



## Frequently Asked Questions: Wi-Fi CERTIFIED™ Voice-Personal

### **What is the Voice-Personal certification program?**

The Wi-Fi Alliance developed the Voice-Personal certification program, an optional program, to verify that access points (or wireless routers) and client devices (handsets, laptops, etc.) meet the specific requirements for voice over Wi-Fi applications. In a shift towards an expanded focus of certification beyond protocol adherence and interoperability, the Wi-Fi CERTIFIED Voice-Personal program focuses on a specific application and is based on performance testing.

Voice-Personal devices will be tested in a typical home and small office environment, with one access point managing multiple client devices and up to four concurrent voice calls. Devices that are Wi-Fi CERTIFIED Voice-Personal have demonstrated that their Wi-Fi performance is capable of providing consistent, good-quality voice calls.

### **Why is a certification program needed for voice over Wi-Fi in home and small office environments?**

The popularity of voice over IP (VoIP) and widespread adoption of Wi-Fi networks are bringing voice over Wi-Fi to a broad consumer market. Wi-Fi enabled devices need to support good voice call performance that matches the user experience and ease of set-up that Wi-Fi already provides for data applications.

The Wi-Fi Alliance baseline certification programs, such as those for 802.11a/b/g/n draft 2.0, Wi-Fi Protected Access™ (WPA2), and Wi-Fi Multimedia™ (WMM®), help to ensure interoperability between Wi-Fi CERTIFIED handsets and access points. They also provide tools such as standards-based Quality of Service, which are necessary for providing good performance.

The Voice-Personal certification program goes to the next level, helping to ensure that the tools are used correctly to create good voice quality when a call is made over a Wi-Fi network using a Wi-Fi CERTIFIED Voice-Personal client device and Wi-Fi CERTIFIED Voice-Personal access point or router.

### **What performance requirements does Voice-Personal certification program test?**

The Voice-Personal certification program tests the performance of the Wi-Fi implementations in voice over Wi-Fi applications, under simulated real-world conditions that include both voice and data traffic streams in network configurations common in home and small office environments. To achieve certification, client devices and access points have to perform above rigorous thresholds for packet loss, latency and jitter when presented with simulated voice streams based around the common Voice over IP protocols.

- Packet loss of less than 1% with no burst losses;
- Latency of less than 50 milliseconds;
- Maximum jitter of less than 50 milliseconds.

### **When will Wi-Fi CERTIFIED Voice-Personal products be available for purchase?**

The optional Voice-Personal certification program is available now to Wi-Fi Alliance members. We expect the first certified products to be available in mid- to late 2008.

### **Do all devices in a Wi-Fi network have to be Wi-Fi CERTIFIED Voice-Personal to offer good voice quality?**

The Wi-Fi CERTIFIED Voice-Personal designation will help to assure users that voice-enabled Wi-Fi devices are capable of carrying voice over Wi-Fi calls with good audio quality. Both the client device (handset, laptop or other voice-capable device) and the access point should be Wi-Fi CERTIFIED Voice-Personal to ensure the optimal voice quality when making calls over Wi-Fi networks.



Devices that carry Voice-Personal certification are required to have passed all of the necessary certifications for interoperability, including the baseline Wi-Fi certification for core radio standards (802.11a/b/g/n draft 2.0), WPA2 for security, and WMM for Quality of Service. Voice-Personal certification also requires that access points have WMM-Power Save certification for improved power saving on clients that support it.

Other Wi-Fi devices in the network, even if not used for voice applications, should also be Wi-Fi CERTIFIED for core radio standards (802.11a/b/g/n draft 2.0) and WPA2.

### **Why should service providers or mobile carriers specify Wi-Fi CERTIFIED Voice-Personal products?**

Wi-Fi CERTIFIED Voice-Personal devices will deliver a better user experience with voice calls than those which are not certified for Voice-Personal. The Voice-Personal certification program helps ensure that when a call is made over a Wi-Fi network using a Wi-Fi CERTIFIED Voice-Personal client device, such as a handset, and a Wi-Fi CERTIFIED Voice-Personal access point, are capable of delivering good voice quality.

Voice over Wi-Fi offers users flexibility, convenience, and often, a better indoor signal than cellular service. For carriers and service providers offering voice of Wi-Fi service, specifying Wi-Fi CERTIFIED Voice-Personal devices will help to ensure a better user experience, fewer support calls, fewer product returns, and thus higher customer satisfaction and less churn.

### **Why should client device handset manufacturers pursue Voice-Personal certification?**

Voice over Wi-Fi offers users flexibility, convenience, and sometimes, a better indoor signal than cellular service for voice calls. For voice-capable Wi-Fi devices, the Voice-Personal certification program helps to ensure that when a call is made over a Wi-Fi network using a Wi-Fi CERTIFIED Voice-Personal client device, such as a handset, **with** a Wi-Fi CERTIFIED Voice-Personal access point, the devices are capable of delivering good voice quality.

By achieving Voice-Personal certification, device manufacturers will help to ensure a better experience for home and small office users, fewer support calls, fewer product returns, and higher customer satisfaction.

### **Why should consumers buy Wi-Fi CERTIFIED Voice-Personal products?**

The Voice-Personal program helps to enable users to consistently make voice over Wi-Fi calls with the same quality and convenience expected from data over Wi-Fi or wired voice applications. Users who have Wi-Fi CERTIFIED Voice-Personal client devices designed to work with a VoIP service provider, and any Wi-Fi CERTIFIED Voice-Personal access point, can turn on their devices, connect with the service provider, and start to make voice calls over their Wi-Fi network with more confidence that the devices they purchased are able to produce high-quality voice over the Wi-Fi network.

