WIRELESS STANDARDS UPDATE Issue 5/2002

Due to the expanding demand and implementation of public Hot-Spots, a WISP (Wireless Internet Service Provider) association was founded to boost and promote one global service mark.
Being a hot topic in the wireless world, new enhanced security measures are launched, in that regard the new 802.1x security standard is the next step forward.
As the wireless technology and standards evolve, more technologies will coëxist, vendors are therefore looking into multi-mode chipsets to cope with multitude of standards.

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✓A WISP Association is born

A new WISP Association called Pass-One was quietly announced yesterday. Pass-One's founding 'Plenary' meeting is scheduled for June 14th in Boston, at a venue where WISPs will be able to enjoy roaming services in a WLAN covered venue.

Pass-One was founded by five WISPs and five WLAN vendors with the ultimate goal of boosting the WLAN hotspot business and promoting one global 'service mark.' At a time when both small and large hotspot businesses are beginning to boom, these providers and vendors decided that the most cost-effective way of expanding the network of hotspots is to offer roaming between them.

While the technical details of roaming between WLANs are still being worked out to provide the most seamless experience for the user, the need for industry agreements on the service level became increasingly apparent. Because of this, WISPs, vendors, and GSM cellular carriers have decided to create a central entity that provides these required standards and at the same time offer consolidated administrative services to all Pass-One members.

Pass-One stated that its mission is to create one global end-user experience by implementing minimum service standards, certifying compliance of its members' networks, and promoting WISPs as premium global wireless broadband providers.

The Association plans to create a single global service mark, similar to those used in the credit card industry, so that end-users recognise compliant organisations.
Pass-One stated that it plans to organise the WISP community around a single legal entity that will enable the enforcement of a service level in the industry.
Members of Pass-One include ISPs, cellular carriers, and fixed line telcos with public WLAN services. Current founding members include: Wayport Inc., Symbol Technologies, Nomadix, Funk Software, OpenPoint Networks, Wificom, FatPort Corp., Tele2, Service Factory AB, and TSI Telecommunication Services Inc.

The members will decide on the service level to be delivered to their end-users while WLAN vendors help build the technical standard specs to enable open and workable standards which can be implemented by WISPs of all sizes. The goal is to strengthen the position of all WISPs, regardless of whether they operate a small number of hotspots or provide regional/national coverage.

Source www.80211-planet.com by Matthew Peretz

✓ 802.1X Clients and Servers Released

Two product announcements have put 802.1X security in reach of any enterprise wireless LAN.
Meetinghouse Data Communications Portsmouth, NH, is actively beta testing AEGIS Server and AEGIS Client, with the full product to ship on May 30, 2002. Funk Software of Cambridge, MA, has meanwhile announced the release of Odyssey, its own 802.1X security client/server solution for Wireless LANs.
Both products support data protection and user authentication using the Extensible Authentication Protocol - Tunnelled Transport Layer Security (EAP-TTLS) protocol, which only requires a password from the end user for authentication.
EAP-TTLS, an extension of EAP-TLS, saves on the administration overhead of issuing certificates. Instead, standard user passwords checked against an authentication database are enough for logging in securely. Login information stays encrypted in a tunnel in the communications channel the entire time. Data is kept private by dynamically issuing per-session keys to encrypt wireless traffic and re-authenticating with a new key at regular intervals.
"[EAP-TTLS] resolves the problems with today's implementation of WEP," said Meetinghouse Vice President of Sales and Marketing Anthony Delli Colli. "Dealing with client side certificates are a key nightmare for administrators."

Both product sets support the multiple certificate EAP-TLS 802.1X authentication, which comes with Windows XP, as well as Cisco's LEAP, PAP, MS-CHAP, and MS-CHAP V2 authentication types.
Meetinghouse Data's AEGIS Client can run on Windows 98/ME/NT/2000/XP and Linux, with Mac OS X and Solaris versions expected in the third quarter of 2002. The server is currently only available for Linux, with Solaris and Windows 2000/XP versions shipping in the third quarter. The price starts at $2500 for 50 AEGIS Client licenses and one AEGIS Server.
Funk's Odyssey 1.0 consists of a Client that runs on a Windows system (98/ME/2000/XP) with an 802.1x adapter card and Server for Windows 2000/XP that interoperates with the WLAN access point. It costs $2500 for a 25 Odyssey Client licenses and one Odyssey Server.

Source : **www.80211-planet.com** by Eric Griffith

✓ Multimode wireless chipsets advance

The next generation of wireless networks will involve multiple protocol standards, and a key consideration is that multimode chipsets can handle them all simultaneously. However, protocol candidates such as Wi-Fi, Wi-Fi5, HiperLAN, IEEE 802.11g and Bluetooth have different and incompatible operating conditions, so multimode chipsets will have to be developed to ensure compatibility.
A major problem is that wireless network protocols operate in different radio frequency bands. Wi-Fi, IEEE 802.11g and Bluetooth operate in the 2.4- to 2.483-GHz frequency band. Wi-Fi5 and HiperLAN operate primarily at 5.15 to 5.35 GHz. As a result, a transceiver's internal RF source must be able to "tune" over both frequency ranges and select the operating frequency channel.

