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DICTIONARY
OF IEEE STANDARDS TERMS

SEVENTH EDITION



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(3) Any product whose sole purpose is to act as an obstruction to the path of the animal. A barrier may have electrical insulating properties, but by design and application, its use is limited to blocking an animal's passage or an animal's contact with energized conductors or equipment.

(SUB/PE) 1264-1993

(4) An obstruction composed of suitable construction and materials or a time delay mechanism that imposes a delay for an intended purpose.

(PE/NP) 692-1997

barrier grid (charge-storage tubes) A grid, close to or in contact with a storage surface, which establishes an equilibrium voltage for secondary-emission charging and serves to minimize redistribution. *See also:* charge-storage tube.

(ED) 158-1962w, [45]

barrier layer (fiber optics) In the fabrication of an optical fiber, a layer that can be used to create a boundary against OH^- ion diffusion into the core. *See also:* core.

(Std100) 812-1984w

barrier transaction (1) Transaction that is guaranteed to become visible to other observers after all transactions created before it have become visible.

(C/BA) 896.3-1993w

(2) A transaction that ensures that all previously generated write transactions have the global appearance of having been written to memory. This is used before signaling another non-coherent unit, or one in a different coherence domain, that the data is available. In some systems, this is an explicit bus transaction that will be treated specially by the bus bridges (e.g., that may not return a response until all write buffers for the unit are flushed). For buses that delay the write-response until write bus transactions have been adequately completed, a separate barrier transaction is not needed since the effect of a barrier can be achieved by waiting for all outstanding write-responses. *Synonym:* write barrier.

(C/MM) 1212.1-1993

barrier wiring techniques (coupling in control systems) Those wiring techniques which obstruct electric or magnetic fields, excluding or partially excluding the fields from a given circuit. Barrier techniques are often effective against electromagnetic radiation also. In general, these techniques change the coupling coefficients between wires connected to a noise source and the signal circuit. *Example:* placement of signal lines within steel conduit to isolate them from an existing magnetic field. *See also:* suppressive wiring techniques; compensatory wiring techniques.

(IA/ICTL) 518-1982r

barring hole (rotating machinery) A hole in the rotor to permit insertion of a pry bar for the purpose of turning the rotor slowly or through a limited angle. *See also:* rotor.

(PE) [9]

bar, rotor *See:* rotor bar.

bar-type current transformer One that has a fixed and straight single primary winding turn passing through the magnetic circuit. The primary winding and secondary winding(s) are insulated from each other and from the core(s) and are assembled as an integral structure.

(PE/TR) C57.13-1993, [57]

base (1) (number system) An integer whose successive powers are multiplied by coefficients in a positional notation system. *See also:* radix; positional notation.

(C) 162-1963w

(2) (rotating machinery) A structure, normally mounted on the foundation, that supports a machine or a set of machines. In single-phase machines rated up through several horsepower, the base is normally a part of the machine and supports it through a resilient or rigid mounting to the end shields.

(PE) [9]

(3) (electron tube or valve) The part attached to the envelope, carrying the pins or contacts used to connect the electrodes to the external circuit and that plugs into the holder. *See also:* electron tube.

(ED) [45], [84]

(4) (electroplating) (basis or base metals) The object upon which the metal is electroplated. *See also:* electroplating.

(PE/EEC) [119]

(5) (transistor) A region that lies between an emitter and a collector of a transistor and into which minority carriers are injected. *See also:* transistor.

(ED/IA) 216-1960w, [12]

(6) (high-voltage fuse) The supporting member to which the insulator unit or units are attached.

(SWG/PE) C37.40-1993, C37.100-1992

(7) (pulse terminology) The two portions of a pulse waveform which represents the first nominal state from which a pulse departs and to which it ultimately returns.

(IM/WM&A) 194-1977w

base active power (synchronous generators and motors) The total (generator) output or (motor) input power at base voltage and base current with a power factor of unity.

base address (1) (computers) An address used as a reference point to which a relative address is added to determine the address of the storage location to be accessed. *See also:* indexed address; relative address; self-relative address.