### **Will all Wi-Fi CERTIFIED single-mode (Wi-Fi only) or dual-mode (Wi-Fi and cellular) handsets include the planned Voice-Personal certification?**

No, the Voice-Personal certification program is available to Wi-Fi Alliance members as an optional certification program. Devices that are designated as Wi-Fi CERTIFIED Voice-Personal are listed in the Wi-Fi CERTIFIED products database on the Wi-Fi Alliance web site, [www.wi-fi.org](http://www.wi-fi.org).

### **How does the Voice-Personal certification program benefit converged (Wi-Fi/cellular) mobile devices?**

The number of dual-mode mobile phones is growing rapidly, and the Wi-Fi radio is increasingly used for voice applications as well as data. Wi-Fi CERTIFIED Voice-Personal handsets and access points will deliver a better user experience with voice calls conducted over a Wi-Fi network. The Voice-Personal



program complements and builds on existing certification programs for converged devices, which include 802.11 radio standards, security, RF performance, multimedia (WMM), and power saving (WMM – Power Save) functionality.

**Does this program mean that any Wi-Fi CERTIFIED Voice-Personal device can work with any VoIP service?**

The Voice-Personal program helps to ensure that the Wi-Fi network is giving the proper performance support for the quality of the voice application. Client devices, such as handsets, and access points or routers that are Wi-Fi CERTIFIED Voice-Personal are essentially “voice ready.”

Because there are many competing industry-standard and proprietary voice protocols (such as SIP and Skype) that operate above the Wi-Fi layer, service providers (including mobile telecom carriers) generally address voice protocol interoperability as part of their system offerings.

If the service provider supports voice over Wi-Fi, and the client devices and access points used are Wi-Fi CERTIFIED Voice-Personal, the user can reap the benefits with the highest quality possible for calls made over Wi-Fi networks, allowing them to use Wi-Fi instead of wires in their home or small office voice environment.

**Does this program mean that any Wi-Fi CERTIFIED Voice-Personal device can work in any Wi-Fi ‘hotspot’?**

The Voice-Personal certification program addresses typical home and small office environments. Because network configurations can vary widely in hotspots, the user would need to be sure the client device and access point(s) at the hotspot location are Wi-Fi CERTIFIED Voice-Personal, in order to help ensure good quality calls can be made over such a hotspot Wi-Fi network.

**How will consumers know if a client device or access point or wireless router is Wi-Fi CERTIFIED Voice-Personal?**

Consumers should look for “Wi-Fi CERTIFIED” logo or phrase and “Wi-Fi CERTIFIED Voice-Personal” phrase on product packaging or in product literature for voice-enabled Wi-Fi devices, or search the Wi-Fi CERTIFIED Products Database on the Wi-Fi Alliance web site: [www.wi-fi.org](http://www.wi-fi.org).

**Will there be a Voice over Wi-Fi certification program for enterprise environments? If so, when?**

The Wi-Fi Alliance plans to introduce the Wi-Fi CERTIFIED Voice-Enterprise program in early 2009. The Voice-Enterprise program builds on the elements of the Voice-Personal program and adds support for bandwidth management, hand-offs between access points, enterprise-class security with WPA2–Enterprise, and additional features relevant to the enterprise network environment.

**Does the Voice-Personal certification program correspond to an IEEE standard?**

Not directly. The Voice-Personal certification program takes the necessary IEEE standards and Wi-Fi CERTIFIED interoperability programs, and adds to performance testing for voice over Wi-Fi applications. This certification program is a key step in the Alliance’s strategy to further enhance the Wi-Fi user experience by taking into account the requirements of specific applications of Wi-Fi in both the home, small office and enterprise markets.

**How does voice over Wi-Fi compare to the expected capability of femtocells?**

Wi-Fi is pervasive and popular wireless networking technology, with hundreds of millions of users worldwide. Voice over Wi-Fi allows a user to take advantage of Wi-Fi as the wireless technology for the home and place voice calls over Wi-Fi networks — based on VoIP services provided typically by telecom carriers or broadband service providers.

The Voice-Personal certification program addresses the correct operation of Wi-Fi Multimedia for Quality of Service and tests the performance of Wi-Fi devices when carrying voice traffic, using exacting performance



thresholds appropriate for voice traffic. Devices that support voice over Wi-Fi and are Wi-Fi CERTIFIED Voice-Personal allow the home and small office user to use the Wi-Fi network as a voice network, instead of, or in addition to, landline or existing cellular technologies.

The planned Voice-Enterprise certification program will address network management issues in large corporate networks.

Femtocells are being suggested as a way for carriers to extend the reach of cellular networks into the home, for places where the coverage of the existing cellular network might not be as strong. Wi-Fi networks offer the flexibility of allowing the user to choose from a wide variety of VoIP offerings, including technologies like Skype and service providers like Vonage, as well as cellular offerings based on UMA like that offered by T-Mobile. Proven Wi-Fi networks allow the user to connect across a variety of Wi-Fi enabled devices in the home or small office.

**How can I tell if a product has been Wi-Fi CERTIFIED?**

Look for the Wi-Fi CERTIFIED name and/or logo on the product. Only products that have passed our rigorous testing may bear the Wi-Fi CERTIFIED name and/or logo:



**How can I find a list of Wi-Fi CERTIFIED products?**

Visit [www.wi-fi.org](http://www.wi-fi.org) and click on the "Certified Products" menu tab to find a searchable database of products. Visitors can search by product type, manufacturer, and type of Wi-Fi certification.