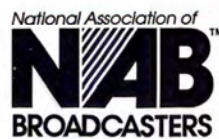

Tech Terms

What Every Telecommunications and
Digital Media Professional Should Know

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and are either computer controlled via a telecom link or have computer functions installed directly into the robotics. CIM devices tend to cut labor costs and improve precision. Typical CIM functions also include automated supply ordering and quality control checking activities.

CIPA (Children's Internet Protection Act)

Level: 1

Definition: Signed into law in December of 2000, the Children's Internet Protection Act (CIPA) requires libraries and schools to install filters on their Internet computers if they plan to retain federal funding and discounts for computers and computer access. The American Library Association and the Freedom to Read Foundation filed a lawsuit to overturn CIPA, but the Supreme Court on June 23, 2003 (in a 6-to-3 decision), upheld the constitutionality of the Children's Internet Protection Act (CIPA). (See also *Censorware* and *Filter*.)

Cipher Text

Level: 2

Definition: Another term for encrypted text, or text that has been encrypted and cannot be read by machines (or humans) until it has been decrypted using the appropriate key.

Used in a sentence: "We received the message, but it must have been in some type of cipher text because we couldn't read it." (See also *Encryption*.)

Circuit

Level: 1

Definition: A pathway established between two end terminals or stations for purposes of one-way or two-way communication. An electronic circuit provides a physical pathway for the flow of electrons in the intended direction at the intended time.

Circuit Switching

Level: 2

Definition: A type of switching protocol that establishes a communication pathway and maintains the connection until the transaction has been completed. The pathway is a "dedicated

circuit" in that the signal will maintain the same course of travel as a continuous stream and at the same transfer rate throughout the transaction until the communication is terminated. Circuit switching was originally designed for the analog-based phone networks but was later modified to use a digital circuit-switching technology called TDM.

Cladding

Level: 3

Definition: The part of a fiber-optic cable that comes in direct contact with the glass core. It is used as a protective device and a method of insulating the light-waves being transmitted. Although some light is absorbed into the cladding, one of its primary purposes is to surround the core with a refractive surface that is used to redirect any lost light back into the core. This helps ensure that the light-wave carrying communication information will not deteriorate or diminish before reaching its intended destination. (See also *Fiber Optic*.)

Clarke Belt

Level: 2

Definition: In an early science fiction novel, scientist and author Arthur C. Clarke discussed a concept in which every point on earth could be covered by three satellites placed equidistantly in an orbit 22,300 miles above the earth's surface. The purpose in the novel for such satellites was futuristic "big brother" government surveillance. Clarke's fiction was grounded in reality when scientists confirmed the logic of satellites in geostationary orbit almost precisely at 22,300 miles above the equator that could create communications networks covering the earth except for the polar regions. To honor this futurist, the geosynchronous orbit has been named the "Clarke Belt." (See Figure C-3 and see also *Geostationary Orbit*.)

CLASS (Custom Local Area Signaling Service)

Level: 3

Definition: A grouping of optical enhancements to basic local exchange telephone service. CLASS operations use digital switching and

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interface. DCE provides physical connection to the network, forwards traffic, and provides clocking signals used to synchronize data transmission between DTE devices and itself. (See also *DTE*.)

DCT (Discrete Cosine Transform)

Level: 3

Definition: A set of mathematical manipulations that generates information describing the signal being processed. The description is in a form such that important information can be distinguished from less important information. Compression, by throwing away information that will not be missed when the signal is reconstructed, can be more easily accomplished after this transform is performed. DCT is a step in the process of both JPEG and MPEG compression algorithms. (See also *JPEG* and *MPEG*.)

Debugging

Level: 1

Definition: The process of detecting, diagnosing, and correcting faults, flaws, or anomalies in computer system circuitry, computer management software, program applications, databases, or other related hardware or software systems.

Used in a sentence: "It took a lot of debugging to make our new software work with our existing hardware systems."

Decibel (See *dB*.)

Decoder

Level: 2

Definition: Any electronic device used to recon-vert or translate information from one established protocol or standard to another. In computer and digital communications systems, digital decoders could be used both internally and externally. Inside a computer, digital bits are converted into text words on a display screen using a particular word processing application program. Decoders are also used in video distribution systems such as interactive TV, cable, or new telephone-based broadband networks in which subscriber set-top boxes are used to decode or unscramble video channels to provide access to subscribers or those ordering PPV events. Other types of digital

decoders are used to reconstruct error-protected coded signals so that information removed in compression or actually lost or damaged bits can be recovered or restored to the original form of the signal. (See also *Encoding/Decoding*.)

Decryption

Level: 2

Definition: Decryption is the process of restoring or reversing an encoded or encrypted signal to its original form. Encryption involves modifying, rearranging, or scrambling a signal such as a pay-TV channel through the use of an algorithm designed to make the source material (audio, video, text, and so on) unable to be heard, viewed, or interpreted by an unauthorized recipient. (See also *Encryption*.)

Decryption Content Scrambling System (See *DeCSS*.)

DeCSS (Decryption Content Scrambling System)

Level: 2

Definition: DeCSS is a decryption program developed in 1999 that removes copy protection from DVDs. CSS stands for content scrambling system, a weak encryption used for movie DVDs. DeCSS was used as a blueprint by programmers around the world to create hundreds of similar programs. DeCSS is a tiny (60 KB) utility that copies the encrypted DVD video file, giving it a .vob file extension, and saving it to the hard disc without encryption (i.e., without being "scrambled"). That .vob file can then be copied and distributed at will. In the United States, DeCSS is being treated as a violation of the Digital Millennium Copyright Act of 1998. However, DeCSS is widely available on the Internet. (See also *DMCA*, *DMCA 1201*, and *Encryption*.)