(C) 610.12-1990, 610.10-1994w

(2) A given address from which an absolute address is derived by combination with a relative address. *Synonyms:* reference address; presumptive address; constant address.

(C) [20], 610.10-1994w, [85]

base address register A register used in an operand field of a processor instruction with a specified offset, the sum of which points to a data value within a data structure to be used by the instruction. *See also:* base register.

(C) 610.10-1994w

base ambient temperature (power distribution, underground cables) (cable or duct) The no-load temperature in a group with no load on any cable or duct in the group.

(PE) [4]

base apparent power (1) (ac rotating machinery) (basic per-unit quantities for ac rotating machines) A reference value expressing an electrical power rating of the machine. *Notes:* 1. Base apparent power may be either input or output power, and the numerical value may be either real power—watts (W)—or total apparent electrical power—voltamperes (VA)—depending upon machine type. Base apparent power is usually expressed in voltamperes, but any consistent set of units may be used. For synchronous generators, induction generators, and synchronous motors, base apparent power is the total apparent electrical at rated voltage and rated current. In induction motors (preferred method), base apparent power is numerically equal to the rated power output. For induction motors (alternate method), base apparent power is the total apparent electrical power at rated voltage and rated current. 2. When the alternate method is used it should be identified as "input voltampere based."

(EM/PE) 86-1987w

(2) (synchronous generators and motors) The total rated apparent power at rated voltage and rated current. *Note:* Base apparent power is usually expressed in volt-amperes, but any consistent set of units may be used.

86-1961

base assertion An assertion that is required to be tested for required features and for implemented conditional features.

(C/PA) 1326.2-1993w, 1328-1993w, 13210-1994,

2003.1-1992, 1328.2-1993w

baseband (carrier or subcarrier wire or radio transmission system) The band of frequencies occupied by the signal before it modulates the carrier (or subcarrier) frequency to form the transmitted line or radio signal. *Note:* The signal in the baseband is usually distinguished from the line or radio signal by ranging over distinctly lower frequencies, which at the lower end relatively approach or may include direct current (zero frequency). In the case of a facsimile signal before modulation on a subcarrier, the baseband includes direct current. *See also:* facsimile transmission.

(BT/COM/PE/AV) [34], 168-1956w, 599-1985w

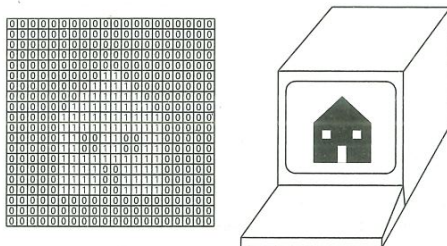
baseband coaxial system (1) A baseband system employing coaxial cables as a data transmission medium. At any point on the medium only one information signal at a time can be present without disruption. *Contrast:* baseband twisted-pair system.

(C) 610.7-1995

(2) A system whereby information is directly encoded and impressed upon the transmission medium. At any point on the medium only one information signal at a time can be present without disruption.

(C/LM) 802.3-1998

bit map In computer graphics, a block of memory that stores a raster image of pixels in a device-specific format, in which the characteristics of each pixel are determined by a set of bits. *Synonyms:* refresh buffer; frame buffer.



bit map

(C) 610.6-1991w

(2) A data structure that stores information about entities in the form of a series of one-bit entries, each of which describes the state of the corresponding entity; for example, in graphics, a block of memory that stores a raster image in a device-specific format in which the characteristics of each pixel are determined by a set of bits. *See also:* bit plane; bit-mapped. (C) 610.10-1994w

bit map font A font defined in the form of a bit map that specifies the bit pattern which makes up each character. *Synonym:* intrinsic font. *Contrast:* derived font; vector font; outline font. (C) 610.10-1994w

bit-mapped Pertaining to a display screen on which a character or image is generated from a bit map in memory. (C) 610.10-1994w

bitonic merge *See:* bitonic sort.

