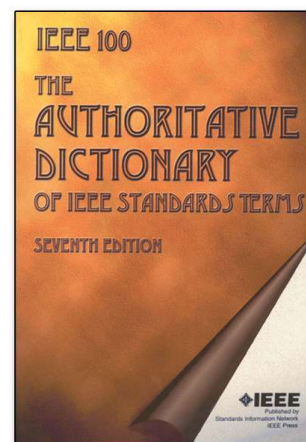


# **IEEE 100**

# **The Authoritative Dictionary of IEEE Standards Terms**

**Seventh Edition**



**Published by  
Standards Information Network  
IEEE Press**

Authorized licensed use limited to: UCLA Library. Downloaded on October 26, 2016 at 17:34:11 UTC from IEEE Xplore. Restrictions apply.

## Trademarks and disclaimers

*IEEE believes the information in this publication is accurate as of its publication date; such information is subject to change without notice. IEEE is not responsible for any inadvertent errors.*

*Other tradenames and trademarks in this document are those of their respective owners.*

*The Institute of Electrical and Electronics Engineering, Inc.  
3 Park Avenue, New York, NY, 10016-5997, USA*

*Copyright © 2000 by the Institute of Electrical and Electronics Engineers, Inc. All rights reserved. Published December 2000. Printed in the United States of America.*

*No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.*

*To order IEEE Press publications, call 1-800-678-IEEE.*

<i>Print: ISBN 0-7381-2601-2</i>	<i>SP1122</i>	<i>PDF ON CD-ROM</i>
		<i>ISBN: 0-7381-3926-2 SE127</i>

See other standards and standards-related product listings at: <http://standards.ieee.org/>

*The publisher believes that the information and guidance given in this work serve as an enhancement to users, all parties must rely upon their own skill and judgement when making use of it. The publisher does not assume any liability to anyone for any loss or damage caused by any error or omission in the work, whether such error or omission is the result of negligence or any other cause. Any and all such liability is disclaimed.*

*This work is published with the understanding that the IEEE is supplying information through this publication, not attempting to render engineering or other professional services. If such services are required, the assistance of an appropriate professional should be sought. The IEEE is not responsible for the statements and opinions advanced in this publication.*

**disk array** Multiple disks arranged in such a manner as to increase storage capacity or to provide redundant data for disaster recovery. *See also*: RAID storage.

(C) 610.10-1994w

**disk cache** A cache consisting of random-access memory, used by a disk driver as intermediate storage between a rotating disk and main storage. *Note*: The disk cache minimizes access to the rotating disk by storing recently-used data or adjacent data in the random-access memory. (C) 610.10-1994w

**disk cartridge** An assembly of one or more magnetic disks that is removable from the disk drive, but which cannot be separated from its associated container. *Contrast*: disk pack. *See also*: removable storage. (C) 610.10-1994w

**disk crash** The sudden and complete failure of a disk drive. *See also*: head crash. (C) 610.10-1994w

**disk drive** An electromechanical device that reads from and writes to disks. *Contrast*: tape drive. *See also*: disk storage device; magnetic disk drive; WORM drive; head-per-track disk drive; disk pack; full-height disk drive; half-height disk drive. (C) 610.10-1994w

**disk driver** A device driver that supports a specific class of disk drives. (C) 610.10-1994w

**diskette** A magnetic disk enclosed in a protective container. *See also*: floppy diskette; double-sided disk; disk.

(C) 610.10-1994w

**diskette compatibility** The ability of a diskette to be accessed by one or more systems such that data exchange can take place. (C) 610.2-1987

**disk file** A file, typically containing data, residing on a magnetic or optical disk. (C) 610.10-1994w

**disk label** Contains descriptive information, usually in a well-known location such as physical block zero, about the device and the media and may include logical partitioning information. (C/BA) 1275-1994

**diskless workstation** A workstation with no storage capacity, intended to be used in conjunction with another workstation networked in such a way that the two workstations can share the storage. (C) 610.10-1994w

**disk mirroring** *See*: double storage.

**disk pack** An assembly of one or more magnetic disks that is removable from the disk drive together with its container, however the disks must be separated from the container when they are in use. *Contrast*: disk cartridge. *See also*: volume. (C) 610.10-1994w

