



WiMax: Wireless Networks Extended

WiMax – An Introduction

IEEE 802.16 is a standard for broadband wireless access, also known as WiMax. There are many advantages of systems based on 802.16, the ability to provide service, even in areas that are hard for wired infrastructure to reach and the ability to overcome the physical limitations of traditional wired infrastructure. The propagation of WLANs is driving the demand for broadband connectivity back to the Internet. Systems built on 802.16 standard represent an easily deployable third pipe capable of delivering flexible and affordable last-mile broadband access for millions of subscribers in homes and businesses throughout the world. The standard will offer wire-less connectivity of up to 30 miles. The major capabilities of the standard are its widespread reach because of which it can be used to setup a metropolitan area network and its data capacity of 75 mbps - broadband.

The WiMax Assurance

Each of the 802.16 antennas that transmit data to the WiMax modem, deliver up to 75 mbps as opposed to the capacity of cable TV wire, which is just 64 kbps. In terms of coverage, a WiMax hotspot supports much better coverage as compared to Wi-Fi hotspot. High-speed wireless broadband technology promises to open new, economically viable market opportunities for operators, wireless Internet service providers, and equipment manufacturers. The flexibility of wireless technology, combined with high throughput, scalability and long range features of the IEEE 802.16 standard help fill the broadband coverage gaps and reach millions of new residential and business customers worldwide.

	Wi-Fi (802.11b)	WiMax (802.16)
Range	100-200 ft	2-30 miles
Data rate	11-54 Mbps	75 Mbps

Security

Security concern for wide range connectivity is always there. The security features of the standard are being worked on so that when its time for the product release to market, the technology will be more secure. The wireless networks such as Wi-Fi typically use wired equivalent privacy (WEP) protocol to meet security objectives. To address security concerns such as confidentiality, access control, and data integrity is to use enhanced encryption. This doesn't make the system entirely foolproof, but just makes it harder to breach the security.

With Intel delivering the technology and popularity of wireless standards, 802.16 and its variants will find many takers in the product arena. Intel is actively participating in these industry efforts to help reduce investment risks for operators and service providers while enabling them to more cost effectively take advantage of the tremendous market potential of wireless broadband access. The 802.16 wireless standard will provide a flexible, cost-effective means of filling existing gaps in broadband coverage, and creating new forms of broadband services, not thought of in a wired world.