Open Mobile Alliance

Push-to-Talk over Cellular (PoC)

Short Paper

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June 2005

OMA – specifying mobile service enablers

The Open Mobile Alliance (OMA) is a center for mobile service enabler specification work, stimulating and contributing to the creation of interoperable services. OMA's organizational goals include delivery of quality, open technical specifications based upon market requirements that are consistent, modular and extensible. OMA service enabler specifications provide interoperability across different devices, geographies, service providers, operators, and networks, and facilitate interoperability of the resulting product implementations.

Market need for Push to Talk Over Cellular (PoC) specification

The mobile industry is constantly re-inventing itself. There is a convergence of traditional IP technologies and mobile solutions. Enterprises are mobilizing their existing businesses, consumers' increasing demand for multimedia services, and operators look for revenue from other than traditional voice services.

PoC is a new, differentiated voice service that utilizes packet-switched data, and offers one-to-one and one-to-many voice service. The solution is both attractive for users and an opportunity for additional data revenue for operators.

Currently, the main impediment to true mass-market growth of PoC services is the lack interoperability between different manufacturers' devices and networks. A number of operators have launched a pre-standard PoC offering to meet time-to-market requirements, and these services have proven popular. The members of OMA have taken a significant step forward by defining the first, interoperable set of industry specifications for Push to Talk Over Cellular, by introducing the OMA PoC 1.0 Enabler Release

OMA PoC 1.0 Enabler Release

The OMA specified Push To Talk Over Cellular (PoC) service is a two-way form of communications that allows users to engage in immediate communication with one or more users. PoC service is similar to a "walkie-talkie" application in that by pressing a button, a talk session with an individual user or broadcast group is initiated.

Receiving participants hear the sender's voice either without any action on their part (auto-answer mode), or may be notified and have to accept the call (manual answer mode) before listening to the sender's voice. In addition, the PoC service provides two modes for PoC Session establishment: the *Pre-established Session mode* and the *On-demand Session mode*.

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The communication is half-duplex, meaning that one person can talk at a time and all other participants hear the speech. The PoC Server controls permission for talk. OMA PoC 1.0 supports:

- One-to-One PoC v1.0 Session: the basic capability to set up a voice communication between two users
- One-to-Many PoC v1.0 Session: enables the user to set up a voice communication with a multiple number of other PoC subscribers in an ad-hoc or pre-defined group manner
- Instant Personal Alert: enables the calling user to inform a party of his or her wish to communicate and to request the invited user to “call-back”
- Group Advertisement: the capability to inform other users about an existing PoC Group

The OMA PoC Service Enabler utilizes basic inter-working with the OMA XML Document Management Enabler and OMA Presence Enable. Key features to these Enablers are: group list creation and management functions, group sessions emulating conferencing on demand and integration of user’s presence & availability information in the session setup process.

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Basic PoC Architecture

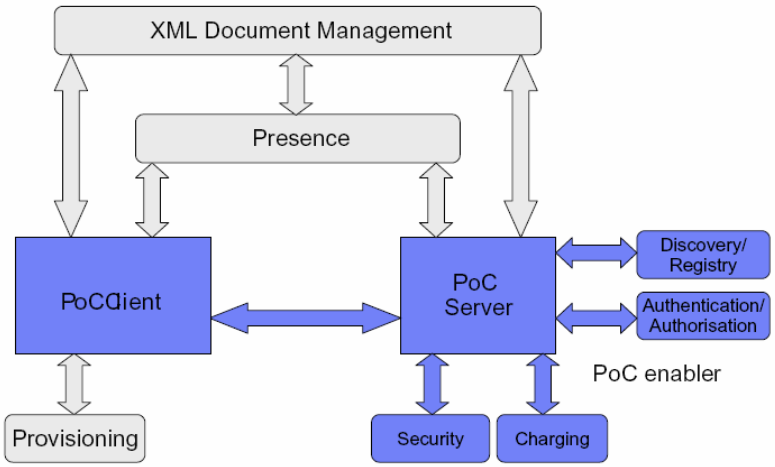

Figure 1. Logical architecture of PoC

In OMA PoC 1.0, the Client and Server use and interact with certain enablers as shown in the Figure 1 “Logical architecture of PoC”.

PoC Clients can define group documents to the XML Document Management server. The PoC Server can use these group documents, when establishing PoC group sessions.

PoC Client can publish its presence status to the PoC Server, or watch status of another PoC Client. The PoC Server can also publish and retrieve PoC Client status.

PoC Service can be used after registration and authentication. PoC Server supports the charging and security of the underlying radio access network. The PoC Clients can be provisioned by using OMA Device Management.

Interoperability

The Open Mobile Alliance facilitates Interoperability TestFests as a service for OMA member companies to test their OMA implementations for interoperability against other vendors’ OMA implementations.

The first OMA TestFest for Push to Talk Over Cellular was held immediately following the completion of the specification in May 2005. A number of vendors

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participated in the specification work, bringing their implementations to test basic inter-working in a production environment. Results from OMA Interoperability Test Fests will be used for product enhancements as well as OMA's work on improving the specification.

OMA Evolving the PoC Solution

OMA PoC 1.0 has been released as a *Candidate Enabler Release*, and production implementations of the services are being tested for interoperability within the OMA TestFest program. As the implementations are fine-tuned through the TestFest program, the specification will be moved to *Approved Enabler Release* status. Future versions of OMA PoC are being defined and will provide enhancements to this important specification.

About the Open Mobile Alliance (OMA)

The Open Mobile Alliance (OMA) delivers open specifications for the mobile industry, helping to create interoperable services that work across countries, operators and mobile terminals and are driven by users' needs. To expand the mobile market, companies supporting the Open Mobile Alliance work to stimulate adoption of a variety of new, enhanced mobile information, communication and entertainment services. The Open Mobile Alliance includes contributors from all key elements of the wireless value chain, and contributes to the timely and efficient introduction of services and applications.

For more information on OMA PoC 1.0 as well as the many other Enablers under development at OMA, please visit www.openmobilealliance.org.

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