**disk recorder (phonograph techniques)** A mechanical recorder in which the recording medium has the geometry of a disk. *See also*: phonograph pickup. (SP) [32]

**disk server** On a network, a server that allows access to a disk storage device at the disk sector level; that is, the server sends absolute disk sectors to the requestor. *See also*: database server; print server; mail server; file server; terminal server; network server. (C) 610.7-1995

**disk storage device** *See*: disk drive.

**dismiss** To remove a menu or popup window from the screen. (C) 1295-1993w

**disparity** The difference between the number of logical 1s and logical 0s in a character. A positive or negative disparity indicates an excess of 1s or 0s, respectively. (C/BA) 1355-1995

**dispatch** Issue a fetched instruction to one or more functional units for execution. (C/MM) 1754-1994

**dispatcher** The software that implements the service interface functions using workspace interface functions. (C/PA) 1328-1993w, 1327-1993w

**dispatching system (mining practice)** A system employing radio, telephone, and/or signals (audible or light) for orderly and efficient control of the movements of trains of cars in mines. *See also*: mine radio telephone system; mine-fan signal system. (PE/EEC) [119]

**Dispatch List** A DMA model where the DMA queues are linked lists of dispatch\_items. Each dispatch\_item contains a pointer

to the next dispatch\_item and a message being passed to the consumer. (C/MM) 1212.1-1993

**dispatch operation (radio-communication circuit)** A method for permitting a maximum number of terminal devices to have access to the same two-way radio communication circuit. *See also*: channel spacing. (VT) [37]

**dispenser cathode (electron tube)** A cathode that is not coated but is continuously supplied with suitable emission material from a separate element associated with it. *See also*: electron tube. (Std100) [84]

**dispersed data processing (DDP)** *See*: distributed data processing.

**dispersed magnetic power tape** *See*: magnetic-powder-impregnated tape.

**dispersed power** An electric power generation source (or sources) not directly under established electric utility ownership and control. (SUB/PE) 1109-1990w

**dispersion (1)** The property of a planar transmission line whereby the phase velocity of the mode of propagation is frequency dependent, or equivalently, the phase constant is not proportional to frequency. (MTT) 1004-1987w

**(2)** (of a wave) The variation of the phase velocity with frequency. (AP/PROP) 211-1997

**dispersion relation** The functional relationship between the angular frequency,  $\omega$ , and the wave vector,  $\vec{k}$ , for waves in a source-free medium. For a dispersionless medium, the components of  $\vec{k}$  are linearly proportional to  $\omega$ . (AP/PROP) 211-1997

**dispersion slope** The rate of change of the chromatic dispersion of a fiber with wavelength. (C/LM) 802.3-1998

**dispersive bandwidth (1)** The operating frequency range over which the delay dispersion is defined (dispersive delay line). *Synonyms*: dispersive bandwidth; frequency selective bandwidth. (UFFC) 1037-1992w, [22]

**(2)** *See also*: frequency selective bandwidth. (AP/PROP) 211-1997

**dispersive delay line** A delay line which has a transfer characteristic with a constant modulus and an argument (phase) which is a nonlinear function of frequency. The phase characteristic of devices of common interest is a quadratic function of frequency, but in general may be represented by higher order polynomials and/or other nonlinear functions. (UFFC) [22]

**dispersive Doppler frequency** *See*: differential Doppler frequency.

**dispersive medium** A medium in which one or more of the constitutive parameters vary with frequency. *Note*: As a result, the phase velocity of propagating waves in a dispersive medium depends on frequency. (AP/PROP) 211-1997

**displaced phase center antenna (DPCA)** An antenna and signal processing method used in airborne moving-target indication (AMTI) radar to compensate for the spread of the clutter Doppler spectrum caused by platform motion. *Note*: An example of a popular DPCA method is to employ two squinted antenna beams, take their sum and their difference on each of two successive pulses, and combine them in such a manner that the radar antenna appears to be stationary from pulse to pulse (a stationary antenna does not cause widening of the clutter spectrum). *See also*: space-time adaptive processing; airborne moving-target indication radar. (AES) 686-1997

**displacement current** The time rate of change of the electric flux density. (AP/PROP) 211-1997

**display (1)** (A) To present data visually. (B) The result of a display process. *See also*: copy. (C/Std100) 610.2-1987

