
Software Glossary

09-Jan-97

NAME: A PROGRAMMING LANGUAGE

ACRONYM: APL

DEFINITION: A high-level, interactive scientific language noted for its brevity and matrix generation capabilities. Developed by Kenneth Iverson in the mid 1960s, it is often used to develop mathematical models. It is primarily an interpreted language but compilers are also available. [Computer Glossary]

NAME: ACCESS TIME

ACRONYM:

DEFINITION: The time required for a computer to move data between its memory section and the CPU. [SEMICON & COMP GLOSS]

NAME: ACCUMULATOR

ACRONYM:

DEFINITION: A register and related circuitry that holds an operand for arithmetic and logic operations. [SEMICON & COMP GLOSS]

NAME: ADA PROGRAMMING LANGUAGE

ACRONYM: ADA

DEFINITION: A Pascal-based comprehensive programming language developed as a standard for DoD. ADA was designed as a common language for both business applications, such as inventory control, and embedded applications, such as missile guidance systems. ADA was named after Augusta Ada Byron (1815-1852), Countess of Lovelace, and daughter of Lord Byron. She was a mathematician and colleague of Charles Babbage, who developed a stored program calculator. Some of her programming notes have survived, giving her the distinction of being the first programmer in the world. [Computer Glossary] Applicable uses of ADA used in DoD can be found in DODD 3405.1 and MIL-STD-1838A.

NAME: ADAPTATION ADJUSTMENT FACTOR

ACRONYM: AAF

DEFINITION: An intermediate quantity used to calculate Equivalent Delivered Source Instructions (EDSI). The Adaptation Adjustment Factor is calculated as follows: $AAF = 0.4(DM) + 0.3(IM)$.

NAME: ADAPTIVE MAINTENANCE

ACRONYM:

DEFINITION: Software changes necessary to accommodate change(s) in the operational or hardware environment. Includes changes to implement new system interface requirements, new system requirements (i.e., changes to the system requirements specification), or new hardware requirements. [MIL-HDBK-347]

NAME: ADDRESS

ACRONYM:

DEFINITION: Specifies the location of a word, data, or instruction in memory. [MCCR MGT GUIDE]

NAME: AIRCRAFT INTERNAL TIME DIV CMD/RES MULT D BUS

ACRONYM: MILSTD1553B

DEFINITION: Establishes requirements for digital, command/response, time-division multiplexing (data bus) techniques on aircraft that encompass the data bus line and its interface electronics. It defines the concept of operations and information flow on the multiplex data bus and the electrical and functional formats to be employed. When stated in a specification or Statement of Work, the requirements apply to the multiplex data bus and associated equipment which is developed either alone or as a portion of an aircraft weapon system or subsystem development. The contractor is responsible for stating all the applicable requirements of this standard on any and all subcontracts he/she may employ. [MIL-STD-1553B]

NAME: AIS LCM PROCESS, REVIEW, AND MS APPROVAL PROCED

ACRONYM: DODI8120.2

DEFINITION: Replaces DODI 7920.2, "Automated Information System Life-Cycle Management Review and Milestone Approval Procedures." Authorizes the publication of DODD 8120.2, "Automated Information System Life-Cycle Management Manual," to update uniform procedures for conducting AIS LCM activities and provide guidelines for preparing AIS LCM documentation. It requires submission of Quarterly Major AIS Status Reports. Establishes procedures for the LCM review and milestone approval for AIS programs. [DODD 8120.2]

NAME: ALGORITHMIC LANGUAGE

ACRONYM: ALGOL

DEFINITION: A high-level compiler language that was developed as an international language for expressing algorithms between people as well as between people and machines. Introduced in the early 1960s, ALGOL achieved more acceptance in Europe than in the U.S. [Computer Glossary]

NAME: ALLOCATED BASELINE

ACRONYM:

DEFINITION: The initial, approved specifications governing the development of configuration items that are part of a higher level configuration item. Each specification defines the functional characteristics that are allocated from those of the higher level configuration item, establishes the tests required to demonstrate achievement of its allocated functional characteristics, delineates necessary interface requirements with other associated configuration items, and establishes design constraints. [IEEE STD GLOSSARY]

NAME: AMERICAN NATIONAL STANDARDS INSTITUTE

ACRONYM: ANSI

DEFINITION: A non-profit, privately-funded membership organization founded in 1918, that coordinates the development of U.S. national standards in both the private and public sectors. It is the U.S. member to the International Standards Organization (ISO) and the International Electrotechnical Commission (IEC). Information technology standards pertain to the analysis control and distribution of information, which includes programming languages, electronic data interchange, telecommunications, and physical properties of diskettes, cartridges, magnetic tapes, etc. [Computer Glossary]

NAME: AMERICAN STANDARD CODE INFORMATION INTERCHANGE

ACRONYM: ASCII

DEFINITION: A binary code for data that is used in communications for most minicomputers and all PCs. ASCII is a 7-bit code providing 128 possible character combinations; the first 32 are used for printing and transmission control. Since the common storage unit is an 8-bit byte (256 combinations) the extra bit is used to hold a parity bit or special symbols. [Computer Glossary]

NAME: ANALOG

ACRONYM:

DEFINITION: A representation of an object that resembles the original. Analog devices monitor conditions, such as movement, temperature, and sound, and convert them into analogous electronic or mechanical patterns. For example, an analog watch represents the planet's rotation with the rotating hands on the watch face. Analog implies continuous operations, in contrast with digital, which is broken up into numbers. Once continuously varying analog signals are measured and converted into digital form, they can be stored and transmitted without loss of integrity due to the inherent accuracy of digital methods. [Computer Glossary]

NAME: ANALOG COMPUTER

ACRONYM:

DEFINITION: A computer that accepts and processes infinitely varying signals, such as voltage fluctuations or frequencies. For example, a thermostat is the simplest analog computer. A continuously varying change in temperature causes a metal bar to bend correspondingly. Although complex analog computers are built for special purposes, most computers are digital. [Computer Glossary]

NAME: ANALOG-TO-DIGITAL CONVERTER

ACRONYM: ADC

DEFINITION: A device that converts the continuously varying analog signal from instruments that monitor such conditions as movement, temperature, and sound into a binary-coded form for the computer. A/D converters may be contained on a chip or part of a circuit with a chip. [Computer Glossary]

NAME: AND GATE

ACRONYM:

DEFINITION: A digital logic circuit that produces a logic "1" output only when all its inputs are "1." It will produce a logic "0" output if any one of its inputs is "0." [SEMICON & COMP GLOSS]

NAME: APPLICATION GENERATOR

ACRONYM:

DEFINITION: Software that generates application programs from a description of the problem rather than from detailed programming. It is one level higher than high-level programming languages, but still requires the user to enter mathematical or algorithmic expressions to describe complex functions. [Computer Glossary]

NAME: APPLICATION SOFTWARE

ACRONYM:

DEFINITION: Software specially produced for the functional use of a computer system; e.g., target tracking, fire control, weapon assignment, navigation, and mission resources management. Software that implements the operational capabilities of a system. [DOD 5000.4-M]

NAME: ARCHITECTURE

ACRONYM:

DEFINITION: Organizational structure of a computer system, mainly referring to the CPU or microprocessor. [SEMICON & COMP GLOSS]

NAME: ARITHMETIC LOGIC UNIT

ACRONYM: ALU

DEFINITION: The part of a CPU that executes adds, subtracts, "AND" logic operations, "OR" logic operations, etc. [SEMICON & COMP GLOSS]

NAME: ARTIFICIAL INTELLIGENCE

ACRONYM: AI

DEFINITION: A broad range of applications that exhibit human intelligence and behavior including robots, expert systems, voice recognition, and natural and foreign language processing. It also implies the ability to learn or adapt through experience. AI was defined in the 1940s by the English scientist, Alan Turing, who said, "A machine has artificial intelligence when there is no discernible difference between the conversation generated by the machine and that of an intelligent person." [Computer Glossary]

NAME: ASSEMBLER

ACRONYM:

DEFINITION: A computer program that translates Assembly language instructions into machine language. Typically, one Assembly language instruction is translated into one corresponding machine language instruction. Both the Assembly and machine languages are unique to a particular computer. [MCCR MGT GUIDE]

NAME: ASSEMBLY LANGUAGE

ACRONYM:

DEFINITION: A programming language that allows the use of abbreviated names (mnemonics) for machine language instructions and operands in place of binary ("0s" or "1s") machine codes. [Computer Glossary]

NAME: ASYNCHRONOUS TRANSFER MODE

ACRONYM: ATM

DEFINITION: High-speed, cell-switching network technology for Local Area Networks (LANs) and Wide Area Networks (WANs) that handles data and real-time voice and video. It carries data packets in a 53-byte standard size at a minimum speed of 51 megabits per second. ATM is sometimes called fast-packet switching. [GOVT COMP NEWS 2/95]

NAME: AUTOMATED DATA PROCESSING

ACRONYM: ADP

DEFINITION: Synonymous with data processing, electronic data processing, and information processing. [Computer Glossary]

NAME: AUTOMATED INFORMATION SYSTEM

ACRONYM: AIS

DEFINITION: A combination of information, computer and telecommunications resources, and other information technology, and personnel resources which collects, records, processes, stores, communicates, retrieves, and displays information. [DOD-STD-7935A]

NAME: AUTOMATION

ACRONYM:

DEFINITION: The replacement of manual operations by computerized methods. Office automation refers to the integration of clerical tasks, such as typing, filing, and appointment scheduling. Factory automation refers to computer-driven assembly lines and warehouses. [Computer Glossary]

NAME: BACK-END PROCESSOR

ACRONYM:

DEFINITION: A specially designed computer for database access that is coupled to the main computer by a high-speed channel (in contrast with a database server, which is used on a LAN). The back-end processor or database machine is lightly coupled to the main CPU, whereas the database server is loosely coupled in the network. [Computer Glossary]

NAME: BACKBONE

ACRONYM:

DEFINITION: In communications, the part of a network that handles the major traffic. [GOVT COMP NEWS 2/95]

NAME: BACKPLANE

ACRONYM:

DEFINITION: Area of a computer or other equipment where various logic and control elements are interconnected. It often takes the form of a rat's nest of wires interconnecting printed circuit cards in the back of computer racks or cabinets. [SEMICON & COMP GLOSS]

NAME: BASELINE

ACRONYM:

DEFINITION: A configuration identification document or a set of documents formally designated by the Government at a specific time during the configuration identification (CI) life cycle. Baselines, plus approved changes from those baselines, constitute the current CI. In configuration management, there are three baselines: functional baseline, allocated baseline, and product baseline. [DOD-STD-480B]

NAME: BATCH PROCESSING

ACRONYM:

DEFINITION: The processing of a group of transactions at one time. Transactions are collected and processed against the master file at the end of the day or some other time period. Information systems typically use both batch and transaction processing methods. [Computer Glossary]

NAME: BAUD

ACRONYM:

DEFINITION: A communication measure of serial data transmissions. Essentially, it is the number of bits transmitted per second, including the "start" and "stop" bits. [SEMICON & COMP GLOSS]

NAME: BEGINNERS ALL PURPOSE SYMBOLIC INSTRUCTION CODE

ACRONYM: BASIC

DEFINITION: A programming language developed by John Kemeny and Thomas Kurtz in the mid 1960s at Dartmouth College. Originally developed as an interactive, time-sharing language for mainframe computers, BASIC has become widely used on all sizes of computers, including pocket calculators. BASIC is available in both compiler and interpreter form. A very popular language for the casual user and first-time programmer, BASIC is one of the easiest programming languages to learn. [Computer Glossary]

NAME: BENCHMARK

ACRONYM:

DEFINITION: A sample program used to evaluate and compare computers. In general, two computers will not use the same number of instructions, memory, words, or cycles to solve the same problem. [SEMICON & COMP GLOSS]

NAME: BINARY

ACRONYM:

DEFINITION: A numbering system consisting of only two digits either "0" or "1" (in contrast with ten digits, 0 to 9, of the decimal system). In electronics, "binary," "two-state," and "digital" are synonymous. [SEMICON & COMP GLOSS]

NAME: BIT

ACRONYM:

DEFINITION: A binary digit whose value is either a "1" or "0." A byte is eight bits. [MCCR MGT GUIDE]

NAME: BREAK-EVEN POINT

ACRONYM: BP

DEFINITION: The point in time when the savings equal the investments made with all savings and investment costs expressed in terms of inflated or Then-Year dollars. [MIL HDBK SRAH]

NAME: BUG

ACRONYM:

DEFINITION: A persistent error in software or hardware. If the bug is in the software, it can be corrected by changing the program. If the bug is in the hardware, new circuits have to be designed. The term was coined in the 1940s, when a moth was found squashed between the points of an electromechanical relay in the MARK I computer (in contrast with glitch, which is any temporary or random malfunction in hardware). [Computer Glossary]

NAME: BUS

ACRONYM:

DEFINITION: A group of wires that allows memory, CPU, and Input/Output devices to exchange words. [SEMICON & COMP GLOSS]

NAME: C PROGRAMMING LANGUAGE

ACRONYM: C

DEFINITION: A high-level programming language developed at Bell Laboratories that manipulates the computer at a low level like Assembly language. During the 1980s, C became the language of choice for commercial software. C can be compiled into machine language for almost all computers (e.g., UNIX in C can be run on micro, mini, and mainframe computers). [Computer Glossary]

