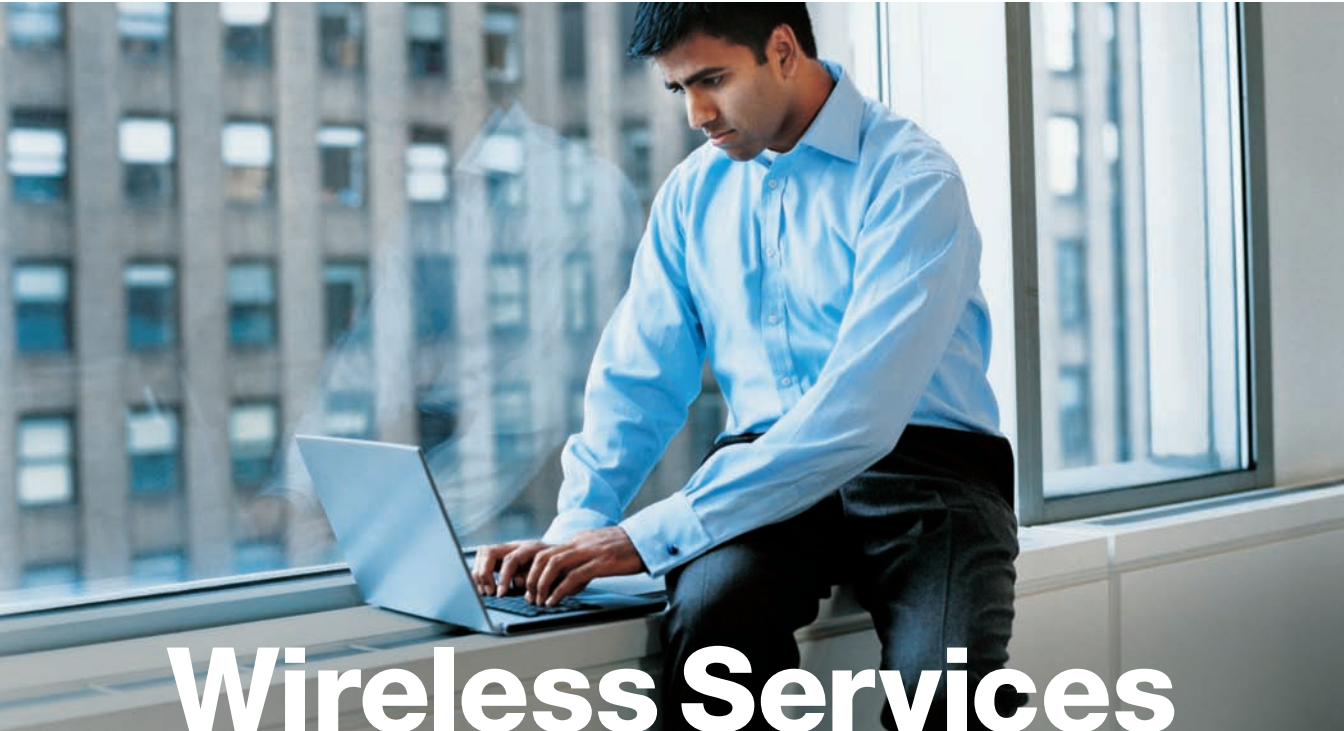


TRENDS IN TELECOM

WINTER 2004



Wireless Services for the Mainstream

The wireless industry is adopting new standards for broadband wireless LAN security, interoperability and ease-of-use.

Learn how recent technology advances can help service providers connect with a new wave of wireless users.

While many users already enjoy the freedom and productivity of wireless Internet access, continued growth in the broadband wireless sector depends on heightened user acceptance. Getting there requires wireless solutions that are easy to deploy and simple to connect and use, all with enhanced

security capability. New wireless LAN technologies from Intel, like Intel® Centrino™ mobile technology, are helping service providers proactively address the remaining barriers to widespread adoption. The benefits include a new wave of users and a growing global demand for enhanced wireless services. →

intel®



Extending the Growth of Hotspots Worldwide

Encouraging the use of public and enterprise Wi-Fi hotspots is essential to drive the continued growth of wireless LAN services. Intel has worked extensively with the industry to deliver an enhanced experience when connecting to wireless LANs in businesses, public hotspots, and homes.

The Intel Wireless Verification Program has worked with 115 service providers worldwide to verify their network services in more than 45,000 public hotspots with common configurations of notebooks built on Intel® Centrino™ mobile technology, in addition to verification work on WLAN gateways for home users.†

Americas
8,988 Hotspots
23 Service Providers

Europe
11,851 Hotspots
55 Service Providers

Japan
5,797 Hotspots
10 Service Providers

Asia Pacific
19,140 Hotspots
27 Service Providers



**Advances in security
and ease of use will
help service providers
reach a new wave
of wireless users.**



Advances in Wi-Fi Security

Wi-Fi (IEEE 802.11) was one of the earliest high-speed wireless LAN standards, and is currently supported by a broad range of products and technologies. Similar to other networks, wireless networks need to have security enabled to maintain network integrity.