**(2) (navigation aid terms)** The visual representation of output data. (AES/RS/GCS) 686-1990, 172-1983w

**(3) (watthour meters)** A means for visually identifying and presenting measured or calculated quantities and other information. (ELM) C12.15-1990, C12.13-1985s

- (4) **(test, measurement, and diagnostic equipment)** A mechanical, optical, electro-mechanical, or electronic device for presenting information to the operator or maintenance technician about the state or condition of the unit under test or the checkout equipment itself. (MIL) [2]
- (5) **(oscilloscopes)** The visual presentation on the indicating device of an oscilloscope. (IM) 311-1970w
- (6) **(A) (computer graphics)** A visual presentation of graphics or other data such as text. *See also:* display device.
- (B) (computer graphics)** To visually present graphics or other data. *See also:* display device. (C) 610.6-1991
- (7) To output to the terminal of the user. If the output is not directed to a terminal, the results are undefined. (C/PA) 9945-2-1993
- (8) To make a popup menu visible. (C) 1295-1993w
- (9) Visual depiction of a single, integrated, organized set of information. A display may be an integration of several display formats (such as a system mimic that includes bar charts, trend graphs, and data fields). (PE/NP) 1289-1998
- display address space** The range of addresses available for display of a graphical image. (C) 610.6-1991w
- display buffer** A storage device or area of memory that contains the graphics display commands and coordinate data used to create images on a display device. *See also:* image memory. (C) 610.10-1994w, 610.6-1991w
- display command** An instruction that is processed by a graphical display device or display processor. *Synonym:* display order. (C) 610.6-1991w
- display console** *See:* console.
- display controller** *See:* display generator.
- display cycle** The time needed to completely refresh a graphical display image. *Synonym:* refresh cycle. (C) 610.6-1991w
- display data** A collection of data that defines a graphical image, or a portion thereof, for display. *Synonym:* graphics data. (C) 610.6-1991w
- display device** (1) In computer graphics, an output device on which display images can be represented. For example, cathode ray tube display device, plotter, hard copy unit. *See also:* graphical display device. (C) 610.6-1991w
- (2) An output device that gives a visual representation of data. *Note:* The representation is usually temporary, however arrangements may be made for producing a hard copy of the representation. *Synonyms:* display screen; display unit; display monitor; display station. *See also:* monitor; display surface. (C) 610.10-1994w
- (3) The hardware used to provide the display to users. An example is a video display unit. *See also:* display. (PE/NP) 1289-1998
- display element** (1) A basic computer graphics element used in the construction and rendering of a display image. For example, line, arc, circle, text string. *Synonyms:* primitive; output primitives. *See also:* selectable element. (C) 610.6-1991w
- (2) The individual component(s) of a display, such as labels, abbreviations, acronyms, icons, symbols, numbers, color, graph lines, coding, highlighting, and background. *See also:* display. (PE/NP) 1289-1998
- display flatness (spectrum analyzer)** The total variation in displayed amplitude over a specified span, decibel (dB). *Note:* Display flatness is closely related to frequency response. The main difference is that the tuning control of the spectrum analyzer is not readjusted to center the display. (IM) 748-1979w
- display file** *See:* display list.
- display frequency (spectrum analyzer)** The input frequency as indicated by the spectrum analyzer (Hz). (IM) 748-1979w
- display format** Method of data presentation, such as a trend plot, bar chart, graph, table, or cross-plot. *See also:* display. (PE/NP) 1289-1998
- display formatting** A word processing capability that presents the formatted version of a document on a display device. (C) 610.2-1987
- display frame** A single display image analogous to a frame in a motion picture. *Synonym:* frame. (C) 610.6-1991w
- display generator** A processing unit that will produce the corresponding image on the display device when presented with a display instruction. *Synonym:* display controller. (C) 610.10-1994w
- display graphic** A hardware device (crt, plasma panel, arrays of lamps, or light-emitting diodes) used to present pictorial information. (SWG/PE) C37.100-1992
- display group** *See:* segment.
- display head** A head within a display device that employs the signals obtained from the various function generators to control the display of information on the display device. (C) 610.10-1994w
- display image** The portion of an image that is displayed on a graphical display device. *Synonym:* screen image. (C) 610.6-1991w, 610.10-1994w
- display law (spectrum analyzer)** The mathematical law that defines the input-output function of the instrument.
- 1) *Linear.* A display in which the scale divisions are a linear function of the input voltage.
  - 2) *Square law (power).* A display in which the scale divisions are a linear function of the input power.
  - 3) *Logarithmic.* A display in which the scale divisions are a logarithmic function of the input signal. (IM) 748-1979w
- display line** The writing line on a display device. *See also:* display position. (C) 610.10-1994w
- display list** The display commands and data required to generate a graphical image. *Synonym:* display file. *See also:* metafile; display buffer. (C) 610.6-1991w
- display menu** *See:* menu.
- display monitor** *See:* display device.
- display order** *See:* display command.
- display panel** (A) A set of indicators on the front of a device or component, used to indicate its status. (B) A special display area on a processing unit that is used to show the contents of the display register and is activated by a display switch. (C) 610.10-1994
- display position** One character position on a display line. (C) 610.10-1994w
- display primaries (color television)** The colors of constant chromaticity and variable luminance produced by the receiver or any other display device that, when mixed in proper proportions, are used to produce other colors. *Note:* Usually the three primaries used are red, green, and blue. (BT/AV) 201-1979w
- display processor** A hardware device that executes a sequence of display commands to create a display image. *Synonym:* graphics processor. (C) 610.6-1991w
- display reference level (spectrum analyzer)** A designated vertical position representing specified input levels. The level may be expressed in dBm, volts, or any other units. (IM) 748-1979w
- display register** A register with corresponding indicators on the display panel, used to display the contents of the register selected by the display switch. (C) 610.10-1994w
- displays (nuclear power generating station)** Devices that convey information to the operator. (PE/NP) 566-1977w
- display screen** The surface of a display device on which the visual representation of data is displayed. For example, the phosphor-coated portion of a CRT display device. *See also:* display device. (C) 610.10-1994w
- display segment** *See:* segment.
- display space** The portion of the device space on a graphical display device that is available for displaying images. *Synonym:* image space. (C) 610.6-1991w



