IEEE ComSoc April 11, 2007 Meeting on IMS and PoC

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Introduction

At the IEEE ComSoc-SCV chapter's April 11th, 2007 meeting, Sonim Technologies CTO Joakim Wiklund presented an enlightening and pragmatic view of IMS (IP Multimedia System). Included were the origins, current status and future directions for this much hyped panacea technology for service convergence over IP networks.

Sonim is a start up company, specializing in a complete end-to-end mobile VoIP platform that delivers high-performance push-to-talk applications. Sonim products are said to be 100% interoperable with standard IMS platforms and are available to network operator customers for in-network deployment or as Sonim-managed hosted services. More information on the company may be found at:

http://www.sonimtech.com/

Historical Perspective

At the end of the 1990s, there was no standardized platform or framework for multiple applications running over a (service converged) IP network. Cellular network operators didn't want to be just a point to point pipe provider, because they feared loss of customer control over services that might be provided over their networks. The 3G.IP industry forum was created with a goal to enable all services, including voice, to be provided over an IP based wireless network. Some of the results of this effort were **GPRS, EDGE**, and **UMTS**.

Editors Notes:

GPRS (General Packet Radio Services) provides data services directly over cellular networks. Instead of building a new overlay network for data, cellular operators could use GPRS so that applications could reside outside of the traditional core network.

EDGE (Enhanced Data GSM Environment) facilitates increased data transmission rates and improves data transmission reliability. EDGE has been introduced into GSM networks around the world since 2003, initially in North America.

UMTS (Universal Mobile Telecommunications Service) was part of the IMT-2000 initiative. This 3G standard supports theoretical data throughput of up to 2 Mbps.

Can IMS Be a Key Enabler of Internet-like Wireless Network?

Wireless carriers wanted to quickly deploy 100s of new services, but lacked a low cost method to do so. IMS is intended to serve as the common platform to achieve this objective. It creates an open environment for rapid service launch.

IMS is off to a slow start and remains infrastructure centric. Operators like the IMS vision, but still lack a business case. Further, the standards process has failed to define an IMS client. Without a standardized IMS client, there is no clear requirement applicable to all cellular operators. Hence, handset manufacturers have no standard spec to build to.

Joakim stated that **SIP** (Session Initiated will Protocol) services would languish until mass- market devices can accept 3rd party down loadable applications. [Note that most VoIP systems now use SIP for call setup. Earlier VoIP systems used ITU H.263.] He noted that current cell phone Operating Systems, like Symbian and Windows Mobile, can do this today.

IMS Services and Applications

Three were identified: The **Push to talk over Cellular (PoC), Presence** (more of a supporting application), and **Streaming.** These services all run over a SIP/ IP v6 network. (They are specified for IPv6 but in real deployment still in IPv4)

According to Joakim, **PoC*** is the only real IMS application that has been standardized to date: OMA PoC 1.0. The 1st commercial deployment by Sonim is for KPN in the Nederlands- using Sonim's technology (handsets with the corresponding software/firmware).

PoC's initial market is in PMR+ replacement in industries such as: construction, field services, transportation and logistics, and security.

+ **PMR=Professional Mobile Radio** (also known as Private Mobile Radio (PMR) in the UK and Land Mobile Radio (LMR) in North America)

* Editors Note: PoC has been defined by the Open Mobile Alliance's "Push to Talk Over Cellular" Working Group. According to its charter, "The PoC WG is positioned to develop application enabling specifications to permit the deployment of interoperable PoC services. Due to critical performance objectives for this service, support for the lower-level services required for this set of application enablers will require some direct engagement with the network defining groups (e.g. 3GPP and 3GPP2). This close engagement may be a key differentiator with other OMA work groups that develop similar application enablers. The expectation is that this Work Group could develop similar application enablers in the future.

The initial work of this OMA Working Group will be focused on the tasks required to develop specifications for an open standard to enable adoption of PoC service over

mobile networks. PoC service is a half-duplex form of communications that allows users to engage in immediate communication with one or more receivers, similar to "Walkie Talkie" type operation, simply by pushing a button on their handsets."

More information is at:

http://www.openmobilealliance.org/tech/wg_committees/poc.html

Presence and Group (PaG) list management is apparently an IMS supplementary service that is currently being developed. PaG creates a **SIP presence enabled network stored lists, for example, address book,** that can be leveraged by any IMS application, using pre-defined protocols.

[There was no discussion about the **Streaming** application or service during the talk]

2 Phases of Wireless IMS Evolution vs a Negative Outlook

1. Operator driven standards applications like PoC and PaG gain market traction.
2. Developer driven applications evolve once a standard IMS client is defined and standardized in 3GPP.

A negative scenario was proposed for consideration: that IMS will never be a commercial success. Reasons include:

1. Applications can be developed and deployed at lower cost without IMS.
2. Lack of a standardized IMS client definition.
3. Good support for application developers might not be forthcoming, because the skills needed to build and support an application platform are not those of the companies standardizing IMS in 3GPP. [Those companies are primarily Nokia and Ericsson].

In closing, Joakim stated that the jury was still out on the success of IMS applications and services and that it would take three to five years before the final verdict is in. A crucial obstacle for operators is the overhead and associated costs needed to deploy an IMS service. Specifically, one service on its own probably would not bring in enough revenue to justify the cost of the IMS infrastructure needed for service launch and delivery. But if there are many services planned, then that overhead cost might be justified.

References:

IMS Baby Steps, by Joni Morse, WirelessWeek - April 01, 2007

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Making IMS Work: Current Realities, Challenges And Successes, by Jeff Fried and Duane Sword, Business Communications Review, May 2006