

GLOSSARY OF TERMS

ADSL	Asymmetric Digital Subscriber Line. See xDSL.
ATM	Asynchronous Transfer Mode. A process of information transfer using fixed length cells and high-speed, switched links.
Auto-negotiation (AUTONEG)	A process to automatically adapt LAN devices operating with the same technology but different bit rates. Used by Ethernet and Token Ring.
Baseband	A form of modulation in which data signals are coded directly onto the transmission medium without frequency division.
Baud	The number of signal transitions per second. Used for modems.
BER	Bit Error Rate. The ratio of received bits that are in error (relative to the amount of bits received); usually expressed as a number referenced to a power of 10, e.g. 1 error in 10 ⁹ bits — also referred to as a BER 10 ⁻⁹ .
Bluetooth	A Personal Area Network (PAN) technology operating at 721 Kbit/s in the 2.4GHz radio band.
Bridge	A Layer 2 internetworking device used to connect separate LAN s by storing and forwarding frames. Specified by IEEE 802.1D
Broadband	A form of modulation that forms multiple channels by dividing the transmission medium into discrete frequency segments. A term increasingly used to describe high-bandwidth transmission.
Broadcast	An all points transmission within a network
Cell	A small fixed-length message used by ATM (53 octets long with a 48 octet payload and a 5 octet header).
Collapsed Backbone	A star-configured backbone system supported by a single root device — often a high-speed switch.
Collision Detection	The act of detecting when an Ethernet collision has occurred.
CSMA/CA	Carrier Sense Multiple Access with Collision Avoidance. A system used by Wireless LAN s to warn other stations of an intended transmission, and hence prevents a collision.
CSMA/CD	Carrier Sense Multiple Access with Collision Detection. A system in Ethernet where a station listens for the presence of a carrier before attempting to send, and detects the presence of a collision.
Cut-through	A type of LAN switch which forwards incoming frames without storing and without error-checking.
Datagram	A Network Layer (Layer 3) message. Also called a packet.
Diffserve	Differentiated Services. A protocol used to support QoS for different types of traffic in a network.
DSP	Digital Signal Processing / Processor. A silicon device that uses sophisticated signal manipulation procedures to enhance its quality.
EIA	Electronic Industries Alliance. A US consortium.
EMC	Electromagnetic Compatibility. The ability of electrical and electronic equipment to co-exist without unacceptable interference.
EMC Directive	The European Directive containing legislation to support the application of RF emission, conducted disturbance and noise immunity standards.
EMI	Electromagnetic Interference.
Ethernet	A LAN technology initially based on CSMA/CD techniques, developed by Xerox, Intel and DEC. Switched Ethernet does not use CSMA/CD
Ethernet in the First Mile (EFM)	IEEE 802.3ah. A standard describing the provision of Ethernet over subscriber loop cabling, operating at 100/1000 Mbit/s full-duplex over optical fibre and 2/10 Mbit/s full-duplex over copper cabling.
Fast Ethernet	A version of Ethernet operating at 100 Mbit/s over twisted pair copper and optical fibre cabling.
FDDI	Fibre Distributed Data Interface. An industry standard fibre optic LAN with a data rate of 100 Mbit/s.
Fibre Channel	A high-speed system bus, specified to support data transfer between hosts, host-to-storage device and channel-to-LAN.
Firewall	Security mechanisms that prevent, detect, suppress and/or contain unauthorised access to a network or attached resources.
Flow Control	A mechanism used to manage the frame/packet transfer rate between devices on a network. Often accomplished by source throttling .
Frame	A Data Link Layer (Layer 2) message used within LAN s.
Full-Duplex Transmission	Transmission over 2 channels in both directions simultaneously.
Gigabit Ethernet	A version of Ethernet operating at 1,000 Mbit/s over twisted pair copper and optical fibre cabling.
10 Gigabit Ethernet	A version of Ethernet operating at 10,000 Mbit/s over twisted pair copper and optical fibre cabling.
Half-Duplex Transmission	Transmission in either direction but not in both directions simultaneously.
Hub	The core of a star topology network or cabling system.
IEC	International Electrotechnical Commission.
IEEE	Institute of Electrical and Electronic Engineers.
IETF	Internet Engineering Task Force. US organisation responsible for the overall development of the internet plus the specification of TCP/IP protocols.
Intranet	A private network based on Internet technology.
IP	Internet Protocol
ISDN	Integrated Services Digital Network. An ITU standard supporting the integration of voice and data.
ISM Bands	License-free Industrial, Scientific and Medical bands used by WLAN s.
ISO	International Standards Organisation.
ISP	Internet Service Provider.
LANE	LAN Emulation. A set of protocols that allow ATM networks to communicate with conventional LAN technologies such as Ethernet.
Latency	The amount of end-to-end delay in a network path or channel.
MPLS	Multi Protocol Label Switching. A protocol used to support QoS for different types of traffic in a network.
Multicast	A point-to-group message transmission within a network.
Octet	A grouping of 8 data bits. Sometimes referred to as a Byte.
Packet	See Datagram.

