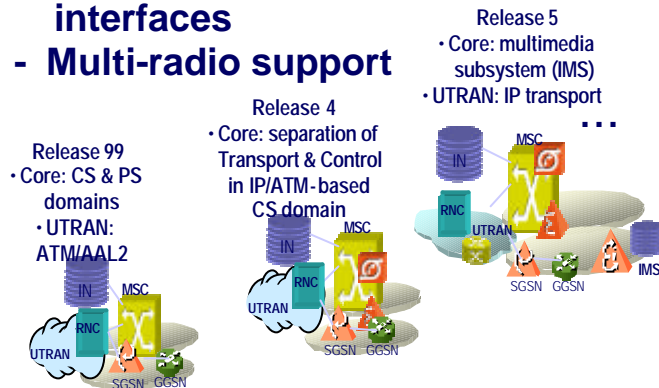


Network Evolution



Drivers:

- IP transport / Economy of scale
- E2E IP services / open architecture and interfaces
- Multi-radio support



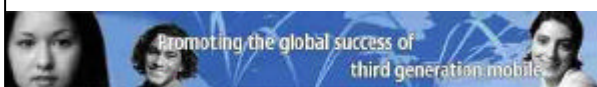
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Current Status of Rollout



- 12 networks up and running,
- More than 10.000 Node B deployed,
- Continuing network tuning,
- Successful migration of GSM Customer base towards W-CDMA,
- Close to 1million User's today, with over 2,5 million users expected by end of 2003.

Almost 120 operators worldwide have selected W-CDMA



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Many Standards!

Convergence, Bluetooth, WLANS, EDGE, UMTS, HSDPA, CDMA2000, IPv4, IPv6, GPRS

UMTS Forum

Promoting the global success of third generation mobile

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19th Century perception of year 2003

Uncertainties:

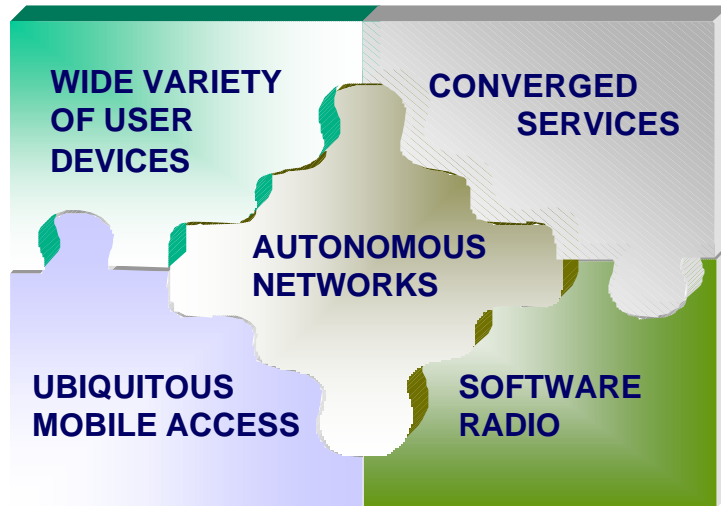
- In customer willingness to buy into new services.
- On the demand for broadband mobility.
- As to who will be the actors in the value chain.
- As to how to simulate the demand.
- Will access to content prevail over connectivity?

UMTS Forum

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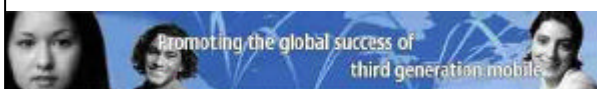
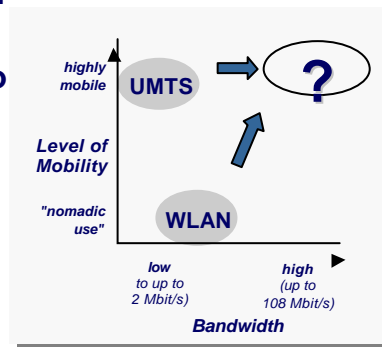
21st Century Puzzel



Cannibalisation of Technologies



- Real time over WLAN, but no real time properties (802.11a/b/g)?
WLAN/WiFi/802.11 “No Treat” to UMTS/3G!
Needs deployment for IPv6 and Mobile IPv6:
 -First with reconnect strategy when roaming
 -Then Mobile IPv6 always-on-anytime roaming

