Wi-Fi 术语（Wi-Fi 联盟）

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10BaseT
The most common cabling method for Ethernet. 10BaseT conforms to IEEE standard 802.3. It was developed to enable data communications over unshielded twisted pair (telephone) wiring at speeds of up to 10 megabits per second up to distances of approximately 330 feet on a network segment. (See Ethernet).

3G
The term refers to digital, packet-switched technology and is used to describe the third-generation of mobile telephony which brings video and broadband Internet access to mobile phones. The first generation was represented by analog cellular phones and the second generation by digital cellular networks.

802.11a
An IEEE standard for a wireless network that operates at 5 GHz with rates up to 54Mbps.

802.11b
An IEEE standard for a wireless network that operates at 2.4 GHz with rates up to 11Mbps.

802.11d
An IEEE specification that allows for configuration changes at the Media Access Control layer (MAC layer) level to comply with the rules of the country in which the network is to be used. (See MAC).

802.11e
An IEEE standard that adds Quality of Service (QoS) features and multimedia support to the existing 802.11b, 802.11g, and 802.11a wireless networks. (See QoS, WMM).

802.11g
An IEEE standard for a wireless network that operates at 2.4 GHz Wi-Fi with rates up to 54Mbps.

802.11h
802.11h supports Dynamic Frequency Selection (DFS) and Transmit Power Control (TPC) requirements to ensure coexistence between Wi-Fi and other types of radio frequency

devices in the 5 GHz band.

802.11i
An IEEE standard specifying security mechanisms for 802.11 networks. 802.11i makes use of the Advanced Encryption Standard (AES) block cipher. The standard also includes improvements in key management, user authentication through 802.1X and data integrity of headers. (See 802.1X, AES, WPA2).

802.11j
An IEEE specification for wireless networks that incorporates Japanese regulatory requirements concerning wireless transmitter output power, operational modes, channel arrangements and spurious emission levels.

802.11n
A taskgroup of the IEEE 802.11 committee whose goal is to define a standard for high throughput speeds of at least 100Mbps on wireless networks. The standard is expected to be ratified by 2007. Some proposals being fielded by the taskgroup include designs for up to 540 Mbps. Multiple-Input-Multiple-Output (MIMO) technology, using multiple receivers and multiple transmitters in both the client and access point to achieve improved performance is expected to form the basis of the final specification. (See Mbps, MIMO).

802.1X
A standard for port-based authentication, first used in wired networks, that was adapted for use in enterprise WLANs to address security flaws in WEP, the original security specification for 802.11 networks. 802.1X provides a framework for authenticating users and controlling their access to a protected network and dynamic encryption keys to protect data privacy. (See EAP, WEP, WPA, WPA2).

802.3
The standard defining wired Ethernet networks. (See Ethernet).

A

Ad-Hoc mode
An old term used to describe a device-to-device network. (See device-to-device network, peer-to-peer network).

AES
Advanced Encryption Standard. The preferred standard for the encryption of commercial and government data using a symmetric block data encryption technique. It is used in the implementation of WPA2. (See 802.11i, WPA2).

AP
Access point. A device that connects wireless devices to another network, that being a wireless LAN, Internet Modem or others.

Applet
A small application or utility program, usually written In the Java programming language that is designed to do a very specific and limited task. Applets are most commonly used in hand-held mobile devices.

Application software
A computer program that is designed to do a general operational task such as word processing or payroll. Internet browsers and graphic design programs are also considered applications. Application software runs on top of the operating system.

Association
Describes the establishment and maintenance of the wireless link between devices. (If security is enabled, the devices cannot do anything but exchange security credentials with this link). (See authentication).

Authentication
The process that occurs after association to verify the identity of the wireless device or end user and allow access to the network. (See association, 802.1X, WPA, WPA2).

B

Backbone
The central part of a large network that links two or more sub-networks. The backbone is the primary data transmission path on large networks such as those of enterprises and service providers. A backbone can be wireless or wired.

