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NEWTON'S TELECOM DICTIONARY

The Authoritative Resource for
Telecommunications, Networking,
the Internet and Information Technology

MORE THAN 20,000 TERMS DEFINED

CMPBooks

18th

Updated and Expanded Edition
by Harry Newton

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Radio Paging Access Provides attendant and phone user dial access to customer-owned radio paging equipment to selectively tone-alert, or voice-page individuals carrying a phone within the PBX.

Radio Paging Access With Answer Back Allows access to customer-provided paging systems and provides the capability in the PBX to connect the paged party when the former answers the radio page by dialing a special code from any PBX.

Radio Resource Management A management entity or subentity concerned with the operation of the radio resources management protocol. A cellular radio term.

Radio Resource Management Entity A management entity or subentity concerned with the operation of the radio resource management protocol. A cellular radio term.

Radio Wave Electromagnetic waves of frequencies between 10 KHz and 3MHz, propagated without guide in free space (air).

Radiocommunications Consultative Council See RCC.

Radiogram A telegram sent by radio. Totally obsolete term, but cute.

Radiometer An instrument, distinct from a photometer, to measure power, in Watts, of electromagnetic radiation.

Radiophone Apparatus for transmitting and/or receiving speech or music by radio. Totally obsolete term, but cute.

Radiosonde An automatic radio transmitter in the meteorological aids service usually carried on an aircraft, free balloon, kite, or parachute, and which transmits meteorological data.

Radiotelegraphy The use of a radio (instead of wire) to communicate telegraphy messages over a distance. An old term, not used much any more. See also Radiotelephony.

Radiotelephony The science, art, and act of transmitting speech by means of radio. Now called telecommunications.

RADIUS Remote Authentication Dial-In User Service is an authentication and accounting system used by many Internet Service Providers (ISPs) and end user organizations to provide secure Internet access, especially in a VPN (Virtual Private Networks) application. When you dial in to the ISP, for example, you must enter your username and password. This information is passed to a RADIUS server, which checks that the information is correct, and then authorizes access to the ISP systems and network. Though not an official standard, the RADIUS specification is maintained by a working group of the IETF. RADIUS is a client/server-based authentication software system that centralizes the administration of user profiles maintained in authentication databases, thereby simplifying the process of supporting multiple VPN switches. The remote access servers act as RADIUS clients which connect to the centralized authentication server. RADIUS is an open specification that can be adapted to work with legacy systems and protocols. RADIUS was developed by Steve Williams of Livingston Enterprises, Inc., which was acquired by Lucent Technologies. See also Authentication, Client/Server, and VPN.

Radome A plastic cover for a microwave antenna. It protects the antenna from awful weather, but has little effect on the radiation pattern of the antenna. Here's a more technical explanation: A radome is a dielectric cover placed over an antenna to protect it from the environment. For example, the nose of an aircraft which contains the airplane's weather radar antenna. There are hundreds of other radome applications encompassing telecommunications, wireless, radars, satcom, terrestrial communications, ECM equipment and other commercial and military sensors.

RADSL Rate Adaptive Digital Subscriber Line. Transmission technology that supports both asymmetric and symmetric applications on a single twisted pair telephone line and allows adaptive data rates. RADSL employs intelligent ADSL modems which can sense the performance of the copper loop and adjust transmission speed accordingly. These devices adjust dynamically as the performance of the loop varies during a session, much as does a V.34 modem. Depending on various characteristics of the subject cable plant, ADSL accommodates downstream transmission speeds of as much as seven megabits per second, plus bidirectional transmission speeds of as high as 640 Kbps over a single UTP (Unshielded Twisted Pair). Some RADSL equipment can be manually configured. See ADSL.

RAID Redundant Array of Inexpensive Disks. The idea is simple: Put several disk drives into a single housing. Then write your data over the disk drives in such a way that if you lose one or more of the drives, you won't have lost any of your data. Thus the term "redundant." At its simplest, RAID mirrors data to an equal number of disk drives, e.g. two sets of two. At its most complex, RAID writes data across a bunch of drives, so that if one goes

the data can be retrieved from the remaining drives. The opposite of RAID is SLED (Single Large Expensive Disk). See also Redundant Array of Inexpensive Disks for a much more detailed explanation.

