

NEWTON'S TELECOM DICTIONARY

24th Edition

Harry Newton



New York

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email: Harry@HarryNewton.com
book site: www.NewtonsTelecomDictionary.net
personal web site: www.HarryNewton.com

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Stay In Touch

For suggestions, corrections, updates, special offers: please send an email to Harry@HarryNewton.com

I promise you I won't give your name to anybody. Nobody. Promise.

Harry Newton

DPBX • drift

seas carriers between cable heads, earth stations, or border crossing points. The DPS is based on DSSs, which are diversely routed and continuously monitored.

DPBX Digital PBX. Not a common term. Most PBXs these days are digital. And they are simply called PBXs.

DPCM Differential Pulse Code Modulation, or Delta Pulse Code Modulation. DPCM is a variant of PCM, the technique generally used for converting analog voice signals into digital signals for transmission over a digital transmission system and through a digital switch. PCM samples the amplitude (i.e., signal strength, or volume level) of the native analog voice information stream at a rate of 8,000 times per second at precise intervals of 125 microseconds, i.e., 1/8000th of a second. PCM encodes each voice sample into an 8-bit byte, which yields a bandwidth requirement of 64 Kbps (64,000 bits per second). DPCM expresses each sample as the difference, or delta, between one sample and the previous sample, thereby requiring only four bits, rather than eight. As a result, DPCM voice requires bandwidth of only 32 Kbps, rather than 64 Kbps. Unfortunately DPCM sacrifices some voice quality in the process. DPCM also is used in some video compression applications, but also suffers from loss of quality. See also ADPCM and PCM.

DPCS Digital Personal Communications Services. See PCS.

dpi Dots Per Inch. A measure of a scanner's ability to scan. The higher the number, the sharper the image and the greater the potential size of the image. See Scanner Accuracy.

DPLB Digital Private Line Billing.

DPMI An acronym for DOS Protected Mode Interface. DPMI is an industry standard that allows MS-DOS applications to execute code in the protected operating mode of the 80286 or 80386 processor. The DPMI specification is available from Intel Corporation. It is a superset of the VPMI (Virtual Control Program Interface) specification for controlling multiple programs inside a PC, as well as programs that use protected mode.

DPMS Display Power Manager Signaling is a power reduction feature that places a computer monitor in reduced power when the monitor is still on but has been idle for some time.

DPNSS Digital Private Network Signaling System. A standard in Britain which enables PBXs from different manufacturers to be tied together with E-1 lines and pass calls transparently between each—as easily as if the phones were extensions off the same PBX and were simply making intercom calls. The international version of DPNSS is called Q.SIG, which is now becoming Q.931, which is Euro-ISDN.

DPO Dedicated Pair Out (DPO) and Dedicated Pair In (DPI). If you move out of a residential apartment, the pair that you were using is dedicated to that Apt. so when the next occupant moves in, it is a flick of a switch to get phone service turned on. That's called Dedicated Pair Out. The DPI pair is the OE (Office Equipment) or the Switch pair. Now the pair in the C.O. (Central Office), when it's joined to the DPO pair, is often called a MATED PAIR. The DPI pair is mated to the DPO pair.

DPP Distributed Processing Peripheral.

DPRAM Dual port RAM.

Dprovisioning Elimination of an existing subscriber account; deprovisioning of a subscriber account includes subscriber account deregistration and device deactivation.

DPSK Differential Phase Shift Keying, also called dibit phase shift keying. A 4-level phase shift technique. See Differential Phase Shift Keying.

DPST Double-pole single throw.

DPT Dial pulse terminate.

DPU 1. Digital Processing Unit.

2. Dynamic Path Update. Allows IBM networks to add new network nodes or change backup routing paths while the front-end is still operating.

3. Director of Public Utilities, a title often found at a state regulatory commission.

DPX DataPath loop eXtension.