Bandwidth
The maximum transmission capacity of a communications channel at any point in time. Bandwidth, usually measured in bits per second (bps), determines the speed at which information can be sent across a network. If you compare the communications channel to a pipe, bandwidth represents the pipe width and determines how much data can flow through the pipe at any one time. The greater the bandwidth, the faster data can flow. (See bps).

Bluetooth wireless technology
A technology designed for short-range, wireless communications among computing devices and mobile products, including PCs and laptop computers, personal digital assistants, printers, and mobile phones. Designed as a cable-replacement, Bluetooth enables short-range transmission of voice and data in the 2.4 GHz frequency spectrum within a

range of about 30 feet. (See WPAN).

bps
Bits per second. A measure of data transmission speed across a network or communications channel; bps is the number of bits that can be sent or received per second. It measures the speed at which data is communicated and should not be-but often is-confused with bytes per second (Bps, in this reference the B is capitalized while in bps lower case is used). While "bits" is a measure of transmission speed, "bytes" is a measure of storage capacity. (See bandwidth, Mbps).

Bridge
A wireless device that connects multiple networks together. (See router).

Broadband
A comparatively fast Internet connection possessing sufficient bandwidth to accommodate multiple voice, data and video channels simultaneously. Cable, DSL and satellite are all considered to be broadband channels; they provide much greater speed than dial-up Internet access over telephone wires. (See cable modem, DSL).

Broadband modem
A device that connects a local computer or network to a high-speed Internet service, such as DSL or Cable Internet. (See cable modem, DSL).

BSSID
Basic Service Set Identifier. A unique address that identifies the access point/router that creates the wireless network. (See SSID).

Bus adapter
A special adapter card that installs in a PC's PCI or ISA slot and enables the use of PC Card radios in desktop computers. Some companies offer one-piece PCI or ISA Card radios that install directly into an open PC or ISA slot.

C

Cable modem
A device used with broadband Internet service provided by a traditional cable TV service. Cable modems convert analog data from the cable TV system into a digital format that can be used by a computer. (See broadband modem).

Channel
One portion of the available radio spectrum that all devices on a wireless network use to communicate. Changing the channel on the access point/router can help reduce

interference.

Client
Any computer connected to a network that requests files and services (files, print capability) from the server or other devices on the network. The term also refers to end users. (See AP).

Client devices
Wi-Fi client devices include PC Cards that slide into laptop computers, mini-PCI modules embedded in laptop computers and mobile computing devices, as well as USB radios and PCI/ISA bus Wi-Fi radios. Client devices usually communicate with hub devices like access points and gateways. (See AP, client).

Collision avoidance
A means of proactively detecting whether a node on an Ethernet network can transmit a signal without risk that it will collide with other traffic on the network. (See CSMA/CA, CSMA/CD).

Crossover cable
A twisted-pair cable used to network two computers without use of a hub. Instead of traveling in direct parallel paths between plugs, the signals "crossover," reversing the sending and receiving wire pairs on each end. Crossover cables may be required to connect a cable or DSL modem to a wireless router or access point.

CSMA/CA
Carrier Sense Multiple Access/Collision Avoidance. The principal media access control strategy used in 802.11 networks to avoid data collisions. It is a "listen before talk" method of minimizing collisions. The network node checks to see if the transmission channel is clear before a data packet is sent. (See collision avoidance, CSMA/CD).

CSMA/CD
Customer Sense Multiple Access/Collision Detection. The principal media access control strategy used to manage traffic and reduce noise on wired Ethernet networks. It allows a network device to transmit data after detecting a channel is available. If two devices transmit data simultaneously, the sending device detects the collision of data packets and retransmits after a random time delay. (See collision avoidance, CSMA/CA).

D

DC power module
Modules that convert Alternate Current (AC) power to Direct Current (DC) for the operation of electronic and computer equipment. Depending on the manufacturer and product, these

modules can range from typical "wall wart" transformers that plug into a wall socket to larger, enterprise-level Power Over Ethernet systems that inject DC power into the Ethernet cables to provide power to the access points.

