



Motorola Networks News

IMS: WiMAX's Path to Optimization

IMS integrates broadband ecosystems to make WiMAX's promise of seamless mobility a reality.

Because IMS is standards-based, the network can grow into the future, with fast and simple additions of new applications and servers within existing network frameworks.

IMS, or IP Multimedia Subsystem, has become a reality. As service providers build large-scale wireless broadband networks – including WiMAX – to support voice, data and video, IMS is a pivotal element in the delivery of carrier-grade services and mass application introductions. Much of the recent focus on WiMAX had been concentrated on broadband wireless access. Today, service providers adopting the technology have the ability to not only provide data services, but also deliver comprehensive wireless services.

According to Gartner research, total worldwide WiMAX connections are expected to reach 16.3 million in 2009. As WiMAX service providers look to compete with traditional service providers, they need a solution that offers flexibility, quality of service (QoS) and a clear evolution path. Deploying an IMS core—rather than a

legacy core system—in a WiMAX network does exactly this.

Expanding Boundaries

A WiMAX technology platform paired with an IMS core has the capability to expand subscribers' boundaries with quickly deployed applications that allow communications to flow continuously between fixed and mobile networks and devices, all with carrier-class QoS. With IMS-enabled WiMAX, true seamless mobility comes to life with an integrated network ecosystem. Because IMS is standards-based, the network can grow into the future, with fast and simple additions of new applications and servers within existing network frameworks.

"It's not just IP; it's a standardized IP multimedia solution, versus IP simply for data," says Darren McQueen, Motorola Vice President, IMS, Cellular and Broadband Product Management. "IMS is key to maximizing the potential of WiMAX, and it's no longer a vision, it's a reality."

Motorola is bringing IMS to life today. Motorola's end-to-end WiMAX solution with an IMS core, first launched in trials at the end of 2006, will be commercially available in the first half of this year.

IMS allows nearly limitless applications possibilities via WiMAX. For example, Find-me/Follow-me services will allow simultaneous ringing to more than one device from a single number, allowing users to specify the device on which they would like to be reached, according to time of day. A shared address book application lets subscribers use the same contact lists across various devices and applications, making communication simpler and more seamless. Using a multi-mode handset, an end user will be able to roam seamlessly between cellular, WiFi, and WiMAX networks. In addition, subscribers will be able to move a voice call or live video from one device to another across network boundaries. With the use of location-based services, applications can be developed that identify a user's location, and thus tailor services to that locale. Customer and location specific services, including maps or reviews of nearby hotels can be provided, even taking into account user preferences to tie in to frequent traveler programs or restaurant referrals.



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Personalizing the Multimedia Experience

IMS is an integrated system that supports the development of applications over the IP backbone. The technology is based on Third Generation Partnership Project (3GPP) standards and can be readily overlaid on existing network infrastructures, interworking with existing legacy equipment. IMS carries signaling and bearer traffic over the IP layer, functioning as an intelligent "routing engine" that matches a user profile with an appropriate call handling server and switches the call control over to the designated handler. IMS includes the capability to add, modify or delete sessions in an existing multimedia call, and extends the IP network all the way to the user equipment, enabling the core network to remain access agnostic. IMS enables service providers to offer multi-access solutions utilizing the best technology for optimum service delivery. Each end user can have a personalized experience involving simultaneous voice, data and multimedia sessions.

Tap into New Revenue

As service providers transition to IP-based services, QoS can be difficult to manage, particularly with voice services. Unlike IMS-based applications, many traditional voice-over-IP (VoIP) solutions are not standards-based and often lack carrier-grade QoS. Using IMS, service providers will be able to provide carrier-grade voice products, as well as intelligent applications that add value and increase revenue. With IMS, WiMAX service providers can offer more than commoditized "big pipe" access service—they can actually join the revenue streams of the applications riding the big pipes.

"It's the new direction of WiMAX," McQueen says. "IMS enables WiMAX to become a full-fledged communications network—optimized for voice, data, video and multimedia experiences. Now it's not just broadband data, it's comprehensive communications."