To complicate things, the Bluetooth protocol, based on Frequency-Hopped Spread Spectrum, requires 1,600 frequency hops per second over the regulatory-mandated frequency band using 1-MHz-instantaneously wide frequency channels.

Multiple modes can be daunting

The Wi-Fi protocol relies on single-carrier modulation to achieve both 11M and 5.5M bit/sec data rates. The Wi-Fi5 and HiperLAN protocols employ multicarrier modulation to achieve their higher 54M bit/sec data rates.
IEEE 802.11g employs Orthogonal Frequency Division Multiplexing (OFDM) for the 54M bit/sec rate and provides for Packet Binary Convolutional Code modulation as an option to deliver 22M or 33M bit/sec data rates.

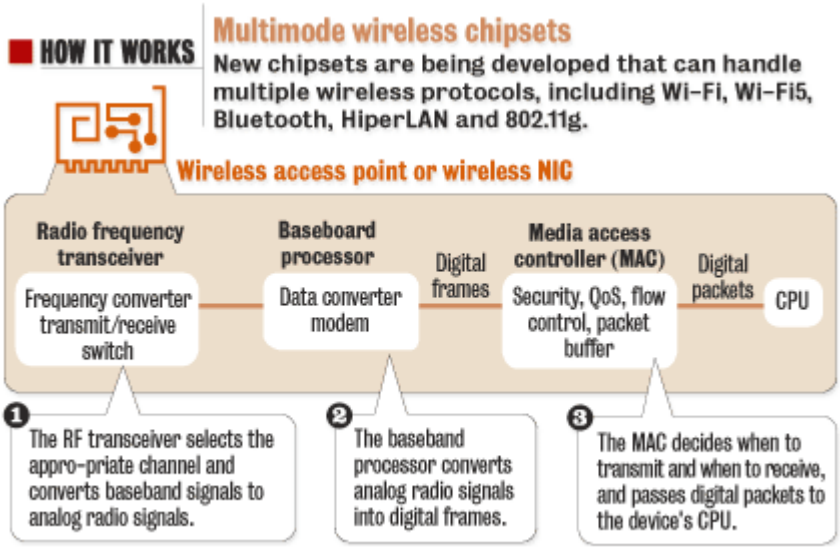
Bluetooth relies on Gaussian Frequency Shift Keying modulation to deliver 1M bit/sec data rates.

Baseband processor to the rescue

The principal functions of baseband processors are to generate the frequency hopping sequence, convert analog signals into digital data frames in the receive mode, and vice versa, in the transmit mode. In the receive mode, the first step is analog-to-digital data conversion. The digitised signals are then demodulated by the baseband processor. The multimode baseband processor is also responsible for establishing necessary control functions, including timing and frequency synchronisation over the radio frequency transceiver, and must do so within the time allotted, without knowing in advance which modulation approach has been used in received signals.

Media access controller

A media access controller (MAC) is responsible for managing interaction with an air interface, deciding when to listen and when to talk, and passing error-free data packets to a terminal CPU. Because all the IEEE 802.11 standards essentially are based on using the same MAC, and the Bluetooth MAC is comparatively simple, defining a multimode MAC is not as challenging as the implementation of the corresponding radio frequency transceiver and baseband processor.



Chipset development challenges

The key piece in the design of a multimode wireless chipset is the radio frequency transceiver. The major functions of the radio frequency transceiver are to select the

transmit/receive channel, convert radio signals to and from baseband signals, and perform the necessary modulation and demodulation functions.
The transceiver translates internally generated baseband signals to a radio frequency, creating the desired waveform for transmission. On the receive side, it removes the radio frequency carrier from the incoming signal, leaving the baseband signals with the desired data.
To encompass operation in all protocols the radio frequency transceiver will need to have a radio frequency signal source agile enough for Bluetooth and with enough spectral purity for OFDM. The receiver will need to have enough sensitivity, and the transmitter enough power output to produce adequate range and have circuits with adequate dynamic range and linearity for providing IEEE 802.11a and 802.11g operation at the intended maximum data rates.
Providing the processing power (that is, a million instructions per second) and speed to establish protocol mode control within the time allotted without consuming excessive battery power is one of the most challenging requirements of multimode baseband processors.
The challenges at every level are difficult. But vendors are undaunted, and initial product releases have been forecast for as early as the third quarter.

This article appeared on Network World Fusion at
http://www.nwfusion.com/news/tech/2002/0415tech.html