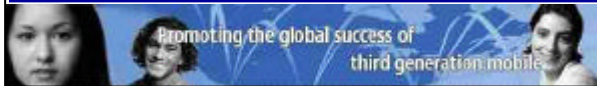


IMT – 2000 Family Members



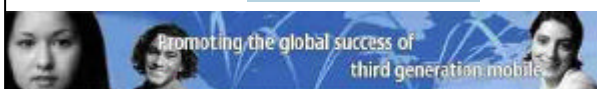
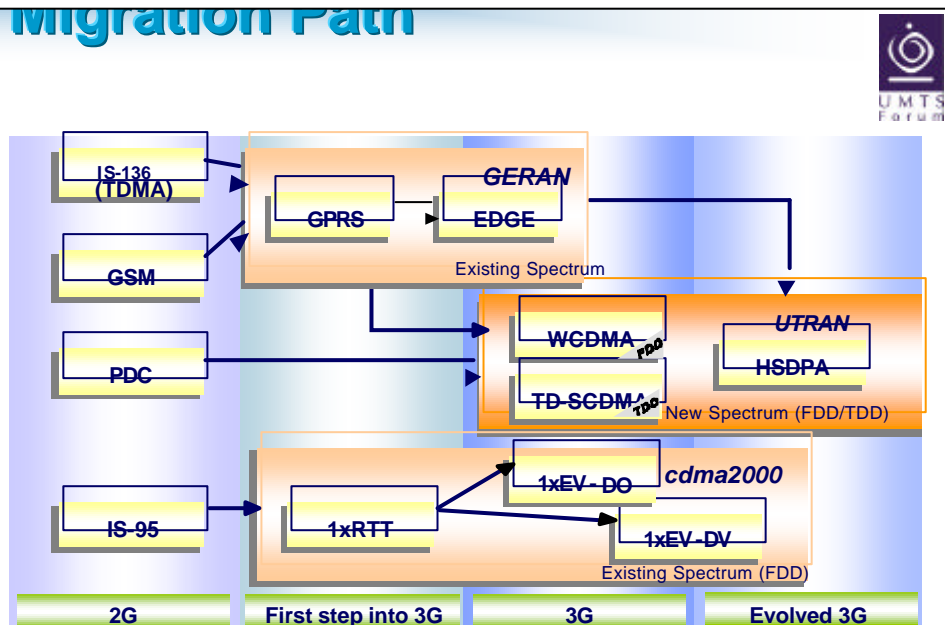
Standard	TD-SCDMA	UTRA-TDD	UTRA-FDD	DECT	UWCC136	CDMA2000
Freq. band	unpaired	unpaired	paired	unpaired	paired	paired
IMT-2000	IMT-TD <i>IMT-2000 CDMA TD (time division) TDD-LCR</i>	IMT-TD <i>IMT-2000 CDMA TD (time division) TDD-HCR</i>	IMT-DS <i>IMT-2000 CDMA DS (direct spread) W-CDMA</i>	IMT-FT <i>IMT-2000 FDMA / TDMA</i>	IMT-SC <i>IMT-2000 TDMA SC (single carrier)</i>	IMT-MC <i>IMT-2000 CDMA MC (multi carrier)</i>
Core network compatibility	GSM MAP	GSM MAP	GSM MAP	ISDN	ANSI-41	ANSI-41
Primary standardisation bodies	CWTS 3GPP	3GPP	3GPP	ETSI	TIA (US)	3GPP2