Working through the Wi-Fi Alliance, Intel is helping device manufacturers, developers and wireless service providers deliver a new generation of solutions for safer and more secure wireless computing. By making wireless LANs more secure, advances in Intel Centrino mobile technology provide users with the confidence to take advantage of new services delivered through the growing wireless LAN infrastructure.

Moving Up to 802.11i

IEEE 802.1X authentication and Wi-Fi Protected Access (WPA) for data privacy were originally developed to provide standards-based solutions to bolster the security of 802.11 wireless LANs. In 2004, the IEEE ratified the 802.11i standard for robust wireless LAN security implementation. This specification includes an important enhancement known as the Advanced Encryption Standard or AES, a computationally-intensive 128-bit algorithm adopted by the National Institute of Standards

and Technology (NIST) of the U.S. Department of Commerce for the protection of critical data.

Wi-Fi CERTIFIED* Interoperability

To complement 802.11i, the Wi-Fi Alliance has developed WPA2*, a standards-based certification for device interoperability. While various products may be designed to be 802.11i-compliant, being Wi-Fi CERTIFIED* by the Wi-Fi Alliance verifies that such devices have been tested for interoperability and 802.11i compliance.

Security Capabilities

Intel Centrino mobile technology with an Intel PRO/Wireless 2915ABG Network Connection provides support for wireless LAN security standards (including WEP, 802.1X, WPA*, WPA2, 802.11i, and AES)§.

Intel has also worked with the industry to enhance wireless security. Common notebook configurations of Intel Centrino mobile technology have been verified with leading wireless security hardware, Digital Private Network, firewall and access point providers.† Intel Centrino mobile technology also supports leading third-party security solutions, such as Cisco* Compatible extensions.§

By providing advanced feature support (e.g. AES encryption, Wi-Fi Multimedia, 802.11a/b/g), notebooks based on Intel Centrino mobile technology

have become the platforms of choice for enhanced security capabilities[§] and wireless LAN services.[†]

Boosting Bandwidth: 802.11n

Intel is working with the IEEE and the Wi-Fi Alliance to enable a next-generation wireless LAN standard. Known as 802.11n, it will handle the needs of data-intensive services for more users. The new technology is intended to support multiple HDTV and digital video streams, while helping enterprises handle more clients and increase the range and performance of hotspots. The 802.11n standard is intended to boost bandwidth in consumer electronics, PC and handheld platforms up to 100 Mbps or greater.

Enhancing the Wireless Experience: 802.11a/b/g

Intel Centrino mobile technology with Intel PRO/Wireless 2915ABG Network Connection flexibly supports 802.11a/b/g wireless LANs in a single solution.

Intel Centrino mobile technology with Intel PROSet/Wireless software version 9 enables users to easily monitor and control network/wireless

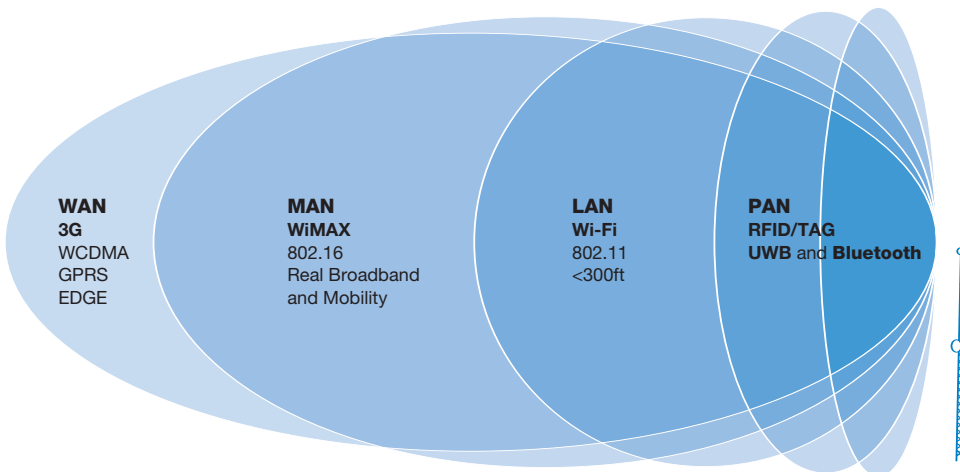
adapter management, including identifying available networks, security settings and security profiles. Intel and Linksys have worked together to develop Intel Smart Wireless Solutions, a subset of Intel PROSet/Wireless Software Version 9.0, designed to relieve the complexities of setting up and managing a secure wireless network on certain Linksys routers and Intel Centrino mobile technology. The feature set includes a Wireless Network Configuration Wizard (supported on Linksys* WRT54G and WRV54 wireless routers), a Security Assistant and a Wireless Troubleshooter.

