

EXHIBIT 20

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OF COMPUTER TERMS

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Compiled by
Donald Spencer

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Arabic numbers The numerals used for depicting decimal numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.

arc A portion or section of a circle or curved line.

arcade game A computer video game popularized by coin-operated machines, characterized by high-resolution color graphics, high-speed animation, and sound. Players often use joysticks to control a screen object, and the computer scores points based on the game's rules.

architecture (1) The physical structure of a computer's internal operations, including its registers, memory, instruction set, and input/output structure. (2) The special selection, design, and inter-connection of the principal components of a system.

archival Pertaining to long-term storage of data.

archival database A historical copy of a DATABASE.

archival storage (1) Refers to memory (on magnetic disks, optical discs, or magnetic tape) used to store data outside of the main memory. (2) Saving digital data for future reference.

archive (1) To copy programs and data onto an auxiliary storage medium, such as a disk or tape, for long-term retention. (2) To store data for anticipated normal long-term use. (3) A procedure for transferring image information from an online optical storage medium to an offline medium.

Arcnet A computer networking scheme.

area chart Usually, a combination of two line charts with the differences between them highlighted for emphasis.

area fill In a painting system, the process of flooding a defined area of the display screen with a specific color or pattern.

area sampling The determination of a pixel's color and intensity based upon the color and intensity of the pixels surrounding it.

area search Examination of a large group of documents to select those that pertain to one group, such as a specific category or class.

CONDUCTOR (MOS) chips that uses almost no power and works faster than MOS. Not very good for LSI, but used in electronic watches and clocks where power has to come from a battery.

completion aid A prompt that requires the user to enter information, such as a filename.

completion screen A screen that requests information from the user.

completeness check A procedure that establishes that none of a record's fields is missing and that the entire record has been checked.

complex number A number consisting of an ordered pair of real numbers, expressible in the form $a + bi$, where a and b are real numbers and i^2 equals -1 .

component (1) A basic part; an element. (2) Part of a computer system. (3) A portion of an application.

composite A type of video signal in which all three primary video color signals (red, green, blue) are combined, which limits the sharpness of the monitor image. Used in some monitors and TV sets that use only one electron gun to generate the three primary colors.

composite curve A series of curves grouped together as a single entity so that they appear to be a single curve.

composite map A single map created on a graphics system from a mosaic of individual adjacent map sheets.

composite symbol A symbol consisting of more than one character, such as the composite symbol $\langle \rangle$, which stands for "not equal to" in some software systems.

composite video The color output from a computer color display described in terms of its hue and its brightness and encoded in a single video signal. The color control signal is a single data stream that must be decoded into three colors (red, green, and blue). Inexpensive color monitors called composite monitors use composite video and produce a

dust cover A plastic cover used to protect microcomputers, disk units, terminals, printers, and so on from one of their worst enemies.

DVI Abbreviation for **digital video interactive**, a term that refers to the use of a compact disk with a drive that allows for full motion video as well as visual, audio, and text information, making it possible for a computer to store and display moving video images.

DVST Abbreviation for **direct view storage tube**, a vector CRT device in which the image is held in a storage grid in the display device.

Dvorak keyboard A keyboard arrangement designed by August Dvorak. It provides increased speed and comfort and reduces the rate of errors by placing the most frequently used letters in the center for use by the strongest fingers.

DXF Abbreviation for Drawing Interchange Format, AutoCAD's format for 2-D and 3-D drawings.

dyadic Pertaining to an operation that uses two operands.

dyadic operation Any operation on two operands.

dye-polymer recording An optical disc recording process in which dye embedded in a plastic polymer coating on an optical disc is used to create minute bumps on the surface that can be read by a laser. Dye-polymer bumps can be flattened and re-created, thus making an optical disc rewritable.

dynamic A term describing operations that are performed on the fly, while the program is running.

dynamic address translation (DAT) In virtual storage systems, the change of a virtual storage address to a real storage address during execution of an instruction.

