



How Mobile and
Wi-Fi Converge



UMA-Based Fixed-Line VoIP Services

UMA • Mobile VoIP • Broadband IMS

How mobile operators can leverage UMA
deployments to offer fixed-line VoIP services.

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➔ **Executive Summary**

As mobile handset penetration reaches saturation levels in many markets, mobile operators are aggressively seeking new ways to drive top-line revenue growth. Deploying Unlicensed Mobile Access (UMA) dual-mode handset services to encourage increased use of mobile voice and data at home and the office (i.e. accelerate fixed-to-mobile substitution) is one key initiative being pursued to address this challenge.

In addition to offering dual-mode handset services, many mobile operators are now looking to leverage their UMA deployments to also offer traditional “fixed-line VoIP” services and drive even more voice traffic and revenues into the mobile core network. This paper provides an overview of how UMA is being used to deliver several new fixed-line VoIP services including Broadband Telephony and PC SoftMobile services.

➔ **Introduction**

In addition to extending mobile voice, data and IMS services to mobile handsets over broadband IP access networks, the 3GPP UMA standard enables mobile operators to leverage their existing core networks to offer traditional fixed-line VoIP services; services similar to those offered by providers such as Vonage, Free or AT&T.

Fundamentally, a UMA Network Controller (UNC) extends voice, data and IMS services from a core mobile network over any fixed IP access network through an open, standards-based IP interface. This capability can be leveraged well beyond the concept of providing enriched mobile voice and data services to mobile handsets to provide a number of feature-rich, low-cost fixed-line VoIP services. UMA-based fixed-line VoIP products currently under development include UMA Terminal Adapters and UMA SoftMobiles (Figure 1).

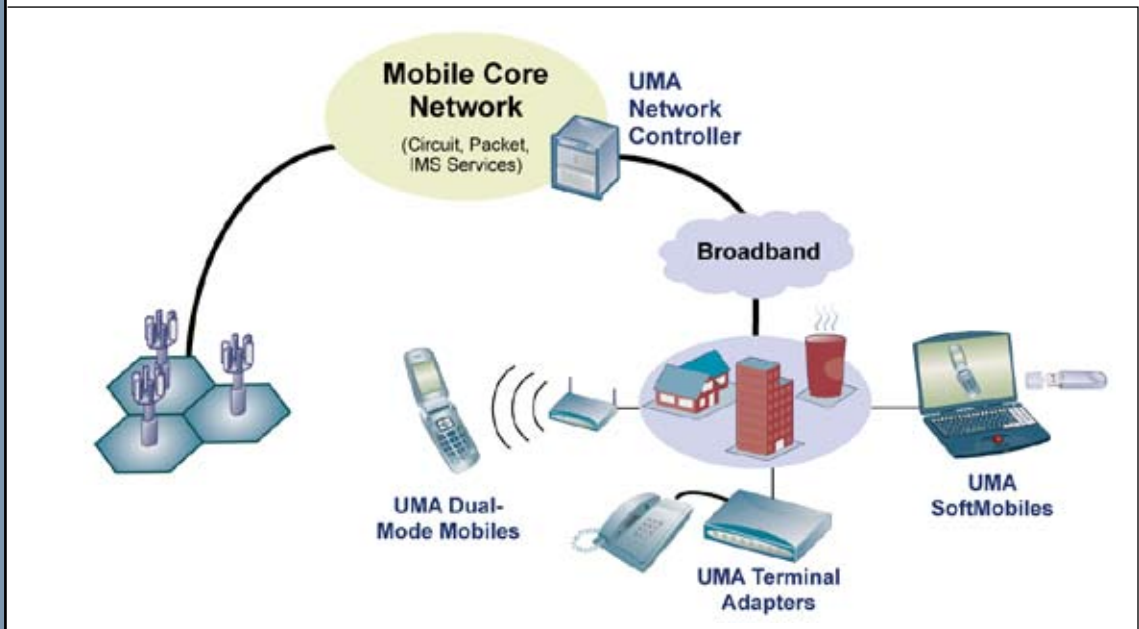


Figure 1. UMA-Based Fixed-Line VoIP Services

➔ **UMA-Based Broadband Telephony Service**

The market for Broadband Telephony service has increased dramatically over the last twelve months. As of April 2006, Vonage Holdings alone had more than 1.6 million subscribers paying between \$15 and \$25 per month for a telephone service delivered over existing broadband access connections.

Now, thanks to UMA-based terminal adapters, mobile operators can also participate in this large and growing service opportunity. A UMA-based fixed-line VoIP service is an ideal approach for mobile operators looking to increase fixed-to-mobile substitution by directly capturing in-home fixed minutes of use.