DQDB Distributed Queue Dual Bus. The Metropolitan Area Network (MAN) access technique defined by the IEEE 802.6 standard for Switched Multimegabit Data Service (SMDS). Based on QPSX (Queued Packet Synchronous Exchange), developed at the University of Western Australia (of which fact Harry Newton is ever so proud), DQDB operates by maintaining a queue at each station to determine when the station may access its dual buses. The dual buses provide bidirectional transmission between originating and terminating stations with excellent congestion control ensured through the network, from end-to-end. DQDB consists of two uni-directional buses connected as an open ring (i.e., each bus is not directly interconnected). It provides for full duplex operation between any two nodes. Each SMDS cell consists of 5 bytes of control information, involving a header and trailer, plus 48 bytes of payload. See also SMDS and ATM.

DQPSK Differential Quadrature Phase Shift Keying. An improvement on QPSK, this compression technique transmits only the differences between the values of the phase of the

sine wave, rather than the full absolute value. QPSK makes use of two carrier signals, separated by 90 degrees. See also PSK and QPSK.

DR Digital Radio.

Draconian Draco was an Athenian lawgiver. Around 621 B.C., the Greeks became tired of the privileged few making all the decisions. So, Draco was appointed to draft a set of laws, which turned out to be especially harsh. Those in debt could be enslaved, but only if they were members of the lower class. (He was tough, but not stupid.) Draco introduced the concept of "intent" to murder. He also introduced the distinctions between justifiable, accidental and intentional homicide. When asked about the harshness of his punishments, he supposedly said that the death penalty was appropriate for even so slight a crime as stealing a cabbage. Excessively severe rules or laws have come to be known as draconian in nature. See also Trivia.

draft proposal An ISO standards document that has been registered and numbered but not yet approved.

drag Dragging is a way of moving an item on the screen using your mouse. To drag a window in Windows, for example, move the mouse pointer onto a window's title bar, then hold down the mouse button while moving the mouse across your desktop. When you release the mouse button, the window will remain in its new location. Apply this technique to drag any data object, such as icons or list box items.

drag and drop The "drag and drop" definition defines how objects from one desktop application can be "dragged" out of that application, through clicking on the object with a mouse, across the desktop and "dropped" on another application. Most of the graphics operating systems, like Windows, Apple's Macintosh and Sun Sparc use Drag and Drop.

drag line A length of rope or string used to pull wire and cable through conduit or inaccessible spaces. Drag lines are often inserted in wall and ceilings during construction to ease future wire installation.

drag queen A drag queen is a man who likes to dress as a woman. In the 1940s, California law made it illegal to dress as a member of the opposite sex. Drag queens avoided this restriction by pinning pieces of paper to their dresses which read "I'm a boy!" The courts accepted the argument that anyone wearing such a notice was technically dressed as a man, not a woman. Some people claim that DSL lines are really T-1 lines in drag, but at a much lower price.

drain wire In a cable, an uninsulated wire laid over the component or components and used as a ground connection. It is the uninsulated wire in intimate contact with a shield to provide for easier termination of such a shield to ground. See also ground wire and ground.

DRAM 1. Dynamic Random Access Memory. Pronounced "dee-ram." The readable/writable memory used to store data in older PCs. DRAM stores each bit of information in a "cell" composed of a capacitor and a transistor. Because the capacitor in a DRAM cell can hold a charge for only a few milliseconds, DRAM must be continually refreshed to retain its data. In contrast, Static RAM, or SRAM, requires no refresh and delivers better performance, but it is more expensive to manufacture. See also DDR-SDRAM, EDO RAM, Flash RAM, FRAM, Microprocessor, RAM, RDRAM, SDRAM, SRAM, and VRAM.

2. Digital Recorder Announcer Module.

drawing In the manufacture of wire, pulling the metal through a die or series of dies in order to reduce the diameter to a specified size.

drawing tools A computer imaging term. The means of creating freehand lines or basic geometric shapes. Paint packages often provide an ellipse-drawing function as a variation of the circle (or vice versa) and a square drawing function as a variation of the rectangle. Virtually all packages offer filled geometric figures, the fill item being either a solid color or a pattern.

DRB Digital Radio Broadcasting.

DRCS Digital Radio Concentrator System.