bitonic sort A variation on Batchier's parallel sort in which one of the two ordered subsets begins in reverse order and the items to be compared and exchanged are selected from the same subset. *Synonym:* bitonic merge. (C) 610.5-1990w

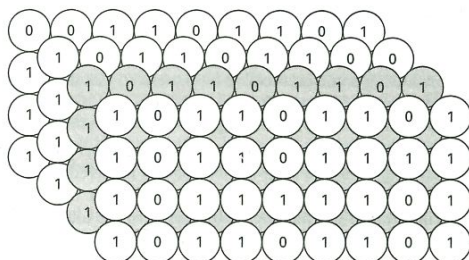
bit pad *See:* data tablet.

bit parallel Pertaining to a method for simultaneously processing all bits as a contiguous set of bits over separate wires, one wire for each bit. (C) 610.10-1994w

bit-parallel (programmable instrumentation) (696 interface devices) (signals and paths) A set of concurrent data bits present on a like number of signal lines used to carry information. Bit-parallel data bits may be acted upon concurrently as a group or independently as individual data bits. (IM/MM/C/AIN) 488.1-1987r, 696-1983w

bit pattern The image created on the screen of a display device by the mapping of the bit map onto the screen. (C) 610.10-1994w

bit plane A portion of a bit map that stores one bit of every pixel of a raster image. *Note:* Several bit planes are combined to make the full image.



bit plane

(C) 610.10-1994w

bit rate (BR) (1) (station control and data acquisition) (supervisory control) (data acquisition and automatic control) The number of bits transferred in a given time interval. Bits per second is a measure of the rate at which bits are transmitted. (SWG/PE/SUB) C37.100-1992, C37.1-1994

(2) (data transmission) The speed at which bits are transmitted; usually expressed in bits per second.

(PE) 599-1985w

(3) The number of bits transmitted per unit of time, usually expressed in bits per second (bps).

(COM/TA) 1007-1991r

(4) The rate of data throughput on the medium in bits per second or hertz, whichever is more appropriate to the context. *Synonym:* bit transfer rate. *Contrast:* baud rate.

(C) 610.7-1995

(5) The rate at which data are transmitted, expressed in bits per unit time. *Synonym:* bit transfer rate. *See also:* baud rate.

(C) 610.10-1994w

(6) The total number of bits per second transferred to or from the Media Access Control (MAC). For example, 100BASE-T has a bit rate of one hundred million bits per second (10^8 b/s). (C/LM) 802.3-1998

bit rate/2 One-half of the BR in hertz. (C/LM) 802.3-1998

bit-retention The time interval from the writing of either state into a specified memory location to the earliest appearance of an incorrect state from such memory location, as measured on the specified output terminal(s). (ED) 1005-1998

bit-retention time The retention time for one address location. (ED) 641-1987w

bit serial Pertaining to a method of sequentially processing a contiguous set of bits one at a time over a single wire, according to a fixed sequence. (C) 610.10-1994w

bit slice Pertaining to a device consisting of an n-bit functional component, such as an arithmetic and logic unit (ALU), or a sequencer, which may be cascaded with one or more identical devices to expand the width of its function by multiples of n. *See also:* bit slice device; bit slice processor. (C) 610.10-1994w

bit slice architecture An architecture in which a section of the register and the arithmetic and logic unit in a computer is placed into one package. *See also:* bit slice processor. (C) 610.10-1994w

bit slice device A device that uses bit slice technology. (C) 610.10-1994w

bit slice microprocessor *See:* bit slice device; bit slice processor. (C) 610.10-1994w

bit slice processor A processor that is built from multiple bit slices to any given word-size. (C) 610.10-1994w

bits per second (bps) A unit of data transmission speed, expressed as the number of bits transmitted per second. *Note:* IEEE Std 260.1-1993 specifies b/s as the SI unit symbol for bits per second. *Contrast:* baud rate. (C) 610.7-1995