Device-to-device network
Two or more devices that connect using wireless network devices without the use of a centralized wireless access point. Also known as a peer-to-peer network. (See ad hoc mode, Peer-to-peer network).

DHCP
Dynamic Host Configuration Protocol. A protocol for dynamically assigning IP addresses from a pre-defined list to nodes on a network. When they log on, network nodes automatically receive an IP address from a pool of addresses served by a DHCP. The DHCP server provides (or leases) an IP address (to a client for a specific period of time. The client will automatically request a renewal of the lease when the lease is about to run out. If a lease renewal is not requested and it expires, the address is returned to the pool of available IP addresses. Using DHCP to manage IP addresses simplifies client configuration and efficiently utilizes IP addresses. (See IP address).

Dial-up
A connection to a remote network, or the Internet, using a standard modem and telephone connection, or Plain Old Telephone Service (POTS). (See POTS).

Diversity antenna
An antenna system that uses multiple antennas to reduce interference and maximize reception and transmission quality.

DNS
Domain Name Service. An Internet service that translates alphanumeric domain names to assigned IP addresses and vice versa. The term is typically used to describe the server which makes the translation. Every website has its own specific IP address on the Internet. DNS typically refers to a database of Internet names and addresses which translates the alpha-numeric names to the official Internet Protocol numbers and vice versa. For instance, a DNS server converts a name like mywebsite.com to a series of numbers like 107.22.55.26. (See IP, IP address).

DSL
Digital Subscriber Line. A dedicated digital circuit between a residence or business and a telephone company's central office. It allows high-speed data, voice and video transmissions over existing twisted-pair copper Plain Old Telephone Service (POTS) telephone wires. (See broadband, POTS).

Dual-band
A device that is capable of operating in two frequencies. On a wireless network, dual-band

devices are capable of operating in both the 2.4 GHz (802.11b/g) and 5 GHz (802.11a) bands. In cellular phone technology, dual-band devices typically operate in both the GSM900 and GSM1800 frequencies, allowing a greater number of roaming options. (See Tri-mode).

E

EAP
Extensible Authentication Protocol. A protocol that provides an authentication framework for both wireless and wired Ethernet enterprise networks. It is typically used with a RADIUS server to authenticate users on large networks. EAP protocol types are used in the 802.1X-based authentication in WPA-Enterprise and WPA2-Enterprise. (See 802.1X, EAP, LEAP, RADIUS, TLS, WPA-Enterprise, WPA2-Enterprise).

EAP-AKA
Authentication and Key Agreement. Enables handoff between 3G cellular and Wi-Fi networks using a single user identifier.

EAP-FAST
Flexible Authentication via Secure Tunneling. Uses multiple secured tunnels during authentication.

EAP-SIM
Specifies a mechanism for mutual authentication and session key agreement using the GSM-SIM and used in GSM-based mobile phone networks.

EAP-TLS
Extensible Authentication Protocol Transport Layer Security.

EAP-TTLS/MSCHAPv2
EAP-Tunneled TLS/Microsoft Challenge Authentication Handshake Protocol. Securely tunnels clients authentication within TLS records.

Encryption
A mechanism for providing data confidentiality. (See 802.11i, RC4, TKIP, WEP, WPA, WPA2).

Enterprise
Any large corporation, business or organization. The enterprise market can incorporate office buildings, manufacturing plants, warehouses and research and development facilities, as well as large colleges and universities.

ESSID
Extended Service Set Identifier. A name used to identify a wireless network. (See SSID, network name).

Ethernet
The most popular international standard technology for wired Local Area Networks (LANs). It provides from 10 Mbps transmission speeds on basic 10BastT Ethernet networks to 100 Mbps transmission speeds on Fast Ethernet networks, 1000 Mbps on Gigabit Ethernet, and 10,000 Mbps on 10 Gigabit Ethernet. (See 802.3).

F

FIPS 140-2
The Federal Information Processing Standard that defines the requirements of security technologies used in the handling and processing of information within government agencies. (See 802.11i, AES, WPA2).