Dreamweaver Outside of web site authors who prefer text editors, nearly all serious Web Developers now use Macromedia's (now Adobe's) Dreamweaver. In fact, according to eWeek, the Adobe platform can easily be considered the development environment of the Web. I personally use Dreamweaver every day and, ignoring some minor irritations and quirks, it works well.

dress down day A workday when employees are allowed to dress casually, often Friday, also called Casual Fridays.

dressing cable You "dress" cable by taking multiple cables and joining them together neatly with cable ties. A nicely-dressed, clean installation is a sign of telephony professionalism. It still exists.

drift 1. When a carrier frequency changes due to a transmitter problem. It can be caused by bad connections or defective components, temperature changes or diffraction. Crystal

dynamic gain flattening filters • dynamic T-1

residual gain ripple. The acousto-optic effect, either in a bulk crystal or directly in the fiber, liquid crystals and lattice-filter planar lightwave circuits all employ this approach to create the controllable response filter. With the Fourier filter approach, the control algorithm often uses a convergence method, iterating the response multiple times to arrive at the minimum error function.

The second approach with a much more predictive control algorithm is based on slicing the spectrum and controlling individual elements. These approaches employ a demultiplexing element to provide the spectral slices with the control provided by micro-electro-mechanical systems (MEMS) or thermo-optic planar circuits. To obtain a continuous response function, the filtering element can be placed inside an interferometer, where the phase of the signal rather than the amplitude is controlled. The phase control creates attenuation when combined with the unaltered path in the interferometer.

dynamic gain flattening filters DGFFs. See Dynamic Gain Equalizer.

dynamic host configuration protocol DHCP. A protocol for automatic TCP/IP configuration that provides static and dynamic address allocation and management. See DHCP for a much longer explanation.

dynamic HTML Dynamic HTML combines HTML, scripts and style sheets to bring animation to the Web. With Dynamic HTML, you can program your Web site such that a visitor surfing it alights on a button or some object and instantly a "help" or "explanation" balloon pops up. This balloon explains in greater detail what will happen if the visitor clicks on the button. Or the type may change and suddenly become bigger. Dynamic HTML is being incorporated into both Netscape and Microsoft Internet Explorer. The World Wide Web Consortium is considering the various flavors of dynamic HTML as part of its DOM (Document Object Model) specification. See also www.w3c.org.

dynamic IP addressing The Internet has an address for every "thing" attached to it at that very moment. That "thing" might be your browser-equipped tiny PC, or it might be a gigantic web site server with thousands of people grabbing files off it. That address is in a standard form and is called an IP (Internet Protocol) address. It is in the following form: xxx.xxx.xxx.xxx. You need an IP address so the Internet can route files, emails and messages back and forth to your PC. There are two types of IP addresses – static and dynamic. Static is an address you have all the time. If you're on a corporate network, you'll have a static address. If you are behind a hardware firewall, you'll have a static address. A dynamic address is one that changes every time you connect to the Internet. For example, you might connect to the Internet, you might be assigned this address: 129.37.213.178. Next time you connect that might be changed to 32.101.8.205. Those numbers are real. They're actually numbers I was assigned when I connected on two occasions one after another. The reason for dynamic addresses is that it things easier for users and for ISPs – Internet Service Providers. ISPs, for example have a limited number of addresses they can assign to their users. So they assign them on the fly – the essence of dynamic IP addressing. Virtually all the 500 or so million people who regularly surf the Internet do so through dynamic IP addressing. See Dynamic IP Addressing Allocation.

dynamic IP address allocation Allows a user to be assigned an IP address which is selected on the fly from a list of available addresses. See Dynamic Host Configuration Protocol (DHCP) and IP Network Control Protocol (INCP). See also Dynamic IP Addressing.

dynamic link library DLL. An executable code module for Microsoft Windows that can be loaded on demand and linked at run time, and then unloaded when the code is no longer needed.

dynamic load & stress testing An advanced and accurate form of load testing, dynamic load and stress testing more accurately presents the variety of stimulus of external callers, systems and networks to a computer telephony system. It will test your system using real-world user actions and a realistic call mix and busy hour usage profile. Most modern computer telephony network and systems provide a number of services to their users. Each of those services may stress the system in a different fashion. As the usage patterns of those users is varied and what each user will do can vary significantly, it is critical to load test systems with traffic patterns as dynamically and as close as possible to the way the system will be used in the real world. This definition courtesy of Steve Gladstone, author of the book *Testing Computer Telephony Systems*, available from 212-691-8215.

