

MPD

MICROWAVE PRODUCT DIGEST

RF TO LIGHT

Editorial Statement of Purpose

Microwave Product Digest serves RF and microwave design engineers, research and development engineers, applications engineers and engineering managers. These professionals, working in facilities that serve both the commercial and government markets, are involved with the design, development, application, and use of systems and subsystems, devices, and techniques involving frequencies from RF to light.

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*Microwave
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FROM THE EDITOR

WiMAX IEEE 802.16e “Disruptive Technology” IN MY OPINION

All aboard! We are in for a long and bumpy ride. After the bubble burst in 2000 there are skeptics in one camp and adopters in another. This is what is happening in Europe and the USA.

Global WiMAX infrastructure spending will rocket from \$655m today to \$7.36B in 2009.

Europe is leading in deployment of mobile broadband with WiMAX. Alvarion is a leading provider of base stations with 81% of worldwide deployment. WiMAX Telecom first began building its WiMAX network with Alvarion's BreezeMAX and plans to deploy 10,000 additional CPEs by the end of 2006. *Renaissance RoHS ferrite drop-in circulators are in production for this deployment.*

In the USA, Sprint/Nextel went out on a limb with their WiMAX overbuild announcement in August. Initial deployments will address backhaul applications with a total of \$3.5B invested in 2007/08. Sprint has partnered with Motorola, Samsung and Intel. Intel is poised to deliver the key components needed for successful WiMAX networks. Intel® is now sampling a fixed/mobile, dual-mode solution code-named Rosedale 2. This solution was designed to support both standards with an easy upgrade path from fixed to mobile and is expected to further accelerate the deployment of WiMAX networks.

The embedded base will not stand still as they leverage their existing customers and add new 4G features, but in the end WiMAX is a disruptive technology that will displace other residential and mobile broadband wireless solutions. More than ever, as we look into our crystal ball and try to predict the evolution of telecommunication technology, the vision is clear. Or, maybe WiMAX is just the same old wine in a new bottle.

What is WiMAX (worldwide Interoperability for microwave access)

WiMAX is a wireless metropolitan area network where mobility is added with the latest standard (802.16e). The high Performance Radio Metropolitan Area Network is a standard created by the European Telecommunications Standards Institute (ETSI) to provide a wireless

network in the 2 - 11 GHz bands across Europe and other countries.

Whatever we call it, WiMAX is interoperable broadband wireless connectivity to fixed, portable, and nomadic users. It provides up to 50km of service area, allows users to get broadband connectivity without the need for a direct line of site to the base station, and provides total data rates up to 75Mbps.

WiMAX is IP (internet protocol) enabled using OFDM (orthogonal frequency-division multiplexing) which is another way of saying DMT (a multiple-carrier technique that uses many narrowband channels) and the standard for DSL broadband services. DSL competes for service revenue with DOCSIS® (Data Over Cable Service Interface Specification). All of the existing and future service development for this duopoly will fuel the business case of this new broadband flavor (WiMAX). If history is any indicator, wireless broadband may produce a next generation of dead wire similar to what cellular phone service has done to wireline services.

VOIP (voice over internet protocol) supports WiMAX phone service and may be the first technology that will allow service providers to provide the same international handset. At the least, WiMAX will provide much needed additional capacity in congested areas without growing existing cellular infrastructure.

WiMAX has a potential economy of scale that will make it the lowest cost solution for triple play (voice, data, & video) service delivery. IPTV enabled mobility product development will hinge on the penetration of WiMAX networks.

Any way you slice it, WiMAX is here to stay and is a disruptive wireless technology. If you build it, they will come. With every new wireless technology deployment there are challenges, and new thinking in wireless technology will be required.



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