



International Telecommunication Union



IPv6 the Catalyst for Convergence

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Siemens Ag

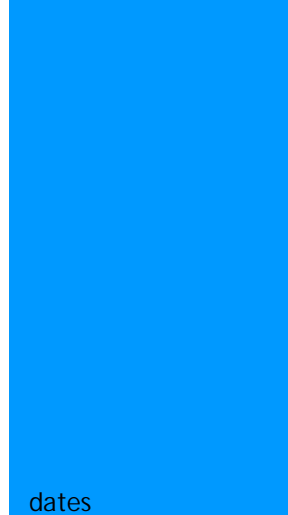
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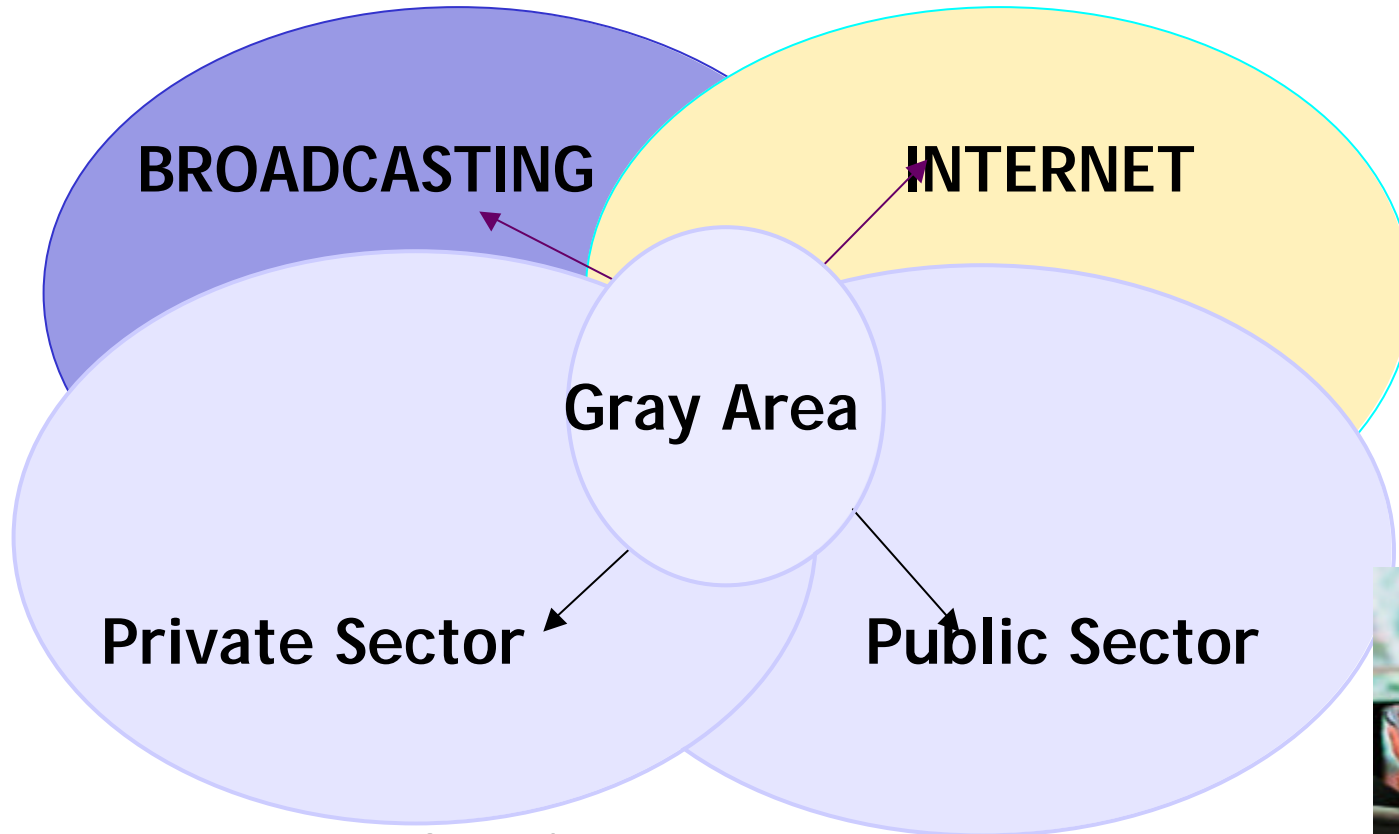
Agenda