dynamic load balancing A technique where a switching system, particularly multiple connected ACDs, apportion incoming calls (the load) to balance the workload. This is done dynamically in real time.

dynamic loud speaker A loud speaker in which the diaphragm is driven by means of a small "voice coil" suspended in a powerful magnetic field.

dynamic memory The most common form of memory, used for RAM, with an access speed ranging from about 60 to 150 nanoseconds. (A nanosecond is a billionth of a

second.) Dynamic memory is an inexpensive but relatively complicated form of semiconductor memory with two states: presence and absence of electrical charge. Dynamic memory requires a continuous electrical current. All data is lost when the power is cut. Frequent saving files to disk helps preserve your data.

dynamic microphone A microphone, the coil of which is moved in a strong magnetic field by vibrations striking the diaphragm to which it is attached. Electrical currents are thus generated in the moving coil.

Dynamic NAT On outgoing requests from your network, a firewall replaces all private IP source addresses with one public address (usually its own). See Network Address Translation, and IP masquerading. NAT stands for Network Address Translation.

dynamic node access A high-speed bus invented by Dialogic to join together multiple voice processing PEB-based systems. PEB stands for PCM Expansion Bus. See PEB.

dynamic overload control DOC. The feature of a switch which uses its translation tables and intelligence to allow the switch to adapt to changes in traffic loads by re-routing and blocking call attempts.

dynamic page assembly You visit a web site. It knows who you are because of your cookie. It makes a web page just for you – knowing your likes and dislikes. Also known as User Personalization.

dynamic path Fibre Channel term. A communication path in which any node can communicate with any other node (assuming no third node is already communicating with the target). See Permanent Path.

dynamic port allocation In a voice processing system running multiple applications, dynamic port allocation is automatic allocation of ports based on the traffic being used by each application.

dynamic quarantining A security approach for dealing with "zero-day" exploits, i.e., attacks that have never been seen before and therefore have no known signature. Dynamic quarantining involves programmatically looking for anomalous traffic on the network, identifying the hosts that are generating the anomalous traffic, and disconnecting those hosts from the network.

dynamic RAM RAM memory that requires data to be refreshed periodically to prevent its loss in memory.

dynamic random access memory RAM which requires electronic refresh cycles every few milliseconds to preserve its data. See also Random Access Memory.

dynamic range In a transmission system, the ratio of the overload level to the noise level of the system, usually expressed in decibels. The ratio of the specified maximum level of a parameter (e.g., power, voltage, frequency, or floating point number representation) to its minimum detectable or positive value, usually expressed in decibels.

dynamic resource allocation The assignment of network capacity to specific users and specific services as required on a moment-to-moment basis.

dynamic routing Routing that adjusts automatically to changes in network topology or traffic. Dynamic routing automatically accomplishes load balancing, therefore optimizing the performance of the network "on the fly." Static routing, on the other hand, involves the selection of a route for data traffic on the basis of predetermined routing options preset by the network administrator. Dynamic routing is more effective, but the routers are more costly and the more complex decision-making process imposes additional delays on the subject packet traffic. See also Router.

dynamic storage allocation The allocation of memory space while a program is running. The memory is released when the program is complete.

dynamic synchronous transfer mode See DTM.

dynamic T-1 A T-1 line is 1.544 million bits per second transmission in both directions. Because these 1.544 million bits are raw bits, they can be configured in many ways – as 24 voice lines or 1.544 million bit per second line to another office or the Internet. A dynamic T-1 is not a technical term. It's a marketing term. And what one vendor means by a dynamic T-1 may be very different from what another vendor means. Essentially the idea is that this T-1 is chameleon. It changes its colors from time to time. One moment it's 24 voice lines. The next moment it's 1.544 million bits of data per second to the Internet. Or somewhere in between, perhaps 12 lines of voice and 772,000 bits per second of data per second to and from the Internet. In other words it assigns bandwidth dynamically – as it's needed. How Dynamic T-1 works depends on your vendor, how they implement the service and how they assign priorities as between voice and data. The typical approach is a black box at your office which monitors your T-1 traffic and reallocates bits to voice, to data, to a bit in between. This dynamic reallocation isn't instantaneous and in fact may take minutes or even hours to occur. Typically preference is given to voice, with data taking a slightly back seat. But how dynamic T-1 is implemented varies from one vendor to another. It pays to ask.