dynamic binding The implementation consequence of inheritance and polymorphism. As an object-oriented program runs, messages are received by objects. Often the method for handling a message is stored high

in a class library. The method is located dynamically when it is needed and binding then occurs at the last possible moment.

dynamic dump A dump taken during the execution of a program. See SNAPSHOT DUMP.

dynamic graphics option A technique used in some storage tube products to combine refresh and stored information on the same display. This allows operation in the dynamic mode of the refreshed display while maintaining the advantages of the storage tube.

dynamic RAM (DRAM) The most common type of computer memory; the computer must refresh DRAM at frequent intervals. Contrast with static RAM, which is usually faster and does not require refresh circuitry.

dynamic relocation The movement of part or all of an active (currently operating) program from one region of storage to another. All necessary address references are adjusted to enable proper execution of the program to continue in its new location.

dynamic scheduling Job scheduling determined by the computer on a moment-to-moment basis, depending upon the circumstances.

Dynamic Simulation Language (DSL) A high-level programming language, suited primarily for simulation of engineering and scientific problems of a continuous nature. Because DSL facilitates the solution of ordinary differential equations that frequently are functions of time, it is particularly useful for transient analysis of dynamic systems.

dynamic storage Any memory device that must constantly be recharged or refreshed at frequent intervals to avoid loss of data; very volatile storage.

dynamic storage allocation Automatic storage allocation.

can cause misregistration, false logic, lost data, and even destruction of delicate circuits in computers, data entry terminals, and data communications equipment. These SPIKES can be a result of inductive load switching of transformers and other types of equipment—even from lightning and static. Equipment can be protected from voltage surges by using surge protectors.

line traffic The number of transmissions and the amount of data sent and received on a telecommunications line.

line turnaround A change in the direction of transmission from send to receive or from receive to send on a HALF-DUPLEX circuit.

line voltage The AC voltage that comes out of a standard wall socket.

line width The actual, physical thickness of a line in a graphics system.

line work Any noncontinuous tone image, i.e., without shades of gray or other colors. Usually black-and-white line art or diagrams, but can also include EPS art created on a computer that incorporates flat color tints (comic-book coloring).

linguistics The study of language. Syntax determines what makes a sentence of a natural language, or a program of a programming language, grammatical.

link (1) In DATA COMMUNICATIONS, a physical connection between one location and another whose function is to transmit data, including satellite links. (2) In HYPERTEXT systems, connections between one document and another.

linkage Coding that connects two separately coded routines, such as coding that links a subroutine to the program with which it is to be used.

linkage editor (1) A system program that binds together related object module program segments so that they may be run as a unit. (2) The part of an operating system that links the object code with any necessary library routines.

processing machine and converts them into signals suitable for transmission over a communications link. Contrast with DEMODULATOR.

module (1) One logical part of a program. In modular programming, a major program may be broken down into a number of logically self-contained modules. These modules may be written (and possibly tested separately) by a number of programmers. The modules can then be put together to form the complete program. (2) An interchangeable plug-in item containing components. (3) A set of logically related statements that perform a specific function.

module diagram Part of the notation of OBJECT-ORIENTED DESIGN, used to show the allocation of classes and objects to modules in the physical design of a system.

modulo A mathematical function that yields the remainder of division. For example, 25 modulo 4 equals 1. This is derived by dividing 25 by 4, which leaves a remainder of 1; this is the modulo value of the operation.

moire pattern (1) An interference pattern created when two regular dot patterns are asymmetrically superimposed. (2) An undesirable grid pattern that may occur when a bit-mapped graphic with gray fill patterns is reduced or enlarged. (3) In scanning, an objectionable pattern caused by the interference of halftone screens. Often produced when a halftone is rescanned and a second screen is applied on top of the first.

molecular modeling A sophisticated chemical engineering application using computer graphics to simulate chemical reactions in molecules.

monadic Pertaining to an operation that uses only one operand. Contrast with NILADIC.

monadic Boolean operator A Boolean operator with only one operand, such as the NOT operator.

monitor (1) The device on which images generated by a computer's video adapter are displayed. (2) A control program or supervisor.

monochrome The term applied to a monitor that displays a single color