UMTS
EDGE
TDD

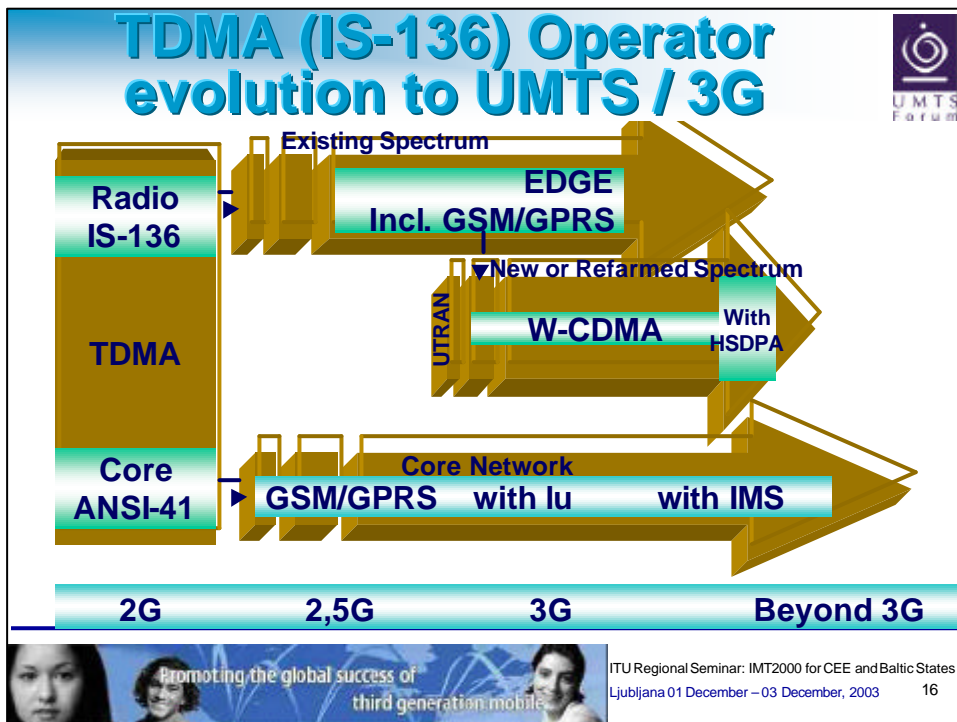
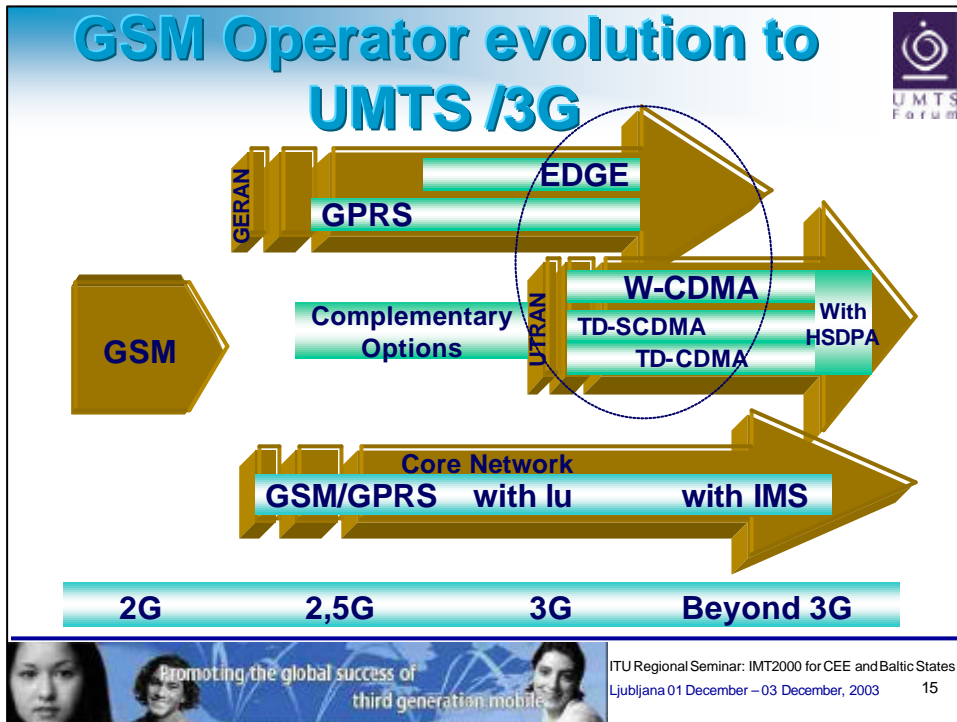


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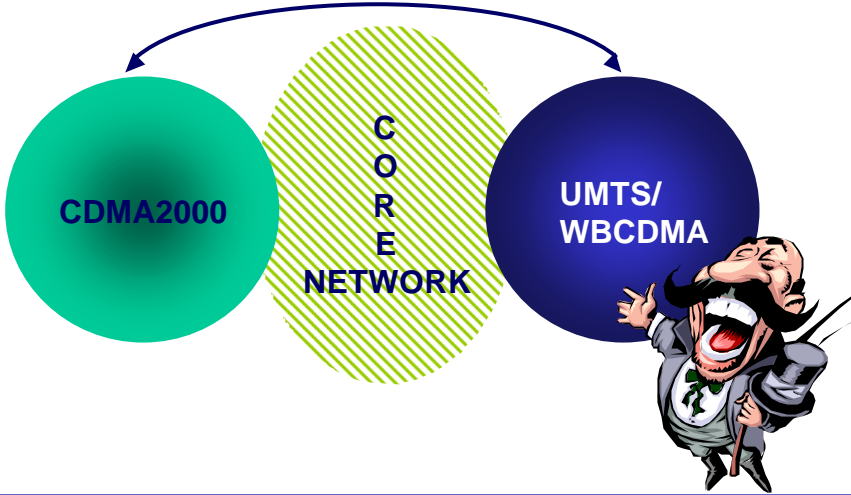
Migration Path



