

MASTER SCHEDULER - the job title of the person who manages the master construction or production schedule. This person should be the best scheduler available as the consequences of the planning here have a great impact on material and capacity planning. Ideally, the person would have substantial product, shop, or field knowledge. (11/90)

MATERIAL COST - the cost of everything of a substantial nature that is essential to the construction or operation of a facility, both of a direct or indirect nature. Generally includes all manufactured equipment as a basic part. (11/90)

MATERIAL DIFFERENCE - a change that is important to the performance of the work or that will have a measurable influence or effect on the time, cost of, or procedures for the work under the contract. (11/90)

MATERIAL REQUIREMENTS PLANNING (MRP) - a system which uses bills of material, inventory and open order data, and master production schedule information to calculate requirements for materials. It makes recommendations to release replenishment orders for material. Further, since it is time-phased, it makes recommendations to reschedule open orders when due dates and need dates are not in phase. See **MANUFACTURING RESOURCE PLANNING**. (11/90)

MATHEMATICAL PROGRAMMING - the operation of reducing a relationship of several variables, which may be subject to constraints, to a mathematical form and, possibly, to a computer program. Specifically, the term used to denote the general problem of optimizing a mathematical function. If the function and constraints are linear in the variables and a subset of the constraints restrict the variables to be non-negative, we have a linear programming problem. (11/90)

MAXIMUM OUT-OF-POCKET CASH - the highest year-end negative cash balance during project life. (11/90)

MECHANICAL COMPLETION - placing a fixed asset in service. Mechanical completion is an event. (11/90)

MERIT SHOP - see **OPEN SHOP**. (11/90)

METHOD OF PERFORMANCE - the manner in which the specified product or objective is accomplished, which is left to the discretion of the contractor unless otherwise provided in the contract. If the owner or the engineer orders the contractor to modify the construction procedure, this constitutes a change in method. If the imposition of this modification results in additional cost to the contractor, the contractor may be entitled to recovery under the changes clause. (11/90)

MILESTONE - an important or critical event and/or activity that must occur when scheduled in the project cycle in order to achieve the project objective(s). [P] (11/90)

MILESTONE FLAG - a numeric code that may be entered on an event to flag the event as a milestone. (11/90)

MILESTONE LEVEL - the level of management at which a particular event is considered to be a key event or milestone. (11/90)

MILESTONE REPORT - an output report at a specified level showing the latest allowable date, expected date, schedule completion date, and the slack for the successor event contained on each activity or event name flagged as a milestone at the level specified. (11/90)

MILESTONE SCHEDULE - a schedule comprised of key events or milestones selected as a result of coordination between the client's and the contractor's project management. These events are generally critical accomplishments planned at time intervals throughout the project and used as a basis to monitor overall project performance. The format may be either network or bar chart and may contain minimal detail at a highly summarized level. (11/90)

MISREPRESENTATION - inaccurate factual information furnished by either party to a contract, even if done unintentionally. (11/90)

MITIGATION OF DAMAGES - to take all possible measures to avoid damage and delay and, if not avoidable, to reduce or lessen the extra costs incurred due to occurrence of the event. (11/90)

MODEL PRICING - the techniques of using verbal, symbolic, or analog models to depict cost relationships, and the form which they take. Mathematics and digital computers are basic analytical tools for model pricing. (11/90)

MODIFICATION, BILATERAL - an agreement negotiated by and entered into by both parties for a modification of the existing contract terms of a mutually agreed time or price adjustment. (11/90)

MODIFICATION, UNILATERAL - a modification to the contract issued by the owner without the agreement of the contractor as to the time or price adjustment. (11/90)

MONITORING - periodic gathering, validating and analyzing various data on contract status to determine any existing or potential problems. Usually one accomplishes this through use of the data provided in contractor reports on schedule, labor, cost and technical status to measure progress against the established baselines for each of these report areas. However, when deemed necessary, on-site inspection and validation and other methods can be employed. (11/90)

MONTE CARLO METHOD - a simulation technique by which approximate evaluations are obtained in the solution of mathematical expressions so as to determine the range or optimum value. The technique consists of simulating an experiment to determine some probabilistic property of a system or population of objects or events by use of random sampling applied to the components of the system, objects, or events. (11/90)

MONTHLY GUIDE SCHEDULE - a detailed two-month schedule used to detail the sequence of activities in an area for analysis or to plan work assignments. This schedule is usually prepared on an "as needed" basis or within a critical area. Syn.: SHORT-TERM ACTIVITIES (11/90)

MONTH-TO-MONTH PRICE INDEX - a price index for a given month with the preceding month as the base period. (11/90)

MOST LIKELY TIME ESTIMATE - the most realistic estimate of the time an activity might consume. (11/90)

MOVING AVERAGE - smoothing a time series by replacing a value with the mean of itself and adjacent values. (11/90)

MRP - see MATERIAL REQUIREMENTS PLANNING. (11/90)

MULTIPLE FINISH NETWORK - a network that has more than one finish activity or finish event. (11/90)

MULTIPLE START NETWORK - a network that has more than one start activity or event. (11/90)

MULTIPLE STRAIGHT-LINE DEPRECIATION METHOD - a method of depreciation accounting in which two or more straight line rates are used. This method permits a predetermined portion of the asset to be written off in a fixed number of years. One common practice is to employ a straight line rate which will write off 3/4 of the cost in the first half of the anticipated service life; with a second straight line rate to write off the remaining 1/4 in the remaining half life. (11/90)

NEAR-CRITICAL ACTIVITY - an activity that has low total float. (11/90)

NEGLIGENCE - failure to exercise that degree of care in the conduct of professional duties that should be exercised by the average, prudent professional, practicing in the same community under similar circumstances. Under this concept, an architect/engineer is not liable for errors of judgment, but only for a breach of duty to exercise care and skill. (11/90)

NET AREA - when used in building construction, it is the area, exclusive of encroachments by partitions, mechanical space, etc, which is available for circulation or for any other functional use within a project. (11/90)

NET BENEFITS (SAVINGS) - the difference between the benefits and the costs -- where both are discounted to present or annual value dollars. [A] (11/90)

NET PRESENT VALUE - see PRESENT VALUE. (11/90)

NET PROFIT - earnings after all operating expenses (cash or accrued non-cash) have been deducted from net operating revenues for a given period. (11/90)

NET PROFIT, PERCENT OF SALES - the ratio of annual profits to total sales for a representative year of capacity operations. An incomplete measure of profitability, but a useful guidepost for comparing similar products and companies. Syn.: PROFIT MARGIN (11/90)

NET PURCHASES (CONCEPT OF) - according to this concept, any proceeds from the sale in the reference year of a used commodity belongs to a given elementary group and are subtracted from the expenditure reported on commodities in that elementary group. (11/90)

NETWORK - a logic diagram of a project consisting of the activities and events that must be accomplished to reach the objectives, showing their required sequence of accomplishments and interdependencies. (11/90)

NETWORK ANALYSIS - technique used in planning a project consisting of a sequence of activities and their interrelationship within a network of activities making up a project. See CRITICAL PATH. (11/90)

