NEWTON'S TELECOM DICTIONARY

11th Edition

The Official Dictionary of Telecommunications
Computer Telephony, Data Communications
Internet Telephony, Voice Processing
Windows 95 & NT Communications
LAN, WAN and Wireless Networking

by Harry Newton

#1 SELLER 140,000 SOLD

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Armored Cable A stainless steel handset cord which is meant to resist vandalism. Typically used on a coin phone, most stainless steel handset cords are too short. This is said to be because they were first ordered for use in prisons, where guards wanted to be certain they would not be used by the prisoners as hanging devices. Thus, they requested Western Electric to make them too short for such a use. Whether there is any validity to this story is dubious, however, it is part of telephone industry folk history and therefore, worth preserving.

ARP Address Resolution Protocol. A protocol within the Transmission Control Protocol/Internet Protocol (TCP/IP) suite that "maps" IP addresses to Ethernet addresses. TCP/IP requires ARP for use with Ethernet.

ARPA Advanced Research Projects Agency of the U.S. Department of Defense. (The whole DOD annual telecommunications bill exceeds $1 billion.) Much of the country's early work on packet switching was done at ARPA. At one stage it was called DARPA, which stands for Defense Advanced Research Projects Agency. ARPA was the US government agency that funded research and experimentation with the ARPANET and later the Internet. The group within DARPA responsible for the ARPANET is ISTO (Information Systems Techniques Office), formerly IPTO (Information Processing Techniques Office). See also DARPA INTERNET. DARPA has changed its name to ARPA and back again. It's hard to keep up.

ARPANET Advanced Research Projects Agency NETwork. A Department of Defense data network, developed by ARPA, which ties together many users and computers in universities, government and businesses. ARPANET has been the forerunner of many developments in commercial data communications, including packet switching, which was first tested on a large scale on this network. ARPANet is a predecessor of the Internet. It was started in 1969 with funds from the Defense Department's Advanced Projects Research Agency.

ARQ Automatic Retransmission reQuest. The standard method of checking transmitted data, used on virtually all high-speed data communications systems. The sender encodes an error-detection field based on the contents of the message. The receiver recalculates the check field and compares it with that received. If they match, an "ACK" (acknowledgment) is transmitted to the sender. If they don't match, a "NAK" (negative acknowledgment) is returned, and the sender retransmits the message. Note: this method of error correction assumes the sender temporarily or permanently stores the data it has sent. Otherwise, it couldn't possibly retransmit the data. No error detection scheme in data transmission is foolproof. This one is no exception.

Array 1. The description of a location of points by coordinates. A 2-D array is described with x,y coordinates. A 3-D array is described with x,y,z coordinates.
2. A named, ordered collection of data elements that have identical attributes; or an ordered collection of identical structures.

Array Antenna Take a bunch of directional antennas. Aim them at the same transmitting source. Join them together. Presto, you now have a very powerful giant antenna. Array antennas are used for picking up weak signals. They are often used in astronomical and defense communications systems.

Array Connector A connector for use with ribbon fiber cable that joins 12 fibers simultaneously. A fan-out array design can be used to connect ribbon fiber cables to non-ribbon cables.

Array Processor A processor capable of executing instructions in which the operands may be arrays rather than data elements.

Arrestor A device used to protect telephone equipment from lightning, electrical storms, etc. An arrestor is typically gas filled so when lightning strikes, the gas ionizes and, bingo, a low resistance to the ground that drains the damaging high voltage elements of the lightning away.

ARS Automatic Route Selection, also called Least Cost Routing. A way that your phone system automatically chooses the least expensive way of making the call that it is presented with. That least expensive way may be a tie line or a WATS line, etc. It may even be dial-up. See LEAST COST ROUTING and ALTERNATE ROUTING.

Article An Internet term. An article is a USENET conversation element. It is a computer file that contains a question or piece of information made available to the USENET community by posting to a newsgroup.

Artifacts Distortions in a video signal. Unintended, unwanted visual aberrations in a video image.

