NEWTON'S TELECOM DICTIONARY

The Official Dictionary of Telecommunications Networking and the Internet

16th EXPANDED & UPDATED EDITION

BY HARRY NEWTON

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Instabus1080 and Instabus1480 Trademarks for MICOM's direct host attachment products.

Instalink 1. An MCI International service that allows access to a host computer in the U.S.A. from a Telex machine anywhere overseas. This allows easier retrieval of information from a U.S. database.

2. A trademark for MICOM's data-over-voice products.

Installation The physical hook-up and diagnostic testing of a PBX switch, cabinet, or peripheral item prior to a cutover and maintenance acceptance by the maintaining vendor.

Installed Base How many of whatever are in and working. Installed base is often confused with annual shipments. They're very different. Shipments is what goes out the factory. Installed base is what's out there. The equation is: Installed base at beginning of year plus annual shipments less equipment taken out of service during the year is equal to the installed base at the end of the year.

Installer's Tone Also called test tone. A small box that runs on batteries and puts an RF tone on a pair of wires. If the technician can't find a pair of wires by color or binding post, they attach a tone at one end and use an inductive amplifier (also called a banana or probe) at the other end to find a beeping tone.

Instance ID An ATM term. A subset of an object's attributes which serve to uniquely identify a MIB instance.

Instanet Trademark for MICOM's family of local data distribution and data private automatic branch exchange (PABX) products.

Instant Messaging I'm logged into the Internet. I load some software. It shows me that you're also logged into the Internet. I type you a message. You see it on your screen the moment I hit "send." You type your reply and send it. I see it. Bingo, a new Internet service that has come to be called "instant messaging." Instant messaging is essentially real-time, on-line electronic mail. Instant Messaging started with software called ICQ, then America Online introduced its hugely-popular variation (AOL Instant Messenger), then Microsoft introduced its software called MSN Messenger. As of writing, none of these softwares is compatible with the other. But there was talk in the trade press of eventual standards. There are serious reasons we need standards. Instant messaging is evolving into much more than a tool for sending typed messages to buddies online. Just as the original Web browsers revolutionized the way average users connect to Internet content, today's instant message screens are evolving into easy-to-use connections for linking people at any given moment on the Internet via text, voice and video. All the new capabilities will be built on a single critical assumption: knowing that a person is online. That, in turn, makes it possible for electronic merchants and providers of online services to reach Internet users with information or incentives — at the precise time they are able to react, namely when they are online in front of their screen, an easy target. Tools are being integrated into instant messaging software that permit the immediate delivery of an increasing array of data that does not come from friends or family. America Online has unveiled a version of its instant messaging software that automatically delivers tailored news headlines and stock quotes.

Instant On Buy a PC (Personal Computer). Turn it on. Bingo, it's already loaded with Windows or OS/2. Instant On is a new term for preloading software onto hard disks of new computers and shipping those computers already pre-loaded with that software.

Instantaneous Override Energy Function IOEF. A feature of the AT&T PBX Dimension Energy Communications Service Adjunct (ECSA), which allows the user to turn all the ECSA energy functions ON or OFF. IOEF is most often used for periodic maintenance, or to adjust to sudden changes in weather.

Institute for Telecommunications Sciences ITS is the research and engineering branch of the National Telecommunications and Information Administration (NTIA), which is part of the U.S. Department of Commerce (DoC). www.ntia.doc.gov See NTIA

Instruction Register The register which contains the instruction to be executed and functions as the source for the subsequent operations of the arithmetic unit.

Instructional Television Fixed Service ITFS. A service provided by one or more fixed microwave stations operated by an educational organization and used mainly to transmit instructional, cultural and other educational information to fixed receiving stations.

Insulated Wire Wire which has a nonconducting covering.

Insulating Materials Those substances which oppose the passage of an electric current through them.

Insulation A material which does not conduct electricity but is suitable for surrounding conductors to prevent the loss of current.

Insulation Displacement Connection IDC. The IDC has replaced wire wrap and solder and screw post terminations as the way for connecting conductors (i.e. wires carrying telecom) to jacks, patch panels and blocks. Insulation Displacement Connections are typically two sharp pieces of metal in a slight V. As the plastic-covered wire is pushed into these metal teeth, the teeth pierce the plastic jacket (the insulation) and make connection with the inside metal conductor. This saves the installer having to strip off the conductor's insulation. This saves time. Since IDCs are very small, they can be placed very close together. This reduces the size of jacks, patch panels and blocks. IDCs are the best termination for high speed data cabling since a gas-tight, uniform connection is made. The alternate method of connecting wires is with a screw-down post. There are advantages and disadvantages to both systems. The IDC system, obviously, is faster and uses less space. But it requires a special tool. The screw system takes more time, but may produce a longer-lasting and stronger, more thorough (more of the wire exposed) electrical connection. The most common IDC wiring scheme is the 66-block, invented by Western Electric, now Lucent. But there are other systems — from other telecom manufacturers. See Punchdown Tool.

