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Examining Interoperability Issues for Push-to-Talk Over Cellular

Improving Market Uptake through Standardization

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Evolution and Scope of OMA PoC Enabler

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Summary

What is OMA?

- The OMA is designed to be a center for mobile service specification work, stimulating and contributing to the creation of interoperable services

“No matter what device or operating system you have, no matter what service you have, no matter what carrier you use, you can communicate, access and exchange information.”

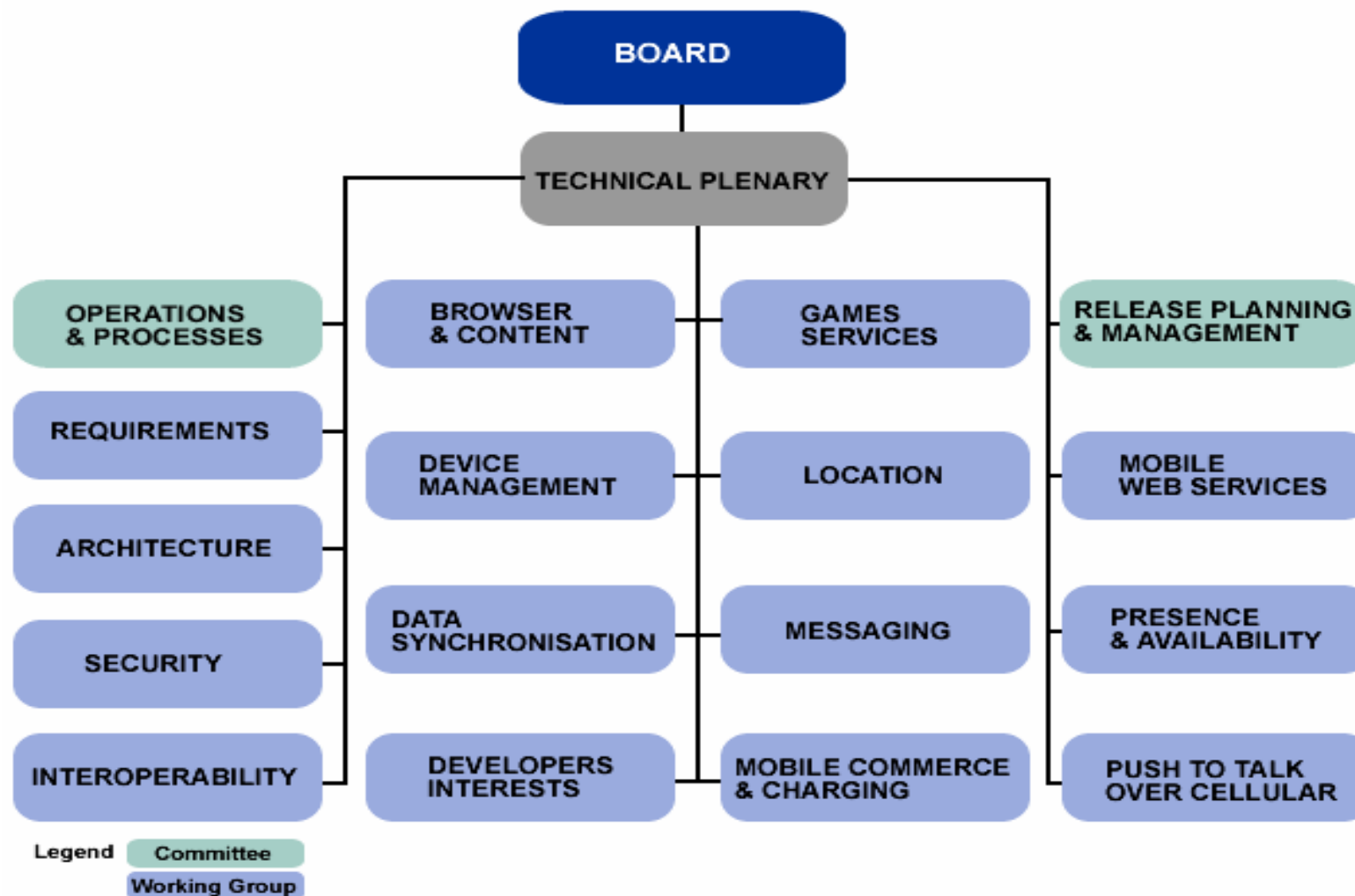
OMA Mission

The mission of the Open Mobile Alliance is to facilitate global user adoption of mobile data services by specifying market driven mobile service enablers that ensure service interoperability across devices, geographies, service providers, operators, and networks while allowing businesses to compete through innovation and differentiation.