NAME: C++ PROGRAMMING LANGUAGE

ACRONYM: C++

DEFINITION: An object-oriented version of C created by Bjarne Stroustrup combining traditional C programming with object-oriented capability. [Computer Glossary]

NAME: CACHE

ACRONYM:

DEFINITION: A reserved section of memory used to improve performance. A disk cache is a reserved section of normal memory or additional memory on the disk controller board. When the disk is read, a large block of data is copied into the cache. Memory caches are high-speed banks between memory and the CPU. Blocks of instruction and data are copied into the cache, and instruction execution and data updates are performed in high-speed memory. [Computer Glossary]

NAME: CAPABILITY MATURITY MODEL

ACRONYM: CMM

DEFINITION: The Software Engineering Institute's (SEI) CMM is used to improve an organization's software engineering processes by setting goals to achieve higher SEI levels. The five CMM levels of software process are (1) Initial, (2) Repeatable, (3) Defined, (4) Managed, and (5) Optimizing. [CrossTalk 11/94]

NAME: CENTER FOR INFORMATION MANAGEMENT

ACRONYM: CIM

DEFINITION: Part of the Defense Information Systems Agency (DISA) responsible for DoD information systems. CIM also stands for Corporate Information Management and is the responsibility of DISA. The goal of CIM is to achieve savings by improving the efficiency of DoD business processes. [DODD 8120.1]

NAME: CENTRAL PROCESSING UNIT

ACRONYM: CPU

DEFINITION: The computing part of the computer. A single microprocessor contains the entire CPU of a personal computer. A minicomputer CPU contains one or several printed circuit boards. A mainframe CPU contains many PCBs. The CPU clock and main memory make up a computer. A complete computer system requires additional controller units, input, output, and storage devices, and an operating system. [Computer Glossary]

NAME: CENTRALIZED PROCESSING

ACRONYM:

DEFINITION: Processing performed in one or more computers in a single, centralized location. It implies that all terminals throughout the organization are connected to the computer in the data center (in contrast with distributed processing and decentralized processing). [Computer Glossary]

NAME: CHARGED-COUPLED DEVICE

ACRONYM: CCD

DEFINITION: A semiconductor storage device in which an electrical charge is moved across the surface of a semiconductor by electrical control signals. Zeros and ones are represented by the absence or presence of a charge. [SEMICON & COMP GLOSS]

NAME: CHIP

ACRONYM:

DEFINITION: A very small piece of semiconductor material, normally silicon and typically less than 1/4-inch square and 1/100-inch thick, on which electronic components are formed. Integrated circuits are formed on chips. [SEMICON & COMP GLOSS]

NAME: CLEANROOM

ACRONYM:

DEFINITION: The cleanroom technique attempts to keep contaminants (software bugs) out of the product. The idea is to control cost by detecting bugs as early as possible when they are less costly to remove. Rather than using natural languages like English, more formal notations are used to produce specifications on which all software design and requirements validation is based. Off-line review techniques are used to develop understanding of the software before it is executed. [CrossTalk 1/95]

NAME: CLIENT/SERVER ARCHITECTURE

ACRONYM:

DEFINITION: A system in which application processing is shared between the "client" and one or more network-attached "servers." An example of this application would be America-On-Line (AOL), which sends commands (i.e., client) to other computers in the network (i.e., servers) for information.

NAME: CLOCK

ACRONYM:

DEFINITION: An electronic circuit that generates timing pulses to synchronize the operation of a computer. [SEMICON & COMP GLOSS]

NAME: CM PRACTICES FOR SYS, EQUIP, MUNITION & COMP PRG

ACRONYM: MIL-STD-483A

DEFINITION: Sets the requirements for the Configuration Management program.

NAME: CODE AND UNIT TEST

ACRONYM: CUT

DEFINITION: Code and Unit Testing (CUT) begins after the Detailed Design Phase. Coding is converting the detailed design into a programming language. Program source and object code are created. Each unit (less than or equal to 100 source instructions) is verified for completeness, consistency, and traceability to requirements and system design specifications. By the end of the CUT phase, acceptance test plans are approved. [Boehm]

NAME: CODE WALK-THROUGH

ACRONYM:

DEFINITION: A step-by-step, detailed examination of source code by a small group of qualified personnel. Sometimes referred to as a "peer review." [Computer Glossary]

NAME: COMMERCIAL-OFF-THE-SHELF

ACRONYM: COTS

DEFINITION: COTS refers to products that are commercially packaged and available for sale to the general public. [Computer Glossary]

NAME: COMMON BUSINESS ORIENTED LANGUAGE

ACRONYM: COBOL

DEFINITION: A high-level, business programming language that has been the primary business application language on mainframes and minis. It is increasingly being adapted to PCs. COBOL is a compiler language and was one of the first high-level languages developed in the 1960s. It was developed from a language called Flowmatic in the mid 1950s. COBOL requires more writing than other languages, but is more readable as a result. [Computer Glossary]

NAME: COMPACT DISC READ ONLY MEMORY

ACRONYM: CDROM

DEFINITION: A compact disc format that is used to hold text, graphics, and hi-fi stereo sounds. The disc is almost the same as a music CD, but uses different tracks for data. The music CD ROM can not play a CD ROM disc, but a CD ROM player may be able to play a CD disc and have jacks for connections to an amplifier or headphone. CD ROMs hold in excess of 600 MB of data which is equivalent to about 250,000 pages of text or 20,000 medium resolution images. Audio and data reside on separate tracks and can not be heard and viewed together. [Computer Glossary]

NAME: COMPILER

ACRONYM:

DEFINITION: A software program that translates a high-level programming language, such as C or COBOL into machine language so the program will run on the computer. A compiler usually generates Assembly language first, and then translates the Assembly language into machine language. [Computer Glossary] A computer program which translates an HOL into machine language. The HOL statements are called source code, and the output of the compiler is called object code. [MCCR MGT GUIDE]

NAME: COMPLEX INSTRUCTION SET COMPUTER

ACRONYM: CISC

DEFINITION: Computers that have large sets of instructions. CISC machines have from two to three hundred instructions, which are built into the microcode. [Computer Glossary]

NAME: COMPUTER HARDWARE

ACRONYM:

DEFINITION: Devices capable of accepting and storing computer data, executing a systematic sequence of operations on computer data, or producing control outputs. Such devices can perform substantial interpretation, computation, communication, control, or other logical functions. [DOD-STD-2167A]

NAME: COMPUTER RESOURCES

ACRONYM:

DEFINITION: The totality of computer hardware, software, personnel, documentation, supplies, and services applied to a given effort. [DOD-STD-2167A]

NAME: COMPUTER SOFTWARE

ACRONYM:

DEFINITION: A combination of associated computer instructions and computer data definitions required to enable the computer to perform computational or control functions. [DOD-STD-2167A]

NAME: COMPUTER SOFTWARE COMPONENT

ACRONYM: CSC

DEFINITION: A distinct part or subset of a computer software configuration item (CSCI). CSCs may be further decomposed into other CSCs and computer software units (CSUs). [DOD-STD-2167A]

NAME: COMPUTER SOFTWARE CONFIGURATION ITEM

ACRONYM: CSCI

DEFINITION: An aggregation of software that satisfies an end-use function and is designated for separate configuration management by the acquirer. CSCIs are selected based on tradeoffs among software function, size, host or target computers, developer, support concept, plans for reuse, criticality, interface considerations, need to be separately documented and controlled, and other factors. [MIL-STD-498]

NAME: COMPUTER SOFTWARE UNIT

ACRONYM: CSU

DEFINITION: An element specified in the design of a Computer Software Component (CSC) that is separately testable. Normally, a subset of a CSC and equal to or less than 100 source instructions. [DOD-STD-2167A]

NAME: COMPUTER SYSTEM

ACRONYM:

DEFINITION: A computer system consists of (1) a CPU, which processes the 3 Cs (calculating, comparing and copying); (2) Peripherals, which store and retrieve information; and (3) an Operating system, which manages the computer system. Computer systems include microcomputers (PCs), minicomputers, and mainframes. [Computer Glossary]

NAME: COMPUTER-AIDED DESIGN/COMPUTER-AIDED MANUFACTURING

ACRONYM: CAD/CAM

DEFINITION: The integration of computer-aided design with computer-controlled manufacturing. It implies that the produced design in the CAD System is a direct input into the CAM System. For example, after a machine part is designed in CAD, its electronic image is transferred to a numerical control programming language, which generates the instruction to control the machine that makes the part. [Computer Glossary]

NAME: COMPUTER-AIDED SOFTWARE (SYSTEM) ENGINEERING

ACRONYM: CASE

DEFINITION: Software that is used in any and all phases of developing an information system. It includes analysis, design, and programming (e.g., data and diagramming tools used in the analysis and design phases). While application generators speed up the programming phase, CASE tools provide automation methods for design and documentation of traditional structures and programming techniques. The ultimate goal of CASE is to provide a language for describing the overall system that is sufficient to generate all the necessary programming. [Computer Glossary] Computer-aided software engineering is the use of computer-based support in the software development process. [SEI 93]

NAME: CONCEPT DEVELOPMENT PHASE

ACRONYM:

DEFINITION: The phase that synthesizes (or solicits) and evaluates alternative methods to accomplish the function documented in the approved Mission Needs Statement or the project request for Major Automated Information Systems. [DOD-STD-7935A]

NAME: CONFIGURATION

ACRONYM:

DEFINITION: The functional or physical characteristics of hardware/software as set forth in technical documentation and achieved in a product. [DOD-STD-430B]

NAME: CONFIGURATION CONTROL-ENGINEERING CHANGES,
DEVIATION & WAI

ACRONYM: DOD-STD-480

DEFINITION: Sets standards and policy for Configuration Control, Engineering changes, Deviations, and Waivers.

NAME: CONFIGURATION MANAGEMENT

ACRONYM: CM

DEFINITION: A discipline applying technical and administrative direction and surveillance to (a) identify and document the functional and physical characteristics of a configuration item; (b) control changes to those characteristics; and (c) record and report change processing and implementation status. [MIL-STD-481A]

NAME: CONSTANT-YEAR DOLLARS

ACRONYM:

DEFINITION: All prior, current, and future costs that reflect the level of prices of the base year. Use of Constant-Year dollars removes the effect of inflation from the cost. [MIL HDBK SRAH]

NAME: CONVERSATIONAL MONITOR SYSTEM

ACRONYM: CMS

DEFINITION: Software that provides interactive communication for IBM's virtual machine operating systems. It allows users or programmers to launch an application from a terminal and interactively work with it. [Computer Glossary]

NAME: CONVERSION

ACRONYM:

DEFINITION: The process of changing existing software to operate with similar functional capabilities in a different environment; e.g., converting a program from FORTRAN to ADA, or converting a program that runs on one computer to run on another computer. [DOD-HDBK-287]

NAME: CORPORATE INFORMATION MANAGEMENT

ACRONYM: CIM

DEFINITION: A major strategic initiative supporting the goal of improving the efficiency of DoD business processes. [DOD 8120.1]

NAME: CORRECTIVE MAINTENANCE

ACRONYM:

DEFINITION: A subcategory of software repair. It corrects processing, performance, or implementation failures, such as emergency repairs, latent errors, and corrective coding. [Boehm]

NAME: COST ANALYSIS GUIDANCE AND PROCEDURES

ACRONYM: DOD5000.4-M

DEFINITION: Provides guidance for preparing and updating a Cost Analysis Requirements Description (CARD). [DOD 5000.4-M]

NAME: COST ANALYSIS REQUIREMENTS DESCRIPTION

ACRONYM: CARD

DEFINITION: DODI 5000.2 and DOD 5000.2-M require that both a program office estimate and a DoD Component Cost Analysis estimate be prepared in support of acquisition milestone reviews. DOD 5000.2-M specifies that the DoD Component sponsoring an acquisition program establish, as a basis for cost estimating, a description of the salient features of the program and of the system being acquired. This information is presented in the CARD. [DOD 5000.4-M]

NAME: COST ELEMENT STRUCTURE

ACRONYM: CES

DEFINITION: The software product-oriented tree structure to which all life cycle cost accounts may be assigned; similar to a work breakdown structure (WBS). [MIL HDBK SRAH]

NAME: CRITICAL DESIGN REVIEW

ACRONYM: CDR

DEFINITION: The review conducted for each configuration item when detailed design is essentially complete to (1) determine if the detailed design of the configuration item under review satisfies the performance and engineering specialty requirements of the HWCI development specifications; (2) establish detailed design compatibility among the CI and the other items of equipment, facilities, computer software and personnel; (3) assess configuration item risk areas (on a technical, cost, and schedule basis); (4) assess the results of the producibility analysis conducted on system hardware; and (5) review the preliminary hardware specifications. For CSCIs, this review will focus on determining the acceptability of the detailed design, performance, and test characteristics of the design solution, and the adequacy of the operation and support documents. [MIL-STD-1521B]

NAME: CYCLE TIME

ACRONYM:

DEFINITION: Time interval at which any set of operations is repeated regularly in the same sequence. [SEMICON & COMP GLOSS]

NAME: DATA

ACRONYM:

DEFINITION: The means for communicating concepts, plans, descriptions, requirements, and instructions relating to technical projects, material, systems, and services. These may include specifications, standards, engineering drawings, associated lists, manuals, and reports, including scientific and technical reports. They may be in the form of documents, displays, sound records, punched cards, and digital or analog data. [MIL-STD-481A]

NAME: DATA ITEM DESCRIPTIONS

ACRONYM: DID

DEFINITION: DIDs are data requirements. DIDs must be listed on the Contract Data Requirements List (DD Form 1423), when the MIL-STD-498 standard is applied on a contract to obtain data, except where DOD FAR Supplement 227.405-70 exempts the requirement for a DD Form 1423. [MIL-STD-498]

NAME: DATA WORD

ACRONYM:

DEFINITION: A computer word that contains or represents the data to be manipulated. Typically more than one byte. [SEMICON & COMP GLOSS]

NAME: DATABASE

ACRONYM: DB

DEFINITION: A collection of related data stored in one or more computerized files in a manner that can be accessed by users or computer programs via a database management system. [MIL-STD-498] A collection of data fundamental to an enterprise usually with a supporting database management system (in contrast with a data bank). [DOD-STD-7935A]

NAME: DATABASE MANAGEMENT SYSTEM

ACRONYM: DMS

DEFINITION: An integrated set of computer programs that provide the capabilities needed to establish, modify, make available, and maintain the integrity of a database. [MIL-STD-498]

NAME: DBASE

ACRONYM: DBASE

DEFINITION: A relational database management system for PCs developed by the Ashton-Tate Corporation. It was the first comprehensive database system for personal computers. Originally named VULCAN, dBASE was created by Wayne Ratliff to manage a company football pool. dBASE provides PASCAL-like interpreter programming language and fourth generation commands for interactive use. [Computer Glossary]

NAME: DEBUG PROGRAM

ACRONYM: DEBUGGER

DEFINITION: A program that aids in debugging a program. It provides ways of stopping the program or capturing various system data at prescribed times. The debugger may be able to jump directly to the line in the source program that created the problem. [Computer Glossary]

NAME: DEBUGGING

ACRONYM: DEBUG

DEFINITION: The process of locating and eliminating errors that exist in a computer program. [MCCR MGT GUIDE]

NAME: DECENTRALIZED PROCESSING

ACRONYM:

DEFINITION: Computer systems in different locations. Although data may be transmitted between the computer periodically, it implies limited daily communications. [Computer Glossary]

NAME: DEFENSE ACQUISITION MGT POLICIES & PROCEDURES

ACRONYM: DODI5000.2

DEFINITION: Describes uniform procedures governing major defense acquisition programs and establishes specific requirements and responsibilities for acquiring major defense acquisition programs requiring decision authority by the Secretary of Defense. [DODI 5000.2]

NAME: DEFENSE INFORMATION SYSTEMS AGENCY

ACRONYM: DISA

DEFINITION: DISA was formerly the Defense Communication Agency (DCA). DISA is responsible for information and world-wide communications systems for DoD and other Federal Agencies.

NAME: DEFENSE SYSTEM SOFTWARE DEVELOPMENT

ACRONYM: DOD-STD-2167

DEFINITION: Establishes requirements to be applied during the acquisition, development, or support of software systems. It also establishes uniform requirements for software development that are applicable throughout the system life cycle and provides the basis for government insight into a contractor's software development, testing, and evaluation efforts. The standard applies to the development of Computer Software Configuration Items (CSCIs) to the extent specified in the contract clauses, the Statement of Work, and the Contract Data Requirements List (CDRL). [DOD-STD-2167A]

NAME: DEFENSE SYSTEM SOFTWARE DEVELOPMENT HANDBOOK

ACRONYM: DOD-HB-287

DEFINITION: Provides guidance to government program managers and other program office staff responsible for tailoring DOD-STD-2167A for a software development or support contract. It explains key concepts, presents tailoring considerations, and describes how to tailor the standard and its associated Data Item Descriptions. This handbook may be used in preparing, negotiating, or modifying any software development or support contract that imposes DOD-STD-2167A. [MIL-HDBK-287]

NAME: DEFENSE SYSTEM SOFTWARE QUALITY PROGRAM

ACRONYM: DOD-STD-2168

DEFINITION: Establishes requirements for a software quality program to be applied during the acquisition, development, and support of software systems. It includes requirements for the development, documentation, and implementation of a software quality program, including planning for and conducting evaluations of the quality of software, associated documentation, and related activities, and planning for and conducting the follow-up activities necessary to assure timely and effective resolution of problems. [DOD-STD-2168]

NAME: DELIVERED SOURCE INSTRUCTIONS

ACRONYM: DSI

DEFINITION: A cost driver on a project. The term "delivered" excludes nondelivered support software, such as test drivers. Source instructions include all program instructions created by project personnel and processed into machine code by some combination of preprocessors, compilers, and assemblers. It also excludes comments and unmodified utility software. It includes job control language (JCL), format statements, and data declarations. Instructions are defined as lines of code or card images. Thus, a line containing two or more source statements counts as one instruction; a five-line data declaration counts as five instructions. [Boehm]

NAME: DESIGN WALK-THROUGHS

ACRONYM:

DEFINITION: A walk-through of each major function or object with other developers and the requirements definition team. On small projects (e.g., simulators), conduct one walk-through per subsystem. On systems of 150 KSLOC or more, hold two walk-throughs per subsystem: one in the early stages of detailed design and one later in the phase. [SEL-81-305]

NAME: DETAILED DESIGN

ACRONYM:

DEFINITION: The phase that produces a complete design specification that will satisfy all requirements for the system and that can be directly implemented in code. The detailed design process begins following PDR and is an extension of the activities begun during the preliminary design. The primary product of the phase is the detailed design document, which contains the design diagrams, prologs, and program design language (PDL) for the software system. During this phase, the development team conducts walk-throughs of the design for the requirements definition team and subjects each design specification to peer inspections. [SEL-81-305]

NAME: DIGITAL DEVICE

ACRONYM:

DEFINITION: An electronic device that processes electrical signals that have only two states, such as "on" or "off," "high" or "low" voltages, or "positive" or "negative" voltages. In electronics, "digital" normally means binary or two-state. [SEMICON & COMP GLOSS]

NAME: DIGITAL SIGNAL PROCESSING

ACRONYM: DSP

DEFINITION: A category or technique that analyzes signals from a wide range of sources, such as voice, into digital data and analyzes it using various algorithms, such as the Fast Fourier Transformation. Once the signal has been reduced to numbers, its components can be isolated and analyzed more readily than in analog form. DSP is used in such fields as biomedicine, sonar, radar, and speech and data communication. [Computer Glossary]

NAME: DIGITAL-TO-ANALOG CONVERTER

ACRONYM: DAC

DEFINITION: A unit or device that converts a digital signal into a voltage or current whose magnitude is proportional to the numeric value of the digital signal. [SEMICON & COMP GLOSS]

NAME: DIRECT ACCESS STORAGE DEVICE

ACRONYM: DASD

DEFINITION: Any peripheral device that is directly addressable, such as a disk or drum. [Computer Glossary]

NAME: DIRECT MEMORY ACCESS

ACRONYM: DMA

DEFINITION: A mechanism that allows an input/output device to take control of the CPU for one or more memory cycles to write into memory or read from memory. The order of executing the program steps (instructions) remains unchanged. [SEMICON & COMP GLOSS]

NAME: DISTRIBUTED PROCESSING

ACRONYM:

DEFINITION: A system of computers connected together by a communications network. The term is loosely used to refer to any computers with communications between them. However, in true distributed processing, each computer system is chosen to handle its local workload, and the network has been designed to support the system as a whole. [Computer Glossary]

NAME: DOCUMENTATION PROCESS MATURITY MODEL

ACRONYM: DPMM

DEFINITION: Provides the basis for an assessment of the current documentation process. The four levels are (1) Ad-hoc, (2) Inconsistent, (3) Defined, and (4) Controlled. A solution to the problem of poor quality, outdated, or missing documentation is to improve the documentation process.

NAME: DOD AUTOMATED INFO SYS (AIS) DOCUMENTATION STD

ACRONYM: DOD-STD-7935

DEFINITION: Provides guidelines for the development and revision of the documentation for an automated information system (AIS) or applications software and specifies the content of each of the 11 types of documents that may be produced during the life cycle of an AIS. [DOD-STD-7935A]

NAME: DUMB TERMINAL

ACRONYM:

DEFINITION: A display terminal without processing capability. It is entirely dependent on the main computer for processing (in contrast with "smart" terminal and "intelligent" terminal). [Computer Glossary]

NAME: ELECTRICALLY-ALTERABLE ROM

ACRONYM: EAROM

DEFINITION: A Read-Only-Memory (ROM) that can be erased and reprogrammed any number of times. [SEMICON & COMP GLOSS]

NAME: ELECTRONIC MAIL

ACRONYM: E-MAIL

DEFINITION: A system for sending messages between people via a computer; messages sent between people using an electronic mail system. [UNIX, STRONG/ HOSLER]

NAME: EMBEDDED COMPUTER SYSTEM

ACRONYM: ECS

DEFINITION: A computer system that is integral to an electro-mechanical system such as a combat weapon tactical system, ship, missile, spacecraft, certain command and control systems, or civilian systems, such as a rapid transit systems. Different than automated data processing systems (ADPS) primarily in how they are developed, acquired, and operated. The key attributes are (1) it is physically incorporated into a larger system whose primary function is not data processing; and (2) its output generally includes information, computer control signals, and computer data.

NAME: EMBEDDED MODE

ACRONYM:

DEFINITION: A type of software project that operates within tight constraints. The software product must operate within a strongly-coupled complex of hardware, software, regulations, and operational procedures, such as an electronic funds transfer system or an air traffic control system. [Boehm]

NAME: EMULATOR

ACRONYM:

DEFINITION: A combination of computer programs and computer hardware that mimics the instructions and execution speed of another computer or system. [MCCR MGT GUIDE]

NAME: EQUIVALENT DELIVERED SOURCE INSTRUCTIONS

ACRONYM: EDSI

DEFINITION: Calculated from the following estimated adaptation quantities: (1) Adapted DSI (ADSI), the number of delivered source instructions adapted from existing software to form the new product; (2) Percent Design Modified (DM), the percentage of the software's design which is modified to adapt it to the new objectives and environment; (3) Percent of Code Modified (CM); and (4) Percent of Integration Required for Modified Software (IM). The equations for calculating EDSI involve an intermediate quantity, the adaptation adjustment factor (AAF). The calculation of EDSI is as follows: $EDSI = (ADSI) * (AAF/100)$. See the definition for AAF to calculate the Adaptation Adjustment Factor. [Boehm]

NAME: ETHERNET

ACRONYM:

DEFINITION: A LAN developed by XEROX, Digital, and Intel that interconnects personal computers via coaxial cable. It transmits at 10 megabits per second. Ethernet can connect up to 1,024 PCs and workstations together and has evolved into the IEEE 802.3 Standard. [Computer Glossary]

NAME: EXECUTABLE

ACRONYM:

DEFINITION: The process where a computer interprets an instruction and performs the operation specified by that instruction. [SEMICON & COMP GLOSS]

NAME: EXPERT SYSTEM

ACRONYM:

DEFINITION: Systems that utilize artificial intelligence (AI) to perform their functions. [MCCR MGT GUIDE]

NAME: EXTENDED BINARY-CODED DECIMAL INTERCHANGE CODE

ACRONYM: EBCDIC

DEFINITION: A binary code for representing data developed by IBM for its 360 series computers in 1964. It is built into all IBM mainframes and most minicomputers. It is an 8-bit code, allowing 256 possible character combinations, that stores one alphanumeric character or two decimal digits within a single byte. EBCDIC and ASCII are the two codes most widely used to represent data. [Computer Glossary]

NAME: EXTENDED INDUSTRY STANDARD ARCHITECTURE

ACRONYM: EISA

DEFINITION: A bus standard for PCs that extends the AT bus architecture to 32 bits and allows more than one CPU to share the bus. EISA was announced in 1988 as a counter to IBM's Microchannel. Existing PC and AT boards which cannot plug into the microchannel can plug into the EISA slot. [Computer Glossary]

NAME: EXTERNAL INPUT

ACRONYM:

DEFINITION: A function point type. A user-defined process of data or control information that comes from outside the application boundary; the data maintains one or more Internal Logical Files. [IFPUG 94]

NAME: EXTERNAL INQUIRY

ACRONYM:

DEFINITION: A function point type. A user-defined process made of an input/output combination that results in data retrieval; contains no derived data. [IFPUG 94]

NAME: EXTERNAL INTERFACE FILE

ACRONYM:

DEFINITION: A function point type. A user-defined group of logically related data or control information referenced by the application, but maintained outside the application boundary. [IFPUG 94]

NAME: EXTERNAL OUTPUT

ACRONYM:

DEFINITION: A function point type. A user-defined process that sends data or control information outside the application boundary. [IFPUG 94]

NAME: FEATURE POINT

ACRONYM:

DEFINITION: A variant of the function point metric. Includes a count of algorithms. Used for computation-intensive (embedded) software. [SPC]

NAME: FETCH

ACRONYM:

DEFINITION: Reading an instruction from a particular memory location into the CPU. [SEMICON & COMP GLOSS]

NAME: FIBER OPTIC DATA DISTRIBUTION INTERFACE

ACRONYM: FDDI

DEFINITION: A set of ANSI standards for fiber optic local area networks. It transmits at 100 megabits per second. At this speed, high-resolution graphics can be quickly transmitted and digital video can be handled in real time. [Computer Glossary]

NAME: FIRMWARE

ACRONYM:

DEFINITION: The combination of a hardware device and computer instructions or computer data that resides as read-only software on the hardware device. [MIL-STD-498]

NAME: FIRST-GENERATION LANGUAGE

ACRONYM: 1GL

DEFINITION: Also called machine language. In the earliest days of computing, there were no interpreters or compilers to translate computer languages from one form to another. Early computers were programmed with binary notation (e.g., "011011 000000").