- IP the glue to convergence of multimedia content and mobility.
- Benefits and Advantages of IMS concepts and IPv6
- Conclusion

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Spheres of Influence



Service transparency
Service integration
Multiple-media Services
Service Regulation

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Broadband and IP open the door to IT

Power shifts from network to the end user

Network drives value generation
Network is differentiator
Network defines and constrains services

IP

Services drive value generation
Value added services are differentiator
Services are network-agnostic

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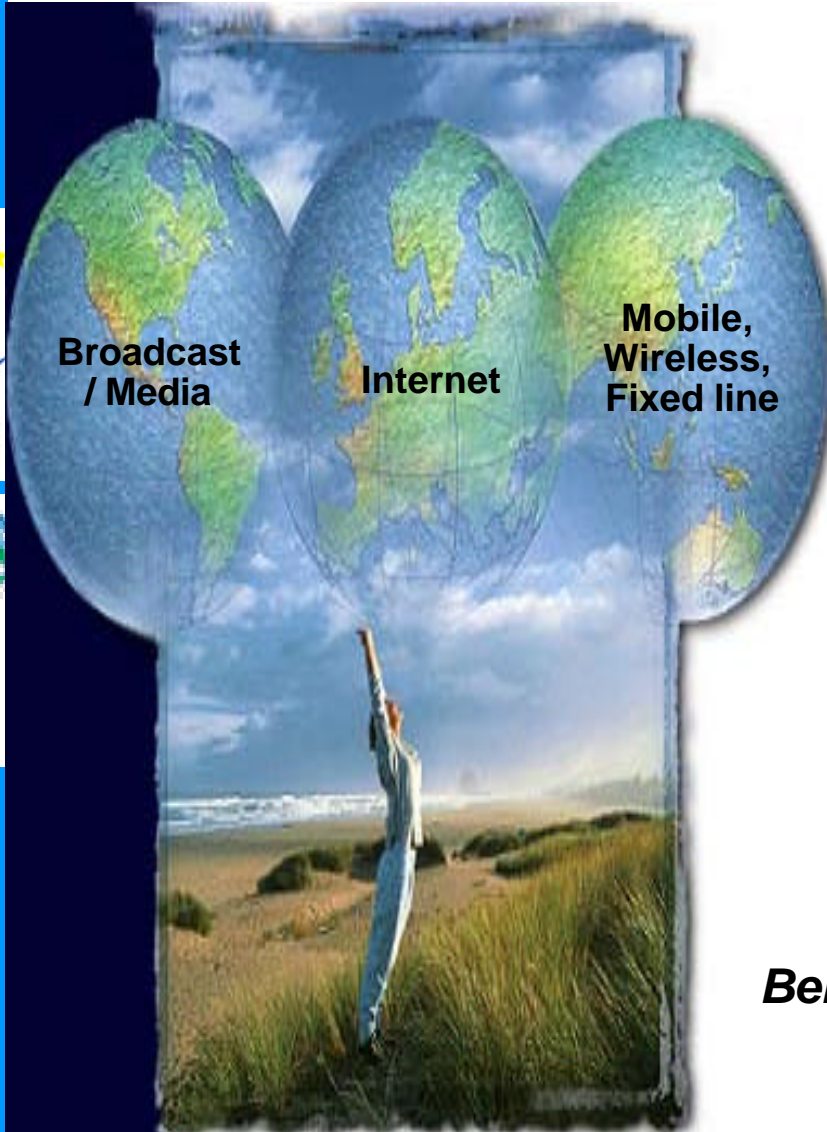
Current Situation



- An industry desperate for renewed revenue growth.
- Continuing pressure on existing carrier business models with the advent of VoIP and new broadband wireless technologies.
- IPv6 is essentially a catalyst to spark innovation in many different areas, especially in access infrastructures, home networks, user applications -such as VoIP, 3G IMS, Peer-2-Peer gaming, etc.
- RIPE NCC has delegated 500 IPv6 prefixes to European ISPs, which lead the way compared to total world deployment with over 50%. What is not known are their profiles and motivations in deploying IPv6. It is expected that a large majority see IPv6 as a differentiator waiting for the take-up of IPv6.

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Convergence



- Seamless network roaming flexibility
- Auto-Configuration
- Security and QoS
- Multicasting
- Manageability
- Applications

Beides IPv6 Benefits (other than trillions of IP addresses)

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Benefits of the IP approach



- o Basically a connectionless packet delivery service that can run over just about any layer 2 technology.
- o IP decouples the network layer very clearly from the service and application.
- o IP applications tend to use end-to-end functionality.
- o Dramatically reduces costs.