NETWORK PLANNING - a broad generic term for techniques used to plan complex projects using logic diagrams (networks). Two of the most popular techniques are ADM and PDM. (11/90)

NODE - the symbol on a logic diagram at the intersection of arrows (activities). Nodes identify completion and/or start of activities. See EVENT. (11/90)

NOMINAL DISCOUNT RATE - the rate of interest reflecting the time value of money stemming both from inflation and the real earning power of money over time. This is the discount rate used in discount formulas or in selecting discount factors when future benefits and costs are expressed in current dollars. [A] (11/90)

NONCASH - a term frequently used for tangible commodities to be used from inventory and not replaced. (11/90)

NONDURABLE GOODS - goods whose serviceability is generally limited to a period of less than three years (such as perishable goods and semidurable goods). (11/90)

NONEXEMPT EMPLOYEES - employees not exempt from federal wage and hours guidelines. (11/90)

NONWORK UNIT - a calendar-specified time unit during which work will not be scheduled. (11/90)

NOTICE OF AWARD - the written notice of acceptance of the bid by the owner to a bidder stating that upon compliance by the bidder with the conditions precedent enumerated therein, within the time specified, the owner will sign and deliver the agreement. (11/90)

NOTICE TO PROCEED - a written notice issued by the owner to the contractor authorizing the contractor to proceed with the work and establishing the date for commencement of the contract time. (11/90)

OBJECTIVE EVENT - an event that signifies the completion of a path through the network. A network may have more than one objective event. (11/90)

OBSOLESCENCE - (1) the condition of being out of date. A loss of value occasioned by new developments which place the older property at a competitive disadvantage. A factor in depreciation; (2) a decrease in the value of an asset brought about by the development of new and more economical methods, processes, and/or machinery; (3) the loss of usefulness or worth of a product or facility as a result of the appearance of better and/or more economical products, methods or facilities. (11/90)

OFFSITES -- general facilities outside the battery limits of process units, such as field storage, service facilities, utilities, and administrative buildings. (11/90)

OMISSION - any part of a system, including design, construction and fabrication, that has been left out, resulting in a deviation. An omission requires an evaluation to determine what corrective action is necessary. (11/90)

ON-STREAM FACTOR - the ratio of actual operating days to calendar days per year. (11/90)

OPEN SHOP - an employment or project condition where either union or non-union contractors or individuals may be working. Open shop implies that the owner or prime contractor has no union agreement with workers. Also referred to as merit shop. (11/90)

OPERATING COST - the expenses incurred during the normal operation of a facility, or component, including labor, materials, utilities, and other related costs. Includes all fuel, lubricants, and normally scheduled part changes in order to keep a subsystem, system, particular item, or entire project functioning. Operating costs may also include general building maintenance, cleaning services, taxes, and similar items. See **MANUFACTURING COST**. (11/90)

OPERATION - ongoing endeavor, or activities that utilize strategic assets for a defined function or purpose. (1/02)

OPERATIONS RESEARCH (OR) - quantitative analysis of industrial and administrative operations with intent to derive an integrated understanding of the factors controlling operational systems and in view of supplying management with an objective basis to make decisions. OR frequently involves representing the operation or the system with a mathematical model. (11/90)

OPPORTUNITY COST OF CAPITAL - the rate of return available on the next best available investment of comparable risk. [A] (11/90)

OPTIMISTIC TIME ESTIMATE - the minimum time in which the activity can be completed if everything goes exceptionally well. It is generally held that an activity would have no more than one chance in a hundred of being completed within this time. (11/90)

OPTIMUM PLANT SIZE - the plant capacity which represents the best balance between the economics of size and the cost of carrying excess capacity during the initial years of sales. (11/90)

OPTIMIZATION - Techniques that analyze a system with the goal of finding an optimum result. Finding an optimum result usually requires evaluating design elements, execution strategies and methods, and other system inputs for their effects on cost, schedule, safety, or some other set of outcomes or objectives. Commonly employs computer simulation and mathematical modeling. (1/03)

ORGANIZATIONAL CODES - numerical or alphabetized characters that the user specifies for the system to associate with a particular activity for sorting purposes. (11/90)

ORIGINAL DURATION - the initial accepted estimate of an activity duration used in the original baseline schedule. (11/90)

OVER-HAUL - the distance in excess of that given as the stated haul distance to transport excavated material. (11/90)

OVERHEAD - a cost or expense inherent in the performing of an operation, ie, engineering, construction, operating or manufacturing, which cannot be charged to or identified with a part of the work, product or asset and, therefore, must be allocated on some arbitrary base believed to be equitable, or handled as a business expense independent of the volume of production. Plant overhead is also called factory expense. (11/90)

OVER (UNDER) PLAN - the planned cost to date minus the latest revised estimate of cost to date. When planned cost exceeds latest revised estimate, a projected underplan condition exists. When latest revised estimate exceeds planned cost, a projected overplan condition exists. (11/90)

OVERRUN (UNDERRUN) - the value for the work performed to date minus the actual cost for that same work. When value exceeds actual cost, an underrun condition exists. When actual cost exceeds value, an overrun condition exists. (11/90)

OWNER - the public body or authority, corporation, association, firm or person with whom the contractor has entered into the agreement and for whom the work is to be provided. (11/90)

PAASCHE-TYPE PRICE INDEX - a composite index founded on a fixed basket which is taken from the current period of this index. (11/90)

PARAMETRIC ESTIMATE - In estimating practice, describes estimating algorithms or cost estimating relationships that are highly probabilistic in nature (i.e., the parameters or quantification inputs to the algorithm tend to be abstractions of the scope). Typical parametric algorithms include, but are not limited to, factoring techniques, gross unit costs, and cost models (i.e., algorithms intended to replicate the cost performance of a process of system). Parametric estimates can be as accurate as definitive estimates. (1/03)

PARTIAL UTILIZATION - placing a portion of the work in service for the purpose for which it is intended (or a related purpose) before reaching substantial completion for all the work. (11/90)

PATH - the logically continuous series of connected activities through a network. [P] (11/90)

PATH FLOAT - see FLOAT. (11/90)

PAYBACK METHOD - a technique of economic evaluation that determines the time required for the cumulative benefits from an investment to recover the investment cost and other accrued costs. See DISCOUNTED PAYBACK PERIOD; SIMPLE PAYBACK PERIOD. [A] (11/90)

PAYOFF (PAYBACK) PERIOD - see PAYOUT TIME. [A] (11/90)

PAYOUT TIME - the time required to recover the original fixed investment from profit and depreciation. Most recent practice is to base payout time on an actual sales projection. Syn.: PAYOFF PERIOD. See also SIMPLE PAYBACK PERIOD. (11/90)

PAYROLL BURDEN - includes all payroll taxes, payroll insurances, fringe benefits, and living and transportation allowances. (11/90)

PDM - see PRECEDENCE DIAGRAM METHOD. (11/90)

PDM ARROW - a graphical symbol in PDM networks used to represent the lag describing the relationship between work items. (11/90)