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Interoperability Issues





The diagram illustrates the interoperability issues between CDMA2000 and UMTS/WCDMA. A green circle labeled 'CDMA2000' and a blue circle labeled 'UMTS/WCDMA' are connected by a double-headed arrow. In the center is a yellow hatched oval labeled 'CORE NETWORK'. A cartoon character with a large mustache and a top hat is pointing towards the UMTS/WCDMA circle.

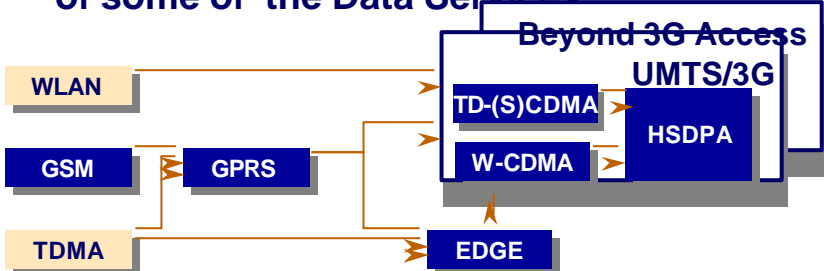
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Evolution Access Technologies



- UMTS/3G is vital for delivery of rich media!
- Due to the nature of the Technology, Licence conditions and Spectrum 2.5G might not fulfil the bandwidth requirements of some of the Data Services

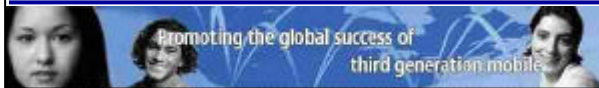
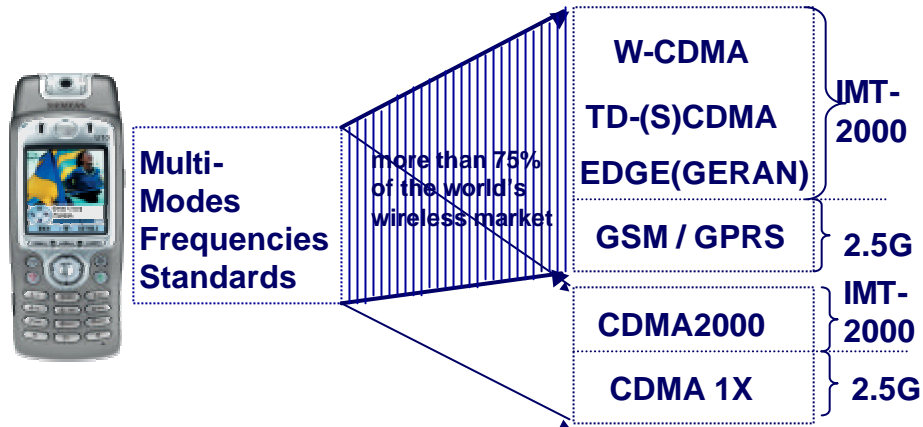


The flowchart shows the evolution of access technologies. On the left, three boxes represent 'WLAN', 'GSM', and 'TDMA'. Arrows from 'WLAN' and 'GSM' point to a box labeled 'GPRS'. An arrow from 'TDMA' points to a box labeled 'EDGE'. From 'GPRS', an arrow points to a box labeled 'EDGE'. From 'EDGE', an arrow points to a box labeled 'Beyond 3G Access'. Inside this box, there are three sub-boxes: 'TD-(S)CDMA', 'W-CDMA', and 'HSDPA'. Arrows from 'TD-(S)CDMA' and 'W-CDMA' point to a box labeled 'UMTS/3G'. An arrow from 'HSDPA' points to 'UMTS/3G'.