What is holding up deployment?



- o Lack of sufficient urgency and Business case.
- o Confusing the backbone deployment Vs edge.
-Edge deployment-just do it.
- o A lack of appreciation for the power of simplicity.



Service Delivery Platform



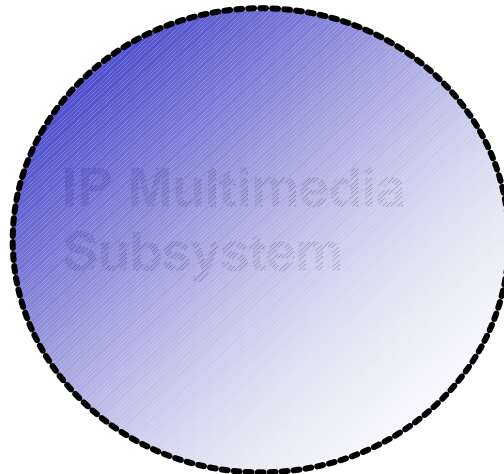
Fixed line Networks

ETSI TISPAN

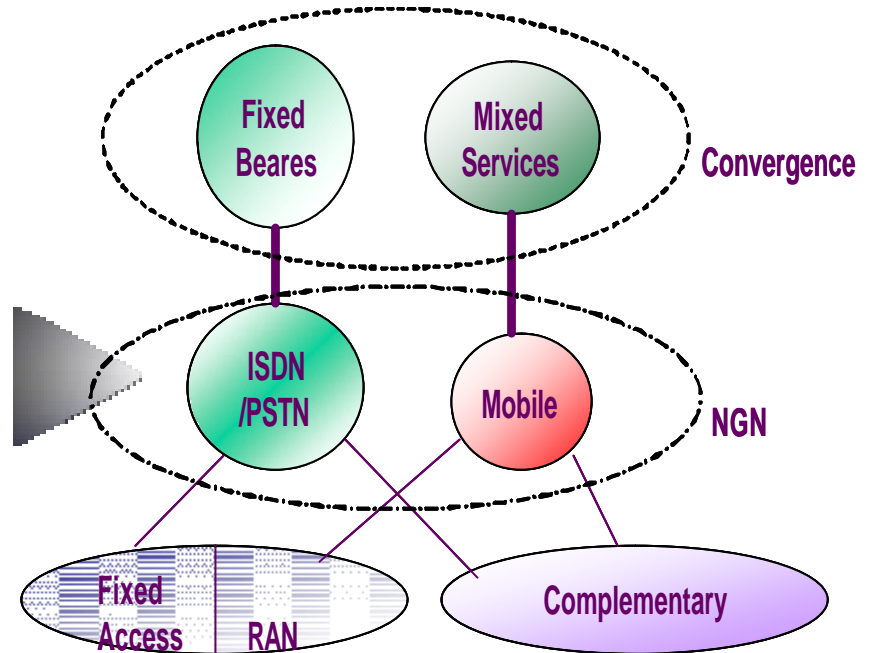


3GPP

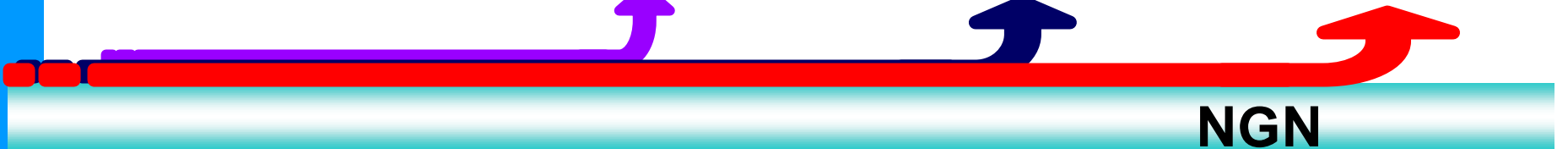
Mobile Networks



IP Optional



IPv6 IMS



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IMS: the benefits to operators...

- **Standards-based implementation enables interoperability between mobile and other IP networks.**
- **Infrastructure and administrative cost savings which decrease the investment threshold for new services deployment.**
- **Standard network elements (e.g. routers) are used, thereby reducing infrastructure deployment and expansion costs.**



Service Provider Benefits

- Relief for IP address assignment
- More efficient routing tables and route advertisements
- Potentially easier provisioning for some services
- Opportunity for enhanced security features
- Opportunity for enhanced quality of service features
- New IPv6-enabling services
 - Anycast-based Services
 - Data Services for Mobile Devices

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Triple play services driving the need for IPv6

More devices and services are becoming IP-aware .
Consequently driving the need for increased network addressing and for “Plug and play” networking.