WiMAX: Connecting the Next Wave of Wireless Users

WiMAX (IEEE 802.16) is an emerging technology that delivers 'last-mile' broadband connectivity over a much larger geographic area than Wi-Fi.

By providing wireless coverage to areas ranging from one to six miles wide, WiMAX will provide backhaul for carrier infrastructure, enterprise campuses and Wi-Fi hotspots in addition to last-mile broadband access. WiMAX is designed to

A World Without Wires



Helping users stay always 'best connected', wherever they go.

Intel is working to build an end-to-end wireless architecture that enables seamless, simple and secure connectivity, so that users have the ability to connect to the 'best available' network for the delivery of wireless services.

provide T1-level bandwidth to businesses and the equivalent of cable/DSL access for home users.

WiMAX will be rolled out in three phases:

- In its first phase, WiMAX technology (IEEE 802.16-2004) will be deployed using outdoor antennas to serve known subscribers within a fixed location.
- Phase two will include indoor antennas that will enable carriers to simplify installation at user sites.
- Phase three, slated for 2006, will be based on the IEEE 802.16e specification. WiMAX Forum Certified* hardware will be available for mobile networks, enabling users to roam within the service area while staying 'best-connected.'

Learn More

Broadband wireless encompasses a range of fixed and mobile wireless technologies and applications. Learn more at www.intel.com/go/wimax

Delivering Wireless Services to More Users

Industry standards based on the IEEE 802.16 specifications will enable carrier-class solutions to scale to support thousands of users with a single base station, while providing differentiated

service levels. For areas poorly served by wired infrastructure, including emerging countries, WiMAX is expected to enable service providers to reach new businesses and residential customers, while reducing service costs. WiMAX will also enable service providers to ramp up service at a given location, such as a special event, for a short period of time.

Intel Drives Standards

In addition to its leadership of the WiMAX Forum, Intel is working with industry leaders to develop WiMAX Forum Certified systems for broadband wireless networks. These companies are deploying pre-standard broadband wireless systems today in more than 125 countries.

Helping Wireless Services Go Mainstream

As the worldwide leader in driving the deployment, adoption and innovation of broadband wireless technology, Intel plays a critical role in enabling the roll-out of end-to-end wireless



“Enterprise-class notebooks with built-in wireless technologies bring new security management challenges. Senforce gives organizations the ability to take control, with features that include the ability to suppress and activate embedded WLAN adapters during any phase of wireless deployment. These capabilities provide enterprises with the flexibility to roll out wireless connectivity with confidence.”

Allan Thompson

President and CEO, Senforce Technologies

Senforce Technologies, Inc.

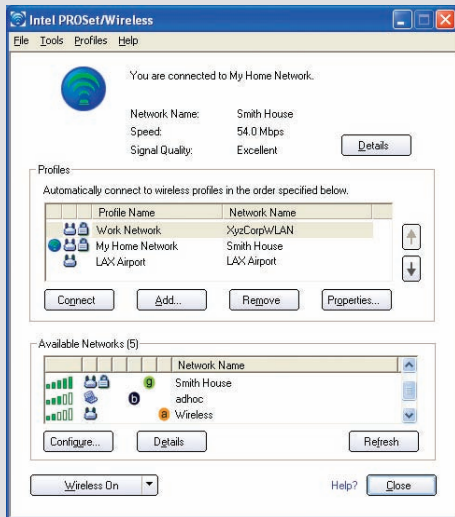
Senforce Technologies' mobile security management software automates policy enforcement on multiple clients. Senforce EMSM* provides central administration and control, protecting against certain exposure and risks cause by wireless vulnerabilities. It offers the industry's first WLAN adapter suppression and activation for Intel® Centrino™ mobile technology-based notebooks.

service provisioning technologies, from Ultra Wide Band and Wi-Fi to WiMAX and 3G wide area networks.

Intel is supporting the adoption of wireless services through a combination of industry-leading technologies, an extensive roadmap of silicon building blocks and broad industry involvement.

- Intel Centrino mobile technology supports industry standards and leading third party security solutions designed to enable safer notebook connectivity.[§] →

Making Wi-Fi Connections Easier and More Secure



Helping to Extend Wireless LAN Services to a New Wave of Mainstream Users

Ease of use is a critical factor for user acceptance. Intel® Centrino™ mobile technology with Intel PROSet/Wireless Software Version 9.0[◇] can help make connecting to Wi-Fi hotspots easier by providing an at-a-glance depiction of connection status, network speed, signal quality, security profiles and available networks.

- Intel and leading wireless LAN service providers have worked together to verify interoperability on common notebook configurations across their Wi-Fi hotspot networks.[†] The shared goal is to enhance wireless experiences at verified hotspots.

Intel continues to work with a growing ecosystem of equipment manufacturers, service providers and carriers to make the vision of safe and easy to use wireless communications a reality. Now is the time to learn more. Contact your Intel Business Development Manager and visit us online at www.intel.com/go/bbw.