bits per unit time (test, measurement, and diagnostic equipment) Operating number of bits, handled by a device in a given unit of time, under specified conditions. (MIL) [2]

bit steering A microprogramming technique in which the meaning of a field in a microinstruction is dependent on the value of another field in the microinstruction. *Synonym:* immediate control. *Contrast:* residual control. *See also:* two-level encoding. (C) 610.12-1990

bit stream A continuous stream of bits transmitted over a channel with no separators between the character groups. (C) 610.7-1995, 610.10-1994w

bit string (1) A sequence of binary digits; for example, the bit string 0101001. *See also:* character string. (C) 610.5-1990w

(2) An ordered sequence of zero or more bits.

(C/PA) 1328-1993w, 1327-1993w, 1224-1993w

bit stuffing A method to insert extra bits in a bit stream to achieve transparency throughout the bit stream. (C) 610.7-1995

bit time (BT) The duration of one bit as transferred to and from the MAC. The bit time is the reciprocal of the bit rate. For example, for 100BASE-T the bit rate is 10^{-8} s or 10 ns.

(LM/C) 8802-3-1993s, 802.3-1998

bit transfer rate *See:* bit rate.

paper tape *See*: punch tape.

paper tape reader A reader that senses hole patterns in punched paper tape and translates them into internal machine data representations. *Synonym*: perforated tape reader.

(C) 610.10-1994w

paper throw character *See*: form feed character.

paper traffic *See*: information traffic.

PAR *See*: precision-approach radar.

parabolic approximation *See*: parabolic equation.

parabolic equation Results when the Helmholtz equation is approximated to emphasize preferred propagation in the axial direction, leading to a differential equation of parabolic form. *Synonym*: parabolic approximation. (AP/PROP) 211-1997

parabolic profile (fiber optics) A power-law index profile with the profile parameter, g , equal to 2. *Synonym*: quadratic profile. *See also*: multimode optical waveguide; profile parameter; power-law index profile; graded index profile.

(Std100) 812-1984w

parabolic torus reflector A toroidal reflector formed by rotating a segment of a parabola about a non-intersecting co-planar line.

(AP/ANT) 145-1993

paraboloidal reflector An axially symmetric reflector that is a portion of a paraboloid. *Note*: This term may be applied to any reflector that is a portion of a paraboloid, provided the term is appropriately qualified. For example, if the reflector is a portion of a paraboloid but does not include its vertex, then it may be called an off-set paraboloidal reflector.

(AP/ANT) 145-1993

parachute harness An assembly of webbing, strapping, and attachments, that permits the attachment of a support device (e.g. D-ring), and fits the human such that the entire weight of same can be supported without injury. The lanyard is constructed so that it will support the normal weight of a human, but can be released by pulling on a disconnection means. Upon this action, there will be separation of the body support assembly from the lanyard that has been attached to the harness, thus permitting the movement of the body support means from the human body support assembly. A parachute harness allows separation of the lanyard supporting assembly from an object, commonly an aircraft or helicopter. As released, the force to complete the full separation of the harness is of the order of 1/3 of that required to produce separation resulting from the actuation of the master (main) release (disconnection) means.

(T&D/PE) 1307-1996

paraelastic crystal (primary ferroelectric terms) By analogy with paraelectric crystals, a crystal in which mechanical strain S is a single-valued function of mechanical stress T , whose elastic compliance exhibits an obvious Curie-Weiss behavior with temperature over some given temperature range, and that at some critical temperature T_c undergoes a phase transition to a ferroelastic phase. Crystals that clearly have a paraelastic phase include the metallic alloys Nb_3Sn , $In-Th$, $Au-Zn-Sn$, and lithium ammonium tartrate.

(UFCF) 180-1986w

paraelastic phase (primary ferroelectric terms) A phase that encompasses the range of temperature in which the elastic compliance exhibits Curie-Weiss behavior.