PDM FINISH TO FINISH RELATIONSHIP - this relationship restricts the finish of the work item until some specified duration following the finish of another work item. (11/90)

PDM FINISH TO START RELATIONSHIP - the standard node type of relationship as used in ADM where the activity of work item may start just as soon as another work item is finished. (11/90)

PDM START TO FINISH RELATIONSHIP - the relationship restricts the finish of the work item until some duration following the start of another work item. (11/90)

PDM START TO START RELATIONSHIP - this relationship restricts the start of the work item until some specified duration following the start of the preceding work item. (11/90)

PERCENT COMPLETE - a comparison of the work completed to the current projection of total work. The percent complete of an activity in a program can be determined by inspection of quantities placed as workhours expended and compared with quantities planned or workhours planned. Other methods can also be used. (11/90)

PERCENT ON DIMINISHING VALUE - see DECLINING BALANCE DEPRECIATION. (11/90)

PERFORMANCE BOND - a bond that guarantees the work will be completed in accordance with the contract documents. The bond also assures the owner that the contractor will fulfill all contractual and financial obligations. (11/90)

PERFORMANCE MEASUREMENT BASELINE - the time-phased budget plan against which contract performance is measured. It is formed by the budgets assigned to scheduled work elements and the applicable indirect budgets. For future effort not planned in detail, the performance measurement baseline also includes budgets assigned to higher level CWBS elements and undistributed budget. It will reconcile to the contract budget base. It equals the total allocated budget less management reserve. (11/90)

PERT - an acronym for Project Evaluation Review Technique which is a probabilistic technique, used mostly by government agencies, for calculating the "most likely" durations for network activities. Most recently, however, the term PERT has been used as a synonym for CPM. (11/90)

PESSIMISTIC TIME ESTIMATE - the maximum time required for an activity under adverse conditions. It is generally held that an activity would have no more than one chance in a hundred of exceeding this amount of time. (11/90)

PHASED CONSTRUCTION - as most commonly used today, implies that construction of a facility or system or subsystem commences before final design is complete. Phased construction is used in order to achieve beneficial use at an advanced date. (11/90)

PHYSICAL PROGRESS - the status of a task, activity, or discipline based on preestablished guidelines related to the amount or extent of work completed. (11/90)

PLAN - a predetermined course of action over a specified period of time which represents a projected response to an anticipated environment in order to accomplish a specific set of adaptive objectives. (11/90)

PLANNED COST - the approved estimated cost for a work package or summary item. This cost when totaled with the estimated costs for all other work packages results in the total cost estimate committed under the contract for the program or project. (11/90)

PLANNING - the determination of a project's objectives with identification of the activities to be performed, methods and resources to be used for accomplishing the tasks, assignment of responsibility and accountability, and establishment of an integrated plan to achieve completion as required. (11/90)

PLANNING BILL (of Material) - an artificial grouping of items, in bill of material format, used to facilitate master scheduling and/or material planning. (11/90)

PLANNING HORIZON - in an MRP system, the span of time from the current to some future date for which material plans are generated. This must cover at least the cumulative purchasing and manufacturing lead time and is usually substantially longer to facilitate MRP II. (11/90)

PLANNING PACKAGE - a logical aggregation of work within a cost account, normally the far term effort that can be identified and budgeted in early baseline planning, but which will be further defined into work packages, LOE, or apportioned effort. (11/90)

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PLANT OVERHEAD - those costs in a plant that are not directly attributable to any one production or processing unit and are allocated on some arbitrary basis believed to be equitable. Includes plant management salaries, payroll department, local purchasing and accounting, etc. Syn.: **FACTORY EXPENSE**. (11/90)

PLUG DATE - a date assigned externally to an activity that establishes the earliest or latest date when the activity is scheduled to start or finish. Syn.: **CONSTRAINT DATE**. (11/90)

POPULATION - all conceivable or hypothetically possible instances or observations of the selected phenomenon. (11/90)

PRECEDENCE DIAGRAM METHOD (PDM) - a method of constructing a logic network using nodes to represent the activities and connecting them by lines that show logic relationships. (11/90)

PRECEDING EVENT - see **BEGINNING EVENT**. (11/90)

PRECONSTRUCTION CPM - a plan and schedule of the construction work developed during the design phase preceding the award of contract. (11/90)

PREDECESSOR - An activity that immediately precedes another activity. (3/04)

PREDECESSOR ACTIVITY - any activity that exists on a common path with the activity in question and occurs before the activity in question. (11/90)

PREDECESSOR EVENT - see **BEGINNING EVENT**. (11/90)

PREFERENTIAL LOGIC - the contractor's approach to sequencing of the work over and above those sequences indicated in or required by the contract documents. Examples include equipment restraints, crew movements, form reuse, special logic (lead/lag) restraints, etc factored into the progress schedule instead of disclosing the associated float times. (11/90)

PRELIMINARY CPM PLAN - CPM analysis of the construction phase made before the award of contracts to determine a reasonable construction period. See **PRECONSTRUCTION CPM**. (11/90)

PRELIMINARY ENGINEERING - includes all design-related services during the evaluation and definition phases of a project. (11/90)

PRESENT VALUE - the value of a benefit or cost found by discounting future cash flows to the base time. Also, the system of comparing proposed investments, which involves discounting at a known interest rate (representing a cost of capital or a minimum acceptable rate of return) in order to choose the alternative having the highest present value per unit of investment. This technique eliminates the occasional difficulty with profitability index of multiple solutions, but has the troublesome problem of choosing or calculating a "cost of capital" or minimum rate of return. Also called **Net Present Value**. Syn.: **PRESENT WORTH**. [B] (11/90)

PRESENT VALUE FACTOR - (1) the discount factor used to convert future values (benefits and costs) to present values; (2) a mathematical expression also known as the present value of an annuity of one; (3) one of a set of mathematical formulas used to facilitate calculation of present worth in economic analysis involving compound interest. Syn.: **PRESENT WORTH FACTOR**. [B] (11/90)

PRESENT WORTH - see PRESENT VALUE. [A] (11/90)

PRESENT WORTH FACTOR - see PRESENT VALUE FACTOR. [A] (11/90)

PREVENTION - quality activities employed to avoid deviations; includes such activities as quality systems development, quality program development, feasibility studies, quality system audits, contractor/subcontractor evaluation, vendors/suppliers of information/materials evaluation, quality orientation activities, and certification/qualification. (11/90)

PRICE - the amount of money asked or given for a product (eg, exchange value). The chief function of price is rationing the existing supply among prospective buyers. (11/90)

PRICE INDEX - the representation of price changes, which is usually derived by dividing the current price for a specific good by some base period price. See COST INDEX. (11/90)

PRICE RELATIVES - the ratio of the commodity price in a given period to its price in the base period. (11/90)

PRICING - In estimating practice, after costing an item or activity, the determination of the amount of money asked in exchange for the item, activity, or project. Pricing determination considers business and other interests (e.g., profit, marketing, etc.) in addition to inherent costs. The price may be greater or less than the cost depending on the business or other objectives. In the cost estimating process, pricing follows costing and precedes budgeting. In accounting practice, the observation and recording (collecting) of prices. (1/03)

PRICING, FORWARD - an estimation of the cost of work prior to actual performance. It is also known as Prospective Pricing. Pricing forward is generally used relative to the pricing of proposed change orders. (11/90)

PRICING, RETROSPECTIVE - the pricing of work after it has been accomplished. (11/90)

PRIMARY CLASSIFICATION - the classification of commodities by "commodity type." (11/90)

PROBABILITY - a value depicting the likelihood of an expected or occurred event. (11/90)

PROBABILITY DISTRIBUTION - a distribution giving the probability of a value x as a function of x ; or more generally, the probability of joint occurrence of a set of variates x_1, \dots, x_p , as a function of those quantities.