NAME: FIXED MEMORY

ACRONYM:

DEFINITION: A memory into which information normally can be written only once. A ROM is a fixed-program memory. Programs are usually stored in fixed memories. [SEMICON & COMP GLOSS]

NAME: FIXED-INSTRUCTION COMPUTER

ACRONYM:

DEFINITION: A computer having an instruction set that is fixed by the manufacturer. Users must design application programs using this instruction set (in contrast to a microprogrammable computer). [SEMICON & COMP GLOSS]

NAME: FLOATING POINT OPERATIONS PER SECOND

ACRONYM: FLOPS

DEFINITION: The unit of measurement of floating point calculations (e.g., 100 mega flops is 100 million floating point operations per second). [Computer Glossary]

NAME: FLOW CHART

ACRONYM:

DEFINITION: A graphical representation of the definition, analysis, or method of the solution to a problem, particularly a problem to be solved on a computer. Symbols are used to represent operations, data flow, etc. [SEMICON & COMP GLOSS]

NAME: FORMAL QUALIFICATION REVIEW

ACRONYM: FQR

DEFINITION: A system-level configuration audit conducted after system testing is completed to ensure that the performance requirements of the system specifications have been met. [MCCR MGT GUIDE]

NAME: FORMULA TRANSLATOR PROGRAMMING LANGUAGE

ACRONYM: FORTRAN

DEFINITION: The first high-level programming language and compiler developed in 1954 by IBM. It was originally designed to express mathematical formulas, and although it is used occasionally for business applications, it is still most widely used for scientific, engineering, and mathematical problems. [Computer Glossary]

NAME: FORTH PROGRAMMING LANGUAGE

ACRONYM: FORTH

DEFINITION: A high-level programming language created by Charles Moore to provide direct control of the computer. Its syntax resembles the LISP programming language, uses reverse polish notation for calculations, and is noted for its extendability. FORTH is both a compiler and an interpreter: the source program is compiled and then executed by its operating system/interpreter. It is extensively used in process-control applications in which tight control is necessary. It is also used in arcade game programming as well as robotics and AI applications. [Computer Glossary]

NAME: FOURTH-GENERATION LANGUAGE

ACRONYM: 4GL

DEFINITION: Created in response to 3GL problems: the need for using vast numbers of lines of code to program commercial applications; time-consuming processes to debug programs; and the difficulty in modifying complex systems. 4GLs have several advantages: (1) to speed up the application-building process; (2) to make applications easy and quick to change, hence, reducing maintenance costs; (3) to minimize debugging problems; (4) to generate bug-free code from high-level expressions; and (5) to make languages easy to use so that end users can solve their own problems. 4GLs need far fewer lines of code than would be needed with languages like COBOL, PL/1, and ADA to perform the same functions. Many 4GLs are dependent on a database and its data dictionary. Some 4GLs are referred to as non-procedural languages. The difference between a procedural and non-procedural language is that procedural languages, such as COBOL and PL/1, specify how something is accomplished, whereas non-procedural languages specify what is accomplished, but not in detail how. Most query languages, report generators, graphics packages, and application generators are non-procedural.

NAME: FRONT-END PROCESSOR

ACRONYM:

DEFINITION: A communications computer. It connects to the communications channel on one end and the main computer on the other. Software in the front-end processor directs the transmitting and receiving of messages according to the protocol used in the network. It also detects and corrects transmission errors and assembles and disassembles messages. A front-end processor is sometimes synonymous with a communication control unit, although the latter is usually not as flexible. In LANs, intelligent network interface cards (NIC) perform the same function. [Computer Glossary]

NAME: FULL-TIME EQUIVALENT SOFTWARE PERSONNEL

ACRONYM: FSP

DEFINITION: A measure of the equivalent number of people working on the project at a given time. [Boehm]

NAME: FUNCTION POINTS

ACRONYM: FP

DEFINITION: The unit of measure used in Function Point Analysis (FPA) for measuring the "size" of a software project or system. It is based on the functionality of the software expressed in terms of five components: internal logical files, external interface files, external inputs, external outputs, and external inquiries. Each component is rated according to a qualifying criteria provided in the International Function Point Users Group (IFPUG) Counting Practices Manual. [MIL HDBK SRAH] Function points quantify the size and complexity of an application based on that application's inputs, outputs, inquiries, internal files, and interfaces. The resulting count is then adjusted based on the complexity of the system defined by a set of general system characteristics. Since FPs are independent of language, operating system, platform or development process, they avoid the problems that arise from the use of SLOC to measure the size of an application. [CrossTalk 11/94]

NAME: FUNCTIONAL BASELINE

ACRONYM:

DEFINITION: The initial approved technical documentation for a configuration item. It describes all necessary functional characteristics, the tests required to demonstrate achievement of specified functional characteristics, the necessary interfaces with associated configuration items, its key lower-level configuration, and design constraints. [IEEE STD GLOSSARY]

NAME: FUNCTIONAL CONFIGURATION AUDIT

ACRONYM: FCA

DEFINITION: The formal examination of functional characteristics of a CI, prior to acceptance, to verify that the item has achieved the performance specified in its functional or allocated configuration identification. [DOD-STD-480B]

NAME: FUNCTIONAL ECONOMIC ANALYSIS

ACRONYM: FEA

DEFINITION: The principal document in a decision package that evaluates actions proposed to achieve functional objectives, including selection of migration systems, implementation of process changes, information system changes, and continuation or redirection of approved programs. An FEA includes an analysis of functional process needs or problems, proposed solutions, assumptions and constraints, alternatives, life cycle costs, cost/benefit analysis, and investment risk analysis. An FEA is consistent with and amplifies existing DoD economic analysis policy in DODI 7041.3 with special emphasis on capturing the full risk-adjusted costs and benefits to functional activities of proposed actions. [DODD 8120.1]

NAME: GENERAL PURPOSE SYSTEM SIMULATION

ACRONYM: GPSS

DEFINITION: A programming language designed by IBM. A graphic-oriented language used for business simulation problems.

NAME: GOVERNMENT OPEN SYSTEMS INTERCONNECT PROFILE

ACRONYM: GOSIP

DEFINITION: U.S. government mandate that as of August 5, 1990, all network procurements must comply with Open System Interconnection (OSI). Testing is performed at the National Institute of Standards and Technology (NIST) which maintains a database of OSI compliant commercial products. [Computer Glossary]

NAME: GOVERNMENT-OFF-THE-SHELF

ACRONYM: GOTS

DEFINITION: Products for which the government owns the data rights, require no unique modifications or maintenance over the life cycle of the product, and are authorized to be transferred to other DoD or government customers. [DODD 8120.2]

NAME: GRAPHICAL USER INTERFACE

ACRONYM: GUI

DEFINITION: A graphic-based user interface that incorporates ICONs, pull-down menus, and a mouse in WINDOWS or OS/2 presentation language (in contrast with user interfaces which are character- or text-based, such as DOS, and display data in the standard 25-line and 80-column text mode). [Computer Glossary]

NAME: GRAPHICS

ACRONYM:

DEFINITION: The creation and management of pictures. Pictures can be entered into the computer using input devices, such as graphic tables, mice or light pens, and existing pictures on paper can be scanned into the computer using a camera or scanners. Two methods are used for storing and maintaining pictures in the computer: the first is called vector graphics, (also known as object-oriented graphics), which maintains the images in a series of points, lines, arcs and other geometric shapes. The second method, called raster graphics, resembles television. The picture image is made up of dots. Raster graphics images may take up more space on a disk than the vector graphic because storage for each pixel is required, even if it is part of the background. [Computer Glossary]

NAME: GROUND-FIXED

ACRONYM:

DEFINITION: Ground-based software physically maintained and used at a fixed site.

NAME: GROUND-MOBILE

ACRONYM:

DEFINITION: Ground-based software physically maintained and used on a ground-mobile platform.

NAME: HARD COPY

ACRONYM:

DEFINITION: A printed copy of a machine output. [SEMICON & COMP GLOSS]

NAME: HARDWARE

ACRONYM: HW

DEFINITION: The electronic components, such as gates, inverters, and storage devices that make up a system (in contrast to software and firmware). [SEMICON & COMP GLOSS]

NAME: HARDWARE CONFIGURATION ITEM

ACRONYM: HWC/I

DEFINITION: An aggregation of hardware that satisfies an end-use function and is designated for separate configuration control by the user. [MIL-STD-498]

NAME: HIGHER ORDER LANGUAGE

ACRONYM: HOL

DEFINITION: A programming language where the program is written in a series of statements which typically resemble mathematical formulas or English expressions. HOLs have been developed to make writing and understanding programs easier. [MCCR MGT GUIDE]

NAME: HOST COMPUTER

ACRONYM:

DEFINITION: The computer on which a compiler executes. [MCCR MGT GUIDE]

NAME: INCREMENTAL MODEL

ACRONYM:

DEFINITION: The incremental model uses the waterfall model in overlapping sections, attempting to compensate for the length of waterfall model projects by providing usable functionality earlier. This may involve a complete set of requirements that are implemented in a series of small projects (i.e., a spiral model). An incremental model starts with general objectives, then some portion of these objectives are defined as requirements and implemented. The following portions of the objectives are defined and implemented until all objectives are implemented. Formal reviews and audits are more difficult to perform on increments than on completed systems. [CrossTalk 1/95]

NAME: INDEPENDENT VERIFICATION AND VALIDATION

ACRONYM: IV&V

DEFINITION: Systematic evaluation of software products and activities by an agency that is not responsible for developing the product or performing the activity being evaluated. [MIL-STD-498]

NAME: INFORMATION MANAGEMENT SYSTEM

ACRONYM: IMS

DEFINITION: A hierarchical database management system for IBM that is used on large IBM mainframes. IMS is a first-generation system that was widely used throughout the 1960s. IMS provides transaction processing capability and automatically handles the detail of communications and networking. [Computer Glossary]

NAME: INFORMATION SYSTEM

ACRONYM: IS

DEFINITION: Same as an automated information system (AIS). Any combination of hardware, software, telecommunications, information technology, personnel, and other resources which collect, record, process, store, communicate, retrieve, and display information. [DODD 8120.1] A business application of the computer. It is made up of a database, application programs, manual and machine procedures, and encompasses the computer system that does the processing. The database stores the subjects of the business (master files and its activities) transaction files. Application programs provide the data entry updating, querying, and report processing. Procedures define the data flow. [Computer Glossary]

NAME: INFORMATION TECHNOLOGY

ACRONYM: IT

DEFINITION: The hardware and software used in connection with government information regardless of the technology involved, whether computers, communications, micrographics, etc. [DODD 8120.1]

NAME: INFORMIX

ACRONYM:

DEFINITION: A family of database products from Informix Software, Inc. which includes an SQL-based relational database management system, fourth generation language, and tool kits for embedding SQL in application programs. [Computer Glossary]

NAME: INPUT/OUTPUT

ACRONYM: I/O

DEFINITION: A transfer of data between the CPU and a peripheral device. Every transfer is an output from one device and an input into another. [Computer Glossary]

NAME: INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

ACRONYM: IEEE

DEFINITION: A membership organization that includes engineers, scientists and students in electronics and allied fields. Founded in 1963, it has over 290,000 members and is involved with setting standards for computers and communications. For example, IEEE 802.1 is an IEEE standard for local area networks (LANs). [Computer Glossary]

NAME: INSTRUCTION

ACRONYM:

DEFINITION: A group of bits that defines a computer operation. An instruction may move data, perform arithmetic and logic functions, control input/output devices, or make decisions as to which instruction to execute next. [SEMICON & COMP GLOSS]

NAME: INSTRUCTION SET

ACRONYM:

DEFINITION: The set of general-purpose instructions available with a given computer. Usually, different machines have different instructions sets. The number of instructions only partially indicates the quality of an instruction set. [SEMICON & COMP GLOSS]

NAME: INSTRUCTION SET ARCHITECTURE

ACRONYM: ISA

DEFINITION: The attributes of a digital computer or processor as might be seen by a machine (Assembly) language programmer; i.e., the conceptual structure and functional behavior as distinct from the organization of the flow and controls, logic design, and physical implementation. ISA is also the acronym for Industry Standard Architecture.

NAME: INSTRUCTION WORD

ACRONYM:

DEFINITION: A computer word that causes the computer to execute a particular operation. [SEMICON & COMP GLOSS]

NAME: INTEGRATED CIRCUIT

ACRONYM: IC

DEFINITION: Tiny, complex electronic components and connections that produce in or on a small slice of material such as silicon. The basic building blocks of modern electronics. [MCCR MGT GUIDE]

NAME: INTEGRATED COMPUTER-AIDED SOFTWARE ENGINEERING

ACRONYM: I-CASE

DEFINITION: See definition for CASE.