- Quality of Experience- Call set-up delay, voice latency, channel-zapping, packet loss.
- Security-Dos attack impact on services such as VoIP and IPTV.

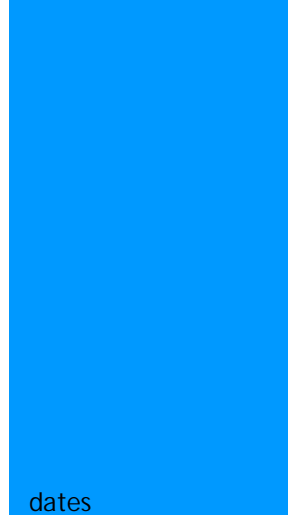
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Why IMS in NGN ?

- o IP Multimedia Subsystem generally fulfills the NGN requirements for conversational services
 - For managed, carrier operated telecom networks.
 - With Release 6 becomes applicable to a range of access network types (3G RAN, WLAN).
 - IMS access (technology) independence.
- o Whole Telecom industry benefits
 - Will enable simple and effective interworking between Cellular and Wireline
 - Growing IMS market, encouraging greater usage
 - Wider choice of IMS suppliers
 - Market stimulation, decreasing costs (thanks to shared development/deployment costs)

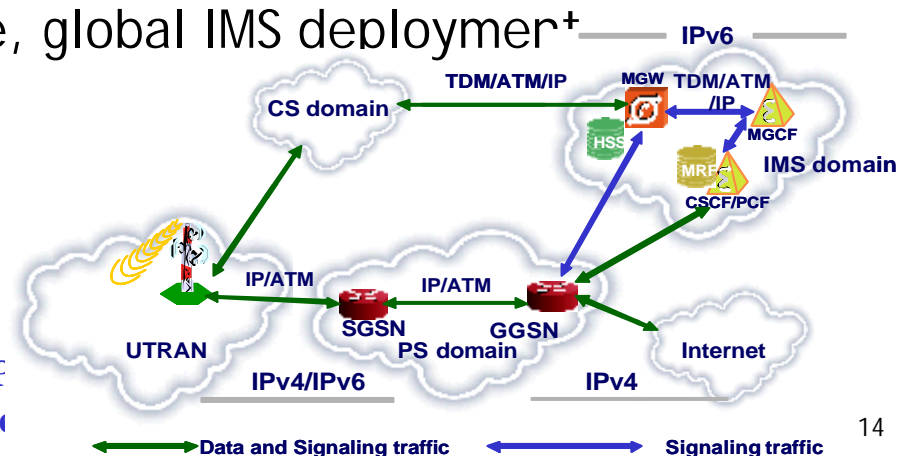
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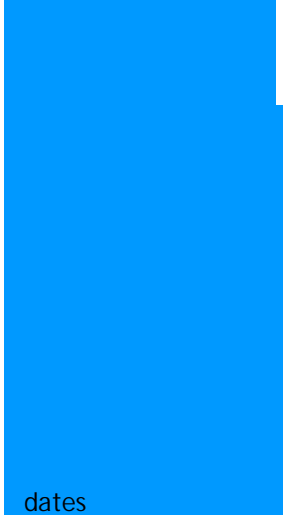