Dedicated Line

Level: 1

Definition: Phone industry terminology for a telephone line that has been leased by a specific customer (usually a business) for exclusive use of the line for its own communications needs. Dedicated lines are often leased to provide an easy



Medium Frequency (See *MF*.)

Megabit (Mb)

Level: 2

Definition: A measurement of the rate of digital data transmission over a specified amount of time, usually per second (ps). One (1) megabit equals 1 million bits of digital information. An example is a system that transmits data at 100 Mbps.

Megabyte (MB)

Level: 2

Definition: A measurement of digital data storage capacity where 1 MB equals 1 million bytes of digital information. One common example is 512 MBs of RAM.

Memory

Level: 2

Definition: Internal capacity of a computer or integrated computer system for short- and medium-term retention of digital data in readiness mode for immediate, rapid accessibility by system users. (See also *RAM* and *ROM*.)

Memory Key

Level: 1

Definition: Also called "flash drives" or "flash memory," a memory key is a compact, portable memory device that can be used as an external data storage device. Small enough to fit on a key chain, memory keys range in capacity from 8 Mb to 4 Gb and can even be configured as bootable devices. Most memory keys connect to computers through a USB 2.0 interface, making them a fast, efficient, mobile memory solution. (See also *Flash Memory* and *USB 2.0*.)

Messaging Application Programming Interface (See *MAPI*.)

Metadata

Level: 2

Definition: In short, metadata are data about data. A set of auxiliary time codes or other summary information related to specific portions of audio, video, data, or text material that comprise

components of a work of intellectual property. Metadata may represent data set assets, thumbnail images for quick visualizations, or coding to facilitate accurate, rapid retrieval of specific items embedded within the program material.

Used in a sentence: "We wanted to store as much metadata as possible about each of our online catalog items." (See also *Data Warehousing*.)

Meta-Searcher

Level: 1

Definition: A meta-searcher is a searching service on the Internet that executes a single search simultaneously through multiple search engines and directories and then compiles the results into a single list. For example, the meta-searcher Dogpile sends its queries to a variety of directories and search engines (such as Google, Yahoo, LookSmart, Teoma, Overture, FindWhat, and so on) and then allows the user to either see the results source by source or as a list of the top results from each source (usually eliminating duplicates). Because most search engines and directories today include "sponsored" or paid links in their listings and results, and because most meta-searchers can include these types of links without labeling them as paid links, some Internet researchers shy away from using meta-searchers. However, sometimes a meta-searcher is an effective way of casting as wide of a net as quickly as possible when searching for specific content on the Internet. (See also *Search Engine*.)

Meta-Tag

Level: 2

Definition: A special background portion of a web page that provides information about the page and the web site of which it is a part. Meta-tags can be used to record information about who composed the web page, what software they used, and how often the page is updated. Perhaps most importantly, meta-tags are used to contain descriptions and key word information that is used by search engines when they are cataloging the web site's content. One of the most important characteristics of an easy-to-find web site is the care that went into formulating and refining the

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codecs for delivering streaming content over the Internet. Like other codecs, RealMedia (comprised of RealVideo, RealAudio, and other file formats created by Real) uses compression algorithms for eliminating data that can be considered extraneous or not as important as other information. RealMedia and Windows Media are two of the most widely used technologies for streaming video today. (See also **Streaming Media**.)

RealNetworks (See **Streaming Medium**.)

Real Time

Level: 1

Definition: Used in reference to telephone and video signals, usually this means a system where there is no perceived delay in the transmission and/or reception of a signal. Phone conversations (including VoIP) are in real time, as are live news broadcasts.

Reboot

Level: 1

Definition: Computer term meaning to turn on the system or to reset the computer (i.e., reset the internal pointers and counters, clear out instructions, and so on). A "cold boot" refers to restarting a computer that has been completely powered down (turned off). A "warm boot" (boot-up) means restarting a computer without physically turning off the electricity but by selecting Restart from the Shut Down menu. Such rebooting may be necessary when the system freezes for unknown reasons or experiences a general protection fault (GPF) for undetermined reasons. (See also **Cold Boot** and **Warm Boot**.)

Receiver

Level: 1

Definition: A receiver is any electronic device that accepts a transmission signal and is opposite of a transmitter. Some devices perform both functions and are referred to as transceivers. Electronic receivers can range from small handheld PCS or cellular flip-phones to massive radioastronomy satellite dishes.

Record Head

Level: 2

Definition: An electromagnetic device that magnetizes the surface of a tape or disc in the process of recording an analog or digital signal.

Recycle Bin

Level: 1

Definition: A special folder on computers using a Microsoft Windows operating system (similar to the trash can on an Apple computer), the recycle bin is a temporary storage location for files that have been deleted by the user of the system. If a file is deleted accidentally it can be recovered from the recycle bin unless the recycle bin has been emptied (in which case the file cannot be recovered).

Red-Green-Blue (See **RGB**.)

Reduced Instruction Set Computing

(See **RISC**.)

Redundancy

Level: 2

Definition: Refers especially to digital encoding procedures that identify parts of an analog voice, audio music, or video signal that can be eliminated without losing critical or important information contained in the signal. Redundant parts of a signal are usually those that are precisely repetitive of signal parts that were already encoded in a prior digital data frame. Although redundant material is left out or eliminated in compression schemes aimed at saving transmission time or storage space, quite often the original signal is restored as faithfully as possible through expanding or filling in the missing parts through interpolation techniques for actual viewing or listening. It also refers to maintaining redundant hardware and/or software installations to maintain system viability and archived information. (See also **Companding**, **Compression**, and **Replication**.)

Redundant Array of Independent Drives

(See **RAID**.)

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