It is customary, but not the universal practice, to use "probability distribution" to denote the probability of values up to and including the argument x . From a frequency viewpoint the distinction is the same as between Frequency Function and "distribution function". (11/90)

PROCUREMENT - the acquisition (and directly related matters) of equipment, material, and nonpersonal services (including construction) by such means as purchasing, renting, leasing (including real property), contracting, or bartering, but not by seizure, condemnation, or donation. Includes preparation of inquiry packages, requisitions, and bid evaluations; purchase order award and documentation; plus expediting, in-plant inspection, reporting, and evaluation of vendor performance. (11/90)

PRODUCTION PLAN - the agreed upon strategy that comes from the production planning function. (See PRODUCTION PLANNING.) (11/90)

PRODUCTION PLANNING - the function of setting the overall level of manufacturing or construction output. Its prime purpose is to establish production rates that will achieve management's objective, while usually attempting to keep the production force relatively stable. (11/90)

PRODUCTION RATE - the amount of work, which may be accomplished in a given unit of time. (4/04)

PRODUCTION SCHEDULE - a plan which authorizes the factory to manufacture a certain quantity of a specific item. Usually initiated by the production planning department. (11/90)

PRODUCTIVITY - In general terms, labor productivity can be defined as the ratio of the value that labor produces to the value invested in labor. It is an absolute measure of work process efficiency, i.e., a measure of the extent to which labor resources are minimized and wasted effort is eliminated from the work process.

In earned value project control practice, productivity is a relative measure of labor efficiency, either good or bad, when compared to an established base or norm as determined from an area of great experience. Alternatively, productivity is defined as the reciprocal of the labor factor. (1/04)

PROFIT-

(1) **Gross Profit** - earnings from an on-going business after direct costs of goods sold have been deducted from sales revenue for a given period.

(2) **Net Profit** - earnings or income after subtracting miscellaneous income and expenses (patent royalties, interest, capital gains) and federal income tax from operating profit.

(3) **Operating Profit** - earnings or income after all expenses (selling, administrative, depreciation) have been deducted from gross profit. (11/90)

PROFIT MARGIN - see NET PROFIT, PERCENT OF SALES. (11/90)

PROFITABILITY - a measure of the excess income over expenditure during a given period of time. (11/90)

PROFITABILITY ANALYSIS - the evaluation of the economics of a project, manufactured product, or service within a specific time frame. (11/90)

PROFITABILITY INDEX (PI) - the rate of compound interest at which the company's outstanding investment is repaid by proceeds for the project. All proceeds from the project, beyond that required for interest, are credited, by the method of solution, toward repayment of investment by this calculation. Also called discounted cash flow, interest rate of return, investor's method, internal rate of return. Although frequently requiring more time to calculate than other valid yardsticks, PI reflects in a single number both the dollar and the time values of all money involved in a project. In some very special cases, such as multiple changes of sign in cumulative cash position, false and multiple solutions can be obtained by this technique. (11/90)

PROGRAM - an endeavor of considerable scope and enduring in nature as opposed to a project; usually representing some definable portion of the basic agency mission and defined as a line item in the agency budget. (11/90)

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PROGRAM MANAGER - an official in the program division who has been assigned responsibility for accomplishing a specific set of program objectives. This involves planning, directing and controlling one or more projects of a new or continuing nature, initiation of any acquisition processes necessary to get project work under way, monitoring of contractor performance and the like. (11/90)

PROGRESS - development to a more advanced stage. Progress relates to a progression of development and, therefore, shows relationships between current conditions and past conditions. In networking, progress indicates activities have started or completed, or are in progress. See STATUS. (11/90)

PROGRESS TREND - an indication of whether the progress rate of an activity or of a project is increasing, decreasing, or remaining the same (steady) over a period of time. (11/90)

PROJECT - an endeavor with a specific objective to be met within the prescribed time and dollar limitations and which has been assigned for definition or execution. (11/90)

PROJECT CONTROL - project control is a process for controlling the investment of resources in an asset where investments are made through the execution of a project. Project control includes the general steps of; 1) project planning including establishing project cost and schedule control baselines; 2) measuring project performance; 3) comparing measurements against the project plans, and; 4) taking corrective, mitigating, or improvement action as may be determined through forecasting and further planning activity. (1/02)

PROJECT DURATION - the elapsed duration from project start date through project finish date. (11/90)

PROJECTED FINISH DATE - the current estimate of the calendar date when an activity will be completed. (11/90)

PROJECTED START DATE - the current estimate of the calendar date when an activity will begin. (11/90)

PROJECTED UNDERRUN (OVERRUN) - the planned costs minus the latest revised estimate for a work package or summary item. When planned cost exceeds the latest revised estimate, a projected underrun condition exists. When the latest revised estimate exceeds the planned cost, a projected overrun condition exists. (11/90)

PROJECT FINISH DATE (SCHEDULE) - the latest scheduled calendar finish date of all activities on the project. (11/90)

PROJECTION - an extension of a series, or any set of values, beyond the range of the observed data. (11/90)

PROJECT LIFE - see ECONOMIC LIFE. [A] (11/90)

PROJECT MANAGEMENT - the utilization of skills and knowledge in coordinating the organizing, planning, scheduling, directing, controlling, monitoring and evaluating of prescribed activities to ensure that the stated objectives of a project, manufactured product, or service, are achieved. (11/90)

PROJECT MANAGER - an individual who has been assigned responsibility and authority for accomplishing a specifically designated unit of work effort or group of closely related efforts established to achieve stated or anticipated objectives, defined tasks, or other units of related effort on a schedule for

performing the stated work funded as a part of the project. The project manager is responsible for the planning, controlling, and reporting of the project. [P] (11/90)

PROJECT NETWORK ANALYSIS (PNA) - a group of techniques based on the network project representation to assist managers in planning, scheduling, and controlling a project. (11/90)

PROJECT OFFICE - the organization responsible for administration of the project management system, maintenance of project files and documents, and staff support for officials throughout the project life cycle. (11/90)

PROJECT PHASES - the major phases of a project, which include preplanning, design, procurement, construction, start-up, operation, and final disposition. (11/90)

PROJECT PLAN - the primary document for project activities. It covers the project from initiation through completion. (11/90)

PROJECT START DATE (SCHEDULE) - the earliest calendar start date among all activities in the network. (11/90)

