

NEWTON's TELECOM DICTIONARY

31st Updated, Expanded Edition

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New York

**Volex Exhibit 1025
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inmate calling. Dennis Squires from Bell Atlantic says, "Prison inmates can get very creative when they have a lot of time on their hands, like 20 years." So, to avoid stealing of phone calls by prisoners, some phone companies have a service called "Inmate Calling." The inmate enters his authorization code, which allows him to make phone calls – but only to authorized phone numbers, i.e. mothers, lawyers, bail bondsmen, etc.

INMC. International Network Management Center.

inmessaging. Text messaging between customers of the same cellular operator. Cellular operators who use the term in-messaging do so because such text messages are not metered, billed, or charged against customers' text message allowances. Unlimited in-messaging is part of their plans.

INMLM. Integrated Network Manager Link Module.

INMS. Integrated Network Management Services.

INN. See InterNode Network.

inner coder. The second of two concatenated error-correcting coders in transmission and the first of two in reception used in the digital signal processing (DSP) of bitstreams in radio communications systems.

inner wires. For a standard four wires connection, the wires fastened to the inner two pin positions in a jack or connector. For example, in a six position connector, the inner wires are pins 3 and 4.

innerduct. A flexible plastic conduit that's placed in a larger conduit. It's used for three main reasons: (1) cable management, (2) for segregating different companies' wires when they lease space in the same conduit and (3) to provide yet another layer of protection for optical fiber. Also spelled inner duct. Synonym: subduct. See common trench.

inoculate. The Washington Post's Style Invitational asked readers to take any word from the dictionary, alter it by adding, subtracting or changing one letter, and supply a new definition. This one is one of the winners. Inoculate means to take coffee intravenously.

INode. Integrated Node (SSP and SIP).

in-orbit spare. An extra satellite that is placed into a special orbit until it needs to be pressed into service to replace an operational satellite. See storage orbit.

INOS. Intelligent Network Operations System. An operations system designated to manage, monitor, and control elements of an intelligent telecommunications network.

iNOW! iNOW! is a standards-based, multi-vendor initiative announced in December 1998 to provide interoperability among IP telephony platforms. Ascend (now owned by Alcatel-Lucent), Cisco, Clarent, Dialogic, Natural MicroSystems and Siemens will be working with the iNOW! Profile to make their gateways and gatekeepers interoperable with each other's products and with those from Lucent and VocalTec. The specs on the standard are due to be published in January 1999. According to the January, 1999 release, the iNOW! Interoperability Profile will detail how to achieve interoperability between gateways from different vendors and interoperability between gatekeepers from different vendors. Up until recently, carriers and callers were limited in the destinations they could reach since calls had to be terminated on the exact same platform from which they originated. Internet telephony service providers had to choose between dependence on a single vendor or operating multiple parallel networks of incompatible gateways. According to the release, Lucent and VocalTec are responsible for the development of the programming and engineering for the iNOW! Interoperability Profile. The interoperability guidelines are based on the International Telecommunications Union (ITU) H.323 standard, and the H.225.0 Annex G standard.

INP. 1. Interim Number Portability. Interim method of porting a LEC owned phone number to a CLEC via remote call forwarding when a LEC switch does not fully support LNP functionality. See Number Portability.

2. International Network Provisioning.

INPA. Interchangeable Numbering Plan Area. An area code that looks like an office code. There is no particular name for an office code that looks like an area code, according to Leo Goeller.

INPS. Intelligent Network Product Support.

input. A signal fed into a circuit.

input buffer limiting. Buffering strategy that divides buffer at a mode into

two classes, both available to transit packets but only one available to packets input at the node.

input circuit. The grid circuit of an electron tube.

input file. A file that a process opens and reads data from.

input/output. I/O. Input and output are two of the three functions that computers perform (the other is processing). Input/Output describes the inter-related tasks of providing information to the computer and providing the results of processing to the user. I/O devices include keyboards (input) and printers (output). A disk drive is both an input and an output device, since it can both provide information to the computer and receive information from the computer.

input/output parallelism. I/O parallelism. The writing to or reading from two or more I/O devices at the same time, for example, when writing to or reading from a partitioned database whose partitions are on different disk drives. Synonym: parallel I/O. See RAID.

inquiry. A request for specific information.

INS 1500. A term for a digital T-1 line transmitting at 1,544 million bits per second.