(UFCF) 180-1986w

paraelectric Curie temperature (of a ferroelectric material) The intercept of the linear portion of the plot of $1/\epsilon$ versus T , where ϵ is the small signal dielectric permittivity measured at zero bias field and T is the absolute temperature in the region above the ferroelectric Curie temperature where ϵ generally follows the Curie-Weiss relation. *See also*: ferroelectric domain.

(UFCF) 180w

paraelectric phase (primary ferroelectric terms) Encompasses the range of temperature or pressure over which the permittivity exhibits Curie-Weiss behavior.

(UFCF) 180-1986w

paraelectric region The region above the Curie point where the small signal permittivity increases with decreasing temperature. *See also*: small-signal permittivity; ferroelectric Curie point.

(UFCF) [21]

parallax (computer graphics) The apparent displacement of an object as seen from two different points. It is used to simulate a three-dimensional image on a graphical display device.

(C) 610.6-1991w

parallel (1) (A) (networks) (parallel elements) Two-terminal elements are connected in parallel when they are connected between the same pair of nodes. **(B) (networks) (parallel elements)** Two-terminal elements are connected in parallel when any cut-set including one must include the others. *See also*: network analysis.

(Std100) 270-1966

(2) (A) Pertaining to the simultaneity of two or more processes. **(B)** Pertaining to the simultaneity of two or more similar or identical processes. **(C)** Pertaining to simultaneous processing of the individual parts of a whole, such as the bits of a character and the characters of a word using separate facilities for the various parts. *See also*: serial-parallel.

(C) 162-1963, [20], [85], 270-1966

(3) (radio-wave propagation) Of a propagating wave for which the electric field vector lies parallel to the plane of incidence. *Note*: Sometimes called vertical polarization.

(AP) 211-1977s

(4) (software) Pertaining to the simultaneous transfer, occurrence, or processing of the individual parts of a whole, such as the bits of a character, using separate facilities for the various parts. *Contrast*: serial. *See also*: concurrent.

(C) 610.12-1990

(5) Many bits transmitted over a single pathway simultaneously. *Contrast*: serial. *See also*: bit parallel.

(C) 610.10-1994w

(6) In a propulsion system, the motor circuit in which the final parallel or series-parallel motor connection is achieved and the maximum available per-motor voltage is applied.

(VT) 1475-1999

parallel adder An adder in which addition is performed concurrently on multiple digits of the operands. *Contrast*: serial adder.

(C) 610.10-1994w

parallel addition Addition that is performed concurrently on all digit places of the operands. *Note*: This technique uses partial sums and partial carries to obtain its results. *Contrast*: serial addition.

(C) 1084-1986w

parallel architecture A multiprocessor architecture in which parallel processing can be performed, that is, different parts of a single task can be executed concurrently on different processors. *See also*: fine-grain parallel architecture; medium-grain parallel architecture; coarse-grain parallel architecture.

(C) 610.10-1994w

parallel classes A pair of classes that are distinct, are not mutually exclusive and have a common generic ancestor class and for which neither is a generic ancestor of the other.

(C/SE) 1320.2-1998

parallel computer (A) A computer that has multiple arithmetic units or logic units that are used to accomplish parallel operations or parallel processing. *Contrast*: sequential computer; serial computer. **(B)** A computer design in which more than one operation can occur simultaneously. *See also*: simultaneous computer.

(C) 610.10-1994

parallel-connected capacitance (as applied to interrupter switches) Capacitances are defined to be parallel-connected when the crest value of inrush current to the capacitance being switched exceeds the switch inrush current capability for single capacitance.

(SWG/PE) C37.100-1992

parallel-connected capacitor unit A capacitor unit with the elements connected in parallel groups, with the parallel groups connected in series between the line terminals. A capacitor unit that has only one string of capacitor elements between the capacitor terminals is considered to be parallel-connected power systems relaying.

(PE) C37.99-2000

parallel connection The arrangement of cells in battery made by connecting all positive terminals together and all negative terminals together, the voltage of the group being only that of one cell and the current drain through the battery being divided among the several cells. *See also*: battery.