PROJECT SUMMARY WORK BREAKDOWN STRUCTURE (PSWBS) - a summary WBS tailored by project management to the specific project, and identifying the elements unique to the project. (11/90)

PROJECT TIME - the time dimension in which the project is being planned. (11/90)

PROPOSAL SCHEDULE - the first schedule issued on a project; accompanies either the client's request or the contractor's proposal. (11/90)

PROPOSED BASE CONTRACT PRICE - the sum total of the individual total price amounts for items of work designated as base bid items listed on the schedule of prices on the bid form (excluding alternates, if any). (11/90)

PROPOSED COMBINED CONTRACT PRICE - the sum total of bidder's proposed base contract price and all of the individual total price amounts for items of work designated as alternate bid items listed on the schedule of prices for alternate bid items on the bid form (excluding all additional alternates, if any). (11/90)

PROPOSED CHANGE ORDER - the form furnished by the owner or the engineer which is to be used (1) by the owner, when signed by the owner, as a directive authorizing addition to, deletion from, or revision in the work, or an adjustment in contract price or contract time, or any combination thereof; (2) by the owner, when unsigned, to require that the contractor figure the potential effect on contract price or contract time of a proposed change, if the proposed change is ordered upon signing by the owner; (3) by the contractor, to notify the owner that in the opinion of the contractor, a change is required as provided in the applicable provisions of the contract documents. When signed by the owner, a proposed change order may or may not fully adjust contract price or contract time, but is evidence that the change directed by the proposed change order will be incorporated in a subsequently issued change order following negotiations as to its effect, if any, on contract price or contract time. When countersigned by the contractor, a proposed change order is evidence of the contractor's acceptance of the basis for contract adjustments provided, except as otherwise specifically noted. (11/90)

PRUDENT INVESTMENT - that amount invested in the acquisition of the property of an enterprise when all expenditures were made in a careful, businesslike, and competent manner. (11/90)

PUNCHLIST - a list generated by the owner, architect, engineer, or contractor of items yet to be completed by the contractor. Sometimes called a "but" list ("but" for these items the work is complete). (11/90)

PURE PRICE CHANGE - change in the price of a particular commodity which is not attributable to change in its quality or quantity. (11/90)

QUALIFICATION SUBMITTALS - data pertaining to a bidder's qualifications which shall be submitted as set forth in the instructions to bidders. (11/90)

QUALITY - conformance to established requirements (not a degree of goodness). (11/90)

QUALITY ACCEPTANCE CRITERIA - specified limits placed on characteristics of a product, process, or service defined by codes, standards, or other requirement documents. (11/90)

QUALITY ACTIVITIES - those activities directly associated with appraisal, training, and prevention. (11/90)

QUALITY APPRAISAL - quality activities employed to determine whether a product, process, or service conforms to established requirements, including: design review, specification review, other documentation review, constructability review, materials inspection/tests, personnel testing, quality status documentation, and post project reviews. (11/90)

QUALITY ASSURANCE - all those planned or systematic actions necessary to provide adequate confidence that a product, process, or service will conform to established requirements. (11/90)

QUALITY AUDIT - a formal, independent examination with intent to verify conformance with the acceptance criteria. An audit does not include surveillance or inspection for the purpose of process control or product acceptance. (11/90)

QUALITY CONFORMANCE - quality management activities associated with appraisal, training, and prevention adapted to achieve zero deviations from the established requirements. (11/90)

QUALITY CONTROL - inspection, test, evaluation or other necessary action to verify that a product, process, or service conforms to established requirements and specifications. (11/90)

QUALITY CORRECTIVE ACTION - measures taken to rectify conditions adverse to quality and, where necessary, to preclude repetition. Corrective action includes rework and remedial action for nonconformance deviations. (11/90)

QUALITY MANAGEMENT - concerns the optimization of the quality activities involved in producing a quality product, process or service. As such, it includes appraisal, training, and prevention activities. (11/90)

QUALITY MANAGEMENT COSTS - the sum of those costs associated with appraisal, training, and prevention activities. (11/90)

QUALITY NONCONFORMANCE - a deviation that occurs with a severity sufficient to consider rejection of the product, process, or service. In some situations the product, process, or service may be accepted as is; in other situations, it will require corrective action. It also may involve the provision of deliverables that are more than required. (11/90)

QUALITY PERFORMANCE TRACKING SYSTEM - a management tool providing data for the quantitative analysis of certain quality-related aspects of projects by systematically collecting and classifying costs of quality. (11/90)

QUANTIFICATION - In estimating practice, an activity to translate project scope information into resource quantities suitable for costing. In the engineering and construction industry, a take-off is a specific type of quantification that is a measurement and listing of quantities of materials from drawings. Syn.: TAKE-OFF. (1/03)

QUANTITY RATIO - a ratio which measures, for a given commodity, its quantitative shift between alternative baskets. (11/90)

QUANTITY SURVEY - using standard methods measuring all labor and material required for a specific building or structure and itemizing these detailed quantities in a book or bill of quantities. (11/90)

QUANTITY SURVEYOR - In the United Kingdom, contractors bidding a job receive a document called a bill of quantities, in addition to plans and specifications, which is prepared by a quantity surveyor, according to well-established rules. To learn these rules the quantity surveyor has to undergo five years of technical training and must pass a series of professional examinations. In the United Kingdom a quantity surveyor establishes the quantities for all bidders, and is professionally licensed to do so. (11/90)

QUEUING THEORY - the theory involving the use of mathematical models, theorems and algorithms in the analysis of systems in which some service is to be performed under conditions of randomly varying demand, and where waiting lines or queues may form due to lack of control over either the demand for service or the amount of service required, or both. Utilization of the theory extends to process, operation and work studies. (11/90)

RANDOM PROCESS - in a general sense the term is synonymous with the more usual and preferable "stochastic" process. It is sometimes employed to denote a process in which the movement from one state to the next is determined by a variate which is independent of the initial and final state. (11/90)

RANDOM WALK - the path traversed by a particle which moves in steps, each step being determined by chance either in regard to direction or in regard to magnitude or both. Cases most frequently considered are those in which the particle moves on a lattice of points in one or more dimensions, and at each step is equally likely to move to any of the nearest neighboring points. The theory of random walks has many applications, eg, to the migration of insects, sequential sampling and, in the limit, to diffusion processes. (11/90)

RATE OF RETURN - the interest rate earned by an investment. See RETURN ON AVERAGE INVESTMENT, RETURN ON ORIGINAL INVESTMENT, PROFITABILITY INDEX, INTERNAL RATE OF RETURN, DISCOUNTED CASH FLOW. (11/91)

REAL DISCOUNT RATE - the rate of interest reflecting that portion of the time value of money related to the real earning power of money over time. This is the discount rate used in discount formulas or in selecting discount factors when future benefits and costs are expressed in constant dollars. [A] (11/90)

REAL DOLLARS - see CONSTANT DOLLARS. [A] (11/90)

REAL ESTATE - this refers to the physical land and appurtenances, including structures affixed thereto. In some states, by statute, this term is synonymous with real property. (11/90)

