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IEEE Std 100-1996

The IEEE Standard
Dictionary of Electrical
and Electronics Terms

Sixth Edition



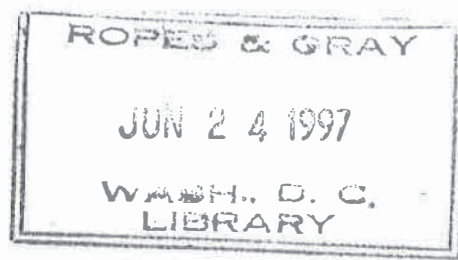
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The IEEE Standard Dictionary of Electrical and Electronics Terms

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Standards Coordinating Committee 10, Terms and Definitions
Jane Radatz, Chair

This standard is one of a number of information technology dictionaries being developed by standards organizations accredited by the American National Standards Institute. This dictionary was developed under the sponsorship of voluntary standards organizations, using a consensus-based process.

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environment information that is adequately correlated for the type of exercise to be performed. (C/DIS) 1278.1-1995

simulation exercise An exercise that consists of one or more interacting simulation applications. Simulations participating in the same simulation exercise share a common identifying number called the exercise identifier. These simulations also utilize correlated representations of the synthetic environment in which they operate. *See also:* exercise.

(C/DIS) 1278.1-1995, 1278.2-1995, 1278.3-1996

simulation fidelity (A) The similarity, both physical and functional, between the simulation and that which it simulates. **(B)** A measure of the realism of a simulation. **(C)** The degree to which the representation within a simulation is similar to a real world object, feature, or condition in a measurable or perceivable manner. (C/DIS) 1278.3-1996

simulation game A simulation in which the participants seek to achieve some agreed-upon objective within an established set of rules. For example, a management game, a war game. *Note:* The objective may not be to compete, but to evaluate the participants, increase their knowledge concerning the simulated scenario, or achieve other goals. *Synonym:* gaming simulation. (C) 610.3-1989

simulation host *See:* host computer.

simulation language An application-oriented programming language used to implement simulations. *See also:* continuous simulation language. (C) 610.13-1993, 610.3-1989

simulation management A process that provides centralized control of the simulation exercise. Functions of simulation management include: start, restart, maintenance, shutdown of the exercise, and collection and distribution of certain types of data. (C/DIS) 1278.1-1995

simulation model *See:* simulation.

Simulation Program with Integrated Circuit Emphasis (SPICE) A simulation language used widely to design electrical circuits. (C) 610.13-1993

simulation site Location of one or more simulation hosts connected by a LAN. (C/DIS) 1278.2-1995

simulation time The reference time (e.g., UTC) within a simulation exercise. This time is established ahead of time by the simulation management function and is common to all participants in a particular exercise. (C/DIS) 1278.1-1995

simulator (1) (analog computer) A device used to represent the behavior of a physical system by virtue of its analogous characteristics. In this general sense, all computers are, or can be, simulators. However in a more restricted definition, a simulator is a device used to interact with, or to train, a human operator in the performance of a given task or tasks. (C) 165-1977w

(2) (modeling and simulation) (software) A device, computer program, or system that performs simulation. *See also:* emulator. (C) 610.10-1994, 610.12-1990, 610.3-1989

(3) (test, measurement, and diagnostic equipment) A device or program used for test purposes that simulates a desired system or condition providing proper inputs and terminations for the equipment under test. (MIL) [2]

simulator approach speed The rate at which an air discharge ESD simulator approaches the EUT or coupling plane. (EMC) C63.16-1993

simultaneous Pertaining to the occurrence of two or more events at the same instant of time. *Contrast:* concurrent. (C) 610.12-1990

simultaneous access *See:* immediate access.

simultaneous computer A parallel computer that contains a separate processing unit to perform each portion of the computation concurrently, allowing the units to be interconnected in a manner determined by the computation. *Contrast:* sequential computer. *See also:* parallel computer.

concurrent and partially overlapped signal lobes; the relative phase, or the relative power, of the two signals received from a target is a measure of the angular displacement of the target from the equiphase or equisignal direction. Compare with lobe witching. (AE/AP) [35], [42], 149-1979r

2) (radar) A direction-determining technique utilizing the signals of overlapping lobes existing at the same time. *Synonym:* monopulse. (AE/AP) 145-1993, 686-1982s

simultaneous peripheral output on-line *See:* spool.

simultaneous recursion (software) A situation in which two software modules call each other. (C) 610.12-1990

sin² *See:* sin-square.

sin² pulse *See:* sine-square pulse.

sin² step *See:* sine-square step.

SINAD signal plus noise plus distortion to noise plus distortion ratio expressed in decibels (dB), where the "signal plus noise plus distortion" is the audio power recovered from a modulated radio frequency carrier, and the "noise plus distortion" is the residual audio power present after the audio signal is removed. This ratio is a measure of audio output signal quality for a given receiver audio power output level.

(EMC) 377-1980r

sinad ratio (mobile communication) A measure expressed in decibels of the ratio of: the signal plus noise plus distortion to noise plus distortion produced at the output of a receiver that is the result of a modulated-signal input. *See also:* mobile communication system. (VT) 184-1969w

sinad sensitivity (receiver performance) The minimum standard modulated carrier-signal input required to produce a specified sinad ratio at the receiver output. (VT) [37]

sine beats (seismic qualification of Class 1E equipment for nuclear power generating stations) A continuous sinusoid of one frequency, amplitude modulated by a sinusoid of a lower frequency. (PE) 344-1987r

sine-current coercive force (toroidal magnetic amplifier cores) The instantaneous value of sine-current magnetizing force at which the dynamic hysteresis loop passes through zero induction. (Std100) 106-1972

sine-current differential permeability (toroidal magnetic amplifier cores) The slope of the sides of the dynamic hysteresis loop obtained with a sine-current magnetizing force. (Std100) 106-1972

sine-current magnetizing force (toroidal magnetic amplifier cores) The applied magnetomotive force per unit length for a core symmetrically cyclicly magnetized with sinusoidal current. (Std100) 106-1972

sinen shaping In an amplifier, the pulse shape produced by one CR high-pass filter section (differentiator) followed by n RC low-pass filter sections (integrators), all with different time constants, but following a particular pattern related to the differentiating time constant t. If the input signal is a step function and no other high-pass sections are in the signal path, the pulse shape is unipolar and is described by $Ke^{-3t/t} \text{ sinn}(t/t)$, where K is a constant, t is time, and t is the time constant of the differentiator. (NPS) 325-1996

sine-square pulse (video signal transmission measurement) One cycle of a sine wave, starting and finishing at its negative peaks with an added constant amplitude component of half the peak-to-peak value, thus raising the negative peaks to zero. *Note:* A sin² pulse is obtained by squaring a half-cycle of a sine wave. (BT) 511-1979w

sine-square step (video signal transmission measurement) A step function whose transition from zero to the final value is the sum of a ramp and a negative sinusoid of equal durations, with zero slope at both the zero and the final value of the step. *Notes:* 1. A sin² step is obtained by integrating a sin² pulse. 2. The attractiveness of both the sin² pulse and the sin² step