



3GPP Standardisation Activity



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3GPP Standardisation activity

Paul Reid
3rd Generation Marketing Officer,
European Telecommunications Standards Institute (ETSI)

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December 2003 1

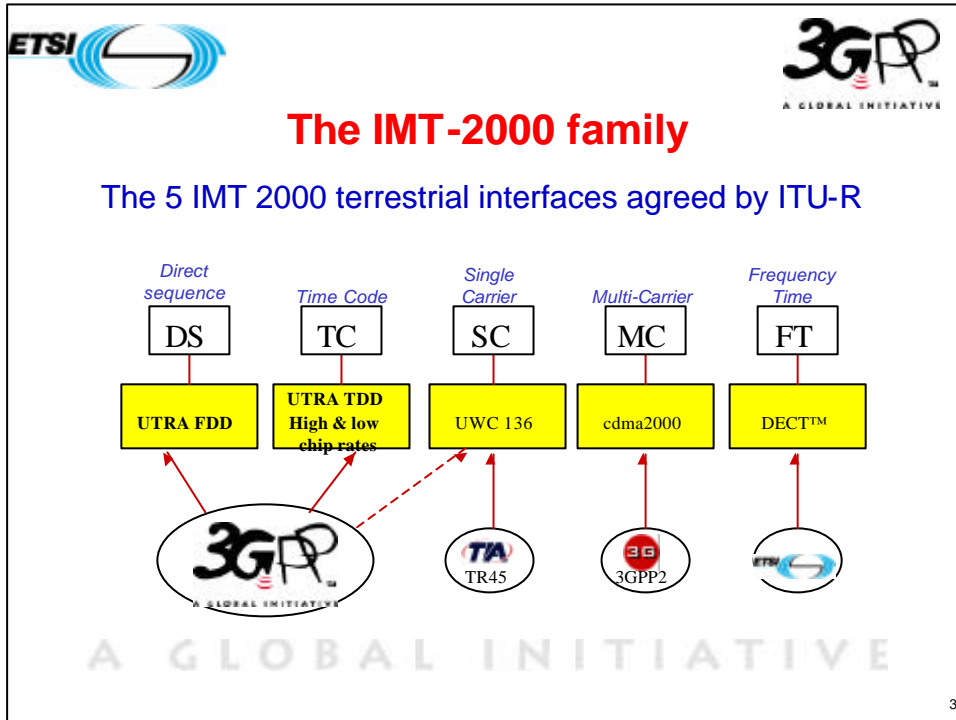


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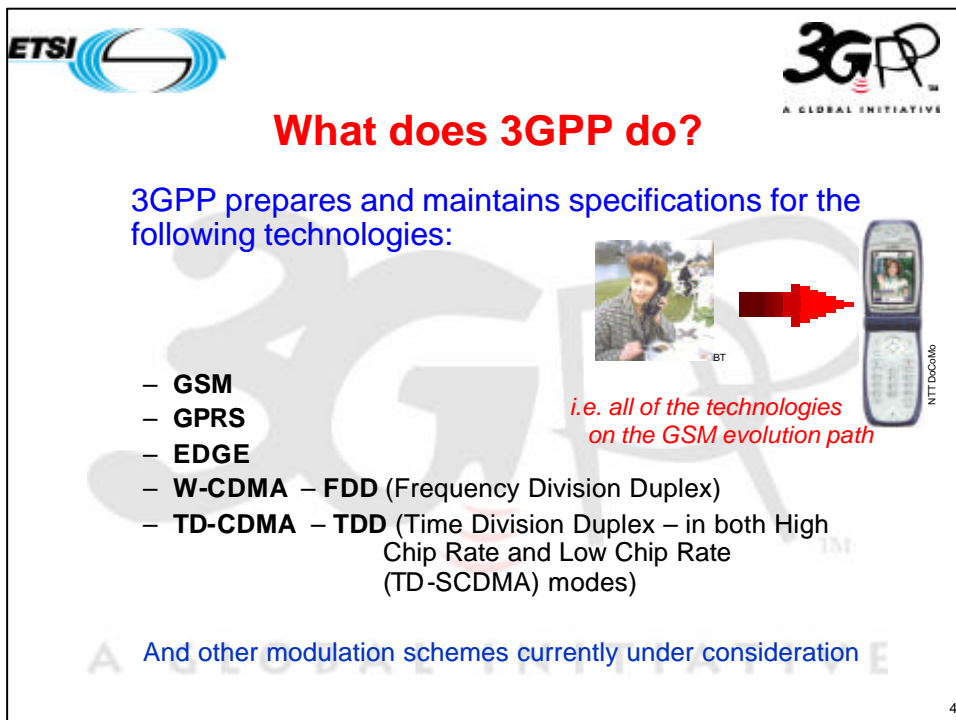
- ✚ What 3GPP does
- ✚ Partnership and Membership
- ✚ Relationship with the ITU
- ✚ 3GPP Releases
- ✚ What's next ?
- ✚ Relationship with other groups
- ✚ Conclusions