(EEC/PE) [119]

radio button A visual user interface control used to represent one of a group of mutually exclusive settings. When a radio button is selected, a visual indication is provided to indicate it is the selected button. (C) 1295-1993w

radio channel (data transmission) A band of frequencies of a width sufficient to permit its use for radio communication. *Note:* The width of the channel depends on the type of transmission and the tolerance for the frequency of emission. Normally allocated for radio transmission in a specified type of service or by a specified transmitter. (AP/PE/ANT) 145-1983s, 599-1985w

radio circuit A means for carrying out one radio communication at a time in either or both directions between two points. *See also:* radio transmission; radio channel. (EEC/PE) [119]

radio compass A direction-finder used for navigational purposes. *See also:* radio navigation. (EEC/PE) [119]

radio compass indicator A device that, by means of a radio receiver and rotatable loop antenna, provides a remote indication of the relationship between a radio bearing and the heading of the aircraft. (EEC/PE) [119]

radio compass magnetic indicator A device that provides a remote indication of the relationship between a magnetic bearing, radio bearing, and the aircraft's heading. (EEC/PE) [119]

radio control The control of mechanism or other apparatus by radio waves. *See also:* radio transmission. (EEC/PE) [119]

radio detection (radio warning) The detection of the presence of an object by radiolocation without precise determination of its position. *See also:* radio transmission. (EEC/PE) [119]

radio direction-finder (RDF) (navigation aid terms) A device used to determine the direction of arrival of radio signals. *Note:* At one time this term was used by the British to mean radio distance-finding—that is, radar. (AES/GCS) 172-1983w

radio direction finding (navigation aid terms) A procedure for determining the bearing, at a receiving point, of the source of a radio signal by observing the direction of arrival and other properties of the signal. (AES/GCS) 172-1983w

radio distress signal (SOS) Radiotelegraph distress signal consists of the group . . . --- . . . in Morse code, transmitted on prescribed frequencies. The radiotelephone distress signal consists of the spoken words May Day (*m'aidez* = help me). *Note:* By international agreement, the effect of the distress signal is to silence all radio traffic that may interfere with distress calls. (EEC/PE) [119]

radio disturbance An electromagnetic disturbance in the radio-frequency range. *See also:* radio interference; radio noise. (EMC) [53]

radio Doppler The direct determination of the radial component of the relative velocity of an object by an observed frequency change due to such velocity. *See also:* radio transmission. (EEC/PE) [119]

radio fadeout (Dellinger effect) A phenomenon in radio propagation during which substantially all radio waves that are normally reflected by ionospheric layers in or above the E region suffer partial or complete absorption. *See also:* radiation. (EEC/PE) [119]

radio field strength The electric or magnetic field strength at a radio frequency. *Synonym:* field strength. (AP/PROP) 211-1997

radio frequency (RF) (I) (A) (data transmission) (Loosely) The frequency in the portion of the electromagnetic spectrum that is between the audio-frequency portion and the infrared portion. **(B) (data transmission)** A frequency useful for radio transmission. *Note:* The present practicable limits of radio frequency are roughly 10 kHz (kilohertz) to 100 000 MHz (megahertz). Within this frequency range electromagnetic radiation may be detected and amplified as an electric current at the wave frequency. (PE) 599-1985

(2) (power line filters) A frequency in the portion of the electromagnetic spectrum that is between the audio frequency portion and the infrared portion. (EMC) C63.13-1991

(3) A frequency in the radio spectrum. *See also:* radio spectrum. (AP/PROP) 211-1997