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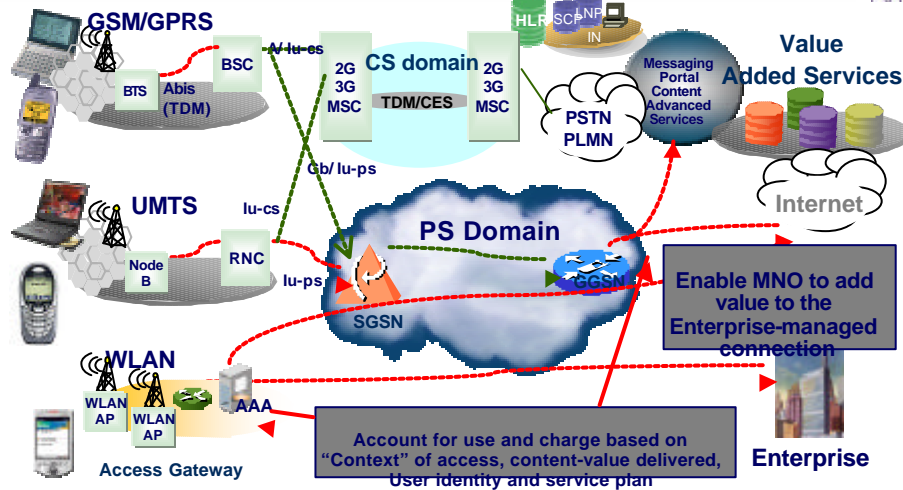
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Handset Challenge



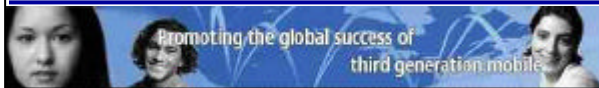
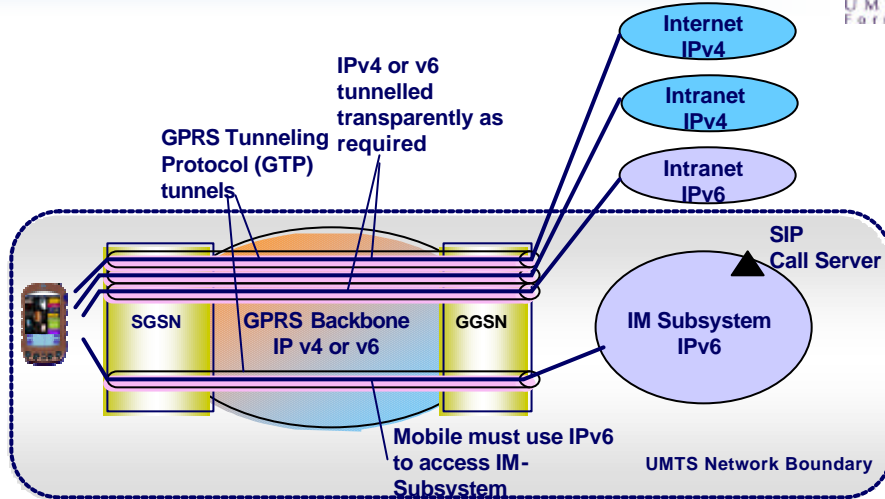
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Basic GPRS/EDGE/UMTS Scenario