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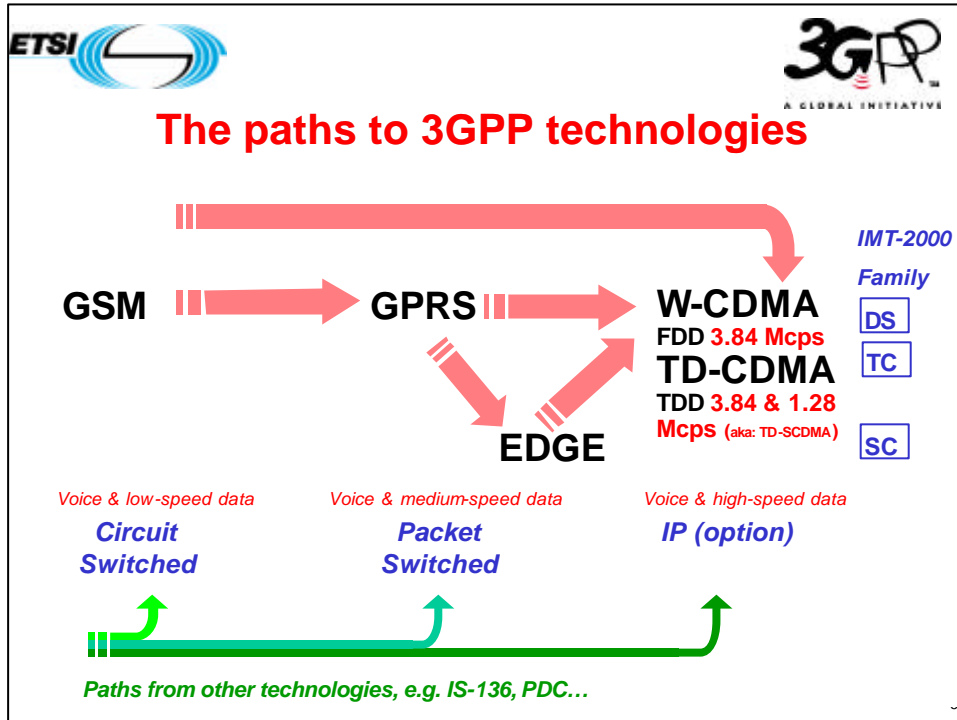


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Partnership and Membership

3GPP is composed of:

- Partners:
 - Organizational Partners
 - 3GPP is open to all officially-recognized standards organizations irrespective of the geographical location
 - Market Representation Partners
 - invited by the Organizational Partners to offer market advice and to bring a consensus view of market requirements (e.g. services, features, functionality)
- Individual Members

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Organizational Partners



The slide displays the logos of the organizational partners of 3GPP. At the top left is the ETSI logo, and at the top right is the 3GPP logo with the tagline "A GLOBAL INITIATIVE". The central text "Organizational Partners" is in red. Below this, the logos for ARIB, CCSA, ETSI (repeated), TTC (Telecommunication Technology Committee), and TTA are shown. To the right of the TTC logo is the logo for Standards Committee T1 Telecommunications. At the bottom, the text "A GLOBAL INITIATIVE" is repeated in a light grey font. A small number "7" is in the bottom right corner.