NAME: INTEGRATED SERVICES DIGITAL NETWORK

ACRONYM: ISDN

DEFINITION: An international telecommunication standard for transmitting voice, video, and data over a digital communication line. It uses out-of-signaling, which provides a separate channel for control information. ISDN services come in two forms: (1) Basic rate interface, which provides 144 kilobits per second including two 64 kbps "B" channels for voice, data, or video and a 16 kbps channel "D" for control information; or (2) Primary interface, which provides 1.54 megabits per second service. [Computer Glossary]

NAME: INTELLIGENT TERMINAL

ACRONYM:

DEFINITION: A terminal with built-in processing capability but no local disk or tape storage. It may use a general-purpose CPU or have specialized circuitry as part of a distributed intelligent system (in contrast to a "dumb" terminal). [Computer Glossary]

NAME: INTERFACE

ACRONYM:

DEFINITION: In software development, a relationship among two or more entities (such as CSCI-CSCI, CSCI-HWCI, CSCI-user, or software unit-software unit) in which the entities share, provide, or exchange data. An interface is not a CSCI, software unit, or the system component; it is a relationship among them. [MIL-STD-498]

NAME: INTERNAL LOGICAL FILE

ACRONYM:

DEFINITION: A function point (FP) type. A user-defined group of logically-related data maintained, or control information referenced, within the application boundary. [IFPUG 94]

NAME: INTERPRETER

ACRONYM:

DEFINITION: A high-level programming language translator that translates and runs programs at the same time. It translates one program statement into machine language and executes it. Then, it proceeds to the next statement and so on, until completed. Programs run much slower with the interpreter than the compiler because the compiler translates the entire program first, then executes it. [Computer Glossary]

NAME: INVESTMENT

ACRONYM:

DEFINITION: The development effort, typically expressed in terms of cost, to reengineer the software cost elements including software development, site preparation, training, and development tools. Investment does not include the cost to maintain either the legacy system or the newly reengineered system. [MIL HDBK SRAH]

NAME: JOB CONTROL LANGUAGE

ACRONYM: JCL

DEFINITION: A programming language that directs the operating system to run an application program. It specifies information such as priority, program site, and running sequence as well as the files and databases used. JCL was originally an IBM term, but has become a generic term for Job Management Language. [Computer Glossary]

NAME: JULE'S OWN VERSION OF INTERNATIONAL ALGEBRAIC LANG

ACRONYM: JOVIAL

DEFINITION: An ALGOL-like programming language developed by Systems Development Corporation in the early 1960s and widely used in military applications. The "J" in JOVIAL is for Jules Schwartz, one of the key architects. [Computer Glossary]

NAME: KERNEL

ACRONYM:

DEFINITION: The fundamental part of a program, such as an operating system, that resides in memory at all times. [Computer Glossary]

NAME: LANGUAGE

ACRONYM:

DEFINITION: The method or technique used to instruct a computer to perform various operations (e.g., machine language and high-level languages). [SEMICON & COMP GLOSS]

NAME: LASER PRINTER

ACRONYM:

DEFINITION: A printer that uses the electrophotographic method in copy machines to print one page at a time. A laser "paints" the dots of light onto a photographic drum or belt. The toner is applied to the drum or belt, and is then transferred to the paper. Laser printers use dot-matrix technology. In 1984, Hewlett-Packard announced the first LaserJet which revolutionized PC printing and desktop publishing. [Computer Glossary]

NAME: LEGACY SOFTWARE

ACRONYM:

DEFINITION: A software system or program that is being evaluated for potential reengineering or redevelopment. [MIL HDBK SRAH]

NAME: LINE OF CODE

ACRONYM: LOC

DEFINITION: A statement in a programming language. In Assembly language, it usually generates one machine instruction, but in high-level languages, it may generate a series of instructions. LOC are used to measure the complexity and size of a program. However, comparisons are misleading if the programs are not in the same language or category. [Computer Glossary]

NAME: LINKER

ACRONYM:

DEFINITION: A computer program that links or ties together programs that have been separately compiled or assembled. [MCCR MGT GUIDE]

NAME: LIST PROCESSING

ACRONYM: LISP

DEFINITION: A high-level programming language used extensively in non-numeric programming, in which objects rather than numbers are manipulated. Developed in 1960 by John McCarthy, it is very different in syntax and structure than languages like BASIC and COBOL. For example, in LISP, there is no syntactic difference between data and instructions. LISP is used extensively in Artificial Intelligence (AI) applications as well as in compiler creation and is available in both Interpreter and compiler versions. It automatically handles more program activities than conventional languages. [Computer Glossary]

NAME: LOADER

ACRONYM:

DEFINITION: A program that reads a program from an input device into RAM. A loader is often part of a package of utility programs. See the definition for RAM. [SEMICON & COMP GLOSS]

NAME: LOGIC

ACRONYM: PROLOG

DEFINITION: A programming language used extensively in artificial intelligence. It gained popularity after the Japanese announced it as the language for their fifth-generation computers. [Computer Glossary]

NAME: LOGIC CIRCUIT

ACRONYM:

DEFINITION: An electronic device, or devices, used to govern a particular sequence of operations in a system. [SEMICON & COMP GLOSS]

NAME: LOGIC DIAGRAM

ACRONYM:

DEFINITION: A diagram that uses special symbols called logic symbols to represent the detailed functioning of electronic logic circuits. The logic symbols in no way represent the types of electronic components used, but represent only their functions. [SEMICON & COMP GLOSS]

NAME: MACHINE CYCLE

ACRONYM:

DEFINITION: The basic CPU cycle. In one machine cycle, an address may be sent to memory, one word (data or instruction) may be read or written, or a fetched instruction may be executed. [SEMICON & COMP GLOSS]

NAME: MACHINE LANGUAGE

ACRONYM:

DEFINITION: Sets of numeric instructions that control the function of a computer. These numeric instructions execute the logic functions of the computer's logic circuits. For example, the instruction "00010001" might tell the computer to "Clear the A-register." To overcome the problems inherent in working with long strings of numbers, computer programs are more often written in Assembly language. [SEMICON & COMP GLOSS]

NAME: MAINFRAME

ACRONYM:

DEFINITION: The CPU of a computer plus input/output units and memory (in contrast to peripheral equipment). [SEMICON & COMP GLOSS]

NAME: MAINTENANCE SOFTWARE SUPPORT

ACRONYM:

DEFINITION: The set of activities to ensure that software installed for operational use continues to perform as intended and fulfill its intended role in system operations. Software support includes software maintenance and assistance to users. [MIL-STD-498]

NAME: MAJOR AUTOMATED INFO SYS REVIEW COUNCIL

ACRONYM: MAISRC

DEFINITION: The DoD AIS LCM review body for each Major Automated Information System subject to review under the procedures of DODD 8120.1. The MAISRC is the senior advisory body to the MDA, providing advice on program readiness to proceed into subsequent LCM phases, and determining if proposed plans for the subsequent LCM phases are consistent with sound management practices. [DODD 8120.2]

NAME: MANAGEMENT INFORMATION SYSTEM

ACRONYM: MIS

DEFINITION: An information system that has integrated the data for all of the departments it serves, providing operations and management with the information required. MIS was the buzzword of the mid to late 1980s when online systems were being implemented within large organizations. [Computer Glossary]

NAME: MANAGEMENT SYSTEM

ACRONYM: MS

DEFINITION: A system consisting of people and machines that makes the decisions, sets organization goals and objectives, strategics and tactics, and plans schedules and controls. [Computer Glossary]

NAME: MATURITY LEVEL

ACRONYM:

DEFINITION: A well-defined evolutionary plateau toward achieving a mature software process. [AF STSC 94]

NAME: MEGA FLOATING POINT OPERATIONS PER SECOND

ACRONYM: MEGAFLOPS

DEFINITION: One million floating point operations per second. Used to measure computer process speed. [Computer Glossary]

NAME: MEGABYTE

ACRONYM: MB

DEFINITION: One million bytes or characters. It is also written MB, MBYTE, M-byte. Used as a measure for computer memory storage. [Computer Glossary]

NAME: MEMORY

ACRONYM:

DEFINITION: The part of a computer that holds data and instructions. Each instruction or datum is assigned a unique address that is used by the CPU when fetching or storing the information. [SEMICON & COMP GLOSS]

NAME: MEMORY CAPACITY

ACRONYM:

DEFINITION: The number of bits that a memory can hold; e.g., a 1K semiconductor memory can store 1000 bits (actually 1024 bits), a 2K semiconductor memory can store 2000 bits (actually 2048 bits). Fixed memories usually contain instructions, and therefore, their capacity is sometimes expressed as the number of words of a certain length that can be held. For example, "256 x 4" means that the memory can store 256 4-bit words, which makes it a 1K memory (1024 bits). The same 1K memory could be a 128 x 8 memory. In either case, the user buys 1K memory from the manufacturer, not a 256 x 4 or 128 x 8 memory. [SEMICON & COMP GLOSS]

NAME: MICROCOMPUTER

ACRONYM:

DEFINITION: A computer whose major sections, CPU control, timing and memory, are each contained on a single, integrated circuit chip, or at most, a few chips; i.e., a large-scale integration (LSI) computer. [SEMICON & COMP GLOSS]

NAME: MICROPROCESSOR

ACRONYM:

DEFINITION: A central processing unit (CPU) constructed from one large-scale Integration (LSI) device or chip. [MCCR MGT GUIDE] An LSI device that performs the function of the CPU of a computer. It is called a microprocessor because of its extremely small size. Typically, it is contained on a single integrated circuit chip. In some cases, the microprocessor is made up of two or more chips. [SEMICON & COMP GLOSS]

NAME: MICROPROGRAM

ACRONYM:

DEFINITION: A special-purpose program stored in fixed memory and initiated by a single instruction in a system's main program. For example, one instruction in the main program may initiate a stored microprogram of 6 or 7 instructions needed to execute the single main program instruction. [SEMICON & COMP GLOSS]

NAME: MICROPROGRAMMABLE COMPUTER

ACRONYM:

DEFINITION: A computer in which the internal CPU control sequence for performing instructions is generated from a ROM. By changing the ROM contents, the instruction set can be changed (in contrast with a fixed-instruction computer). [SEMICON & COMP GLOSS]

NAME: MIDDLEWARE

ACRONYM:

DEFINITION: Non-standard software of two basic types: (1) cross-network (e.g., IBM, SAA, DEC, NAS); and (2) cross-application connectivity (e.g., MICROSOFT database or MICROSOFT E-mail). [CrossTalk 7/94]

NAME: MIGRATION SYSTEM

ACRONYM:

DEFINITION: An existing information system that has been designated as the single system to support a standard process for a functional activity. However, a migration system has not yet undergone transition to the standard technical environment and standard data definitions being established through the Defense IM program, and must "migrate" towards the standard environment. Migration systems can be designated at the DoD level (for DoD-wide applications) or at the DoD Component level. An example of a migration system is the DoD Civilian Payroll System. [DODD 8120.1]

NAME: MILLION INSTRUCTIONS PER SECOND

ACRONYM: MIPS

DEFINITION: The execution speed of a computer (e.g., 0.5 MIPS is 500,000 instructions per second). A large mainframe can perform 10 to 50 MIPS, whereas an inexpensive microprocessor might perform in the 0.05 range. MIPS rates are not uniform across all vendor lines. A large mainframe MIPS rate, which is tied to the computer's clock speed, is only one factor in overall performance. Bus and channel speed and bandwidth (8-bit, 16-bit, 32-bit disk), and memory speed, memory management, and system software also determine total throughput of a computer system. [Computer Glossary]

NAME: MINICOMPUTER

ACRONYM:

DEFINITION: A loosely used term for describing any general-purpose digital computer in the low-to-moderate price range. A few years ago, \$10K was the approximate ceiling price used to define a minicomputer. Today, this figure is subject to wide interpretation. [SEMICON & COMP GLOSS]

NAME: MISSION CRITICAL COMPUTER RESOURCES SW SUPPORT

ACRONYM: MIL-HB-347

DEFINITION: Provides software support concepts, procedures, and guidance to all managers responsible for Mission Critical Computer Resources (MCCR) development or support. It covers software support activities and requirements throughout the system life cycle and should be selectively applied within individual Service and program requirements. It is intended to be used by DoD and commercial agencies involved in any software support activity. [MIL-HDBK-347]

NAME: MNEMONIC CODE

ACRONYM:

DEFINITION: Instructions for a computer written in a form that is easy for the programmer to remember. Typical mnemonics might be LDA, which represents the instruction "Load the accumulator register," or CLI, which means "Clear the interrupt." A program written in mnemonic code must later be converted to machine language. [SEMICON & COMP GLOSS]

NAME: MODIFIED CODE

ACRONYM:

DEFINITION: Predeveloped code that can be incorporated into a software component with a significant amount of effort, but with less effort than required for newly developed code.