REAL PROPERTY - refers to the interests, benefits, and rights inherent in the ownership of physical real estate. It is the bundle of rights with which the ownership of real estate is endowed. (11/90)

REASONABLENESS STANDARD - costs that do not exceed the amount incurred by a prudent contractor or those costs which are generally accepted. Some factors on which reasonableness is based are recognition of the costs as ordinary and necessary and restraints imposed by law, contract terms, or sound business practices. (11/90)

REBASING - conversion of a price index from one time base to another. (11/90)

REGRESSION - a functional relationship between two or more correlated variables often empirically determined from data and used to predict values of one variable when given values of the others. (11/90)

REMAINING AVAILABLE RESOURCES - the difference between the resource availability pool and the level schedule resource requirements. Its computed from the resource allocation process. (11/90)

REMAINING DURATION - the estimated work units needed to complete an activity as of the data date. (11/90)

REMAINING FLOAT (RF) - the difference between the early finish and the late finish. (11/90)

RENTAL (LEASED) EQUIPMENT COST - the amount which the owner of the equipment (lessor) charges to a lessee for use of the equipment. The best evidence of such costs are rental invoices that indicate the amount paid for leasing such equipment. (11/90)

REPLACEMENT - a facility proposed to take the place of an existing facility, without increasing its capacity, caused either by obsolescence or physical deterioration. (11/90)

REPLACEMENT COST - (1) the cost of replacing the productive capacity of existing property by another property of any type, to achieve the most economical service, at prices as of the date specified; (2) facility component replacement and related costs, included in the capital budget, that are expected to be incurred during the study period. [B] (11/90)

REPLACEMENT VALUE - that value of an item determined by repricing the item on the basis of replacing it, in new condition, with another item that gives the same ability to serve, or the same productive capacity, but which applies current economic design, adjusted for the existing property's physical deterioration. (11/90)

REPRODUCTION COST - the cost of reproducing substantially the identical item or facility at a price level as of the date specified. (11/90)

REPROGRAMMING - a comprehensive replanning of the efforts remaining in the contract resulting in a revised total allocated budget which exceeds the contract budget base. (11/90)

REPUDIATION - see ANTICIPATORY BREACH. (11/90)

REQUIRED COMPLETION DATE - the required date of completion assigned to a specific activity or project. (11/90)

REQUIRED RETURN - the minimum return or profit necessary to justify an investment. It is often termed interest, expected return or profit, or charge for the use of capital. (11/90)

REQUIREMENT - an established requisite characteristic of a product, process, or service. A characteristic is a physical or chemical property, a dimension, a temperature, a pressure, or any other specification used to define the nature of a product, process, or service. (11/90)

RESALE VALUE - the monetary sum expected from the disposal of an asset at the end of its economic life, its useful life, or at the end of the study period. [A] (11/90)

RESCHEDULE -(1) in construction, the process of changing the duration and/or dates of an existing schedule in response to externally imposed conditions or progress. (2) in manufacturing, the process of changing order or operation due dates, usually as a result of their being out of phase with when they are needed. (11/90)

RESEARCH EXPENSE - those continuing expenses required to provide and maintain the facilities to develop new products and improve present products. (11/90)

RESERVE STOCK - see SAFETY STOCK. (11/90)

RESIDENT ENGINEER - the authorized representative of the engineer who is assigned to the site or any part thereof whose duties are ordinarily set forth in the contract documents and/or the engineer's agreement with the owner. (11/90)

RESOURCE - in planning and scheduling, a resource is any consumable, except time, required to accomplish an activity. From a total cost and asset management perspective, resources may include any real or potential investment in strategic assets including time, monetary, human, and physical. A resource becomes a cost when it is invested or consumed in an activity or project. (1/02)

RESOURCE ALLOCATION PROCESS (RAP) - the scheduling of activities in a network with the knowledge of certain resource constraints and requirements. This process adjusts activity level start and finish dates to conform to resource availability and use. (11/90)

RESOURCE AVAILABILITY DATE - the calendar date when a resource level becomes available to be allocated to project activity. (11/90)

RESOURCE AVAILABILITY POOL - the amount of resource availability for any given allocation period. (11/90)

RESOURCE CODE - the code for a particular labor skill, material, equipment type; the code used to identify a given resource. (11/90)

RESOURCE DESCRIPTION - the actual name or identification associated with a resource code. (11/90)

RESOURCE HISTOGRAM - a graphic display of the amount of resource required as a function of time on a graph. Individual, summary, incremental, and cumulative resource curve levels can be shown. Syn.: **RESOURCE PLOT**. (11/90)

RESOURCE LIMITED SCHEDULING - a schedule of activities so that a preimposed resource availability level (constant or variable) is not exceeded in any given project time unit. (11/90)

RESOURCE PLOT - see **RESOURCE HISTOGRAM**. (11/90)

RESOURCE REQUIREMENTS PLANNING - the process of converting the production plan and/or the master production schedule into the impact on key resources, such as labor, machine hours, storage, standard cost dollars, shipping dollars, inventory levels, etc. (11/90)

RESPONSIBLE ORGANIZATION - the organization responsible for management of a work package. (11/90)

RESPONSIBILITY - originates when one accepts the assignment to perform assigned duties and activities. The acceptance creates a liability for which the assignee is held answerable for and to the assignor. It constitutes an obligation or accountability for performance. (11/90)

RESTRAINT - see **CONSTRAINT**. (11/90)

RETENTION - usually refers to a percent of contract value (usually 5 or 10 percent) retained by the purchaser until work is finished and testing of equipment is satisfactorily completed. (11/90)

RETIREMENT OF DEBT - the termination of a debt obligation by appropriate settlement with the lender. It is understood to be in full amount unless partial settlement is specified. (11/90)

RETURN ON AVERAGE INVESTMENT - the ratio of annual profits to the average book value of fixed capital, with or without working capital. This method has some advantages over the return-on-original-investment method. Depreciation is always considered; terminal recoveries are accounted for. However, the method does not account for the timing of cash flow and yields answers that are considerably higher than those obtained by the return-on-original-investment and profitability index methods. Results may be deceiving when compared, say, against the company's cost of capital. (11/90)

RETURN ON ORIGINAL INVESTMENT - the ratio of expected average annual after tax profit (during the earning life) to total investment (working capital included). It is similar in usefulness and limitations to payoff period. (11/90)

RETURN ON RATE BASE - for a public utility, that monetary sum established by the proper regulatory authority as a basis for determining the charges to customers and the "fair return" to the owners of the utility. (11/90)

REVISION - in the context of scheduling, a change in the network logic, activity duration, resources availability or resources demand which requires network recalculation and drawing correction(s). (11/90)

RIPPLE EFFECT - the multiplying effect of change(s) and/or productivity impacts to upstream work that may have an adverse impact on the subsequent work to be performed. (4/04)

RISK - the degree of dispersion or variability around the expected or "best" value which is estimated to exist for the economic variable in question, eg, a quantitative measure of the upper and lower limits which are considered reasonable for the factor being estimated. (11/90)