Artificial Intelligence In 1950, Alan Turing, a British mathematician, challenged scientists to create a machine that could trick people into thinking it was one of them. And this for long was THE classic definition of artificial intelligence. One way to trick people is to have the computer make typing mistakes, like real humans do. The real challenge these days with artificial intelligence, now more commonly called "expert systems," is not to recreate people but to recognize the uniqueness of machine intelligence and learn to work with it in intelligent, useful ways.

Artificial Line Interface In T-1 transmission, refers to the ability of a piece of transmission equipment to attenuate its output level to meet the required loop loss of 15-22.5 dB normally switch selectable between 0,7.5, and dB.

ARTS A Rockwell ACD term. Audio Real Time Status. From any touchtone phone, you can call into a Rockwell Spectrum ACD, enter a password, and obtain real time statistics...e.g. average speed of answer, # call in queue, activity by agent group. Neat feature.

ARU Audio Response Unit.

AS Autonomous Systems. Part of the internet layer that routers use to relate to network connectivity and packet addressing. The router checks the network address and only routes on the host address if the source and destination are on the same network.

As Is A term used in the secondary telecom equipment business. "As is" is equipment that is bought or sold with no stated or implied warranties. You should expect any condition from good to bad, from complete to incomplete. Buy As Is equipment at your own risk.

As Is Tested or As Is Working A term used in the secondary telecom equipment business. One step up from "as is" condition. The product has been tested. It works and is complete, unless otherwise specified. Buyer should test upon receipt. There is no warranty beyond receipt. Seller is guaranteeing the product will work upon arrival. After that, the buyer is responsible for any problems.

AS&C Alarm Surveillance and Control

AS/400 IBM's mid-range mini-computer. AS/400 stands for Application System/400. IBM has a product called CallPath/400 which allows AS/400 computers to link to PBXs from the leading manufacturers.

measurement of how quickly data is transmitted, expressed in bps, bits-per-second.

Data Sink Part of a terminal in which data is received from a data link.

Data Source The originating device in a data communications link.

Data Steward A new role of data caretaker emerging in business units. Individual takes responsibilities for the data content and quality.

Data Stream 1. Collection of characters and data bits transmitted through a channel.
2. An SCSA term. A continuous flow of call processing data.

Data Surfer A person who makes a living doing online research and information retrieval. Also known as a Cybrarian (comes from cyberspace librarian) or a super searcher. See CYBRARIAN.

Data Switching Exchange DSE. The equipment installed at a single location to perform switching functions such as circuit switching, message switching, and packet switching.

Data Synchronization The process of keeping database data timely and relevant by sending and receiving information between laptops, between desktops in the field and between bigger computers at headquarters. See also SYNCHRONIZATION and REPLICATION.

Data Terminal Equipment DTE. A definition of hardware specifications that provides for data communications. There are two basic specs your hardware can conform to, DTE (Data Terminal Equipment) or DCE (Data Communications Equipment). See DCE and DTE.

Data Terminal Ready One of the control signals on a standard RS-232-C connector. It indicates if the data terminal equipment is present, connected and ready and has had handshaking signals verified. See RS-232-C and the Appendix.

Data Transfer Rate The average number of bits, characters, or blocks per unit time passing in a data transmission system.

Data Transfer Request Signal A call control signal transmitted by a DCE to a DTE to indicate that a distant DTE wants to exchange data.

Data Transfer Time The time that elapses between the initial offering of a unit of user data to a network by transmitting data terminal equipment and the complete delivery of that unit to receiving data terminal equipment.

Data Typing When converting a database from one format to another, several conversion programs will convert the data to a common format before converting it to the final version. During the conversion process a program may check through the data in the database to determine what it is and arbitrarily make one field numeric, one field character, one field memo, etc.

Data Warehouse A database warehouse consolidates information from many departments within a company. This data can either be accessed quickly by users or put on an OLAP server for more thorough analysis. Data warehouses often use OLAP servers. OLAP stands for On Line Analytical Processing, also called a multidimensional database. According to PC Week, these databases can slice and dice reams of data to produce meaningful results that go far beyond what can be produced using the traditional two-dimensional query and report tools that work with most relational databases. OLAP data servers are best suited to work with data warehouses.