OMA: A Unique Industry Forum

- OMA is different because it brings together all of the links in the value chain
 - Wireless Vendors
 - Information Technology Companies
 - Mobile Operators
 - Application and Content Providers
- Over 350 member companies representing all sizes and across all geographic barriers
- Deliver on end-to-end services and solutions and a truly open standard

OMA Structure



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Interoperable Standards

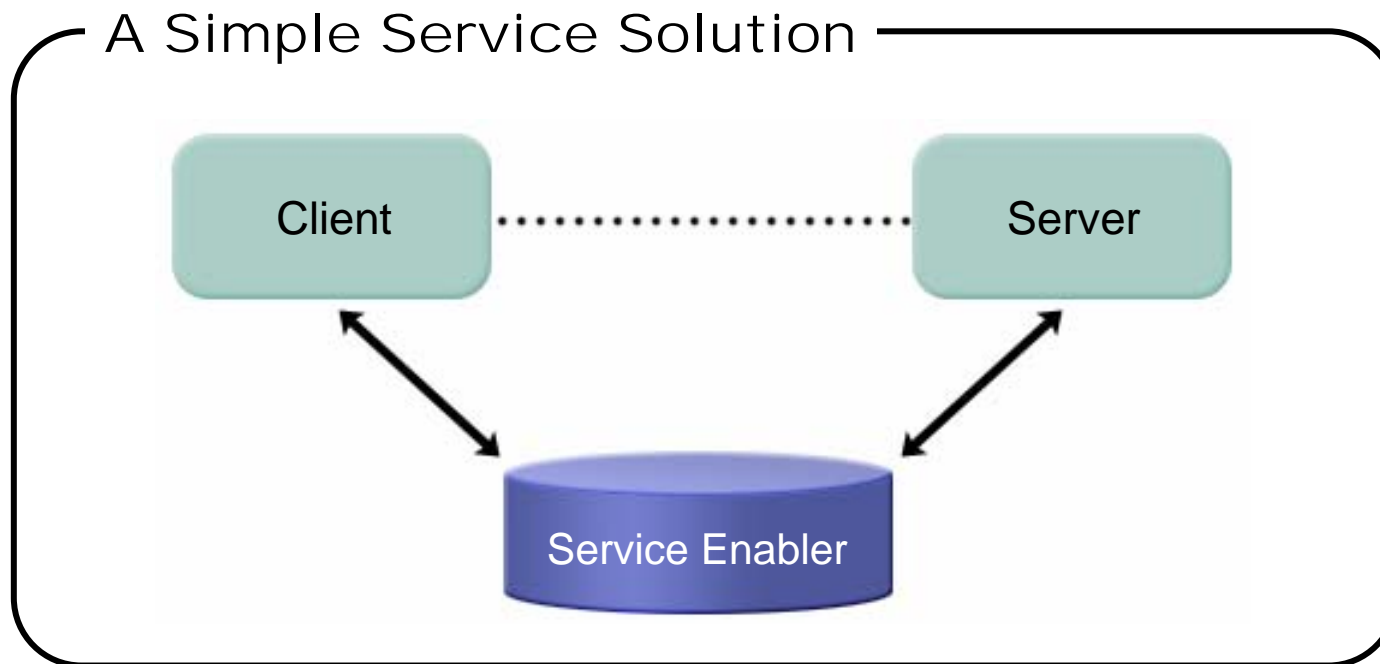
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Evolution and Scope of OMA PoC Enabler

