

Enabling Broadband Wireless Through Standardization

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Abstract

New technologies for the wireless Internet will greatly expand the availability of broadband access. The success of new technologies is closely linked to the development of interoperability standards, which define the marketplace, improve the equipment, bring down the cost, and expand the applicability to lower-volume users. Successful standardization efforts are open, global, and driven by technical considerations.

The wireless Internet is becoming a focal point of the convergence of the telecommunications and data communications industries; the telecommunications business approaches it from the background of cellular telephony while the computer networking business approaches it from the background of the Internet. Each party brings its own technology, philosophy, business models, and standardization models.

In the case of low-level data networking, standardization has been led, for the past two decades, by IEEE 802 LAN/MAN Standards Committee. 802 is a global organization which creates technically superb standards without national boundaries. Its greatest success has been Ethernet, an evolving interoperability standard that, having been universally adopted, has led to phenomenal sales growth and cost declines while spurring innovation. Of IEEE 802's four active projects, three are now wireless (for personal area networks, local area networks, and metropolitan area networks). Together, these technologies form the core of a wireless Internet based on the principles of the computer networking industry.

In particular, the IEEE 802.16 Working Group on Broadband Wireless Access <<http://ieee802.org/16>> is developing the WirelessMAN(TM) family of standards with the participation of hundreds of engineers worldwide. Consensus on a sophisticated air interface for 10-66 GHz has taken shape very quickly and is expected in draft form late in 2000. A 2-11 GHz specification is due the following year, and an additional project considering unlicensed bands is under study. This effort, along with complementary efforts in 802, will lead to broadly-adopted technology that will allow the Internet to evolve beyond its tether.