INS 64. A term for a digital ISDN BRI line transmitting at 144,000 bits per second.

insanely great. When Steve Jobs of Apple and Pixar fame evaluated a new product, it was, in Steve's language, either "insanely great" or an expletive that I can't publish – one full of four letter words. Jobs brought us some of the great technology inventions of the modern day – including the iPhone, the iPad and the iPod. Walter Isaacson's biography of Steve is insanely great (I said so). Please read it. See Jobs, Steve.

insanity. Doing the same thing again and again, but expecting a different result the next time.

insatiable. The demand for telecommunications services was insatiable, according to common myth around the late 1990s – just before the telecom bubble burst.

insertion gain. The gain resulting from the insertion of a device in a transmission line, expressed as the ratio of the power delivered to that part of the line following the device to the power delivered to that same part before insertion. If more than one component is involved in the input or output, the particular component used must be specified. If the resulting number is negative, an "insertion loss" is indicated. This ratio is usually expressed in decibels. See Insertion Loss.

insertion loss. 1. In a fiber optic communication link, insertion loss is the optical power loss due to all causes, usually expressed as decibels/kilometer. Causes of insertion loss may be absorption, scattering, diffusion, dispersion, microbending, or methods of coupling power outside the fiber. In lightwave transmission systems, the power lost at the entrance to a waveguide due to causes, such as fresnel reflection, packing fraction, limited numerical aperture, axial misalignment, lateral displacement, initial scattering, or diffusion.

2. The difference in the amount of power received before and after something is inserted into the circuit (e.g. a telephone instrument) or a call is connected. See also attenuation and insertion gain.

in-service date. The date that something (area code, circuit, service, etc.) becomes available for use.

in-service software upgrade. ISSU. A software update that is done on a live system, such as a router or server, without having to reboot the system. Synonym: hitless software upgrade.

inshallah. In Arabic, inshallah means "God willing." It can be used in sentences like, "I'll see you tomorrow at 3 PM, inshallah." That means I most likely will not be on time.

inside dial tone. The dial tone provided by a PBX. This lets you dial an internal number. When you dial 9 (internal extensions never start with 9), you get the dial tone provided by your local RBOC. Outside North America, you often dial 0 to get an outside line.

inside global address. In a NAT context, IP translated address of an inside host as seen by an outside host and network. inside local address In a NAT context, configured IP address that is assigned to a host on the inside network.

inside link. See horizontal link.

inside move. The moving of the physical termination of an existing service

equipment upstream has experienced a failure. A hierarchy of LOS defect and alarm notifications is implemented at the LOS-detecting equipment based on the duration the condition persists. See also AIS.

2. Line-of-sight. Related acronyms are BLOS (beyond line-of-sight) and NLOS, which has two meanings: near line-of-sight and non-line-of-sight.

Loschmidt number. The number of molecules in one cubic centimetre of a gas at one bar pressure and zero degree centigrade temperature, about 27 million trillion – the actual figure is 2.687×10^{19} – first calculated by and named for Austrian chemist Joseph Loschmidt (1821-1895); used in theoretical calculations of radio-frequency signal attenuation in the atmosphere.

losing face. See Bee's Wax.

loss. The drop in signal level between two points on a network. It is important to distinguish between "loss" and "level". Level is the amplitude, or signal strength, and is measured at finite points known as Transmission Level Points (TLPs). Loss is the difference between levels over a circuit, between two TLPs, and is measured in decibels (dB). Loss occurs constantly throughout telephony – from long distance circuits to switches, as switches set up connections via internal circuits. Loss is cumulative. Add two circuits each with a loss of 10 dB. You will have 20 dB loss in the total circuit. The human ear can detect a 3 dB loss. In figuring losses on fiber optic cables, you add up the individual losses from the connectors, the splices and the cable itself.

loss assessment. Loss Assessment is the process of assessing the monetary cost to the business of the total failure of a specific resource or function. See Ray Horak essay on Disaster Recovery Planning in Introduction section of this dictionary.

loss budget. A loss budget is the maximum amount of signal degradation a wired or wireless communications link can withstand before it becomes susceptible to errors and/or signal loss. In a wired network scenario, the idea is to establish a "loss budget" by consulting your equipment vendors for recommended wire types and maximum allowable lengths of cable before you build the network. See attenuation, radio link budget.

loss deviation. Denotes the variation of the actual loss from the designed value.

Loss of Cell Delineation. LCD. An ATM term. Cell Delineation is accomplished at the Transmission Convergence (TC) sublayer of the ATM Physical Layer (PHY), working in tight formation with the Physical Medium (PM) sublayer. It is at the TC sublayer that the responsibility is assumed for Physical Layer operations that are not medium independent. For example, it is at this sublayer that the ATM cell switch interfaces with a SONET transmission system. Cell Delineation is responsible for defining the cell boundaries at the originating endpoint (e.g. ATM cell switch or ATM workstation) in order that the receiving endpoint can reassemble (i.e. identify and recover) all cells associated with a data payload that has been segmented (i.e. cut up into ATM cells). Cell Delineation is achieved by the receiving endpoint's locking onto the 5-octet cell headers. A failure in this process is known as Loss of Cell Delineation (LCD).