(4) A frequency that is useful for radio transmission. (NIR) C95.1-1999

(5) (A) (Loosely) The frequency in the portion of the electromagnetic spectrum that is between the audio-frequency portion and the infrared portion. **(B)** A frequency useful for radio transmission. *Note:* The present practicable limits of radio frequency are roughly 10 kHz to 100 000 MHz. Within this frequency range, electromagnetic radiation may be detected and amplified as an electric current at the wave frequency. (EMB/MIB) 1073.3.2-2000

radio-frequency absorber A material designed to absorb electromagnetic energy. The material may have a flat face or may be formed into pyramids, wedges, or cones. Radar absorber material is commonly referred to as RAM. (EMC) 1128-1998

radio-frequency alternator A rotating-type generator for producing radio-frequency power. (AP/ANT) 145-1983s

radio-frequency attenuator (signal-transmission system) A low-pass filter that substantially reduces the radio-frequency power at its output relative to that at its input, but transmits lower-frequency signals with little or no power loss. *See also:* signal. (IE) [43]

radio-frequency converter A power source for producing electric power at a frequency of 10 kHz and above. (IE/IA) 169-1955w

radio-frequency electric current hazard advisory symbol Refers to the overall design and shape shown in the figure below.



RF electric current hazard advisory symbol

radio-frequency (RF) electric current hazard advisory symbol (NIR/SCC28) C95.2-1999

radio-frequency energy Includes radio frequency fields and radiation with frequencies between 3 kHz and 300 GHz, and includes microwave frequencies. (NIR/SCC28) C95.2-1999

radio-frequency energy advisory symbol Refers to the overall design, and shape shown in the figure below.



RF energy advisory symbol

radio-frequency (RF) energy advisory symbol (NIR/SCC28) C95.2-1999

serial (1) (A) Pertaining to the time sequencing of two or more processes. **(B)** Pertaining to the time sequencing of two or more similar or identical processes, using the same facilities for the successive processes. **(C)** Pertaining to the time-sequential processing of the individual parts of a whole, such as the bits of a character, the characters of a word, etc., using the same facilities for successive parts. *See also:* serial-parallel. (C) 162-1963

(2) (software) Pertaining to the sequential transfer, occurrence, or processing of the individual parts of a whole, such as the bits of a character, using the same facilities for successive parts. *Contrast:* parallel. *See also:* sequential. (C) 610.12-1990

(3) One bit following another over a single pathway. *Contrast:* parallel. *See also:* bit serial. (C) 610.10-1994w

serial access (1) (computers) Pertaining to the process of obtaining data from, or placing data into, storage when there is a sequential relation governing the access time to successive storage locations. (C) [20], [85]

(2) (data management) *See also:* sequential access. (C) 610.5-1990w

serial access storage *See:* sequential access storage.

serial adder An adder in which addition is performed by adding, digit place after digit place, the corresponding digits of the operands. *Contrast:* parallel adder. (C) 610.10-1994w

serial addition Addition that is performed by adding the corresponding digits of the operands, one digit place at a time. *Contrast:* parallel addition. (C) 1084-1986w

serial by bit *See:* serial transmission.

serial bus (1) Intended as a low-cost peripheral connect or an alternate diagnostic and control path. One instantiation of a serial bus is the "Serial Bus" as specified in IEEE P1394. (C/BA) 896.2-1991w

(2) A peripheral interconnect and an alternate diagnostic and control path. (C/BA) 896.10-1997

Serial Bus (1) The name that refers to the IEEE project, P1394, which specifies a serial bus intended as a low-cost peripheral connect or an alternate diagnostic and control path. (C/MM) 1212-1991s

(2) A bit-serial interconnect defined by IEEE P1394. (C/MM) 1212.1-1993

(3) Refers to the IEEE P1394 project, which defines an inexpensive serial network that can be used as an alternate control or diagnostic path, as an I/O connection, or in place of a parallel bus in some systems. (C/MM) 1596.5-1993, 1596-1992