NAME: MODULATOR-DEMODULATOR

ACRONYM: MODEM

DEFINITION: An electronic device that modulates and demodulates signals transmitted over communications lines. For example, the digital output of a microprocessor might be modulated to form a frequency-modulated signal (analog) for easier transmission over communications lines. Conversely, the modem would demodulate a frequency-modulated signal to change it back to a digital signal. [SEMICON & COMP GLOSS]

NAME: MONOLITHIC INTEGRATED CIRCUIT

ACRONYM:

DEFINITION: An IC that is fabricated completely on a single chip and contains no discrete components (in contrast to a hybrid IC). [SEMICON & COMP GLOSS]

NAME: MULTIPLEXER

ACRONYM:

DEFINITION: Electronic equipment allowing two or more signals to pass over one circuit. [GOVT COMP NEWS 2/95]

NAME: MULTIPROCESSING

ACRONYM:

DEFINITION: A technique where two or more programs operate in the computer at the same time, each with its own place in memory, but having its own CPU.

NAME: MULTIPROGRAMMING

ACRONYM:

DEFINITION: A technique of operating two or more programs in the computer at the same time. Each program is allotted its own place in memory and its own peripherals.

NAME: MULTITASKING

ACRONYM:

DEFINITION: A technique for operating two or more programs in one computer at the same time. Multitasking is controlled by the operating system, which loads the program that can be multitasked and depends on the amount of memory available, CPU speed capability, and speed of peripheral resources as well as the efficiency of the operating system. Multitasking is accomplished due to differences in the input/output processing speed. While one program is waiting for input instructions, another program can be executed. Traditionally, multitasking meant running two or more tasks within the same program at the same time. Today, multitasking means multi-programming and multi-threading. Multi-threading is the concurrent processing of transactions. It implies that transactions or messages can be worked on in parallel and that one transaction may not be completely processed before another is started. For example, multi-threading is required for creating synchronized audio and video. [Computer Glossary]

NAME: NEW CODE

ACRONYM:

DEFINITION: Newly developed software. One hundred percent software code design, coding, integration and testing is required.

NAME: NON-DEVELOPMENTAL ITEMS

ACRONYM: NDI

DEFINITION: Non-developmental items are previously developed hardware and software that are capable of fulfilling DoD requirements, thereby minimizing or eliminating the need for costly, time-consuming government-sponsored R&D programs. NDI are usually off-the-shelf or commercial-type products, but may also include equipment already developed for DoD, other military services, or foreign military forces. [DOD-STD-4808]

NAME: NON-DEVELOPMENTAL SOFTWARE

ACRONYM: NDS

DEFINITION: Deliverable software that is not developed under the contract, but is provided by the contractor, the government, or a third party. Reusable software, government-furnished software, or commercially available software, depending on its source.

NAME: NON-PROCEDURAL LANGUAGE

ACRONYM:

DEFINITION: A programming language that does not require traditional programming logic to be stated. For example, a command, such as LIST, might display all the records in a file screen separating fields with blank spaces. In procedural languages, such as COBOL or FORTRAN, all the logic for inputting each record in the file and testing for the end of file (EOF) has been explicitly programmed. Query language, report writers, interactive database programs, and applications provide non-procedural language for user operation. [Computer Glossary]

NAME: NUMERICAL CONTROL

ACRONYM: NC

DEFINITION: The technique of controlling a machine or process through the use of command instructions in coded numerical form. [SEMICON & COMP GLOSS]

NAME: OBJECT-ORIENTED DESIGN

ACRONYM: OOD

DEFINITION: OOD relies on specifying a structure and behavior of system components to maximize component reuse and organization. The OO paradigm arises from a mathematical concept called the "abstract data type" and adds a mechanism for inheriting characteristics through class hierarchy. [CrossTalk 6/94]

NAME: OBJECT-ORIENTED PROGRAMMING

ACRONYM: OOP

DEFINITION: A programming technology that is generally more flexible and adaptable than standard programming. With this method, nouns carry the thrust of the program, rather than verbs. Its important features are abstract data types, inheritance and polymorphism. Abstract data types are self-sufficient modules that contain the data and the processing, the structure, and the function needed to manipulate that data. OOP allows the programmer to create procedures about objects whose exact type is not known until runtime. For example, a screen cursor may change its shape from an arrow to a line depending on the program mode. The routine to move the cursor on the screen in response to a mouse movement would be written for "cursor," and polymorphism would allow the cursor to be whatever shape it required at runtime. XEROX's Smalltalk was the first object-oriented language and was used to create graphical user interfaces (GUI). C++ is another object-oriented programming language. [Computer Glossary]

NAME: OBJECT-ORIENTED TECHNIQUE

ACRONYM:

DEFINITION: A technique based on the premise that there exists a fundamental human limitation in managing more than seven different objects or concepts at a time. OO includes object-oriented analysis (OOA), design (OOD), and programming (OOP). Use OO in projects where (1) the system is data-oriented and functional complexity is of lesser concern; (2) good OO implementation technology is available, and the organization provides adequate tools; (3) the organization is sophisticated enough to successfully change its development methods; and (4) graphical user interfaces have been developed successfully using OOA. [CrossTalk 1/95]

NAME: OPEN SYSTEM

ACRONYM: OS

DEFINITION: A system that implements sufficient, open specifications for interfaces, services, and supporting formats to use properly engineered components across a wide range of systems with minimal changes, to interoperate with other components on local and remote systems, and to interact with users in a style which facilitates portability. [SECNAVINST 5200.32A] A vendor-independent system that is designed to interconnect with a variety of products. By implication, open systems are built using standards that are determined by the consensus of interested parties rather than by one or two vendors. [ELEC COMP GLOSS]

NAME: OPEN SYSTEM ARCHITECTURE

ACRONYM: OSA

DEFINITION: A design approach where hardware and software are designed to non-proprietary standards allowing the interfacing of components and systems manufactured by multiple vendors. [MIL-STD-2036]

NAME: OPEN SYSTEM INTERCONNECT

ACRONYM: OSI

DEFINITION: A seven-layer model containing a logically grouped collection of functions that performs services to communicate information. The seven layers are physical, data link, network, transport, session, presentation, and application. [Network Mgt]

NAME: OPERATING SYSTEM

ACRONYM: OS

DEFINITION: Software which enables a computer to supervise its own operations, automatically calling in programs, routines, language and data as needed for continuous processing of different types of jobs.

NAME: OPERATIONAL SOFTWARE

ACRONYM:

DEFINITION: The software which operates in the embedded computers of the weapon system.

NAME: OPTICAL CHARACTER RECOGNITION

ACRONYM: OCR

DEFINITION: The machine recognition of printed characters, the OCR system can recognize many different kinds of special OCR fonts as well as typewriter and computer printer characters. Advanced OCR systems can recognize hand printing. [Computer Glossary]

NAME: ORGANIC MODE

ACRONYM:

DEFINITION: A project that is more relaxed about the way the software meets the requirements and interface specifications. Other factors characteristic of organic mode projects are (1) a generally stable development, with very little concurrent development of associated new hardware and operational procedure; (2) minimal need for innovative data processing architectures or algorithms; (3) a relatively low premium on early completion of the project; and (4) a relatively small size. [Boehm]

NAME: PARALLEL PROCESSING

ACRONYM:

DEFINITION: An architecture within a single computer that performs more than one operation at the same time. A multiprocessing architecture made up of multiple processors or multiple computers. In SIMD architecture, such as an array processor, one operation is performed on many sets of data. In MIMD architecture, multiple computer operations are performed on different parts of a job simultaneously. [Computer Glossary]

NAME: PARTITIONING

ACRONYM:

DEFINITION: A memory system in which primary memory is divided and programs assigned to the individual parts.

NAME: PASCAL PROGRAMMING LANGUAGE

ACRONYM:

DEFINITION: A high-level programming language developed by Nicklaus Wirth (Swiss) in the early 1900s and named for the French mathematician Blaise Pascal. It is noted for its structured programming, which caused it to achieve popularity initially in academic circles. PASCAL had a strong influence on subsequent languages, such as ADA, dBASE, and PAL. [Computer Glossary]

NAME: PERFECTIVE MAINTENANCE

ACRONYM:

DEFINITION: Software changes which improve software performance (e.g., man-machine interface enhancements), maintainability, and other software attributes. A perfective change does not impose a new system requirement. [MIL-HDBK-347]

NAME: PERIPHERAL

ACRONYM:

DEFINITION: Any hardware device connected to a computer, such as a monitor, keyboard, printer, plotter, disk, or tape drive, graphic tablet, scanner, joystick, paddle, mouse, etc. [Computer Glossary]

NAME: PERIPHERAL EQUIPMENT

ACRONYM:

DEFINITION: Units that operate in conjunction with a computer, but are not part of the computer itself (e.g., printers, tape readers, etc.). [SEMICON & COMP GLOSS]

NAME: PHYSICAL CONFIGURATION AUDIT

ACRONYM: PCA

DEFINITION: The formal examination of the "as-built" configuration of a CI against its technical documentation to establish the CI's initial product configuration identification. [DOD-STD-480B]
A technical examination of a designated configuration item to verify that the CI "as built" conforms to the technical documentation which defines the configuration item. [MIL-STD-1521B]

NAME: POST-DEPLOYMENT SOFTWARE SUPPORT

ACRONYM: PDSS

DEFINITION: Those software support activities that occur during the full-rate production and initial deployment and operations support phases of the acquisition process, including the software engineering environment, software test environment, and other equipment, material and documentation, including data rights, necessary to provide PDSS for designated mission critical computer resources (MCCR). [MIL-HDBK-347]

NAME: PRELIMINARY DESIGN REVIEW

ACRONYM: PDR

DEFINITION: The review conducted for each configuration item or aggregate of configuration items to (1) evaluate the progress, technical adequacy, and risk resolution (on a technical, cost, and schedule basis) of the selected design approach; (2) determine its compatibility with performance and engineering speciality requirements of the HWC development specification; (3) evaluate the degree of definition and assess the technical risk associated with the selected manufacturing methods/processes; and (4) establish the existence and compatibility of the physical and functional interfaces among the configuration item and other items of equipment, facilities, computer software, and personnel. For CSCIs, the review focuses on (1) the evaluation of the progress, consistency, and technical adequacy of the selected top-level design and test approaches; (2) compatibility between software requirements and preliminary design; and (3) the preliminary version of the operation and support documents. [MIL-STD-1521B]

NAME: PRICE SOFTWARE ACQUISITION MODEL

ACRONYM: PRICE S

DEFINITION: A parametric cost modelling method to estimate resources for computer software development, operations, and support. The underlying principle is that all estimates involve comparative evaluation of new requirements in light of analogous histories. PRICE S was designed for use by analysts, engineers and managers to assist in translating experience and judgment into accurate, timely cost estimates, providing a way to reduce empirical data to a few principal variables that describe the significant technology and cost differences between individual projects and organizations. PRICE S includes a risk analysis capability that enables the analyst to translate the uncertainty in the proposed software system's characteristics to an assessment of cost and schedule risk. [PRICE S Manual]

NAME: PRINTER

ACRONYM:

DEFINITION: A device that converts computer output into printed images. The following are printer types: (1) Serial printers print one character at a time, using dot-matrix and character-printer technologies; (2) Line printers print one line at a time, using drum, chain, train, band, dot-matrix, and dot-band technologies; (3) Line dot-matrix printers have a stationary or oscillating line of printing wires generating images by impacting a ribbon and transferring dots of ink onto paper one line at a time; (4) Dot-band matrix printers are a combination of band- and dot-matrix configurations; (5) Page printers, also called laser printers, print one page at time; (6) Graphic printers use impact serial dot-matrix, impact-line dot-band, and all non-impact technologies; (7) Color printers use impact dot-matrix technologies with multiple color ribbons; (8) Non-impact printers include Electrophotographic, Electrosensitive, Electrostatic, Ink Jet, Ionographic, Magnetographic, or Thermal-type printers. [Computer Glossary]

NAME: PROCESS-CENTERED ENVIRONMENT

ACRONYM: PCE

DEFINITION: A new class of software that integrates the people in the organization with the development process and with the supporting technology. Unlike compilers and editors, PCEs primarily affect how work flows through the organization rather than what is produced. PCE provides the glue that actively manages the flow of work between people and their tools. [CrossTalk 11/94]

NAME: PRODUCT BASELINE

ACRONYM:

DEFINITION: The initial, approved technical documentation defining a configuration item during the production, operation, maintenance, and logistic support of the life cycle. It describes all necessary physical characteristics of a configuration item, the selected functional characteristics designated for production acceptance testing, and production acceptance tests. [IEEE STD GLOSSARY]

NAME: PRODUCTIVITY

ACRONYM:

DEFINITION: A measurement of completed work. Some methods for calculating productivity in software are (1) the total lines of code (LOC) written per day; (2) the total hours per LOC; (3) the amount of non-commented application software divided by the total development effort; (4) the total amount of development software (including comments) divided by the Code and Unit Test effort (excluding management and administration). [Boehm]

NAME: PROGRAM

ACRONYM:

DEFINITION: A set of coded instructions that directs a computer to perform some specific function or yields the solution to some specific problem. [SEMICON & COMP GLOSS]

NAME: PROTOTYPING MODEL

ACRONYM:

DEFINITION: The process of building a working replica of a system; that is, the equivalent of a mock-up in the hardware world. Prototyping may be used with the waterfall method; it can be useful to demonstrate technical feasibility when the technical risk is high. It can also be used to better understand and extract user requirements. In either case, the goal is to limit cost by understanding the problem before committing more resources. [CrossTalk 1/95]

NAME: RANDOM ACCESS MEMORY

ACRONYM: RAM

DEFINITION: RAM is a read/write memory. A more strict definition of RAM is a memory that stores information in such a way that each bit of information may be retrieved within the same amount of time as any other bit in contrast to serial memory. [SEMICON & COMP GLOSS]

NAME: RAPID PROTOTYPING

ACRONYM:

DEFINITION: The proof-of-concept for satisfying a new functional requirement or for augmenting an existing AIS with new capability. It can involve new IS development and acquisition as well as modifications to an existing AIS. Rapid Prototyping differs from predeployment prototyping in that it may be performed during the Concept Exploration and Definition Phase prior to MS I instead of during the Development Phase between MS II and MS III. Rapid Prototyping may also be used for proof-of-concept of a major modification to an existing AIS during the Operations and Support Phase. [SECNAVINST 5231.1C]

NAME: RAYLEIGH DISTRIBUTION

ACRONYM:

DEFINITION: The mathematical function that yields good approximations to the actual labor curves on many types of software projects, including organic mode projects. The Rayleigh distribution gives a good approximation to labor distributions for many types of research and development activities. [Boehm]

NAME: READ-ONLY-MEMORY

ACRONYM: ROM

DEFINITION: A memory in which information is stored permanently; e.g., a math function or a microprogram. A ROM is programmed according to the user's requirements during memory fabrication and cannot be reprogrammed. [SEMICON & COMP GLOSS]

NAME: READ/WRITE MEMORY

ACRONYM:

DEFINITION: A memory whose contents can be continuously changed quickly and easily during system operations. It differs from a read-only-memory (ROM), whose contents are fixed and not subject to change, and a reprogrammable ROM, whose contents can be changed, but only periodically. RAM is a read/write memory. [SEMICON & COMP GLOSS]

NAME: REALTIME

ACRONYM:

DEFINITION: The actual time during which a physical process transpires.

