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WiMAX 802.16e Consultancy

DATA SHEET

What is WiMAX?

WiMAX technology involves microwaves for the transfer of data wirelessly. It can be used for high-speed, wireless networking at distances up to a few miles. The term WiMAX comes from 'Wireless (Wi) Microwave Access (MA).' WiMAX is very similar to Wi-Fi in that it uses the same core technology of wireless modulation developed way back in the '60's and '70's. It's called OFDM (Orthogonal Frequency Division Multiplexing), for those that care about the technical terms.

The real benefit of WiMAX technology is that you can run signals very, very close to each other on wireless channels. You can have super narrow lanes, so you can put a lot of traffic over them and they don't disrupt each other.

How is WiMAX different from Wi-Fi?

Although the fundamental technology is the same, over time we can add levels of sophistication to WiMAX. Wi-Fi channels occupy a fixed width of the spectrum. But with WiMAX, we're going to enable the traffic lanes - or channels - to get smaller and narrower. This helps service providers seeking to offer wireless last-mile DSL or cable-type service because they can provide a narrower channel that uses less bandwidth and serve more users. You can take what used to be a fixed Wi-Fi lane and make a bunch more lanes and serve more people.

The other big difference between Wi-Fi and WiMAX - starting right away - is that we're going to use licensed spectrum to deliver WiMAX. To date, all Wi-Fi technology has been delivered in unlicensed spectrum. WiMAX will use one of the unlicensed frequencies, but we're also supporting two other frequencies that are licensed. What that means is that you can turn up the output power and broadcast longer distances. So where Wi-Fi is something that is measured in hundreds of feet, usually WiMAX will have a very good value proposition and bandwidth up to several miles.

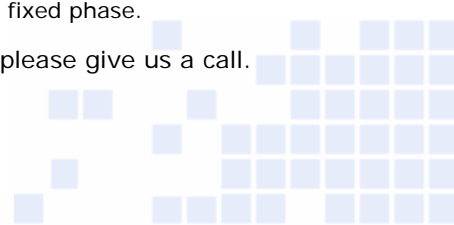
Also WiMAX is designed to be a carrier-grade technology, which requires a higher level of reliability and quality of service than are now available in typical Wi-Fi implementations. Those fundamental differences make WiMAX more of a metropolitan area access technology versus hotspot.

What is the WiMAX standard and when will it be published?

We are now in testing and trial of the 802.16-2004 standard, which is the fixed, point-to-multi point broadband wireless access version of WiMAX. The first generation of the technology will allow service providers to deploy fixed broadband services (similar to DSL or cable). We expect to see commercial trials of that standard in the second half of this year. Based on our development schedule, we believe Intel will have first silicon position for 802.16-2004 WiMAX premise equipment - the WiMAX units that get installed at the consumer's home or office.

Later this year we will publish 802.16e, which some people call the 'portable' or 'nomadic' phase of WiMAX. It will offer broadband connectivity similar to Wi-Fi. When you use a notebook in a hotspot or in a building, you'll be able to move around at pedestrian speeds and maintain your broadband connection. Because the 802.16e standard is already largely defined, we plan to deliver our silicon solution at roughly the same time the standard gets published, which will allow deployment either in a trial basis or some commercialization in late 2006. So 'nomadic phase' will roll out about a year after the fixed phase.

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WiMAX 802.16e Contin.

DATA SHEET

Solutions built on the first generation of 802.16e in 2006 won't allow for the fast hand-off like you're used to with a cell phone. The true mobility - which most people think of as high speed roaming and fast hand off - will be ready roughly a year later, in late 2007.

What will users be able to do via WiMAX that they can't do with existing technologies?

There are areas of the world - especially in emerging markets and rural areas - where deploying wired broadband infrastructure is not cost effective. WiMAX is very cost effective technology to quickly deploy in the regions which otherwise would not have broadband access. So WiMAX helps spread broadband to more users more quickly than existing technologies.

Another benefit of WiMAX is the ability to get higher connection speeds farther away from the transmitter. Right now you can get a really high speed connection in Wi-Fi close to the transmitter. The other option is that you can get a pretty slow Internet connection using a cellular technology, which spans a greater distance. WiMAX fits between those two offerings. You'll get speeds similar to close-up Wi-Fi connections out to several miles away from the transmitter.

WiMAX will also be much easier to install, which makes it more cost-effective for service providers and hopefully some of those savings will accrue to users. For example, with 802.16-2004, service providers will be able to offer users last mile access with an external antenna mount. Shortly thereafter we expect to offer that same service so people can put that antenna inside on their desk near their window. Either way, it's easier to install than Wi-Fi, which requires precise alignment between access points. Our goal here is to enable self installation.

When 802.16e comes out in 2006, the improvements become more obvious. This is where we're adding scalability and multi-access capabilities to the fixed OFDM technology. We'll make the channels scalable and the lanes different sizes to extend broadband wireless access across a larger geography. As I mentioned earlier, fixed wireless access is known as OFDM, and the industry term for this scalable technology is SOFDM - or Scalable OFDM Multi-Access. From the technical side, it's a pretty big change. So it's very similar in concept to today's more evolved, multi-access cellular technologies.

If you are interested in WiMAX Consultancy please give us a call.