ROLLING WAVE PLANNING - Concept of planning where near-term work is planned in more detail than work in the future that is usually planned in summary. As the project progresses, summary activities are broken into more detail for near term execution. (3/04)

ROYALTIES - payments a company receives to allow others to use a design or concept the company has researched and developed to commercialization. Generally, one of two types: (1) paid-up royalties where a lump sum payment is made, and (2) running royalties where continuous payments are made, usually based on actual production or revenues. (11/90)

SAFETY STOCK - the average amount of stock on hand when a replenishment quantity is received. Its purpose is to protect against the uncertainty in demand and in the length of the replenishment lead time. Safety stock and cycle stock are the two main components of any inventory. Syn.: RESERVE STOCK. (11/90)

SAFETY TIME - in a time series planning system, material is frequently ordered to arrive ahead of the forecast requirement date to protect against forecast error. The difference between the forecast requirement date and the planned in-stock date is safety time. (11/90)

SALES - orders booked by customers. (11/90)

SALES ANALYSIS (or RESEARCH) - a systematic study and comparison of sales for consumption data along the lines of market areas, organizational units, products or product groups, customers or customer groups, or such other units as may be useful. See MARKET RESEARCH. Typical analyses would include:

1. Promotion Evaluation
2. Quota Assignment
3. Territory Assignment (11/90)

SALES FORECAST - a prediction or estimate of sales, in dollars or physical units, for a specified future period under a proposed marketing plan or program and under an assumed set of economic and other forces outside the unit for which the forecast is made. The forecast may be for a specified item of merchandise or for an entire line. (11/90)

SALES PROFILE - the growth or decline of historical or forecast sales volume, by years. (11/90)

SALES PRICE - the revenue received for a unit of a product. Gross sales price is the total amount paid. Net sales are gross sales less returns, discounts, freight and allowances. Plant netbacks are net sales less selling, administrative and research expenses. Syn.: SELLING PRICE. (11/90)

SALES REVENUE - revenue received as a result of sales, but not necessarily during the same time period. (11/90)

SALVAGE VALUE - (1) the cost recovered or which could be recovered from a used property when removed, sold, or scrapped; (2) the market value of a machine or facility at any point in time (normally an estimate of an asset's net market value at the end of its estimated life); (3) the value of an asset, assigned for tax computation purposes, that is expected to remain at the end of the depreciation period. (11/90)

SAMPLE - a part, or subset, of a population. (11/90)

SAVINGS-TO-INVESTMENT RATIO (SIR) - either the ratio of present value savings to present value investment costs, or the ratio of annual value savings to annual value investment costs. [A] (11/90)

SCHEDULE - the plan for completion of a project based on a logical arrangement of activities, resources available, imposed dates or funding budgets. (11/90)

SCHEDULED COMPLETION DATE - a date assigned for completion of activity or accomplishment of an event for purposes of meeting specified schedule requirements. (11/90)

SCHEDULED DATE - see CONTRACT DATE. (11/90)

SCHEDULED EVENT TIME - in PERT, an arbitrary schedule time that can be introduced at any event but is usually only used at a certain milestone or the last event. (11/90)

SCHEDULE VARIANCE - the difference between BCWP and BCWS. At any point in time it represents the difference between the dollar value of work actually performed (accomplished) and that scheduled to be accomplished. (11/90)

SCHEDULING - the assignment of desired start and finish times to each activity in the project within the overall time cycle required for completion according to plan. (11/90)

SCHEDULING RULES - basic rules that are spelled out ahead of time so that they can be used consistently in a scheduling system. (11/90)

SCHEDULING VARIANCE - the difference between projected start and finish dates and actual or revised start and finish dates. (11/90)

SCOPE - The sum of all that is to be or has been invested in and delivered by the performance of an activity or project. In project planning, the scope is usually documented (i.e., the scope document), but it may be verbally or otherwise communicated and relied upon. Generally limited to that which is agreed to by the stakeholders in an activity or project (i.e., if not agreed to, it is "out of scope"). In contracting and procurement practice, includes all that an enterprise is contractually committed to perform or deliver. Syn.: **PROJECT SCOPE**. (1/03)

SCOPE CHANGE - a deviation from the project scope originally agreed to in the contract. A scope change can consist of an activity either added to or deleted from the original scope. A contract change order is needed to alter the project scope. (11/90)

SEASONAL COMMODITIES - commodities which are normally available in the market-place only in a given season of the year. (11/90)

SEASONAL VARIATION - that movement in many economics series which tends to repeat itself within periods of a year. (11/90)

SECONDARY FLOAT (SF) - is the same as the Total Float, except that it is calculated from a schedule date set upon an intermediate event. (11/90)

SECULAR TREND - the smooth or regular movement of a long-term time series trend over a fairly long period of time. (11/90)

SELLING EXPENSE - the total expense involved in marketing the products in question. This normally includes direct selling costs, advertising, and customer service. (11/90)

SELLING PRICE - see SALES PRICE. (11/90)

SENSITIVITY - the relative magnitude of the change in one or more elements of an engineering economy problem that will reverse a decision among alternatives. (11/90)

SENSITIVITY ANALYSIS - a test of the outcome of an analysis by altering one or more parameters from an initially assumed value(s). [A] (11/90)

SENTIMENTAL VALUE - a value associated with an individual's personal desire, usually related to a prior personal relationship. (11/90)

SEQUENTIAL ANALYSIS - a process by which statistical data are analyzed continuously as the sample accumulates. After each additional item is obtained, and on the basis of a certain calculation, a decision is made whether to accept the hypothesis H_1 , under test, or to accept an alternative hypothesis H_2 or to suspend judgement until more data are examined. The decision is based on the probability ratio of the sample under alternative hypotheses where the probabilities of the two types of erroneous conclusions are assigned in advance. Frequently fewer observations are required than under any other known method for the same degree of reliability and discrimination. It is very simple to apply and it requires the analyst to state his problem precisely and determine the alternative answers in advance with the attendant probabilities of erroneous conclusion. The calculations involved are the computations of the ratio of the probability of the observations if H_1 is true to the probability of the observations under the hypothesis H_2 . If this ratio exceeds $(I-B)/A$, the hypothesis H_1 is accepted, whereas if it is less than $B/(I-A)$, the hypothesis H_2 is accepted; if it is between these two ratios, judgement is suspended. A is the maximum acceptable probability of erroneously rejecting the hypothesis H_2 , and B is the maximum acceptable probability of erroneously accepting the hypothesis H_2 . (11/90)

SERVICEABILITY - a measure of the degree to which servicing of an item will be accomplished within a given time under specified conditions. (11/90)

SERVICING - the replenishment of consumables needed to keep an item in operating condition, but not including any other preventive maintenance or any corrective maintenance. (11/90)

SERVICE WORTH VALUE - earning value, assuming the rates and/or prices charged are just equal to the reasonable worth to customers of the services and/or commodities sold. (11/90)

SHIFTING BASE - changing the point of reference of an index number series from one time reference period to another. (11/90)