Loss of Frame. See LOF.

Loss of Pointer. See LOP.

lossless compression. Image- and data-compression applications and algorithms, such as Huffman Encoding, that reduce the number of bits a file would normally take up without losing any data. In this way, no information is lost or altered in the compression and/or transmission process. Lossless compression is particularly important for alphanumeric text files, as the integrity of the data is affected dramatically if even one bit is lost. PKZip and WinZip are examples of products that use lossless compression techniques. See also lossy compression.

lossy. 1. Describes a network link that loses packets because of an unreliable data link layer or an imperfect physical transport layer.

2. When you convert information from digital to analog or vice versa or compress, or change an image in some way – e.g. make it small for the web – you inevitably lose some of the data. How important that loss of information is to you depends on what you're going to do with the information. If you're simply going to view the image small on the Internet, then it doesn't matter that you made your image "lossy." If you want to print your photo poster size, the more information you don't lose, the better. Your picture will look better blown up.

Different imaging formats – JPEG, GIF etc. – produce different results. An image which looks good in JPEG might look less good in GIF. You can play around with the concept of "lossy" with your digital camera. Put your camera on a tripod. Take a picture of a vase with some fruit at the largest image size your camera will produce. My camera's largest size produces an image of 19 megabytes. Now take photos of the same bowl of fruit and ask your camera to produce the smallest file. My camera's smallest is around 650 kilobytes. Open both images as large as you can on your computer and check out the differences. You'll find plenty.

lossy compression. Compression techniques that result in the some loss of data are known as lossy. While the data file is not completely accurate, once compressed and decompressed, the savings in storage memory and transmission bandwidth/time are considerable. Audio, video and image files often are compressed via a lossy technique, as the savings in storage and transmission bandwidth are so significant, while the level of loss is often not noticeable. JPEG, MPEG and Wavelet are all examples of lossy compression techniques. See also GIF, JPEG, lossless compression, lossy, MPEG, and Wavelet.

lossy link. A communications link whose packet loss rate exceeds a given threshold.

LoST. See next generation 911.

lost call attempt. A call attempt that cannot be further advanced to its destination due to an equipment shortage or failure in the network.

lost calls cleared. Traffic engineering assumption used in Erlang C that calls not satisfied on the first attempt are held (delayed) in the system until satisfied.

lost calls held. Traffic engineering assumption used in Poisson that calls not satisfied on the first attempt are held in the phone system for a period not exceeding the average holding time of all calls.

lost wages. An endearing term for a town called Las Vegas whose claim to fame is gambling. Hence the term "lost wages."

lottery. A method, authorized by the Congress, designed to provide the FCC with an alternative or option to comparative hearings for allocating spectrum space to competing applicants in various services.

loudspeaker. A device that takes an amplified electrical audio signal and converts it into sound. It reverses the operation of a microphone, which, by contrast, takes a sound and converts it into an electrical audio signal. Sometimes multiple loudspeakers are deployed to broadcast sounds throughout a facility, such as a department store, office building, aircraft, or ship; or throughout a large open area, such as a sports stadium, fair ground or military base. Such an arrangement of loudspeakers sometimes is called a public address system. See 1MC, sound.

loudspeaker paging access. Interface to customer-provided paging equipment.

love. 1. Zero scores in tennis are called "love." In France, where tennis first became popular, a big, round zero on scoreboard looked like an egg and was called "l'oeuf," which is French for "egg". When tennis was introduced in the US, Americans pronounced it "love." I can continue further with bad yokes...

2. The problem with entrepreneurs is they're pigheaded and don't listen. This can be a good thing, since they are often right – like Steve Jobs, Bill Gates or Warren Buffett. But most often they're not. There are few geniuses. By not listening to their advisers, board members or investors, they risk alienating their supporters and, worse. Some entrepreneurs would prefer to muddle on, raising tiny bits of money – enough to keep the door open, but not enough to crank up marketing in a meaningful way. Some actually prefer to let their company die, than accept the outside advice. Yes, I've run into this several times. Figuring your entrepreneur's willingness to listen is key to your Due Diligence – before you dump your hard-earned money into the operation.

Which brings me to one of favorite quotes from Oscar Wilde:

Yet each man kills the thing he loves

By each let this be heard,

Some do it with a bitter look,

Some with a flattering word,

The coward does it with a kiss,

The brave man with a sword!

See also sandbox.