Market Representation Partners

The slide displays the logos of the market representation partners of 3GPP. At the top left is the ETSI logo, and at the top right is the 3GPP logo with the tagline "A GLOBAL INITIATIVE". The central text "Market Representation Partners" is in red. Below this, the logos for UMTS Forum, GSA (Promoting GSM Evolution Worldwide), IR6 FORUM, TD-SCDMA FORUM, GEM, and 3G America are shown. At the bottom, the text "A GLOBAL INITIATIVE" is repeated in a light grey font. A small number "8" is in the bottom right corner.

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Individual Members


Membership in an Organizational Partner is a pre-requisite for Individual Membership in 3GPP

Individual Membership is open to legal entities committed to support 3GPP and to:

- contribute technically or otherwise to one or more of the Technical Specification Groups within the 3GPP scope
- use the 3GPP results to the extent feasible

Currently, more than 430 Individual Member companies are actively engaged in the work of 3GPP

- including 11 from CEEC/CIS countries



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Observers

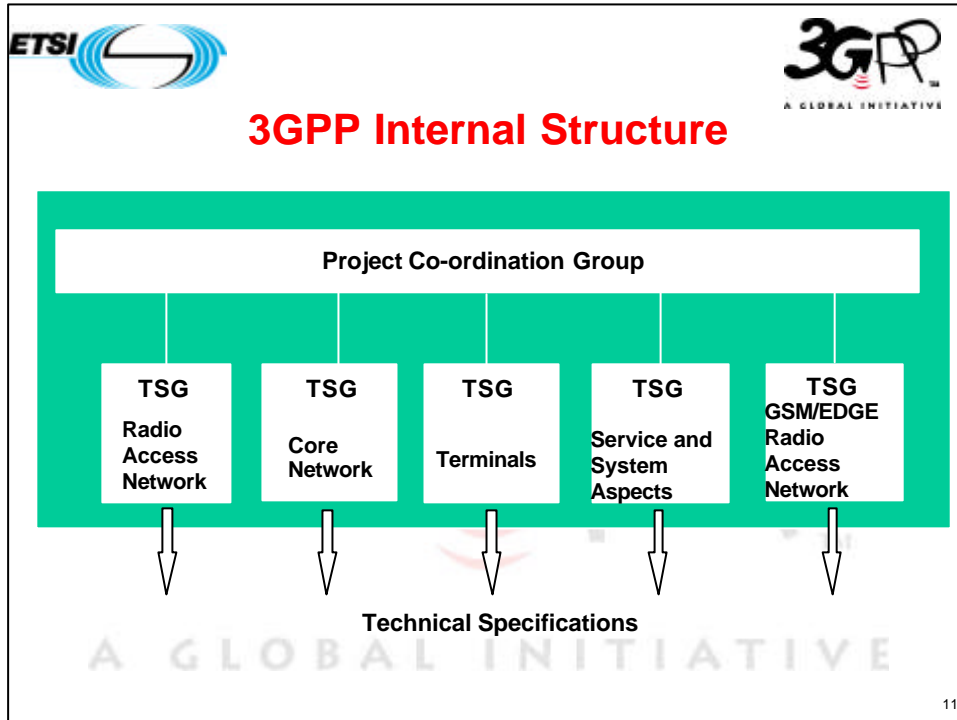
3GPP currently has three Observers:

- Telecommunications Industries Association (TIA) 
- Telecommunications Standards Advisory Council of Canada (TSACC) 
- Australian Communications Industry Forum (ACIF) 



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ITU referencing of 3GPP results




- 3GPP does not contribute directly to the ITU
- Formal contributions to ITU Study Groups are made by ITU members following existing national/regional processes