Firewall
A system of software and/or hardware that resides between two networks to prevent access by unauthorized users. The most common use of a firewall is to provide security between a local network and the Internet. Firewalls can make a network appear invisible to the Internet and can block unauthorized and unwanted users from accessing files and systems on the network. Hardware and software firewalls monitor and control the flow of data in and out of computers in both wired and wireless enterprise, business and home networks. They can be set to intercept, analyze and stop a wide range of Internet intruders and hackers. (See Intrusion detection).

FireWire
A high-speed serial bus system defined by the IEEE 1394 standard for input/output technology that connects multimedia and storage peripherals to a PC. FireWire is similar to USB (Universal Serial Bus) and can provide a bandwidth of about 400 Mbps. FireWire was the original brand name for Apple Computer's implementation of the specification. Today many Windows systems have FireWire capabilities, as well. Other names for products that perform the same function include 1394 (Linux) and iLink (Sony).

Firmware
Software routines that are embedded as read-only memory (ROM) in a computer chip or hardware device to prevent modification of the routines. Unlike random access memory (RAM), read-only memory stays intact in the absence of electrical power. Startup routines and low-level input/output instructions are stored in firmware.

G

Gateway
In the wireless world, a gateway is an access point with additional software capabilities such as providing NAT and DHCP. Gateways may also provide VPN support, roaming, firewalls, various levels of security, etc.

GPRS
General Packet Radio Service. A radio technology used in GSM networks that transmits digital data packets, much like Internet protocols do, for both voice and data without the need of a dedicated circuit for always-on access to data. This allows for more efficient communication and faster data rates. (See 3G, GSM).

GPS
Global Positioning System. A system that uses satellites, receivers and software to allow users to determine their precise geographic position. (See War driving).

GSM
Groupe Speciale Mobile, or Global System for Mobile Communications. A 2G digital standard for cellular phone communications adopted by many countries around the world. Its frequency bands range from 900-1800MHz. (See 3G, GPRS).

H

Hotspot
A location where users can access the Internet using Wi-Fi laptops and other Wi-Fi enabled devices. Access may be provided free or for a fee. Hotspots are often found at coffee shops, hotels, airport lounges, train stations, convention centers, gas stations, truck stops and other public meeting areas. Corporations and campuses often offer it to visitors and guests. Hotspot service is sometimes available aboard planes, trains and boats. (See Wi-Fi ZONE).

Hub
A multi-port device used to connect client devices to a wired Ethernet network. Hubs can have numerous ports and can transmit data at speeds ranging from 10 to 1000 Mbps per second to all the connected ports. A small wired hub may only connect 4 computers; a large hub can connect 48 or more. (See Router).

Hz
Hertz. The international unit for measuring frequency equivalent to the older unit of cycles per second. One megahertz (MHz) is one million hertz. One gigahertz (GHz) is one billion hertz. The standard US electrical power frequency is 60 Hz; 802.11a devices operate in the

5 GHz band; 802.11b and g devices operate in the 2.4 GHz band.

I

I/O
Input/Output. The term used to describe any operation that transfers data to or from a computer. (See MIMO).

IEEE
Institute of Electrical and Electronics Engineers. A global technical professional society and standards-setting organization serving the public interest and its members in electrical, electronics, computer, information and other technologies.

IEEE 802.11
The family of specifications developed by the Institute of Electrical and Electronics Engineers (IEEE) 802.11 committee which establishes standards for wireless Ethernet networks. 802.11 standards define the over-the-air interface between wireless clients and a base station, or access point that is physically connected to the wired network. (See 802.11, IEEE).

iLink
Sony Corp's name for the high-speed serial bus system defined by the IEEE 1394 standard for input/output technology that connects multimedia and storage peripherals to a PC. (See FireWire).

Infrastructure mode
An old term used to describe a wireless network consisting of devices connected to a network using a centralized wireless access point. One of two types of wireless network modes; the other is a device-to-device network (also known as peer-to-peer or ad hoc mode). (See ad hoc mode, device-to-device network, peer-to-peer network).