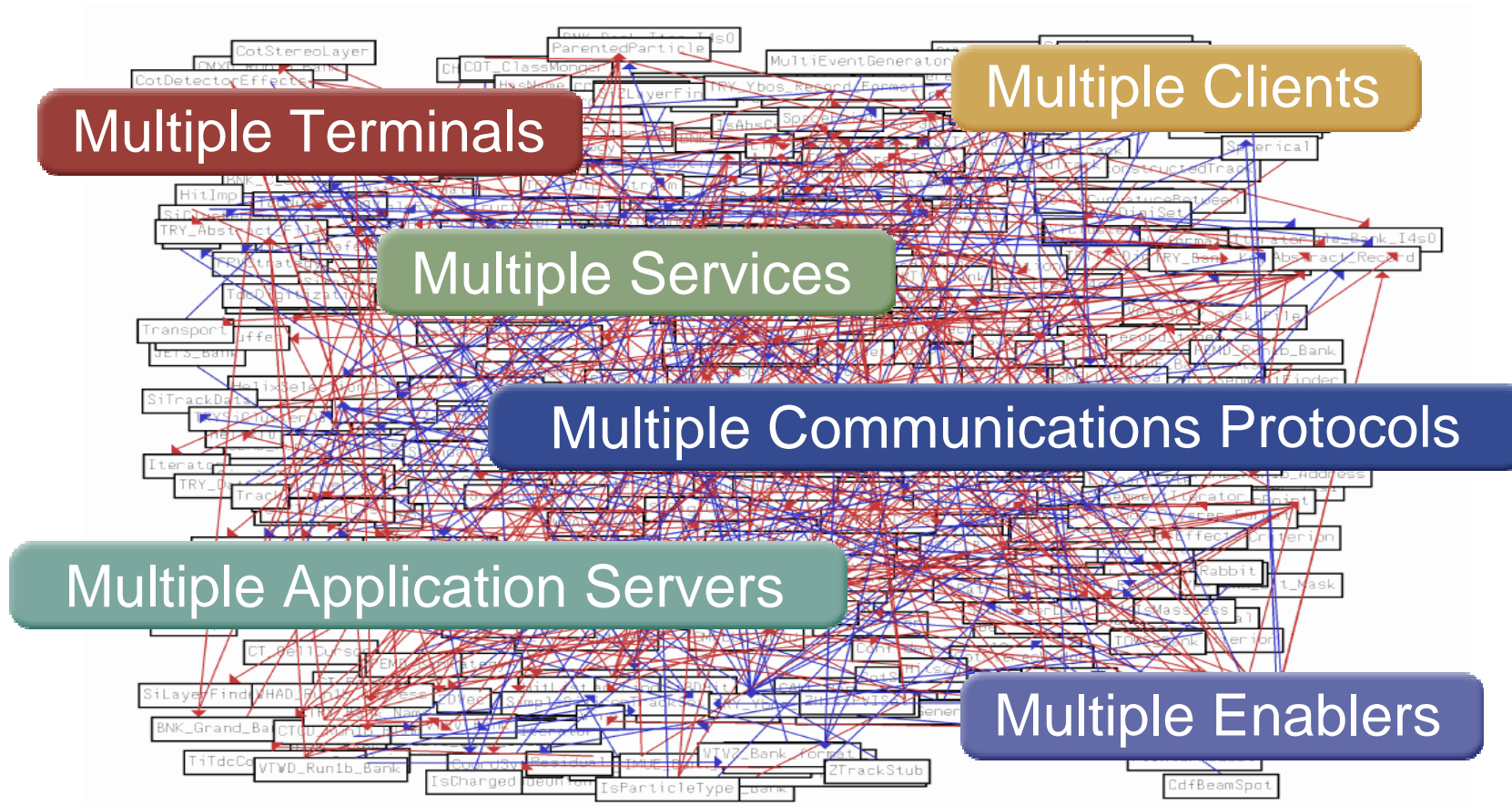
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