Insulation Resistance That property of an insulating material which resists electrical current flow through the insulating material when a potential difference is applied.

Insulators Some atoms hold onto their electrons tightly. Since electrons cannot move freely these material can't easily conduct electricity and are know as non-conductors or insulators. Common insulators include glass, ceramic, plastics, paper and air. Insulators are also called dielectrics.

INT Induction Neutralizing Transformer. A specially designed multipair longitudinal inductor that is spliced into a wireline facility to substantially reduce low frequency steady-state or surge induced voltages and currents that may be causing noise, equipment malfunctions and/or damages or creating a personnel safety hazard. See TEN.

INT14 A software interrupt designed to communicate with the com (serial) port in a PC. Communications programs use interrupt 14h to talk to a modem physically attached to another computer on the network.

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compresses information within a single frame. Compare to Interframe Coding.

IntraLATA Telecommunications services that originate and terminate in the same Local Access and Transport Area. See also Local Access and Transport Area. This can be either Interstate or Intrastate service, traffic or facilities.

Intramodal Distortion In an optical fiber, the distortion resulting from dispersion of group velocity of a propagating mode. It is the only form of multi mode distortion occurring in single-mode fibers.

Intranet A private network that uses Internet software and Internet standards. In essence, an Intranet is a private Internet reserved for use by people who have been given the authority and passwords necessary to use that network. Those people are typically employees and often customers of a company. An Intranet might use circuits also used by the Internet or it might not. Companies are increasingly using Intranets — internal Web servers — to give their employees easy access to corporate information.

According to my friends at Strategic Networks Consulting, Boiled down to its simplest, an Intranet is: a private network environment built around Internet technologies and standards — predominantly the World Wide Web. The primary user interface, called a Web browser, accesses Web servers located locally, remotely or on the Internet. The Web server is the heart of an Intranet, making selection of Web server software a crucial decision, even though much fanfare has focused on browsers (Netscape's Navigator vs. Microsoft's Explorer).

At its core, a Web server handles two arcane languages (HTML and CGI) that are the meat and potatoes of generating Web pages dynamically, making connections and responding to user requests. But in the rush to dominate the potentially lucrative Intranet market, these simple Web functions are being bundled into operating systems and vendors are now touting pricey "Intranet suites" which encompass everything from database and application interfaces, to e-mail and news-groups, to the kitchen sink.

Most medium- or larger-sized companies will need more than just a handful of simple Web servers to deploy a reasonably robust Intranet. To help a company post current job openings, or make up-to-date product specs and available inventory accessible by traveling sales reps, an Intranet needs the following capabilities:

• Database access. Getting at critical data housed in corporate databases can be accomplished via generic, universal ODBC linking or based on "native" links directly to Sybase, Oracle et al. allowing use of all the database's features.

• Application hooks. Used by developers, a standard programming interface (API) allows outside applications like Lotus Notes to interact with Web data and vice versa. In addition, proprietary APIs exist — most notably Microsoft's ISAPI (for "Internet Server API") which lets developers link directly to Microsoft applications.

• User publishing. In addition to dialogues via chat/news-group/bulletin board features, users will want to post their own content on Web servers without having to attain Webmaster status.

• Search vehicles. How does an engineer find the current specs on Project #686-2 among thousands of pages spread across a bunch of Web servers? The answer: an indexing and search engine that creates an internal Yahoo! for your own Web sites.

• Admin/management. A catch-all for loads of important, but still ill-conceived features for managing access, users, con-

tent and the servers themselves. Intranet administrators are currently fascinated with analyzing Web server logs which contain data of some sort, including user connections and page activity.

According to a white paper released by Sun Microsystems in the summer of 1996, the basic infrastructure for an intranet consists of an internal TCP/IP network connecting servers and desktops, which may or may not be connected to the Internet through a firewall. The intranet provides services to desktops via standard open Internet protocols. In addition to TCP/IP for basic network communication, these also include protocols for:

Browsing	HTTP
File Service	NFS
Mail Service	IMAP4/SMTP
Naming Service	DNS/NIS+
Directory Services	DNS/LDAP
Booting Services	Bootp/DHCP
Network Administration	SNMP
Object Services	IIOP (CORBA)

See also Extranet and Intranet.