Peer-2-Peer Services

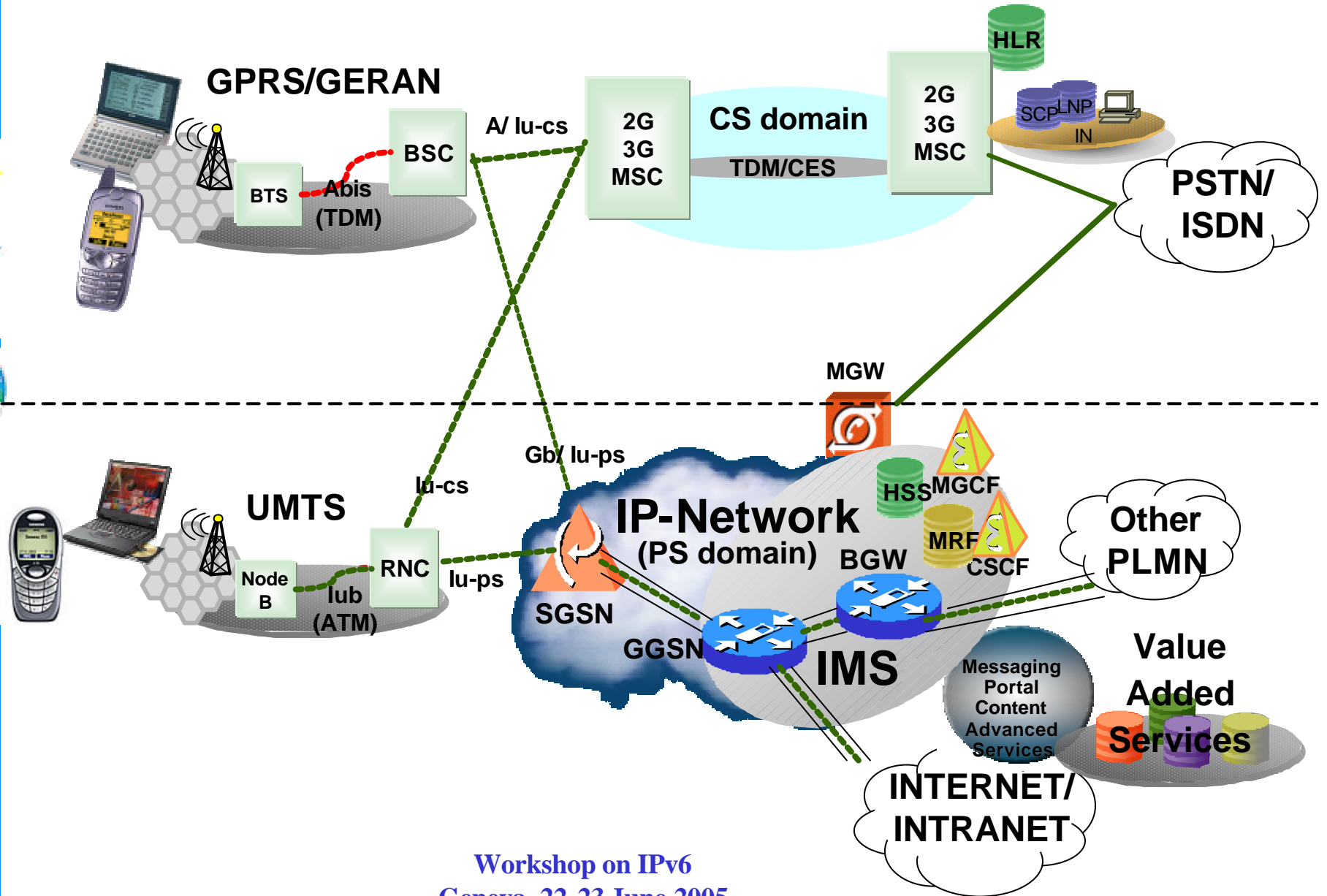
- Introduction of SIP-based peer-to-peer services is an important step after current client-server based services.
- IP Multimedia Subsystem (IMS) is a service infrastructure based on the use of Session Initiation Protocol (SIP).
 - End to end IP services
 - Increased potential for service integration
 - Easy adoption and integration of instant messaging, presence and real time conversational services.
- In order to make peer-to-peer services work between different operators' networks, IPv6 is needed - peer-to-peer services work well only with public IP addresses.
 - Small scale IMS deployment / piloting can be started with IPv4.
 - IPv6 is vital for wider scale, global IMS deployment⁺

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IMS Introduction



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Mobile IPv6

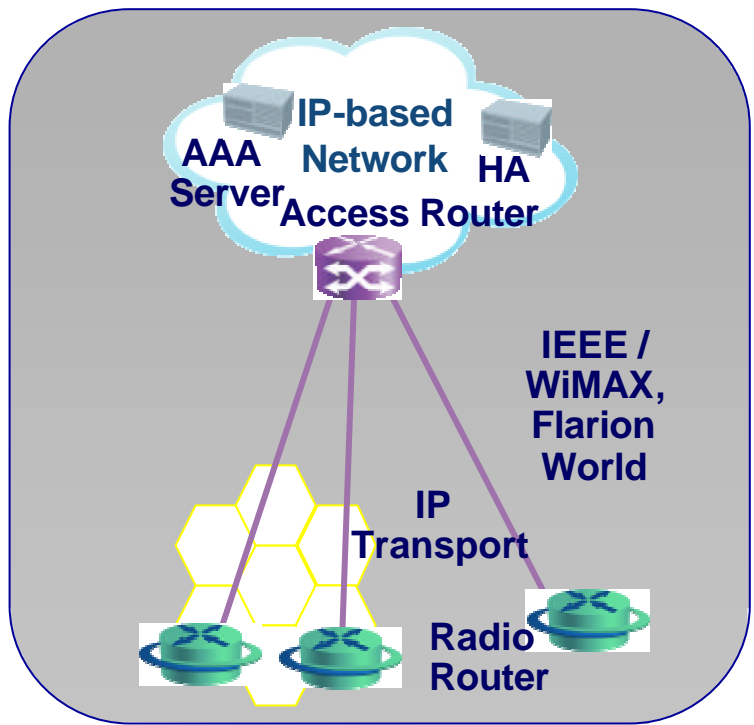
“Mobile IP provides an IP node the ability to retain the same IP address and maintain uninterrupted network and application connectivity while traveling across networks”