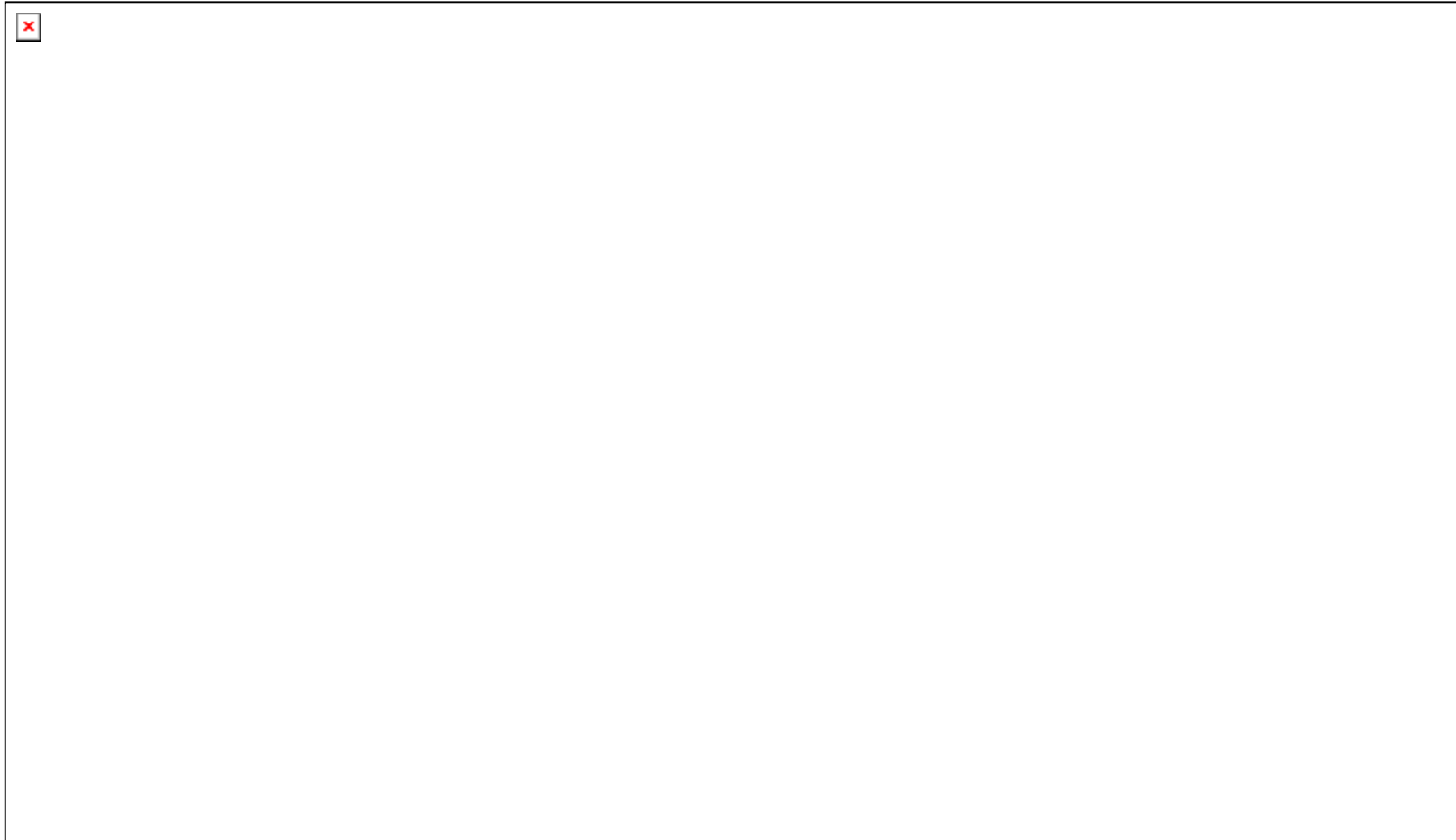
The Need for Interoperable Standards