Intranodal Service Intranodal service is a feature of some central office switches and smaller remote switches. It means that it will continue to switch in which

Intranode Communications path which originates and terminates in the same node.

Intraoffice Call A call involving only one switching system.

Intraoffice Trunk A telephone channel between two pieces of equipment within the same central office.

Intrapreneur An entrepreneur who works inside a big company. Hence, intra, as in inside. It's hard to imagine it actually happening. But the word has became popular as a way for large companies to motivate their employees to take personal career risks and introduce new products.

Intrastate Services, traffic or facilities that originate and terminate within the same state. Therefore, if related to telephone, falling under the jurisdiction of that state's telephone regulatory procedures.

Infrastructure A term coined by "Data Communications" and referring to the software, hardware, and Internet services underlying a corporate Intranet.

Intrinsic Joint Loss That loss in optical power transmission, intrinsic to the optical fiber, caused by fiber parameters, e.g., dimensions, profile parameter, mode field diameter, mismatches when two non identical fibers are joined.

Intrinsics Intrinsics are a component of many windows toolkits. The windows toolkit intrinsics definition has been developed by the MIT X Consortium. The intrinsics define the function of specific graphical user interface and window objects. They do not define any particular look or feel, just the function. Example: A pull down menu intrinsic would define the function of a pull down menu within a toolkit but not the appearance of it.

Intrusive Test Breaking a circuit in order to test its functionality. Testing intrusively will drop service on the circuit.

INTUG International Telecommunications Users Group.

Intumescent Firestop A firestopping material that expands under the influence of heat.

Inverse ARPA See Reverse DNS.

Inverse Fourier Transform Inversion of Fourier transform to convert frequency representation of signal to time representation.

Inverse Multiplexer I-Mux. An inverse multiplexer performs the inverse function of a multiplexer. "Multiplexer"

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managers use their own routines to load high, though they can sometimes borrow DOS commands.

Loading Plan A telephone company term. A Loading Plan is a systematic scheme for fully utilizing all existing capacity in a given switching entity; Utilizing and coordinating the capabilities and capacity limitations of various entities in a multi-entity wire center and maintaining objective service levels at all times. A Loading Plan is the basis for achieving and retaining good Load Balance.
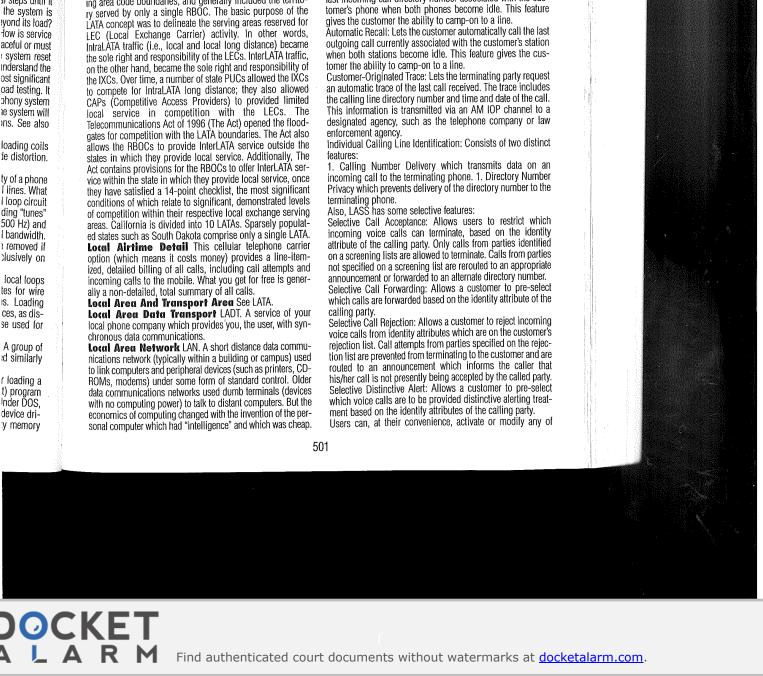
LOC An ATM term. Loss of Cell Delineation: A condition at the receiver or a maintenance signal transmitted in the PHY overhead indicating that the receiving equipment has lost cell delineation. Used to monitor the performance of the PHY layer.

Local Pertaining to a system or device that resides within a subject device's switching domain.

Local Access The connection between a customer's premises and a point of presence of the Exchange Carrier.