Tag	Function
<assign>	Assign a value to a variable
<audio>	Play an audio clip
<block>	A container of executable code
<catch>	Catch an event

The structure of a VXML document is very similar to an HTML document, even though the tags and syntax of the languages are different. However, the basic similarities of HTML and VXML make it easy for a savvy web developer to learn the syntax of VXML quickly and begin to create simple or complex voice interfaces without having to know the technical details of the voice system.

Like the traditional web server VXML follows the client / server model where a user can request information from a document server, the server responds with the appropriate content and an interpreter reads the document and presents the information to the client providing the advantages of web-based development and content delivery to interactive voice response applications.

For example, a person who wants to check their bank account balance to make sure they have enough money to write a check could call their bank and access their automated customer service department. If the phone system is configured with an interactive voice response system, it is able to present and guide the caller to the point where they can check their available balance. After entering their account number and password the caller is presented with a menu of options. The caller presses the keypad number, which sends a request for their available balance. That input is interpreted and a request for the available balance is sent to the document server. The document server accepts the request, looks up the account and authenticates the user from the previously entered information. Once the document server has authenticated the request it generates a VXML document containing the account balance. The VXML document is sent to the interpreter and processed. The information in the VXML document is then interpreted and used to create a synthesized voice response so the customer can hear how much money they have in the account. Using VXML the information presented to the caller is the same interface and database the caller would use if they were retrieving the info from their Web site. This ensures a consistent view regardless of the media used by the customer.

VoiceXML Forum The VoiceXML Forum is an industry consortium engaged in educational and marketing activities in support of the VoiceXML (Voice eXtensible Markup Language) specifications and standards being developed by the W3C (World Wide Web Consortium). VXML will make the Web accessible and browsable via voice and audio (e.g., touchtone) commands. The VoiceXML Forum was established by AT&T, IBM, Lucent Technologies, and Motorola, and now includes a large number of industry members. www.voicexml.org. See also VXML.

Voicemail Voice over instant messaging, a subset of voice over IP.

VoIP Voice over Internet Protocol. The technology used to transmit voice conversations over a data network using the Internet Protocol. Such data network may be the Internet or a corporate Intranet. For much longer explanations, see VoFR, Voice over IP, VoIP peering, VoIP Forum, Skype and Vonage.

VoIP Forum Voice over Internet Protocol. The Voice over IP Forum was formed in 1996 by Cisco Systems, VocalTec, Dialogic, 3Com, Netspeak and others as a working group of the International Multimedia Teleconferencing Consortium (IMTC), which promotes the implementation of the ITU-T H.323 standard. The VoIP Forum is focused on extending the ITU-T standards to provide implementation recommendations as a means of supporting Voice over IP in order that devices of disparate manufacture can support voice communications over packet networks such as the Internet. By way of example, the VoIP Forum intends to establish directory services standards in order that Internet voice users can find each other. They also plan to port touch-tone signals to the Internet to allow the use of ACDs and voice mail systems. See also VON Coalition.

VoIP peering The connection of VoIP (voice over Internet protocol) networks – private and public – to each other without touching the PSTN (Public Switched Telephone Network) so as to avoid PSTN charges. For example, two long distance and international carriers such Level 3 and Global Crossing decide to meet at a neutral point and trade traffic destined for each others' network – without passing it through the public switched telephone network (PSTN) and thus not incurring any third party costs. If done in this manner it should be free for each carrier. Two VoIP providers like BroadVoice and Lingo could do this in a way similar to that outlined above. BroadVoice would typically be carriers of the above carriers and thus could avoid paying them to connect our calls when they are from the subscriber of one provider to the subscriber of the other. In short, VoIP peering is an arrangement whereby cable companies and VoIP providers route VoIP traffic between their respective customers directly over each other's IP networks, thereby bypassing traditional telephone