Database A collection of data structured and organized in a disciplined fashion so that access is possible quickly to information of interest. There are many ways of organizing databases. Most corporate databases are not one single, huge file. They are multiple databases related to each other by some common thread, e.g. an employee identification number. Databases are made up of two elements, a record and a field. A record is one complete entry in a database, e.g. Gerry Friesen, 12 West 21 Street, New York, NY 10010, 212-691-8215. A field would be the street address field, namely 12 West 21 Street.

Databases are stored on computers in different ways. Some are comma delineated. They differentiate between their fields with commas — like Gerry's record above. A more common way of storing databases is with fixed length records. Here, all the fields and all the records are of the same length. The computer finds fields by index and by counting. For example, Gerry's first name might occupy the first 15 characters. Gerry's last name might be the next 20 characters, etc. Where Gerry's names are too short to fill the full 15 or 20 characters, their fields are "padded" with specially-chosen characters which the computer recognizes as padded characters to be ignored. The most important thing to remember about databases is that all the common database programs, like dBASE, Paradox, Rbase, etc. don't automatically make backups of their files like word processing programs do. Therefore, before you muck with a database file — sort it, index it, restructure it, etc. Please make sure you make a backup of the main database file.

Database Management System DBMS. Computer software used to create, store, retrieve, change, manipulate, sort, format and print the information in a database. Database management systems are probably the fastest growing part of the computer industry. Increasingly, databases are being organized so they can be accessible from places remote to the computer they're kept on. The "classic" database management system is probably an airline reservation system.

Database Object One of the components of a database: a table, view, index, procedure, trigger, column, default, or rule.

Database Server A specialized computer that doles out database data to PCs on a LAN the way a file server doles out files. Where a traditional DBMS runs both a database application and the DBMS program on each PC on the LAN, a database server splits up the two processes. The application you wrote with your DBMS runs on your local PC, while the DBMS program runs on the database server computer. With a regular file server setup, all the database data has to be downloaded over the LAN to your PC, so that the DBMS can pick out what information your application wants. With a database server, the server itself does the picking, sending only the data you need over the network to your PC. So a database server means vastly less network traffic in a multi-user database system. It also provides for better data integrity since one computer handles all the record and file locking. See SERVER.

Datagram A transmission method in which sections of a message are transmitted in scattered order and the correct order is re-established by the receiving workstation. Used on packet-switching networks. The Dow Jones Handbook of Telecommunications defines it as, "A single unacknowledged packet of information that is sent over a network as an individual packet without regard to previous or subsequent packets." Here's another definition I found. A finite-length packet with sufficient

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ELEVENTH UPDATED AND EXPANDED EDITION

I wrote this book for all of us who are trying to keep up.

This is not a technical book. I explain technical concepts in non-technical terms. I figure anyone ought to be able to understand my definitions.

Some of my definitions are several pages long. They're mini-essays. They explain the term, its benefits and occasionally a checklist on buying and using the item. Sometimes I include warnings. I want my dictionary to make you informed, buyer or seller.

HARRY NEWTON

Harry Newton has 27 years in telecommunications. He is the telecom industry's most prolific writer. He is publisher of four monthly magazines — Computer Telephony, Teleconnect, Call Center and Imaging. He also founded LAN Magazine and Telecom Gear. He is promoter of the annual trade show, Computer Telephony Conference and Exposition. He holds an MBA from the Harvard Business School and an Economics undergraduate degree from the University of Sydney, Australia. He is not an engineer, but wishes he were. He is the telecom industry's most popular speaker. He has spoken before every telecommunications convention and trade show.
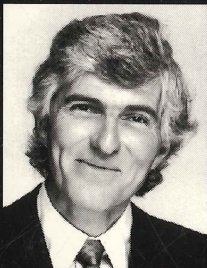
Real person is older, has much less hair and is uglier, too.

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