The Need for Interoperable Standards



The Need for Interoperable Standards



Why the Industry Needs Standards for Push to Talk Over Cellular - Current Situation

- **User**
 - Inability to communicate with others using PoC on other networks
 - Lack of certainty that communication can be maintained whilst roaming
 - Restricted choice of terminals
 - Degraded voice quality due to transcoding and non standard interworking
- **Manufacturer**
 - Higher product development costs
 - Restricted market and slower entry into the global market
 - Interoperability problems with other equipment & services

Why the Industry Needs Standards for Push to Talk Over Cellular (cont'd)

- **Operators**
 - Higher capital costs due to lack of competition
 - Reliance on one manufacturer
 - Costly and time consuming testing
 - Installation compatibility problems with legacy network equipment
 - Network to network interworking problems
 - Loss of roaming revenue
 - Costly evolutionary path

Benefits of Standardising Push to Talk Over Cellular

- **User :**
 - Access agnostic e.g. access could be via CDMA, CDMA 2000, GPRS / EDGE or WCDMA, or via fixed line terminals
 - Ability to communicate using PTT with friends on other networks
 - Wide choice of terminals
 - High Quality of Service
- **Manufacturer:**
 - Lower cost to develop and produce
 - Interoperability with other systems which have implemented OMA PoC Enabler through OMA specified Inter Operability Testing (OMA Test Fest)
 - Faster installation and less de-bugging needed
- **Operators:**
 - Global service allowing operators to provide services to their own and roaming subscribers
 - Increased revenue, Lower capital cost, more vendor choice
 - Easier roaming agreements e.g. can be supported by basic GPRS roaming

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Conclusion

Evolution of the OMA PoC Working Group

- **March 2003** - Group of companies decide that a standardised solution is needed for Push to Talk and approach OMA
- **April 2003** - OMA approve a new Work Item and start work on Requirements Document (RD) for Push to Talk over Cellular (PoC)
- **November 2003** - PoC Working Group formed to develop Architecture and detailed (stage 3) technical specifications
- Average 45-50 delegates from over 30 companies attend the PoC WG and contribute more than 100 technical documents to each meeting !

Scope of OMA PoC Enabler

- Define architecture for PoC including service enablers
- Define interoperable specifications that enable the PoC service
- Create test suites for PoC to drive testing and validation activities

Scope of OMA PoC Enabler Work Item

- Aim of the work is to utilise the existing specifications and capabilities from:
 - IETF (SIP, XCAP and others)
 - 3GPP IP Multimedia Subsystem (IMS)
 - 3GPP2 Multimedia Domain (MMD) for enabling IP connections between mobile terminal
- Enable interoperable technology to allow mobile terminals and networks to be used for Push to Talk communication using a variety of access networks

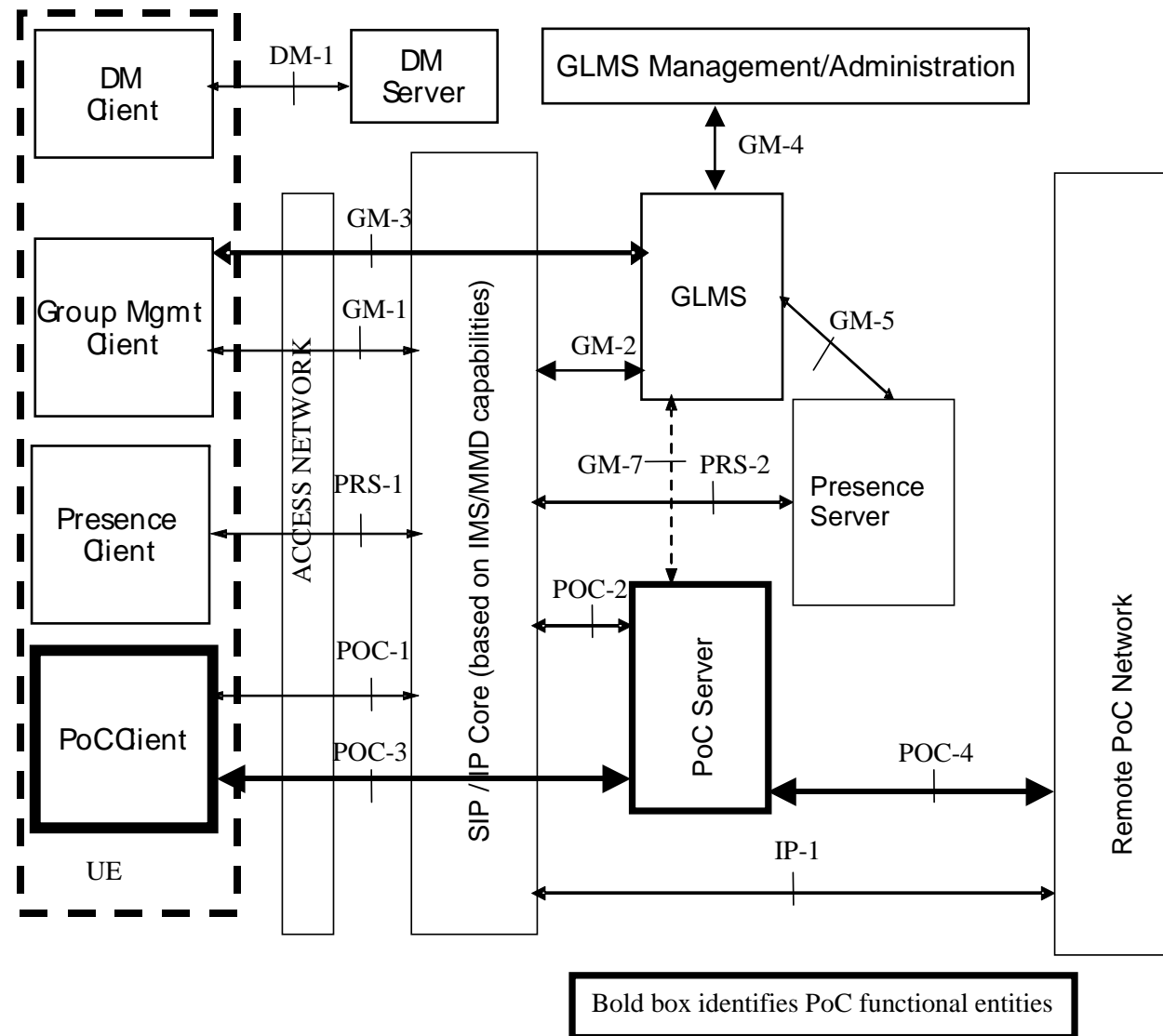
OMA PoC Enabler - Performance Requirements