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ITU referencing of 3GPP results

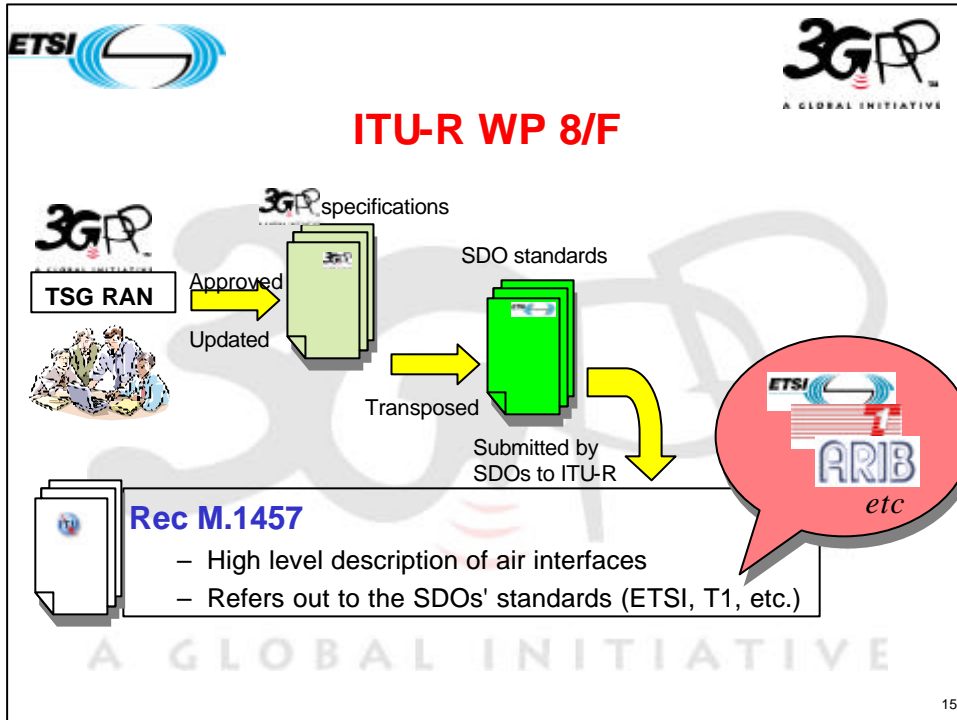


- ITU - R
 - Regular updates submitted to ITU-R Recommendation M.1457
 - High level description of IMT-2000 air interfaces
- ITU - T
 - Collaboration with ITU-T Special Study Group on "IMT-2000 and beyond"
 - Regular updates submitted to ITU-T Recommendation Q.1741
 - Framework for IMT-2000 networks

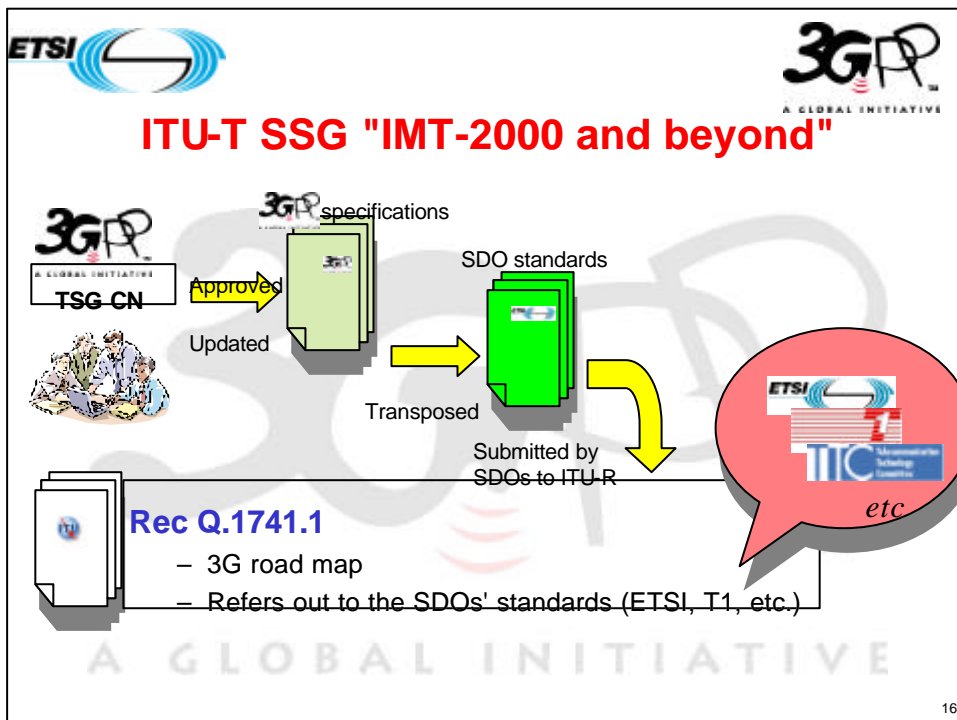
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3GPP Releases