NAME: REENGINEERING

ACRONYM:

DEFINITION: The examination and alteration of an existing system to reconstitute it into a new form. The process encompasses a combination of subprocesses such as reverse engineering, restructuring, redocumentation, forward engineering, and retargeting. [MIL HDBK SRAH]

NAME: REGRESSION TESTING

ACRONYM:

DEFINITION: Selective retesting of a system or component to verify that modifications have not caused unintended effects, and that the system or component still complies with its specified requirements. [CrossTalk 7/94]

NAME: REHOSTED CODE

ACRONYM:

DEFINITION: Source code that has been minimally modified so the revised program can execute on a different platform; that is, the original programming language has not changed. [CrossTalk 2/95] Rehosted code can be used "as is," but must be retested and re-integrated with any new or modified code.

NAME: REHOSTING

ACRONYM:

DEFINITION: Modifying a computer program so that it operates on a different host computer. [MCCR MGT GUIDE] To make limited source code modifications so the revised program can execute on a different platform; the original programming language is not changed. [CrossTalk 2/95]

NAME: REMOTE SPOOLING COMMUNICATION SUBSYSTEM

ACRONYM: RSCS

DEFINITION: Software that provides batch communications for IBM's VM operating systems. It accepts remote batch terminal inputs, executes them on a priority basis, and transmits the results back to the terminal. [Computer Glossary]

NAME: REPORT PROGRAM GENERATOR

ACRONYM: RPG

DEFINITION: A problem-oriented language originally designed to facilitate the output of business reports. Easy to learn and use. Commonly used to rearrange and format reports and process files for accounts receivable, general ledgers, and inventory.

NAME: REUSABLE ADA PRODUCTS FOR INFO SYS DEVELOPMENT

ACRONYM: RAPID

DEFINITION: Reusable Ada products such as the Universal Ada Test Language (UATL) library, procedures, and test functions. [CrossTalk 4/94]

NAME: REUSED CODE

ACRONYM:

DEFINITION: Predeveloped code that can be incorporated in the software component with little or no change (e.g., approximately 10 to 40 percent of the code is modified). Reuse is defined as designing and developing software objects or components as building blocks for use by many systems. For example, in mission support software projects, reusable objects have been designed to provide multiple mission planning products with the same look as a user interface. [CrossTalk 2/95]

NAME: REVISED ENHANCED VERSION OF INTERMEDIATE COCOMO

ACRONYM: REVIC

DEFINITION: A model, developed by Raymond Kile, that predicts the development life cycle costs for software development from Requirements Analysis through completion of the Software Acceptance Testing and the maintenance life cycle for fifteen years. It is similar to the intermediate form of the Constructive Cost Model (COCOMO) described by Dr. Barry Boehm in his book "Software Engineering Economics." The intermediate COCOMO model provides a set of basic equations which calculate the effort (manpower in man-months and hours) and schedule (elapsed time in calendar months) to perform a typical software development project based on an estimate of the lines of code to be developed and a description of the development environment. [REVIC Manual]

NAME: RISK ASSESSMENT

ACRONYM:

DEFINITION: Describes the technology, design, engineering, support, manufacturing, cost and schedule risk assessment for all known or potential risks. Identify the system components or subsystems which have moderate or higher risk. [SECNAVINST 5231.1C]

NAME: SCRATCH PAD MEMORY

ACRONYM:

DEFINITION: A high-speed memory used to temporarily store a small amount of data so that the data can be retrieved quickly when needed. Interim calculations are stored in scratch pad memory. [SEMICON & COMP GLOSS]

NAME: SECOND-GENERATION LANGUAGE

ACRONYM: 2GL

DEFINITION: Symbolic Assembly languages that came into use in the mid-1950s. Symbolic addresses were used rather than physical machine addresses. For example, an instruction may become "CLA SALARY" where the word "SALARY" represents the location in memory where the variable "Salary" is stored.

NAME: SEMI-DETACHED MODE

ACRONYM:

DEFINITION: A project in an intermediate stage between the organic and embedded modes. "Intermediate" may mean either of two things: (1) an intermediate level of the project characteristics; or (2) a mixture of the organic and embedded mode characteristics. The size range of a semi-detached mode project generally extends to 300 KDSI. [Boehm]

NAME: SEMICONDUCTOR MEMORY

ACRONYM:

DEFINITION: A memory in which semiconductors are used as the storage elements and characterized by a low to moderate cost storage and a wide range of memory operating speeds from very fast to relatively slow. Almost all semiconductor memories are volatile. [SEMICON & COMP GLOSS]

NAME: SERIAL MEMORY

ACRONYM:

DEFINITION: A memory whose contained data is accessible only in a fixed order beginning at some prescribed referenced point. Data in any particular location is not available until all data ahead of that location have been read. Such a memory is inherently slow compared with a RAM. [SEMICON & COMP GLOSS]

NAME: SHAREWARE

ACRONYM:

DEFINITION: Software that is distributed free of charge to users. Shareware programs ask users to pay a nominal charge for the program if it is used. Shareware is usually available on electronic bulletin boards (e.g., Prodigy). [Computer Glossary]

NAME: SIMULATION

ACRONYM:

DEFINITION: A method for implementing a model. It is the process of conducting experiments with a model to understand system behavior under selected conditions, or of evaluating various system operational strategies within the limits imposed by developmental or operational criteria. Simulation may include the use of analog or digital devices, laboratory models, or testbed sites. [MCCR MGT GUIDE]

NAME: SIMULATOR

ACRONYM:

DEFINITION: A generic term used to describe a family of equipment representing threat weapon systems in development testing, operational testing, and training. A threat simulator has one or more characteristics which, when detected by human senses or man-made sensors, appear to be an actual threat weapon system with a prescribed degree of fidelity. [MCCR MGT GUIDE]

NAME: SMART TERMINAL

ACRONYM:

DEFINITION: A video terminal with various display characteristics, such as blinking characters, reverse imaging (dark or light), underlining and boldface fonts. Smart terminals may also contain built in communication protocols to connect to minicomputers and mainframes. Sometimes the term "smart" terminal is used to refer to an "intelligent" terminal. [Computer Glossary]

NAME: SOFTWARE

ACRONYM: S/W

DEFINITION: The combination of computer programs or instructions required to cause the computer hardware to perform a certain task or function. [MCCR MGT GUIDE]

NAME: SOFTWARE ARCHITECTURE SIZING AND ESTIMATING TOOL

ACRONYM: SASET

DEFINITION: A software cost estimating model used by estimators, planners, software developers and managers to size, cost and establish schedules for software development projects. SASET can be run using a calibration file or can be re-calibrated by using the Software Management and Costing Data Base Management System (DBMS). [SASET Manual]

NAME: SOFTWARE CORRECTION

ACRONYM:

DEFINITION: A software change implemented to correct a fault in the software. [MIL-HDBK-347]

NAME: SOFTWARE DEVELOPMENT AND DOCUMENTATION

ACRONYM: MIL-STD-498

DEFINITION: Establishes uniform requirements for software development and documentation, applies to contractors, subcontractors, or government in-house agencies performing software development, and applies in any phase of the system life cycle. This standard merges DOD-STD-2167A and DOD-STD-7935A and defines a set of activities and documentation suitable for the development of both weapons systems and Automated Information Systems. [MIL-STD-498]

NAME: SOFTWARE DEVELOPMENT LIFE CYCLE

ACRONYM:

DEFINITION: A series of consecutive phases: Project Planning and Oversight, Establishing a Software Development Environment, System Requirements Analysis, System Design, Software Requirements Analysis, Software Design, Software Implementation and Unit Testing, Unit Integration and Testing, CSCI Qualification Testing, CSCI/HWCI Integration and Testing, System Qualification and Testing, Preparing for Software Use, and Preparing for Software Transition. [MIL-STD-498]

NAME: SOFTWARE DEVELOPMENT PLAN

ACRONYM: SDP

DEFINITION: Describes a developer's plans for conducting a development effort. The SDP provides the acquirer insight into, and a tool for monitoring, the processes to be followed for software development, methods to be used, the approach to be followed for each activity, and project schedules, organization, and resources. [MIL-STD-498]

NAME: SOFTWARE ENGINEERING

ACRONYM: SE

DEFINITION: The planned process of producing well-structured, reliable, high-quality, maintainable software systems within reasonable time frames. [NIST 93]

NAME: SOFTWARE ENGINEERING INSTITUTE

ACRONYM: SEI

DEFINITION: Located at Carnegie Mellon University (CMU) in Pittsburgh, PA. It sponsors several DoD conferences and is instrumental in software engineering research.

NAME: SOFTWARE ENHANCEMENT

ACRONYM:

DEFINITION: A software change which is not a software correction. There are two types of software enhancements: adaptive and perfective. [MIL-HDBK-347]

NAME: SOFTWARE MAINTENANCE

ACRONYM:

DEFINITION: Error correction associated with the incorrect implementation of software as defined in the specifications or those due to programming errors. Software maintenance does not include modifications in support of changing needs or requirements.

NAME: SOFTWARE PROBLEM/CHANGE REPORT

ACRONYM: SPR

DEFINITION: A report to describe each problem detected in software products under project-level or higher configuration control or each problem in activities required by the contract or described in the software development plan. The problem/change report describes the problem, the corrective action needed, and the actions taken to date. The report serves as input to the corrective action system. [MIL-STD-498]

NAME: SOFTWARE SPECIFICATION REVIEW

ACRONYM: SSR

DEFINITION: A review of finalized Computer Software Configuration Item (CSCI) requirements and operational concepts conducted when CSCI requirements have been sufficiently defined to evaluate the contractor's responsiveness to and interpretation of the system, segment, or prime item-level requirements. A successful SSR occurs when the contracting agency determines that the software requirements specification(s), interface requirements specification(s), and operational concept document are satisfactory for proceeding into preliminary software design. [MIL-STD-1521B]

NAME: SOFTWARE SUPPORT

ACRONYM:

DEFINITION: The sum of all activities that ensures implemented and fielded software continues to fully support the operational mission of the software. [DOD-STD-2167A] Software support includes software maintenance and assistance to users. [MIL-STD-498]

NAME: SOFTWARE SUPPORT ENVIRONMENT

ACRONYM: DOD-STD-1467

DEFINITION: Establishes uniform minimum requirements for a contractor to define a Developmental Software Support Environment (DSSE), to ensure the compatibility of the environment with a contracting activity's designated Life Cycle Software Support Environment (LCSSE), and to ensure the existence of a complete contracting activity life cycle software support capability for the deliverable software of the contracted effort. When invoked in a Statement of Work, these requirements apply to all software and associated items necessary to develop and support the software that is deliverable under the contract. [DOD-STD-1467]

NAME: SOFTWARE SUPPORT ENVIRONMENTS

ACRONYM: MIL-HB-782

DEFINITION: Describes software support environments.