- **QoE1 - Right-to-speak (RTS)**
 - Start of session - from first pressing button (sending invite) and receiving RTS indication should be < 2 sec
- **QoE2 - Start-to-Speak (StS)**
 - Established session - from button press to receiving permission to start speaking (StS) should be < 1.6 sec
- **QoE3 - End-to-end channel delay**
 - Delay from speaking to being heard by other participants should be < 1.6 sec
- **QoE4 - Voice Quality**
 - Mean Opinion Score (MOS) typically > 3 at BER = 2%

PoC Enabler - Some of the Features

- **Group & List Management** - Manage your work groups and friends
- **Presence (Optional)** - Links to Presence Enabler are in PoC Enabler
- **Queuing (Optional)** - Useful when there are many participants
- **Auto-answer** - Listen hands-free with speaker in mobile
- **Manual answer** - Avoid embarrassing 'talk-burst' moments!
- **On-demand Session** - Ad hoc call that has not been pre-arranged
- **Pre-Established Session** - Fast call connect, pre-connected to server
- **Concurrent Session** - Listen to 2 or more sessions simultaneously
- **On-line & Off-line charging** - Lots of charging parameters defined

Architecture of OMA PoC Specification



OMA PoC Enabler Deliverables & Time-Scale

- Requirements Document (RD) - Approved by TP Feb 04
- Architecture Document (AD) - Reviewed & Stable April 04
- Control Plane Specification (CP) - Work in progress Nov 04
- User Plane Specification (UP) - Work in progress Nov 04
- Enabler Test Requirements (ETR) - Work in progress Nov 04
- Enabler Test Specification (ETS) - Work in progress Jan 05
- Consistency Review Due to start Nov 04
- PoC 'candidate' Enabler package Submit to OMA TP Dec 04
- OMA IOP testing start when first products available Q1 2005
- OMA TP Approved PoC Enabler (with test results) Sept 2005

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- During this presentation we have seen how many companies are working together in OMA to develop an open global standard for Push to Talk over Cellular - for the benefit of all
- OMA enablers help get products to the global market faster and, because they are tested, they work!
- If you would like to know more about OMA please visit the website:
<http://www.openmobilealliance.org/>
- You can also access many technical documents, including the PoC Architecture Document, via the OMA Public access portal:
<http://www.openmobilealliance.org/tech/publicmaterial.html>