Specifications are grouped into "Releases"



A mobile system can be constructed based on the set of all specifications which comprise a given Release

A Release differs from the previous Release by having added functionality introduced as a result of ongoing standardization work



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3GPP Releases

Release '99

- functionally frozen December 1999. Defines UTRA and many other initial features
 - The basis for early 3G deployment

Release 4

- functionally frozen March 2001. Enhancements to Release '99 plus separation of control plane from user plan in core network
 - First steps towards IP-based operation
- Also defines the low chip rate TDD mode

Release 5

- functionally frozen March/June 2002. In addition to further enhancements, this release introduces:
 - IMS - IP-based Multimedia Services
 - HSDPA - High Speed Downlink Packet Access

Release 6

- functionality expected to be frozen early 2004.
 - Will include 2nd phase of IMS plus many other features designed to exploit multimedia communications, Internet access, etc.

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Release '99 Summary

Current operational systems are based on Release '99:


- Japan – *FOMA & J-PHONE*
- Isle of Man – *Manx Telecom*
- United Kingdom – *3*
- Austria – *Mobilkom*
- Others planned



NTT DoCoMo J-PHONE

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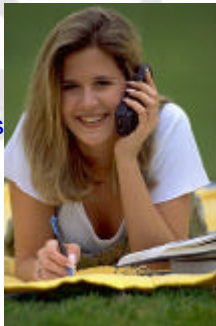
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Release 5 Summary

Release 5 - March 2002

- Main features:
 - **IMS - IP-based Multimedia Services**
 - All the core network elements for multimedia services
 - Based on SIP (from IETF) and PS bearers
 - **HSDPA - High Speed Downlink Packet Access**
 - Data only, downlink speeds of up to 10Mbit/s
 - Included in ITU-R update of M.1457
 - **And much more!**
 - Wideband AMR codec
 - End-to-end QoS
 - Enhancements to messaging, security, etc...





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What does IMS provide?

IMS provides:



- IP Transport in the Core network
- IP Transport in the UTRAN

And this therefore provides the possibility for:

- End to end IP services
- Increased potential for service integration
- Easy adoption and integration of instant messaging, presence and real time conversational services

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What does HSDPA provide?



HSDPA (High Speed Downlink Packet Access) provides:

- The next step in the evolution of the 3GPP air interface
- Provides integrated voice on a dedicated channel (DCH) and high-speed data on downlink shared channel on the same carrier (HS-DSCH)
- May be deployed in both Frequency Division Duplex (FDD) and Time Division Duplex (TDD) modes (in both high and low chip rate)
- Provides data rates of at least 3 Mbit/s and expected to evolve to data rates in the order of 10Mbit/s

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Other Release 5 Features

Other major features in Release 5 include:

- Wideband AMR (new 16 kHz codec)
- End-to-end QoS in the PS domain and Global Text Telephony (GTT) (i.e. real time text)
- Messaging enhancements (EMS, MMS)
- Intra domain connection of RAN nodes to multiple CN nodes
 - i.e one RNC serving two or more MSCs within the same network
 - opens the way to Network Sharing
- CAMEL Phase 4
 - new functions such as mid-call procedures, Interactions with Optimal Routing, etc.
 - Support of CAMEL in IMS

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Other Release 5 Features - continued



Other features include:

- Enhancements in GERAN, LCS, OSA, MExE, etc.
 - Le interface (GMLC – external LCS client) defined by LIF
 - GERAN enhancements include Location Services, real-time QoS for packet services, enhance power control
- Security enhancements
 - Access security of IP-based services
 - Network Domain Security (IP Network Layer)
 - Lawful Interception interface

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Interoperability Testing

Thorough testing

- Major investment in TTCN (Tree and Tabular Combined Notation) testing
- Interoperability is paramount
 - More than 1 M€ already invested in TTCN development
 - Permanent team to draft and deploy TTCN
 - More than a standards issue
 - Work performed in co-operation with industry players, in particular the Global Certification Forum (GCF)
 - Vital feedback into the specification work
 - ETSI "Plugtest™" events feature 3G interop testing



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What's next ?

- **Early 2004** **Release 6**
- **Many new features and enhancements, including:**
 - IMS "Phase 2" (incl. IMS Messaging, Conferencing, Group Management)
 - Interoperability between IMS using different IP-connectivity networks
 - Presence
 - Speech recognition and speech enabled services
 - Wireless LAN/UMTS interworking
 - Network sharing
 - Digital Rights Management
 - Radio optimisation
 - Multimedia Broadcast/Multicast Service (MBMS)
 - Generic user profile
 - MMS enhancements
 - Packet switched streaming services
 - ...

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And what's beyond Release 6?

Developing the position on 3GPP's long term future

- ad hoc study group has prepared Technical Report (TR 21.902) as Roadmap (September 2003)
 - Foresees long-term evolution of 3G towards future generations
 - Foresees continued major role for 3GPP well into the future
 - Foresees continued/expanded collaboration with other bodies

New areas to explore, e.g.

- New radio modulation techniques
- Use of UTRA in other spectrum arrangements
 - Contributions already prepared for ITU-R WP8/F
 - FDD & TDD in 850MHz, 1.7/2.1 GHz for USA
 - and 800 MHz for Japan
 - 2500-2690 MHz
- Exploitation of high speed packet operation
- Exploitation of IP
- Further Integration and interworking with Wireless LANs



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Relationship with other groups



3GPP is required to establish and maintain good relationships with groups working on standards for other IMT-2000 family members



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Collaboration with 3GPP2

- Considerable ad hoc collaboration as many companies active in both groups
- Joint meetings since 1999 to address interoperability, roaming and harmonization needs, centred on:
 - Radio access
 - Terminal design
 - Core network




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Collaboration with 3GPP2



- Joint meetings
- 1999 "Hooks & Extensions" workshops
 - Interoperability between radio access technologies
 - Dual mode terminals
- 2001 Harmonization of HSDPA (3GPP) and 1xEV-DV (3GPP2)
 - Various issues noted:
 - terminal design; services; spectrum; implications of All-IP
 - Initial attention on
 - common definitions for channel and traffic models
 - common physical requirements for future terminal designs
- April 2002 - Joint meeting of core network experts
 - All-IP core network harmonization
 - significant commonality between 3GPP and 3GPP2 core networks
- June 2002 - Joint meeting of radio experts
 - radio-related aspects of HSDPA / 1xEV-DV harmonization



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All-IP Core Network Harmonization Workshop, Toronto, 3-4 April 2002