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Complementary to 3G/UMTS

Interoperability challenge will be on Application level!!!!



IEEE 802.xx Based:

- WiFi
- WiMAX Forum 802.16Revd/e
- Flash OFMA 802.20

Mobile IPv6 will provide Roving

Common Standards 3GPP/3GPP2

- HSDPA 14Mbps
- HSUPA 14Mbps
- Cellular Roaming**

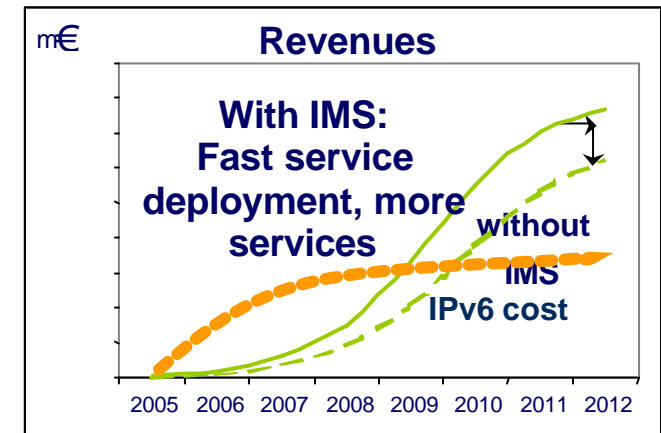
- Orthogonal Frequency Division Multiplexing (OFDM)
- High Speed Download Packet Access (HSDPA)
- High Speed Uplink Packet Access (HSUPA)

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IPv6 is a must for the future

- IPv6 is undoubtedly indispensable for multicasting, Multimedia and LB Services.
- With Session Initiation Protocol (SIP) it will offer Conferencing, presence, events notification and instant messaging, Push-to-Talk (PoC), Peer-to-Peer games.
- Mobile IP
 - Fully intergrated and controllable by operators
- IPsec VPN's



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Timing is important

o Market timing decisions should also consider the following:

- IMS provides a qualitative distinction that can be a source of competitive differentiation for mobile operators.
- IMS provides general market benefits through more rapid service creation and competitive differentiation.
- Measuring direct revenue benefits from IMS deployment is problematic.

For example, if IMS only impacts 10% of users, that 10% may be the most influential early adopters, which in turn will prevent subsequent adoption by “followers”.

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Conclusions

- IMS means “Find and connect” over any network, a super-set of cellular telephony, will redefine connectivity. Applications will be peer-to-peer entities that facilitate sharing. Mobile devices will stay on line and networks will be consolidated.
- IPv6 will enable global IMS-based peer-to-peer services.
- Network Operators are now interested in IPv6 but do not know as to when they will deploy it and what added-value in terms of new revenues it will bring them.
- IMS commercial launches will be accepted end of 2006/2007 with a mass market deployment by 2010. Until this date, all essential IPv6 features for a Telecom Network need to be clarified.
- With new Web services on IMS true “INTERNET on the air” will be offered.

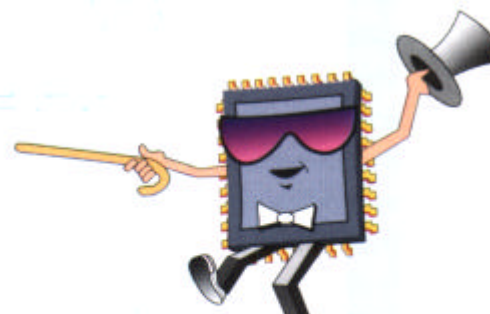
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Thank you for
your attention!!



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