NAME: SOFTWARE TEST PLAN

ACRONYM: STP

DEFINITION: Describes plans for qualification testing of Computer Software Configuration Items (CSCIs) and software systems. It describes the software test environment to be used for testing, identifies the tests to be performed, and provides schedules for test activities. There is usually a single STP for a project. The STP enables the acquirer to assess the adequacy of planning for CSCIs and software system qualification testing. [MIL-STD-498]

NAME: SOURCE CODE TRANSLATION

ACRONYM:

DEFINITION: The transformation of source code from one language to another or from one version of a language to another version of the same language (e.g., from COBOL-74 to COBOL-85 or from CMS-2 to ADA). [MIL HDBK SRAH]

NAME: SOURCE LINES OF CODE

ACRONYM: SLOC

DEFINITION: Physical source statements; that is, one physical line equals one statement. The delimiter (or, more precisely, the terminator) for physical source statements is usually a special character or character pair such as <newline> or <carriage return> or <line feed>. "Dead" code (i.e., code that exists in a program, but is never referenced or used) is excluded. Prior to January 1994, the following definition was also allowed, but CARDS were required to specify which definition was used: Source lines of code denote compilable source instructions, including data declarations, type definitions, and assignments. It excludes comments, null/dummy statements, blank lines, continuation lines, prefaces, file boundary statements, and commercial off-the-shelf software (COTS). Some HOLs use DODD 3405.1 as guidance.

NAME: SPACE CODE

ACRONYM:

DEFINITION: Software on an orbiting vehicle or suborbital probes (the most expensive per line of code for any given category).

NAME: SPAGHETTI CODE

ACRONYM:

DEFINITION: A program that is written without a coherent structure. It often implies an excessive use of GOTO instructions. Each decision point in a program (if this, do that) directs the computer to branch to some other part of the program.

NAME: SPECIFICATION PRACTICES

ACRONYM: MIL-STD-490A

DEFINITION: Establishes the format and content of specifications for program-specific configuration items, processes, and materials by establishing uniform practices for specification preparation, including essential requirements, and analyzing specification content. [MIL-STD-490A]

NAME: SPIRAL MODEL

ACRONYM:

DEFINITION: A model where resources are held constant, but the system size grows. The spiral model's size corresponds to the system size, while the distance between the coils of the spiral indicates the amount of resources. A different spiral model is proposed by Dr. Barry Boehm in which prototyping is used to control cost. Prototyping is used up front with the later introduction of the waterfall model and increased resources when the risk has been minimized. [CrossTalk 1/95]

NAME: STANDARD SYSTEM

ACRONYM:

DEFINITION: A migration system that has completed the transition to the DoD technical architecture, Technical Reference Model, and standard data definitions. New information systems, following the application of functional process improvement programs, are also standard systems. [DODD 8120.1]

NAME: STRUCTURED PROGRAMMING

ACRONYM:

DEFINITION: A variety of techniques that impose a logical structure on the writing of a program. Large routines are broken down into smaller modular routines. The use of the GOTO statement is discouraged which prevents the program from branching to another routine that does not guarantee return to the place from which it was called. For documentation, program statements are indented so that the beginning and ending of loops are easily identified. Languages such as PASCAL, ADA, and dBASE, force programmers to write structured programs. [Computer Glossary]

NAME: STRUCTURED QUERY LANGUAGE

ACRONYM: SQL

DEFINITION: A language used to interrogate and process data in a relational database with several implementations created for mini- and micro-database applications. SQL commands can be used to interactively work with a database or can be embedded within a programming language to interface with a database. [Computer Glossary]

NAME: SUPERCOMPUTER

ACRONYM:

DEFINITION: The fastest computer available, typically used for simulations in petroleum exploration and production, structural analysis, fluid dynamics physics and chemistry, electronic design, nuclear energy research, and meteorology. It is also used for real-time, animated graphics. [Computer Glossary]

NAME: SUPPORT SOFTWARE

ACRONYM:

DEFINITION: Off-line software (e.g., development and diagnostic tools, simulation/training, maintenance, site support, delivered test software, and report generators). Software tools required to develop the operational software. This also includes programs, such as an algorithm analyzer, compiler, editor, debugger, stubs, drivers, etc.

NAME: SYSTEM DESIGN REVIEW

ACRONYM: SDR

DEFINITION: A review that evaluates the optimization, correlation, completeness, and risks associated with allocated technical requirements, including a summary review of the system engineering process which produced the allocated technical requirements and the engineering plan for the next phase. Basic manufacturing considerations will be reviewed and planning for production engineering in subsequent phases will be addressed. The review is conducted when the system definition effort has proceeded to the point where system characteristics and configuration items are identified. [MIL-STD-1521B]

NAME: SYSTEM EVALUATION AND ESTIMATION OF RESOURCES

ACRONYM: SEER

DEFINITION: A software estimating model developed by Galorath Associates, Incorporated. SEER-SEM knowledge bases allow fine tuned estimates with only high-level inputs. The knowledge bases are divided into the following categories: Platform, Application, End User, Development Methods, Development Standards, and Classification. [SEER Manual]

NAME: SYSTEM REQUIREMENTS ANALYSIS

ACRONYM: SRA

DEFINITION: An analysis performed by the developer to identify a subset of the system requirements to be defined in each build and the subset to be implemented in each build. System Requirements Analysis for a given build means defining the system requirements for that particular build. [MIL-STD-498]

NAME: SYSTEM REQUIREMENTS REVIEW

ACRONYM: SRR

DEFINITION: A review that ascertains the adequacy of the contractor's efforts in defining system requirements conducted when a significant portion of the system functional requirements has been established. [MIL-STD-1521B]

NAME: SYSTEM SOFTWARE

ACRONYM:

DEFINITION: Software designed for a specific computer system or family of computer systems to facilitate the operation and maintenance of the computer system and associated programs (e.g., operating systems, communications, computer system health and status, security, and fault tolerance).

NAME: SYSTEM SPECIFICATION

ACRONYM:

DEFINITION: A system-level requirements specification. A system specification may be a System/Segment Specification (SSS), Prime Item Development Specification (PIDS), or Critical Item Development Specification (CIDS).

NAME: TARGET COMPUTER

ACRONYM:

DEFINITION: The computer for which the compiler generates object code. [MCCR MGT GUIDE]

NAME: TECHNICAL REVIEW & AUDIT

ACRONYM: MIL-STD-1521

DEFINITION: Describes the requirements for the conduct of technical reviews and audits on systems, equipment, and computer software to the extent specified in the contract clauses, Statement of Work (SOW), and the Contract Data Requirements List. The contracting agency tailors this standard to require only what is needed for each individual acquisition. [MIL-STD-1521B]

NAME: TEST READINESS REVIEW

ACRONYM: TRR

DEFINITION: A review conducted for each CSCI to determine whether the software test procedures are complete and to ensure that the contractor is prepared for formal CSCI testing. Software test procedures are evaluated for compliance with software test plans and descriptions, and for adequacy in accomplishing test requirements. At TRR, the contracting agency also reviews the results of informal software testing and any updates to the operation and support documents. [MIL-STD-1521B]

NAME: THIRD-GENERATION LANGUAGE

ACRONYM: 3GL

DEFINITION: Referred to as high-level languages that came into use in the 1960s. Some of these are for scientific work, like ALGOL and FORTRAN; others, like COBOL, are used for commercial applications. Some languages, such as PL/I and later ADA, had abilities for both scientific and commercial computing. 3GLs moved a step closer to the language of the user. They use English language words and express formulae in mathematical notation (e.g., $X = (A + B)/(C + D)$).

NAME: THOUSANDS OF DELIVERED SOURCE INSTRUCTIONS

ACRONYM: KDSI

DEFINITION: The number of thousands of delivered source instructions in the software product. [Boehm]

NAME: THOUSANDS OF SOURCE LINES OF CODE

ACRONYM: KSLOC

DEFINITION: The number of thousands of source lines of code.

NAME: TOKEN RING

ACRONYM:

DEFINITION: Local Area Network protocol with throughput capability of 16 megabits per second. [GOVT COMP NEWS 2/95]

NAME: UNIX

ACRONYM:

DEFINITION: A multiuser, multitasking operating system from AT&T that runs on a wide variety of computer systems from micro to mainframe. UNIX is written in C, which is a language designed for system-level programming. It is C's inherent transportability that allows UNIX to run on so many different computers. UNIX makes up the heart of the OS; the file system is a hierarchical directory method for organizing files on disk. Normally, UNIX commands are very cryptic, but they can be replaced with shells that are easier to use, including GUI. The name UNIX was coined for a single-user version of MULTICS, as it was intended to be a scaled-down version of the MULTICS operating system. [Computer Glossary] A comprehensive software system consisting of an OS with facilities for supporting technical development, document preparation, etc.

NAME: UPGRADE

ACRONYM:

DEFINITION: To improve the performance and capability of a software product or attribute. [DOD-HDBK-287]

NAME: VALIDATION

ACRONYM:

DEFINITION: The process of confirming that the software (i.e., documentation and computer program) satisfies all user requirements when operating in the user's environment. [MCCR MGT GUIDE]

NAME: VERBATIM CODE

ACRONYM:

DEFINITION: Reused code that is not modified; (i.e., used "as is").

NAME: VERIFICATION

ACRONYM:

DEFINITION: The process of confirming that the products of each software development phase (e.g., requirements analysis, design, coding, testing, etc.) are complete, correct, and consistent with respect to the products of the previous phase. [MCCR MGT GUIDE]

NAME: VERSION

ACRONYM:

DEFINITION: An identified and documented body of software. Modifications to a version of software (resulting in a new version) require configuration management action by either the contractor, the contracting agency, or both. During PDSS the Software Support Activity (SSA) is responsible for maintaining the configuration identification of all versions. [OOD-STD-2167A]

NAME: VIRTUAL MACHINE

ACRONYM: VM

DEFINITION: An operating system that runs on IBM mainframes. Originally developed for IBM customers, VM has been adopted by IBM as a major system product. VM has the ability of running multiple operating systems within the computer at the same time; each operating system running its own program. [Computer Glossary]

NAME: VIRTUAL MEMORY

ACRONYM: VM

DEFINITION: A technique that simulates more memory than actually exists and allows the computer to run several programs concurrently regardless of their size. The virtual memory system breaks up a program into segments called pages. Instead of bringing the entire program into memory, it brings as many pages into memory as it can fit based on the current size of the programs and leaves the remaining pages on disk. When instructions are called for that are not in memory, the disk page is called in, overlaying the page in memory. [Computer Glossary]

NAME: VIRTUAL MEMORY SYSTEM

ACRONYM: VMS

DEFINITION: A multiuser, multitasking virtual memory operating system from Digital Equipment Corp. that runs on its VAX line of computers. [Computer Glossary]

NAME: VIRTUAL PROCESSING

ACRONYM:

DEFINITION: A parallel processing technique that simulates a processor for applications that require a processor for each data element. It creates virtual processors for data elements above and beyond the number of processors available. [Computer Glossary]

NAME: VOICE MESSAGING

ACRONYM:

DEFINITION: An alternative to electronic mail, in which voice messages are intentionally recorded because the recipient is not available. [Computer Glossary]

NAME: VOLATILE MEMORY

ACRONYM: VM

DEFINITION: Memory that does not hold its contents without power. A computer's main memory is made up of dynamic RAM or static RAM chips: it loses its contents immediately upon loss of power. [Computer Glossary]

NAME: WATERFALL MODEL

ACRONYM:

DEFINITION: A project that consists of phases that are completed sequentially before proceeding to the next phase. Attributes of the waterfall model are that it is (1) a formal method; (2) a top-down development; and (3) composed of independent phases to be performed sequentially. The application of the waterfall model should be limited to situations where the requirements and the implementation of those requirements are very well understood. For example, if a company has experience in building accounting systems, input/output controllers, or compilers, then building another such product based on the existing designs is best managed with the waterfall model. [CrossTalk 1/95]

NAME: WBS FOR DEFENSE MATERIEL ITEMS

ACRONYM: MIL-STD-881B

DEFINITION: Establishes criteria governing the preparation and employment of work breakdown structures (WBS) for use during the acquisition of defense materiel items to display and define the products to be developed or produced. This WBS is associated solely with the acquisition of defense materiel items (or major modifications) that are (a) established as an integral program element of the Future Years Defense Program (FYDP), or (b) designated by the DoD Component or the Under Secretary of Defense for Acquisition. [MIL-STD-881B]

NAME: WBS FOR SOFTWARE ELEMENTS

ACRONYM: MIL-HB-171

DEFINITION: Provides a Work Breakdown Structure (WBS) for the software framework which provides guidance to developers and the government to better monitor, track, analyze, and estimate the cost of developing and supporting defense system software. It also describes how a contract may be written to emphasize software's importance and to obtain software cost information tailored to the specific requirements of the acquisition from the contractor/developer. [MIL-HDBK-171]

NAME: WORD

ACRONYM:

DEFINITION: A data packet of information for the computer, usually composed of many bits. The length of a computer word typically ranges from 8 bits for microprocessors to 64 or more bits for larger computers. The memory of a computer is divided into segments called words. [MCCR MGT GUIDE]

NAME: WORD LENGTH

ACRONYM:

DEFINITION: The number of bits in a computer word. The longer the word length, the greater the precision (number of significant digits). A word represents a computer instruction or the number of bits needed to represent the largest data element normally processed by a computer. [SEMICON & COMP GLOSS]

NAME: WORK BREAKDOWN STRUCTURE

ACRONYM: WBS

DEFINITION: A product-oriented listing, in family tree order, of the hardware, software, services and other work tasks, which completely defines a project or program. The listing results from project engineering during the development and production of defense material items. A WBS relates the elements of work to be accomplished to each other and to the end product. [DOD-STD-480B]