Rain Attenuation Also known as "rain fade." Signal losses due to absorption are common when radio signals encounter a heavily moisture laden atmosphere. Generally, the higher the radio frequency, the more attenuation (i.e., the greater the signal loss). Since microwave signals for satellite and for landline are essentially line-of-sight, microwave radio is very susceptible to signal attenuation in heavy rain. Modern microwave paths are engineered with weather patterns in mind. In areas where heavy rainfalls occur, microwave links may be closer together or more attention is paid to diverse and duplicated routing.

Rain Barrel Effect Signal distortion of a voice telephone line caused by the under-attenuated echoes on the return path.

Rain Fade See Rain Attenuation.

Rain Outage Loss of signal at Ku or Ka Band frequencies due to absorption and increased sky-noise temperature caused by heavy rainfall.

Rainbow Series According to the National Security Agency (NSA), the Rainbow Series is a six-foot tall stack of books dealing with the evaluation of "Trusted Computer Systems." The term comes from the fact that each book is a different color. Colors include orange, aqua, burgundy, lavender, venice blue, pink, peach, turquoise, and violet.

Raincheck When a sports event is rained out, they give you a "raincheck," voucher for a seat when the event will be played. It's used also in personal relations. "Thanks for your invitation. I can't come to dinner tonight. Can I take a raincheck?" Which means, "Can I come at another time?"

Raised Floor A floor distribution method in which square, steel and wood-laminated plates resting on aluminum locking pedestals are attached to the building floor. The plates are usually covered with cork, carpet, or vinyl tiles, and each plate can be removed for easy access to the cables below. Also referred to as access floor.

Rake Receiver A wireless receiver which can support a number of tones, or fingers, which can be combined to form a stronger received signal. Each tone is an individual radio channel.

RAM 1. Random Access Memory. The primary memory in a computer, RAM keeps the CPU (Centralized Processing Unit) efficiently fed with data or programs from the hard drive, or other storage medium. RAM can be overwritten with new information. The "random access" part of its name comes from the fact that the next "bit" of information in RAM can be located — no matter where it is — in an equal amount of time. This means that access to and from RAM memory is extraordinarily fast. By contrast, other storage media (e.g., hard drive, magnetic tape, and CD-ROM) store information serially, one bit after another. Therefore, the computer has to search for them, with the search time depending on the distance between the current bit and the target bit. Floppy disks are faster than magnetic tape because their information is readily at hand, though the read/write head will have to search for it. Hard disks are even faster because there are multiple heads and because the disks spin faster and everything moves faster. The speed of a CD-ROM search depends on the speed of the CD-ROM drive, but it can be pretty slow. RAM memory is the fastest of all. The problem with RAM memory is that it's volatile. This means when power is turned off (or power glitches occur) RAM memory is erased. RAM memory can be protected with rechargeable batteries — just remember to charge the batteries.

All of that having been said, RAM comes in two types, at least along one dimension: buffered and unbuffered. Buffered RAM contains buffer chips that serve intermediaries between the control chips and the memory chips. The buffers help deal with the relatively large electrical load involved when a computer has a lot of memory. For example, a large server may have 16 DIMM (Dual Inline Memory Module) modules, each with as many as 36 RAM chips, yielding a total of 576 RAM chips. Since the controller cannot directly power so many chips, a buffer associated with each DIMM module assumes that responsibility. Unbuffered RAM typically is used on desktops, laptops, and smaller servers. Now for registered and unregistered RAM. Registered RAM includes a small register, or memory element, that imposes a slight delay, typically one clock cycle on the information transfer, from input to output. Large servers serving large volumes of information to large numbers of users employ registered RAM in order to ensure the integrity of the data being transferred. Now let's tie these two concepts together: buffered RAM may be registered, and unbuffered RAM is always unregistered. See also DDR-SDRAM, DRAM, EDO RAM, Flash RAM, FRAM, RDRAM, SDRAM, SRAM, and VRAM.

2. Remote Access Multiplexer. The various DSL (Digital Subscriber Line) services all involve some form of splitter or modem at the customer premises, and a matching device at the

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