To learn more about Motorola's portfolio of end-to-end solutions, please contact your Motorola representative. your Motorola representative.





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CDMA Revisions to Lead Network's IP Revolution

The path to Ultra Mobile Broadband is clear and will change the landscape of wireless connectivity.

The higher bandwidth that UMB provides could also mean new games and gaming devices that will redefine virtual reality games.

A busy manufacturing executive travels to China for an important meeting with his Asian suppliers. Today, though, is an important day in his personal life as well. It's his daughter's sixth birthday and he doesn't want to miss seeing her blow out the candles on her birthday cake. Armed with a 3G CDMA phone with video capabilities, he won't have to miss a precious minute. His wife places a video conference call to him in Shanghai during the party. He excuses himself from his business associates, answers the call and is greeted by his family. He wishes his daughter a happy birthday, grateful he could participate in her special day.

Real-time video telephony is now just one of the many exciting possibilities that come to life with the commercial deployment of CDMA1x EV-DO Revision A (Rev. A), the latest incarnation in CDMA network architecture that is setting the stage for rich mobile multimedia experiences. The rollout is well underway as commercial deployments continue to go live throughout 2007 and beyond, putting enhanced

mobile broadband experiences in subscribers' hands and setting the stage for an all-Internet Protocol (IP) network.

"Rev. A brings the broadband experience you'd get on a landline — from a DSL or cable connection at home — to your mobile," says Pepe Lastres, Director of Solutions Marketing for Motorola.

Rev. A features broadband data rates of up to 3.1 megabits per second (Mbps) to your handset, and 1.8 Mbps from your handset to the network. Rev. A also includes Quality of Service enhancement which allows for increased revenue opportunities through an assortment of next-generation applications on 3G handsets, including VoIP calls and true multimedia content, such as video conferencing and gaming.

Bridge to UMB

And the momentum continues; this year's commercial deployment of Rev. A with an all-IP mobile network, allows for the growth of multimedia content. As multimedia content grows, the need for even greater capabilities will be needed. 3GPP2 has addressed this need with the evolution of DO to the highly anticipated Rev. C, or Ultra Mobile Broadband (UMB). UMB promises data rates up to 280 Mbps to your handset, and up to 68 back. This allows nearly unlimited mobile data possibilities to help both enterprise customers and consumers expand the range of their digital experiences.

For example, imagine, a young couple departs for a once-in-a-lifetime trip to Japan a day after their wedding. An avid photographer, Steve (the groom) captures nearly every moment of their fantastic trip with high-resolution photos on his digital camera. Unfortunately, on the last day of their trip, Steve's camera was stolen from the seat next to him while he and his wife are having lunch. Although Steve will need to buy a new camera, his treasured honeymoon photos are intact. Thanks to UMB network technology, the couple's photos were never stored on their camera to begin with, but instead were safely sent directly to their home computer. Steve's state-of-the-art camera didn't contain a memory card; instead, he was able to instantly download photos to his personal e-mail account as he took them.



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Expanding Enterprise Connectivity

Or, take Matt, for instance, a road warrior sales executive for an expanding robotics firm. Matt is constantly traveling between Chicago and Detroit to meet with his clients in the auto industry. Matt prefers to travel light, keeping his baggage to a minimum in order to zip through the airport with ease. His UMB-networked smartphone enables him to leave his briefcase and laptop at home. Matt can walk into his client meeting with confidence, knowing that his files, notes and information are accessible via his smartphone. UMB even allows him to host a video conference so they can share and modify that big proposal, allowing him to work in real time and win that contract.

Game On

The higher bandwidth that UMB provides could also mean new games and gaming devices that will redefine virtual reality games. Instead of playing games tied to PCs, groups of friends might be able to engage in mobile games in which they actually insert themselves into the game, with their own cities becoming the backdrop. This will take location based services to a whole new level.

With an all-IP network in place and the high bandwidth speeds that UMB enables, your ability to offer bandwidth dependent mobile applications will be far beyond what we see today. New forms of multimedia content, gaming and enterprise applications are just a few of the areas which will feel the impact of UMB.

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