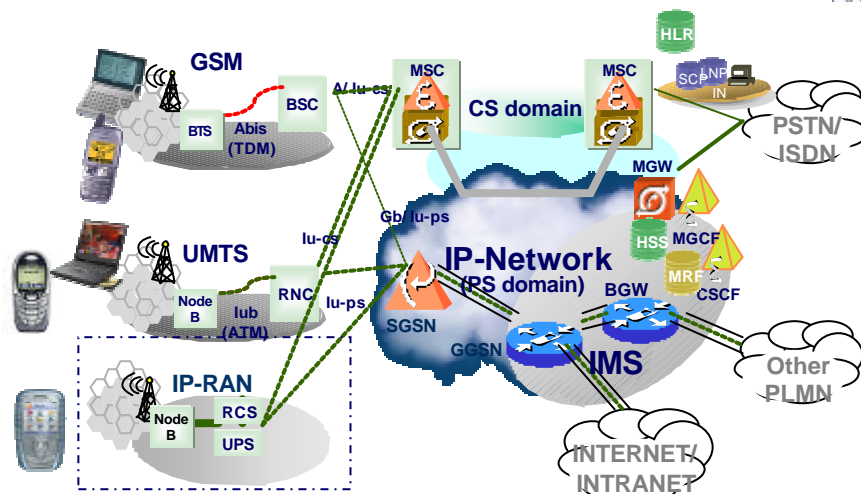


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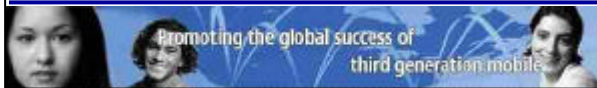
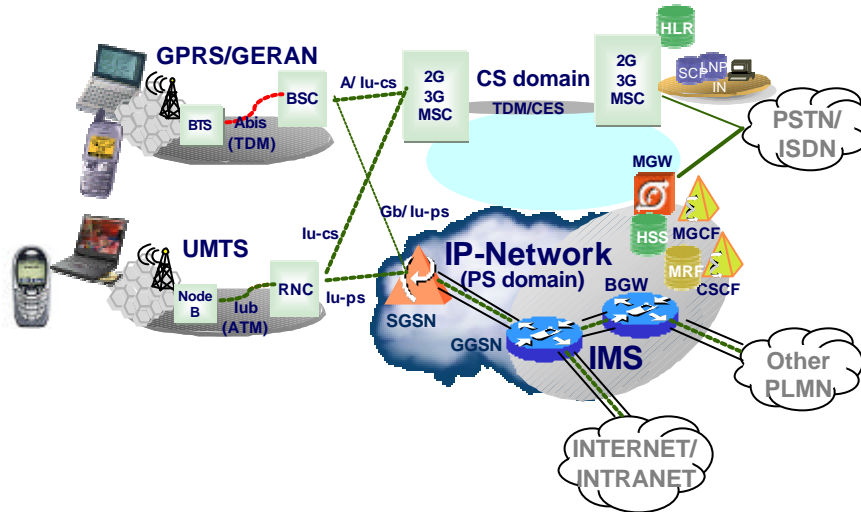
Introduction of IP



Distributed RAN Architecture

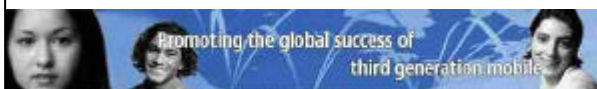
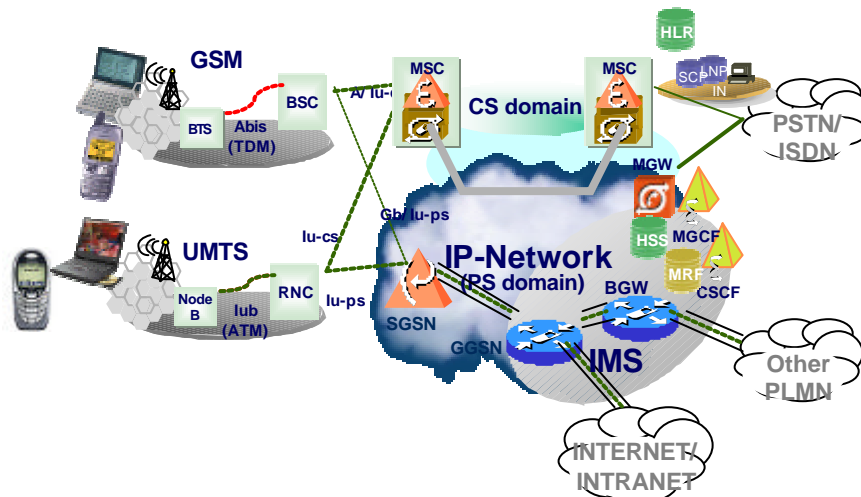