Local Access and Transport Area LATA. The MFJ (Modified Final Judgement), which broke up the Bell System, also defined 196 distinct geographical areas known as LATAs. The LATA boundaries generally were drawn in consideration of SMSAs (Standard Metropolitan Statistical Areas), which were defined by the Census Bureau to identify "communities of interest" in economic terms. Generally speaking, the LATA boundaries also were coterminous with state lines and existing area code boundaries, and generally included the territory served by only a single RBOC. The basic purpose of the LATA concept was to delineate the serving areas reserved for LEC (Local Exchange Carrier) activity. In other words, IntraLATA traffic (i.e., local and local long distance) became the sole right and responsibility of the LECs. InterLATA traffic, on the other hand, became the sole right and responsibility of the IXCs. Over time, a number of state PUCs allowed the IXCs to compete for IntraLATA long distance; they also allowed CAPs (Competitive Access Providers) to provided limited local service in competition with the LECs. The Telecommunications Act of 1996 (The Act) opened the floodgates for competition with the LATA boundaries. The Act also allows the RBOCs to provide InterLATA service outside the states in which they provide local service. Additionally, The Act contains provisions for the RBOCs to offer InterLATA service within the state in which they provide local service, once they have satisfied a 14-point checklist, the most significant conditions of which relate to significant, demonstrated levels of competition within their respective local exchange serving areas. California is divided into 10 LATAs. Sparsely populated states such as South Dakota comprise only a single LATA.

Local Airtime Detail This cellular telephone carrier option (which means it costs money) provides a line-itemized, detailed billing of all calls, including call attempts and incoming calls to the mobile. What you get for free is generally a non-detailed, total summary of all calls.

Local Area And Transport Area See LATA.

Local Area Data Transport LADT. A service of your local phone company which provides you, the user, with synchronous data communications.

Local Area Network LAN. A short distance data communications network (typically within a building or campus) used to link computers and peripheral devices (such as printers, CD-ROMs, modems) under some form of standard control. Older data communications networks used dumb terminals (devices with no computing power) to talk to distant computers. But the economics of computing changed with the invention of the personal computer which had "intelligence" and which was cheap.

LANs were invented as an afterthought — after PCs — and were originally designed to let cheap PCs share peripherals — like laser printers — which were too expensive to dedicate to individual PCs. And as time went on, what LANs were used for got broader and broader. Today, LANs have four main advantages: 1. Anyone on the LAN can use any of the peripheral devices connected to the LAN. 2. Anyone on the LAN can access databases and programs running on client servers (super powerful PCs) attached to the LAN; and 3. Anyone on the LAN can send messages to and work jointly with others on the LAN. 4. While a LAN does not use common carrier circuits, it may have gateways and/or bridges to public telecommunications networks. See LAN Manager, Token Ring and Ethernet.

Local Area Signaling Services LASS is a group of central office features provided now by virtually all central office switch makers that uses existing customer lines to provide some extra features to the end user (typically a business user). They are based on delivery of calling party number via the local signaling network. LASS can be implemented on a standalone single central office basis for intra office calls or on a multiple central office grouping in a LATA (what the local phone companies are allowed to serve) for interoffice calls. Local CCS7 (Common Channel Signaling Seven) is required for all configurations. The following features typically make up LASS:

Automatic Callback: Lets the customer automatically call the last incoming call directory number associated with the customer's phone when both phones become idle. This feature gives the customer the ability to camp-on to a line.

Automatic Recall: Lets the customer automatically call the last outgoing call currently associated with the customer's station when both stations become idle. This feature gives the customer the ability to camp-on to a line.

Customer-Originated Trace: Lets the terminating party request an automatic trace of the last call received. The trace includes the calling line directory number and time and date of the call. This information is transmitted via an AM IOP channel to a designated agency, such as the telephone company or law enforcement agency.

Individual Calling Line Identification: Consists of two distinct features:

1. Calling Number Delivery which transmits data on an incoming call to the terminating phone. 1. Directory Number Privacy which prevents delivery of the directory number to the terminating phone.

Also, LASS has some selective features:

Selective Call Acceptance: Allows users to restrict which incoming voice calls can terminate, based on the identity attribute of the calling party. Only calls from parties identified on a screening lists are allowed to terminate. Calls from parties not specified on a screening list are rerouted to an appropriate announcement or forwarded to an alternate directory number.

Selective Call Forwarding: Allows a customer to pre-select which calls are forwarded based on the identity attribute of the calling party.

Selective Call Rejection: Allows a customer to reject incoming voice calls from identity attributes which are on the customer's rejection list. Call attempts from parties specified on the rejection list are prevented from terminating to the customer and are routed to an announcement which informs the caller that his/her call is not presently being accepted by the called party.

Selective Distinctive Alert: Allows a customer to pre-select which voice calls are to be provided distinctive alerting treatment based on the identify attributes of the calling party.

Users can, at their convenience, activate or modify any of

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