UMA-based terminal adapters enable mobile operators to leverage an existing R99 or R4 core network to deliver a standard analog telephone service over broadband access networks (a.k.a. Broadband Telephony). As far as subscribers are concerned, the service behaves as a standard analog fixed telephone line. The service is delivered in a manner similar to other fixed-line VoIP services, where a simple device (in this case the UMA Terminal Adapter) is connected to the subscriber's existing broadband service.

The UMA Terminal Adapter, which represents itself to the core mobile network as another mobile terminal (including SIM credentials), then converts standard mobile service into a standard fixed analog telephone service. To deliver the service, the terminal adapter provides one or more standard analog telephone ports into which existing corded and cordless telephone devices can be connected (Figure 2).

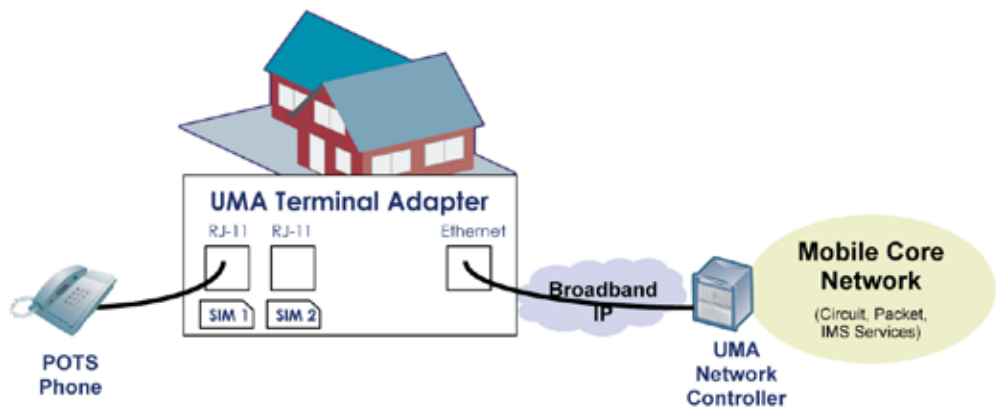


Figure 2. UMA Terminal Adapter Connection

One key advantage of using UMA to provide a fixed-line VoIP service is that it enables a number of fixed-mobile service integration possibilities. As both the fixed-line VoIP service and the subscriber's mobile service are delivered off the same core mobile network, operators can offer a number of unique service integration features including a single voicemail box.

They can also offer simultaneous ringing of fixed and mobile phones when subscribers are at home. In this latter example, when a subscriber is attached to the home WLAN with a UMA mobile, the subscriber could choose to have calls to the mobile phone number ring the home fixed-line VoIP service with a distinctive ring pattern in addition to ringing the mobile phone, and visa versa.

In addition, mobile operators using UMA can provide advantages through the packaging and pricing of broadband telephone services. Mobile operators could easily position a broadband telephone service as an extension to mobile family plans. For example, whereas some mobile operators charge an additional 10 euros per month to add a mobile handset to a family plan, the operators could sell a home phone line service plan to customers in the same manner.

To enable operators to offer UMA-based fixed-line VoIP services, Kineto Wireless is currently working with several leading broadband customer premises equipment (CPE) manufacturers to deliver UMA Terminal Adapter products.

→ **UMA-based SoftMobile Service**

Connecting laptops to broadband access at hotels and Wi-Fi hot spots has become a standard part of everyday life, particularly for business travelers. In addition, many travelers are beginning to utilize laptops and broadband connections for the purpose of voice communications. Rather than using mobile phones to make calls and pay significant roaming fees, they are turning to PC-based SoftPhones and VoIP services when making international calls. This represents a significant threat and opportunity for mobile operators.

In addition to offering broadband telephone services, mobile operators can leverage existing UMA deployments to provide SoftMobile services. Imagine a service where subscribers traveling abroad could make inexpensive mobile calls from their laptops whenever connected to a hotel broadband connection or public hotspot, still within the control of the home mobile service provider.

To use a service like this, a subscriber would simply place a USB memory stick with an embedded SIM into a USB port on their laptop. The UMA SoftMobile client would automatically launch and connect over IP to the home mobile service provider (Figure 3). From that point on, the subscriber would be able to make and receive mobile calls as if he or she was in the home calling area.



Figure 3. UMA SoftMobile

→ Summary

By providing a well-defined standard for extending mobile voice, data and IMS services over fixed IP access networks, the 3GPP UMA standard opens up tremendous new service opportunities for mobile operators. By deploying the Kineto UMA core network solution, not only can operators provide an enriched mobile experience to mobile subscribers when in their home, office or hot spot, but they can now begin to offer compelling, differentiated fixed-line VoIP services.