IMS Introduction

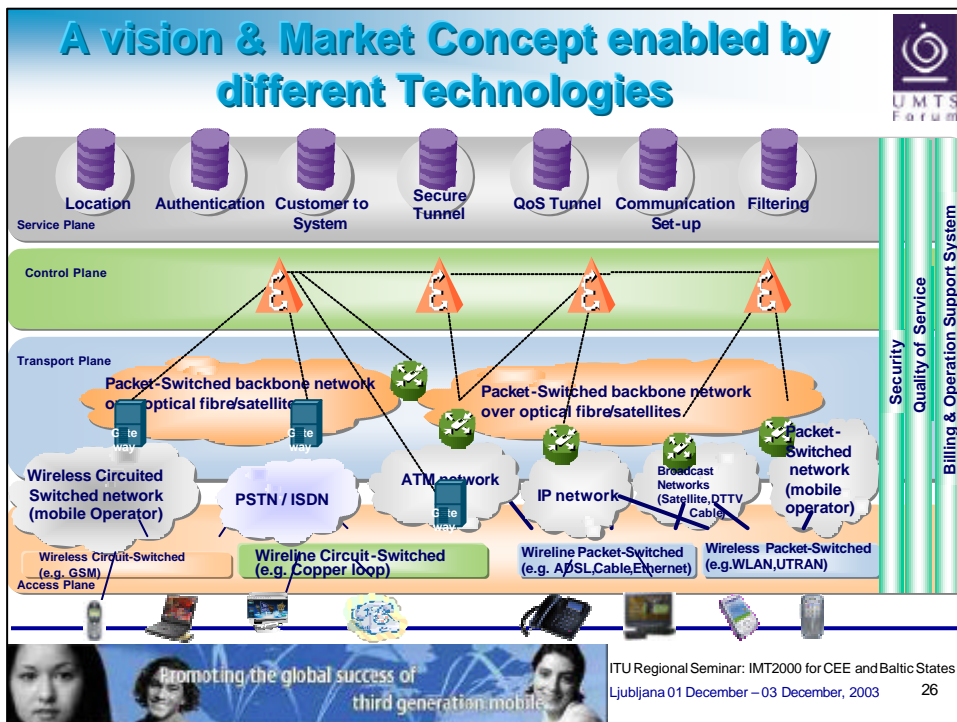
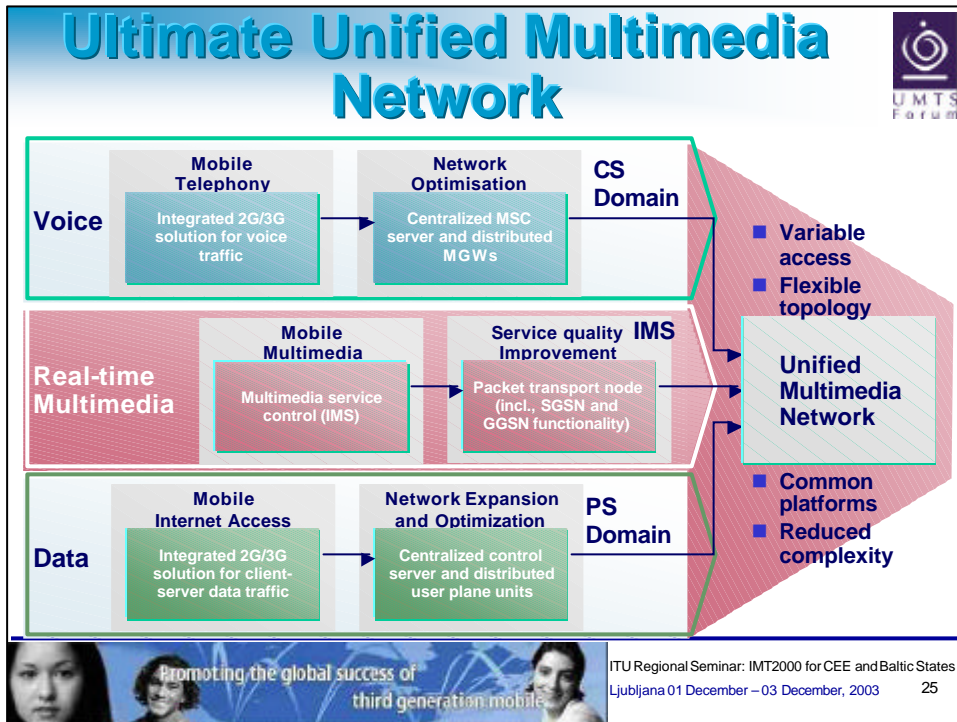


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IP-Transport for CS-Domain



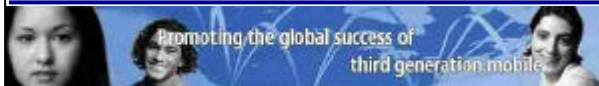
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Conclusions



- Operators need to think of their current Installed data base and how they will offer them a 3G service within an extended EC Market.
- Smooth migration as a corner stone of successful 2.5G and 3G deployment.
- In the search of services that drive up revenues per user, UMTS is the broadband platform, vital for delivery of rich media.
- Consideration should be given to their current investments in transition towards Network innovation.



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Questions?????

*Thank you for your
attention!!*



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