Serial Bus management The set of protocols, services, and operating procedures that monitors and controls the various Serial Bus layers: physical, link, and transaction. See figure 34 for the relation of Serial Bus management to the Serial Bus protocol stack. (C/MM) 1394-1995

serial clock driver A functional module that provides a periodic timing signal that synchronizes the operation of IEEE P1132 serial bus. Two backplane signal lines are reserved for use by a serial bus. However, the protocols of the serial bus are completely independent of this standard, and the inclusion of a serial bus is not a required feature of IEEE Std 1014-1987. (C/BA) 1014-1987

serial communication (1) (supervisory control, data acquisition, and automatic control) A method of transmitting information between devices by sending all bits serially over a single communication channel. (SWG/PE/SUB) C37.100-1992, C37.1-1994

(2) Method of transferring information between devices by transmitting a sequence of individual bits in a prearranged order of significance. (SUB/PE) 999-1992w

serial computer (A) A computer that has a single arithmetic and logic unit. **(B)** A computer, some specified characteristic of which is serial; for example, a computer that manipulates all bits of a word serially. *Contrast:* parallel computer. (C) 610.10-1994

serial construct A program construct consisting of a sequence of steps not involving a decision or loop. *Synonym:* sequential construct. (C) 610.12-1990

serial digital computer A digital computer in which the digits are handled serially. Mixed serial and parallel machines are frequently called serial or parallel according to the way arithmetic processes are performed. An example of a serial digital computer is one that handles decimal digits serially although it might handle the bits that comprise a digit either serially or in parallel. *See also:* parallel digital computer. (Std100) 270-1966w

serial file *See:* sequential file.

serial interface An interface that transmits data bit by bit rather than in whole bytes. (C) 610.10-1994w

serialization Serialization is the process of transmitting coded characters one bit at a time. *See also:* deserialization. (C/BA) 1355-1995

serializer A device that converts a set of simultaneous signals into a corresponding time sequence of signals. *Synonyms:* parallel-serial converter; dynamicizer. (C) 610.10-1994w

serially correlated variable *See:* lag variable.

serial medium A medium that contains a POSIX.1 extended tar or extended `cpio` archive. (C/PA) 1387.2-1995

serial mouse A mouse that is connected to a computer system through a serial port. *Contrast:* bus mouse. (C) 610.10-1994w

serial operation (data transmission) (telecommunications) The flow of information in time sequence, using only one digit, word, line, or channel at a time. (PE) 599-1985w

serial-parallel Pertaining to processing that includes both serial and parallel processing, such as one that handles decimal digits serially but handles the bits that comprise a digit in parallel. (C) 162-1963w

serial port A port that transfers data one bit at a time. *Contrast:* parallel port. (C) 610.10-1994w

serial printer A printer that receives its input data in the form of a serial stream of data. *Contrast:* parallel printer. *See also:* character-at-a-time printer. (C) 610.10-1994w

serial processing Pertaining to the sequential execution of processes in a single device, such as a processing unit or channel. *Synonym:* sequential processing. *Contrast:* parallel processing. (C) 610.10-1994w

serial protocol Any communication protocol in which data is transferred serially to or from a fixed location. (C/MM) 1155-1992

serial transmission (1) (data transmission) (telecommunications) Used to identify a system wherein the bits of a character occur serially in time. Implies only a single transmission channel. *Synonym:* serial by bit. (PE) 599-1985w

(2) In data communications, the conveying of a character of information one bit at a time on a single path. *Contrast:* parallel transmission. (C) 610.7-1995

series In a propulsion system, the motor connection in which all motors are connected in a series circuit for the purpose of applying to them some fraction (usually one half) of the maximum available per-motor voltage. (VT) 1475-1999

series capacitor A device that has the primary purpose of introducing capacitive reactance in series with an electric circuit. (T&D/PE) 824-1994

series capacitor bank (series capacitor) An assembly of capacitors and associated auxiliaries, such as structures, support insulators, switches, and protective devices, with control equipment required for a complete operating installation. (T&D/PE) 824-1994

series circuit A circuit supplying energy to a number of devices connected in series, that is, the same current passes through each device in completing its path to the source of supply. *See also:* center of distribution. (T&D/PE) [10]

series circuit lighting transformer (power and distribution transformers) Dry-type individual lamp insulating transformer, autotransformer, and group series loop transformers

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