networks and avoiding PSTN (public switched telephone company) interconnection fees. VoIP peering is evolving. CableLabs, a nonprofit research and development arm of the cable industry has announced that it "is seeking information regarding the development of a production-grade VoIP Peering infrastructure to allow VoIP traffic exchange among MSOs (multiple service operators – cable companies with more than one location), and, between MSOs and other VoIP partners. Through this RFI, CableLabs is seeking information on the technical scope, requirements, protocols, architecture, management and operations considerations to support the CableLabs VoIP Peering architecture. ... The MSO VoIP Peering project is a CableLabs-led initiative aimed at developing technical requirements, architecture and interoperable protocol specifications for delivering end-to-end VoIP and other real-time multimedia communication exchanges between service operators. The VoIP peering initiative addresses requirements for establishing a production platform to exchange VoIP traffic between operators." See plug and peer.

VoIP peering service An interconnection service that enables VoIP traffic to pass from one VoIP service provider's network to another without the individual providers' having to establish agreements with each other and directly connect their networks. See carrier hotel and VoIP peering.

VoIP substitution When a customer dumps his telephone company landline and goes with a VoIP solution (for example, over a cable or DSL connection) instead.

VolanoMark VolanoMark is a popular Java benchmark for measuring server throughput. It measures messages per second.

volatile storage Computer storage that is erased when power is turned off. RAM is volatile storage.

volleyball People in nudist colonies play volleyball more than any other sport. Personally I think tennis is more fun to play. Watching naked volleyball could be interesting.

Volser An MCI term used to denote a volume of calls. Based on the words "Volume Serial." The term "Volser" can be applied to the manual collection of calls from a switch on a switch tape or through call data transmitted via NEMAS.

volt The unit of measurement of electromotive force. Voltage is always expressed as the potential difference in available energy between two points. One volt is the force required to produce a current of one ampere through a resistance or impedance of one ohm.

volt meter An instrument for measuring voltages, resistance and current.

voltage Electricity is a essentially a flow of electrons. They're pushed into a gadget – toaster, computer, phone – on one wire and they sucked out on the other wire. For this movement of electrons to occur there must be "pressure," just as there must be pressure in the flow of water. The pressure under which a flow of electrons moves through a gadget is called the electric voltage. Voltage doesn't indicate anything about quantity, just the pressure. The amount of electricity moving through a wire is called its current and is measured in amps. You figure the power in an electron flow (i.e. in electricity) by multiplying the flow's current by the voltage under which it flows.

voltage drop The voltage differential across a component or conductor due to current flow through the resistance or impedance of the component or conductor.

voltage rating The highest voltage that may be continuously applied to a conductor in conformance with standards or specifications.

voltage regulator A circuit used for controlling and maintaining a voltage at a constant level.

voltage spike An extremely high voltage increase on an electrical circuit that lasts only a fraction of a second, but can damage sensitive electronic equipment like telephone systems or can cause it to act "funny." If your phone system starts acting "funny," one "cure" is to shut it off, count to ten, and then turn it on again. This sometimes clears the problem.

Voltage Standing Wave Ratio VSWR. The ratio of the maximum effective voltage to the minimum effective voltage measured along the length of mis-matched radio frequency transmission line.

Voltage Tuned Oscillator VTO. The ratio of voltage to reflected voltage in a radio frequency device.

voltmeter A device for measuring the difference of potential in volts.

volume 1. A volume is a partition or collection of partitions that have been formatted for use by a computer system. A Windows NT volume can be assigned a drive letter and used to organize directories and files. In NetWare a volume is a physical amount of hard disk storage space. Its size is specified during installation. NetWare v2.2 volumes, for example, are limited to 255MB and one hard disk, but one hard disk can contain several volumes. A NetWare volume is the highest level in the NetWare directory structure (on the same level as a DOS root directory). A NetWare file server supports up to 32 volumes. NetWare volumes can be subdivided into directories by network supervisors or by users who have been assigned the appropriate rights.