

NEWTON'S TELECOM DICTIONARY

**The Official Dictionary of
Telecommunications & the Internet**

- IP Telephony • LANs & Intranets • Call Centers & Computer Telephony
- Fiber Optics, SONET and DWDM • Satellites
- Voice, Data, Image & Video Networking • Wired and Wireless Telecom • VoIP • T-1, T-3, T-4, E-1, E-3 • ISDN & ADSL • Cable Modems • Cellular, PCS & GSM • Windows 95, 98, NT, NetWare, Apple, Sun & Unix Networking • Ecommerce

Updated
15th
Expanded
Edition

by Harry Newton

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tomers by mutual agreement. The primary objective of joint user service is to save money by buying circuits in bulk.

Joule The unit of work or energy. The energy expended when a current of one ampere flows through a resistance of one ohm for one second. Joule's Law says the heat produced in a circuit in joules is proportional to the resistance, to the square of the current and to the time.

Journal Printers These are special purpose printers which provide hard copy output for audit trail and demand printing functions associated with hotel/motel management features.

Joy Clicker One who nervously fiddles with a mouse.

Joystick A pointing device for a computer whose upright level is used to manipulate a pointer on a screen. Named after a similar shaped control in airplanes. Joysticks are often used in computer gaming.

JPEG Joint Photographic Experts Group. So called as it was developed jointly by the International Standards Organization (ISO) and the ITU-T, it formally is known as ISO 10918-1 Recommendation T.81. JPEG is a compression technique used primarily in the editing of still images, and in color fax, desktop publishing, graphic arts and medical imaging. JPEG is symmetrical in nature, requiring equal processing power, time and expense on both the transmitting side (compression) and the receiving side (decompression). Its complexity renders it ineffective for real-time video; imaging applications are not so delay-sensitive.

The JPEG compression standard works by converting a color image into rows of pixels (picture elements), which are dots of color image, each with a numerical value representing levels of brightness and color. The picture is then broken down into blocks, each 16 pixels x 16 pixels, and then reduced to 8 pixels by 8 pixels by subtracting every other pixel. The software uses a formula that computes an average value for each block, permitting it to be represented with less data. Further steps subtract even more information from the image. To retrieve the data and thus decompress the image, the process is reversed. A specialized chip decompresses the images hundreds of times faster than is possible on a standard desktop computer. **JPEG is a lossy image-compression algorithm that reduces the size of bitmapped images by a factor of 20:1 to 30:1 which compromises the absolute quality of the image in terms of resolution and color fidelity;** JPEG can be pushed to yield a 40:1 compression ratio, although the loss in quality is noticeable at this level. JPEG compression works by filtering out an image's high-frequency information to reduce the volume of data and then compressing the resulting data with a lossless compression algorithm. Low-frequency information does more to define the characteristics of an image than does high-frequency information which serves to define sharp edges—losing some high-frequency information doesn't necessarily affect the image quality. In complex images, however, JPEG suffers from an effect known as "tiling," yielding a mosaic-like effect due to the block-oriented compression technique. When you see an image with the .JPG extension, that means it's JPEG image. See also JPEG ++, Motion JPEG, and MPEG.

JPEG++ Storm Technology's proprietary extension of the JPEG algorithm. It lets users determine the degree of compression that the foreground and background of an image receive; for example, in a portrait, you could compress the face in the foreground only slightly, while you could compress it in the background to a much higher degree. See JPEG.

JPG See JPEG.

JT-2 6.312 Mb/s data rate. Same as T-2. Signal compatible with ITU-T document G.704 signal specification.

JTAPI See Java Telephony API and the definitions below.
JTAPI Address Object Part of the JTAPI Core call model. The Address object represents a telephone number. It is an abstraction for the logical endpoint of a phone call. It is distinct from a physical endpoint. In fact, one address object correspond to several physical devices.

JTAPI Call Model The JTAPI Core call model is defined in the Core API package. A call model describes a set of objects that correspond to physical and conceptual entities in the telephony world. These objects fit together in a way to represent a telephone call. The Core API objects include Provider Object, Call Object, Connection Object, TerminalConnection Object, Terminal Object and Address Object. In the physical view, each Core object represents a tangible property or telephony equipment. From a logical view, the call model represents an abstraction of telephony entities or the functional properties of the objects. In describing these objects, it is difficult to separate the object's logical representation from their logical properties. The description of these objects changes perspective through the call model.

JTAPI Call Object Part of the JTAPI Core call model. Call object represents a telephone call, the information exchanged between the service provider and the call participant. A telephone call comprises a Call object and zero or more connections. In a two-party call scenario, a telephone call has one Call object and two connections. A conference call has three or more connections associated with one Call object.

JTAPI Connection Object Part of the JTAPI Core call model. A Connection object models the communication between a Call object and an Address object. Connections between Call and Address like connected, disconnected, alerting are modeled by the Connection object. A Connection object also serves as a container for TerminalConnection objects. Connection objects represent logical aspects of a call connection.

JTAPI Core Package All JTAPI implementations use the Core package. Many applications only need basic telephony, in which case they use the Core API package. The Core API package defines basic telephony: placing calls, answering calls, and receiving calls. It defines the basic call model that the extensions follow in design.

JTAPI Provider Object Part of the JTAPI Core call model. The Provider object is an abstraction of service provider software. The provider might be a server, a telephony/fax card, a machine, or a computer networking technology. The Provider hides the service-specific aspects of the telephony subsystem and enables Java applications to interact with the telephony subsystem in a consistent manner.

JTAPI Standard Extension Packages The specification defines standard extension packages: telephony package, Call Control, Call Center, and Terminal Set Management extension packages. The telephony 1.0. The specifications for Media Services, Synchronous are still under consideration. Currently eight standard extension packages: Call Center, Private Data, Terminal Set Management, Media Services, Mobile Phones and Synchronous.

JTAPI Terminal Object Part of the JTAPI Core call model.