**display station** A generic term for a terminal or a console.

(C) 610.10-1994w

**display storage tube** A storage tube into which the information is introduced as an electric signal and read at a later time as a visible output. *See also:* storage tube. (ED) 158-1962w

**display surface (1)** The surface of an output unit, such as a display device or plotting unit, on which the output is displayed. (C) 610.6-1991w

(2) The surface of an output device such as a display device or plotting unit. *See also:* display screen.

(C) 610.10-1994w

**display switch** A switch used to select the register that is to be shown on the display panel. (C) 610.10-1994w

**display tube** A tube, usually a cathode-ray tube, used to display data. (C) [20], [85]

**display unit** *See:* display device.

**disposal (liquid-filled power transformers)** Intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of polychlorinated biphenyls (PCBs) and PCB items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB items. Examples: Spill, chemical dechlorination, landfill, incineration.

**disruptive discharge (1)** A discharge that completely bridges the insulation under test, reducing the voltage between the electrodes practically to zero. (PE/PSIM) 4-1995

(2) A term that relates to phenomena associated with the breakdown of insulation under electrical stress, in which the discharge completely bridges the insulation under test, reducing the voltage between the electrodes to zero or nearly to zero. It applies to electrical breakdown in solid, liquid, and gaseous dielectrics and combinations of these.

(SWG/PE) C37.100-1992

(3) The sudden and large increase in current through an insulating medium due to the complete failure of the medium under electrical stress.

(SPD/PE) C62.22-1997, C62.11-1999

(4) (A) The sudden and large increase in current through an insulating medium, due to the complete failure of the medium under the electrostatic stress. (B) An increase that causes explosive mechanical or electrical failure in one of the failure modes. (SPD/PE) C62.62-2000

**disruptive discharge probability (p)** The probability that one application of a prospective voltage of a given shape and type will cause a disruptive discharge. (PE/PSIM) 4-1995

**disruptive discharge voltage** The voltage causing the disruptive discharge for tests with direct voltage, alternating voltage, and impulse voltage chopped at or after the peak; the voltage at the instant when the disruptive discharge occurs for impulses chopped on the front. (PE/PSIM) 4-1995

(2) (A) (**surge arresters**) (fifty percent) The voltage that has a 50-percent probability of producing a disruptive discharge. *Note:* The term applies mostly to impulse tests and has significance only in cases when the loss of electric strength resulting from a disruptive discharge is temporary. (B) (**surge arresters**) (one hundred percent) The specified voltage that is to be applied to a test object in a 100-percent disruptive discharge test under specified conditions. *Note:* The term applies mostly to impulse tests and has significance only in cases when the loss of electric strength resulting from a disruptive discharge is temporary. During the test, in general, all voltage applications should cause disruptive discharge.