Internet appliance
A computing device used primarily for Internet access. It can be Wi-Fi enabled or connected to a wired network and generally offers customized web browsing, touch-screen navigation, with built-in e-mail services, entertainment and personal information management applications. Applications cannot be installed independently.

Intrusion detection
A security service that monitors and analyzes system events to identify security breaches to the network and provide real-time warnings when an unauthorized intrusion, or break-in, to the network is attempted. (See Rogue, War chalking, War driving).

IP
Internet Protocol. The basic communications protocol of the Internet. (See IP address, TCP/IP).

IP (Internet Protocol) telephony
Technology that supports voice, data and video transmission via IP-based LANs, WANs, and the Internet. This includes VoIP (Voice over IP).

IP address
Internet Protocol address. IP Version 4, the most widely used Internet protocol, provides 32-bit number that identifies the sender or receiver of information sent across the Internet. An IP address has two parts: The identifier of the particular network on the Internet and the identifier of the particular device (which can be a server or a workstation) within that network. The newer IP, Version 6, provides a 128-bit addressing scheme to support a much greater number of IP addresses. (See DHCP, DNS, IP).

IP telephony
A general term referring to technologies that use IP packet-switched connections to exchange voice, data, video, and other forms of information traditionally carried over public telephone networks. (See IP, VoIP).

IPX-SPX
IPX, short for Internetwork Packet Exchange, a networking protocol used by the Novell NetWare operating systems. Like UDP/IP, IPX is a datagram protocol used for connectionless communications. Higher-level protocols, such as SPX and NCP, are used for additional error recovery services. Sequenced Packet Exchange, SPX, a transport layer protocol (layer 4 of the OSI Model) used in Novell Netware networks. The SPX layer sits on top of the IPX layer (layer 3) and provides connection-oriented services between two nodes on the network. SPX is used primarily by client/server applications. Whereas the IPX protocol is similar to IP, SPX is similar to TCP. Together, therefore, IPX-SPX provides connection services similar to TCP/IP.

ISA
A type of internal computer bus that allows the addition of card-based components like modems and network adapters. ISA has been replaced by PCI and is not very common anymore.

ISDN
Integrated Digital Services Network-A service offered by most telephone carriers that provides high-speed digital service for voice and data over ordinary telephone lines. ISDN uses standard POTS copper wiring to deliver voice, data or video. (See broadband, POTS).

ISO Network Model
A model developed by the International Standards Organization (ISO) that defines seven

levels, or layers, in a network. By standardizing these layers and the interfaces that connect them, different portions of a given protocol can be modified or changed as technologies advance or systems requirements are altered. The seven layers are, beginning at the lowest layer: Physical, Data link, Network, Transport, Session, Presentation, Application. The IEEE 802.11 Standard encompasses the physical layer (PHY) and the lower portion of the data link layer which is often referred to as the Media Access Control (MAC) sub-layer. (See PHY).

ISS
A special software application that allows all PCs on a network access to the Internet simultaneously through a single connection and Internet Service Provider (ISP) account.

L

LAN
A system of connecting PCs and other devices within the same physical proximity for sharing resources such as an Internet connections, printers, files and drives. When Wi-Fi is used to connect the devices, the system is known as a wireless LAN or WLAN. (See WAN, WLAN, WMAN, WPAN).

LEAP
Lightweight Extensible Authentication Protocol-A proprietary Cisco protocol used for 802.1X authentication on wireless LANs (WLANs). (See 802.1X, EAP).

M

MAC address
Media Access Control address. A unique hardware number that identifies each device on a network. A device can be a computer, printer, etc. (See IP address).

MAN
Metropolitan Area Network. A data network, typically operated by a municipality or communications carrier that provides high-speed service within a geographical area such as a college campus, town or city. A MAN is larger than a Local Area Network (LAN) but smaller than a Wide Area Network (WAN). (See WiMAX).

Mapping
Assigning a PC to a shared drive or printer port on a network.