- Agreed harmonization goals:
 - OSA/PARLAY-based service APIs
 - IMS (3GPP IMS and its equivalent in 3GPP2, MMD)
 - Adoption of a single IMS reference model
 - Consistent terminology to describe common IMS functional entities
 - Interoperability between 3GPP IMS mobiles and 3GPP2 IMS mobiles
 - a 3GPP IMS mobile can set up a session with a 3GPP2 IMS mobile and vice-versa
 - Application level intersystem IMS roaming
 - a 3GPP IMS mobile should be able to roam into a 3GPP2 network and vice-versa
- Recommendations include:
 - continued collaboration between 3GPP & 3GPP2, and with IETF, ITU, etc
 - 3GPP2 to base on-going development on 3GPP IMS Rel-5 and Parlay 3.1

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Collaboration with IETF

- Harmonization of 3GPP work also being enhanced by adoption of external common specifications
 - Notably, IETF RFCs (approx. 40)
 - RFC 3113 defines basis of co-operation between 3GPP & IETF
 - IMS based on SIP, defined by IETF...
 - SIP in original form not adequate for 3GPP
 - signalling, voice and radio efficiency issues
 - But 3GPP did not want a 3GPP specific version of SIP
 - would prevent interworking
 - 3GPP-IETF collaboration has provided required SIP extensions and IETF interoperability changes
 - Collaboration continues...



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Formal liaison with other groups

- 3GPP2
- 802.11 Forum
- International Special Committee on Radio Interference (CISPR)
- Cellular Telecommunications & Internet Association (CTIA)
- Digital Video Broadcasting (DVB) Project
- ECMA (European Computer Manufacturers Association)
- Eurescom
- European Co-operation in the field of Scientific and Technical Research (COST)
- ...in particular COST 273 (Towards Mobile Broadband multiband networks)
- European Radiocommunications Committee (ERC)
- Global Certification Forum (GCF)
- GSM Association
- HomeRF Forum
- IDB Forum
- Internet Engineering Task Force (IETF)
- IrDA
- International Multimedia Telecommunications Consortium (IMTC)
- Internet Streaming Media Alliance
- ISO-ITU expert group
- ISO MPEG / JPEG
- JAIN[™] (Java[™] APIs for Integrated Networks)
- Liberty Alliance Project
- MExE Forum
- Multi Service Switching Forum
- OMA (Open Mobile Alliance)
- Object Management Group (OMG)
- PCS Type Certification Review Board (PTCRB)
- Portable Computer and Communications Association (PCCA)
- The Parlay Group
- Presence and Availability Management (PAM) Forum
- RSA Laboratories
- SDR Forum
- Sun Micro Systems Inc
- SyncML Initiative
- TeleManagement Forum (TMF)
- TIA / TR45
- TV-anytime Forum
- Voice eXtensible Mark-up Language (VXML) Forum
- World Wide Web Consortium (W3C)

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Influencing the work

3GPP is contribution driven...

- Are your requirements fully reflected in 3GPP specifications?
- Are you satisfied with the pace of standardization?
- Are you satisfied with the content of 3GPP Releases?

If not...



- All progress is the result of member contributions...
- Progress can be accelerated by more input...
- New Features may be proposed by 3GPP Individual Members

So

- Make sure your company participates in a 3GPP Organizational Partner and that your voice is heard !

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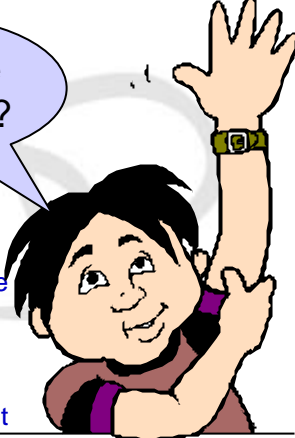


Conclusion

Will 3G be a success ?

Considering:

- The enormous industrial effort expended on developing 3G
- The huge financial investment in this sector
- The rigorous standardization process in place
- The major attention to interoperability issues
- The emphasis now placed on developing innovative and compelling services
- The early experience gained from deployment



Yes, 3G *will* be a success...
...it's only a matter of how and when!

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and finally....

Thank you for your attention

For more information please visit

<http://www.3gpp.org>

or contact

paul.reid@etsi.org

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