(Std100/PE/ELECTEC) [8], [84]

**disruptive test** A test that is invoked through a write to the TEST\_START register and disrupts the node's operation by temporarily moving the node to the testing state.

(C/MM) 1212-1991s

**dissector** *See:* image dissector.

**dissector tube** A camera tube having a continuous photocathode on which is formed a photoelectric-emission pattern that is

scanned by moving its electron optical image over an aperture. *See also:* image dissector tube. (EEC/PE) [119]

**dissipation (1) (electrical energy)** Loss of electric energy as heat. (CHM) [51]

(2) (**waveguide**) The power reduction in a transmission path caused by resistive or conductive loss, or both.

(MTT) 146-1980w

**dissipation, electrode** *See:* electrode dissipation.

**dissipation factor (1) (A)** The ratio of energy dissipated to the energy stored in an element for one cycle. (B) The loss tangent of an element. (C) The inverse of Q. *See also:* dielectric dissipation factor. (CAS) [13]

(2) (**dielectric**) The cotangent of the phase angle between a sinusoidal voltage applied across a dielectric (or combinations of dielectrics) and the resulting current through the dielectric system. (PE/PSIM) 62-1995

(3) The tangent of the dielectric loss angle. *Note:* For small values of dielectric loss angle dissipation factor is virtually equal to the insulation power factor.

(PE/TR) C57.19.03-1996

**dissipation-factor test** *See:* loss-tangent test.

**dissolved gas** Implies that the gas is dissolved in the dielectric fluid. In solution, these gases lose all semblance of gaseous matter. There are no gas bubbles in the fluid under normal circumstances, and there is little tendency for the gases to respond to gravitational forces. Dissolved gases will not accumulate at high points, and they generally do not pose any threat to the dielectric function of the fluid.

(PE/IC) 1406-1998

**dissolved gas content** The amount of gas dissolved in the fluid expressed as a percent of, or in parts-per-million relative to, the volume of the fluid, where the volume of the gas is defined as that occupied by the gas at a pressure of one atmosphere and temperature of 0°C. Dissolved gas content can refer to a specific gas, the total amount of all gases, or the total amount of combustible gases (TCG) only. (PE/IC) 1406-1998

**dissymmetrical transducer** Dissymmetrical with respect to a specified pair of terminations when the interchange of that pair of terminations will affect the transmission. *See also:* transducer. (EEC/PE) [119]

**distal stimuli (illuminating engineering)** In the physical space in front of the eye one can identify points, lines, surfaces, and three dimensional arrays of scattering particles which constitute the distal physical stimuli which form optical images on the retina. Each element of a surface or volume to which an eye is exposed subtends a solid angle at the entrance pupil. Such elements of solid angle make up the field of view and each has a specifiable luminance and chromaticity. Points and lines are specific cases which have to be dealt with in terms of total candlepower and candlepower per unit length. Distal stimuli are sometimes referred to simply as lights or colors. (EEC/IE) [126]

**distance** *See:* signal distance; hamming distance.

**distance clearance** D The minimum separation between two conductors, between conductors and supports or other objects, or between conductors and ground, or the clear space between any objects. (T&D/PE) 516-1995

**distance dialing (telephone switching systems)** The automatic establishing of toll calls by means of signals from the calling device of either a customer or an operator.

(COM) 312-1977w

**distance mark (range mark)** (on a radar display) A calibration marker used on a cathode-ray screen in determining target distance. *See also:* radar. (AES) [42]

**distance measuring equipment (DME) (navigation aid terms)** A radio aid to navigation which provides distance information by measuring total round-trip time of transmission from an interrogator to a transponder and return.

(AES/GCS) 172-1983w

**distance protection** A method of line protection in which an abnormal condition within a predetermined electrical distance of a line terminal on the protected circuit is detected by mea-