PAN	Personal Area Network. Standards being developed by IEEE 802.15 based on radio (Bluetooth) technology.
Piconet	A single Bluetooth wireless personal area network containing up to 8 active devices.
Power over Ethernet	The provision of up to 12 watts of dc power over Ethernet twisted-pair cabling, specified by IEEE 803.3af.
QoS	Quality of Service. Used to define the level of service and control the transmission of different types of traffic (voice, data, video).
RMON	Remote Monitoring. Part of SNMP.
Router	A Layer 3 internetworking device used to connect separate networks by processing packets / datagrams.
RSVP	Reservation Request Protocol. A protocol used to support QoS for different types of traffic in a network. Part of TCP/IP.
SAN	Storage Area Network. A special network designed to interconnect multiple storage devices at high speed. Fibre Channel is often used.
SCSI	Small Computer System Interface. A special network designed to interconnect multiple storage and peripheral devices to computers at a high speed and over limited distances.
SDH	Synchronous Digital Hierarchy. A synchronous transmission system used for telecommunications worldwide, OPERATING UP TO MANY Gbit/s.
SNMP	Simple Network Management Protocol. Part of TCP/IP.
SONET	Synchronous Optical Network. The US version of SDH.
Spread Spectrum	A radio technology that spreads information over a wide band of frequencies for transmission to prevent message interception and increase immunity to interference. Used by WLANs and WPANs.
Starlan	See 1BASE5.
TIA	Telecommunications Industry Association
Thin Ethernet	See 10BASE2
Throughput	A measurement of processing and handling ability, which measures the amount of data accepted as input and processed as output by a system.
Token Ring	A local network access mechanism and topology in which a supervisory frame or special bit pattern is passed from station to station in sequential order; stations wishing to gain access to the network must wait for the supervisory frame or special bit pattern to arrive before transmitting information. Provides deterministic access. Defined by IEEE 802.5.
Topology	The logical or physical arrangement of stations on a LAN in relation to each other.
TP-PMD	Twisted-Pair Physical Medium Dependant; twisted pair version of FDDI operating over 100m Category 5 UTP or Type 1 STP.
Unicast	A point-to-point message transmission within a network.
Virtual Circuit	A communications path that is set-up for information transfer, then torn down on completion. There is no permanent physical circuit or path.
VLAN	Virtual LAN. A technique used with switching technologies to support the logical grouping of attached devices into a number of sub-networks to improve traffic management and / or security. Defined by IEEE 802.1Q.
VoIP	Voice over IP
VPN	Virtual Private Network. A combination of hardware and software technologies designed to provide a secure tunnel for an organisation's messages over the internet.
WLAN	Wireless LAN. Defined by IEEE 802.11 to operate up to 2 Mbit/s over 2.4 GHz radio or infra-red; 802.11a to operate up to 54 Mbit/s over 5 GHz radio; 802.11b to operate up to 11 Mbit/s over 2.4 GHz radio.
xDSL	A family of digital technologies designed to provide high bit rate operation over existing subscriber loop copper cabling.
1BASE5	IEEE 802.3e. A 1 Mbit/s version of Ethernet operating via 250m of Cat 3 UTP cable in a star configuration. Sometimes known as Starlan.
10BASE2	IEEE 802.3a. A 10 Mbit/s Ethernet operating via 185m segments of thin RG58 coaxial cable in a daisy chain topology. Also known as Cheapernet.
10BASE5	IEEE 802.3. The original 10 Mbit/s Ethernet operating via 500m segments of thick coaxial cable with up to 100 multi-dropped transceivers.
10BASE-F	IEEE 802.3j. An 850nm optical fibre version of 10 Mbit/s Ethernet operating via 2km of multimode fibre and supporting active or passive hub implementations.
10BASE-T	IEEE 802.3i. 10 Mbit/s Ethernet operating via 100m of Cat3 UTP cable in a star configuration.
100BASE-FX	IEEE 802.3u. A 1300nm optical fibre version of 100 Mbit/s Ethernet operating via 2km of multimode fibre.
100BASE-SX	TIA/EIA-785. An 850nm optical fibre version of 100 Mbit/s Ethernet operating via 2km of multimode fibre. Supports auto-negotiation with 10BASE-FL devices.
100BASE-T2	IEEE 802.3y. A 100 Mbit/s version of Ethernet supporting 100m operation over 2 pairs of Cat3 UTP cable in a star configuration.
100BASE-T4	IEEE 802.3u. A 100 Mbit/s version of Ethernet supporting 100m operation over 4 pairs of Cat3 UTP cable in a star configuration.
100BASE-TX	IEEE 802.3u. A 100 Mbit/s version of Ethernet supporting 100m operation over 2 pairs of Cat5 UTP cable in a star configuration.
100BASE-VG	IEEE 802.12. A 100 Mbit/s shared-media LAN supporting either Ethernet or Token-Ring and using a higher level of priority (Demand Priority) for real-time traffic.
1000BASE-CX	IEEE 802.3z. A 1,000 Mbit/s version of Ethernet supporting 25m operation over twinaxial cable.
1000BASE-FX	IEEE 802.3z. A 1,000 Mbit/s version of Ethernet operating via optical fibre. 1000BASE-SX (850nm) operates up to 500m over multimode fibre, 1000BASE-LX (1300nm) operates up to 550m over multimode fibre and up to 3km over singlemode fibre.
1000BASE-T	IEEE 802.3ab. A 1,000 Mbit/s version of Ethernet supporting 100m operation over 4 pairs of Cat5 UTP cable in a star configuration.
1000BASE-TX	TIA/EIA-854. A 1,000 Mbit/s version of Ethernet supporting 100m operation over 4 pairs of Cat6 UTP cable in a star configuration.
10GBASE-CX4	IEEE 802.3ak. A 10,000 Mbit/s version of Ethernet supporting 15m operation over Infiniband cabling.
10GBASE-FX	IEEE 802.3ae. A 10,000 Mbit/s version of Ethernet operating via optical fibre for use in LAN and WAN environments. 850nm, 1310nm and 1550nm versions are specified.
10GBASE-T	A 10,000 Mbit/s version of Ethernet supporting up to 100m operation over twisted pair cable. Currently final draft by IEEE 802.3.