SHOP DRAWINGS - all drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the contractor to illustrate some portion of the work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a

supplier and submitted by the contractor to illustrate material or equipment for some portion of the work. (11/90)

SHOP ORDER NUMBER - see ACCOUNT NUMBER. (11/90)

SHOP PLANNING - the coordination of material handling, material availability, the setup and tooling availability so that a job can be done on a particular machine. (11/90)

SHORT-TERM ACTIVITIES - see MONTHLY GUIDE SCHEDULE. (11/90)

SHUTDOWN POINT - the production level at which it becomes less expensive to close the plant and pay remaining fixed expenses out-of-pocket rather than continue operations; that is, the plant cannot meet its variable expense. See BREAKDOWN POINT. (11/90)

SIC CODE - the Standard Industrial Classification of the Office of Management and Budget, which provides the framework for the industry-sector index classification scheme. Product indexes are aggregated to five-digit product classes and four-digit industries. Industry indexes can be aggregated to three- and two-digit levels as well. (11/90)

SIGNIFICANT VARIANCES - those differences between planned and actual performance which exceed established thresholds and which require further review, analysis and action. (11/90)

SIMPLE INTEREST - (1) interest that is not compounded – is not added to the income-producing investment or loan; (2) the interest charges under the condition that interest in any time period is only charged on the principal. (11/90)

SIMPLE PAYBACK PERIOD (SPB) - the time required for the cumulative benefits from an investment to pay back the investment cost and other accrued costs, not considering the time value of money. [A] (11/90)

SIMULATION - (1) the technique of utilizing representative or artificial operating and demand data to reproduce, under test, various conditions that are likely to occur in the actual performance of a system. Simulation is frequently used to test the accuracy of a theoretical model or to examine the behavior of a system under different operating policies; (2) the design and operation of a model of a system. (11/90)

SINKING FUND - (1) a fund accumulated by periodic deposits and reserved exclusively for a specific purpose, such as retirement of a debt or replacement of a property; (2) a fund created by making periodic deposits (usually equal) at compound interest in order to accumulate a given sum at a given future time for some specific purpose. (11/90)

SITE PREPARATION - an act involving grading, landscaping, installation of roads and siding, of an area of ground upon which anything previously located had been cleared so as to make the area free of obstructions, entanglements or possible collisions with the positioning or placing of anything new or planned. (11/90)

SKEWNESS - an expression for nonsymmetrical "tailing" of a distribution. (11/90)

SLACK - see FLOAT. (11/90)

SLACK PATHS - the sequences of activities and events that do not lie on the critical path or paths. (11/90)

SLACK TIME - the difference in calendar time between the scheduled due date for a job and the estimated completion date. If a job is to be completed ahead of schedule, it is said to have slack time; if it is likely to be completed behind schedule, it is said to have negative slack time. Slack time can be used to calculate job priorities using methods such as the critical ratio. In the critical path method, total slack is the amount of time a job may be delayed in starting without necessarily delaying the project completion time. Free slack is the amount of time a job may be delayed in starting without delaying the start of any other job in the project. (11/90)

SPECIFICATION, DESIGN (PRESCRIPTIVE) - a design specification providing a detailed written and/or graphic presentation of the required properties of a product, material, or piece of equipment, and prescribing the procedure for its fabrication, erection, and installation. (11/90)

SPECIFICATION, PERFORMANCE - a statement of required results, verifiable as meeting stipulated criteria, and generally free of instruction as to the method of accomplishment. (11/90)

SPECIFICATIONS - written directions regarding the quality of materials and the nature of the workmanship for a job. Specifications may be written directly on the drawings, or presented in a separate document. (11/90)

SPLICING TECHNIQUE - one of the procedures used for maintaining the continuity of a price index series in the case of substituted items (and/or replaced outlets). The basic assumption underlying the technique is that, at a given point in time, the relative difference in prices between the replaced and replacing items (and/or outlets) reflects the difference in respective qualities. In effect, the splicing technique is analogous to, and may be considered a particular case of, the linking procedure. (11/90)

SPOT MARKET PRICE INDEX - daily index used as a measure of price movements of 22 sensitive basic commodities whose markets are to be presumed to be among the first to be influenced by changes in economic conditions. It serves as one early indicator of impending changes in business activity. (11/90)

STAGE OF PROCESSING - a commodity's intermediate position in the value-added channel of production. (11/90)

STANDARD DEVIATION - the most widely used measure of dispersion of a frequency distribution. It is calculated by summing squared deviations from the mean, dividing by the number of items in the group and taking the square root of the quotient. (11/90)

STANDARD ERROR OF THE MEAN - the standard deviation of the distribution, divided by the square root of the number of cases. (11/90)

STANDARD ERROR OF ESTIMATE - an expression for the standard deviation of the observed values about a regression line, i.e., an estimate of the variance likely to be encountered in making predictions from the regression equation. (11/90)

STANDARD INDUSTRIAL CLASSIFICATION (SIC CODE) - a classification system of the Office of Management and Budget which provides the framework for the industry-sector index classification scheme. Product indexes are aggregated to five-digit product classes and four-digit industries. Industry indexes can be aggregated to three- and two-digit levels as well.

Example: industry code - 3443 - fabricated platework
product code - 80201 carbon steel tanks and vessels (11/90)

STANDARD NETWORK DIAGRAM - a predefined network intended to be used more than one time in any given project. (11/90)

STARTING EVENT - see **BEGINNING EVENT**. (11/90)

STARTUP - that period after the date of initial operation, during which the unit is brought up to acceptable production capacity and quality within estimated production costs. Startup is the activity that commences on the date of initial activity that has significant duration on most projects, but is often confused (used interchangeably) with date of initial operation. (11/90)

STARTUP COSTS - extra operating costs to bring the plant on stream incurred between the completion of construction and beginning of normal operations. In addition to the difference between actual operating costs during that period and normal costs, it also includes employee training, equipment tests, process adjustments, salaries and travel expense of temporary labor, staff and consultants, report writing, post-startup monitoring and associated overhead. Additional capital required to correct plant problems may be included. Startup costs are sometimes capitalized. (11/90)

STATUS - the condition of the project at a specified point in time relative to its plan. An instantaneous snapshot of the then current conditions. See **PROGRESS**. [P] (11/90)

STATUS LINE - a vertical line on a time-scaled schedule indicating the point in time (date) on which the status of the project is reported. Often referred to as the time now line. See **DATA DATE**. (11/90)

STATUSING - indicating on the schedule the most current project status. See **UPDATE**. (11/90)

STOCHASTIC - the adjective "stochastic" implies the presence of a random variable. (11/90)

STOCK AND BOND VALUE - a special form of market value for enterprises, which can be owned through possession of their securities. Stock and bond value is the sum of (1) the par values in dollars of the different issues of bonds multiplied by the corresponding ratios of the market price to the par value, and (2) the number of shares of each issue of stock multiplied by the corresponding market price in dollars per share. (11/90)

STOP WORK ORDER - see **SUSPENSION OF WORK, DIRECTED**. (11/90)

STRAIGHT-LINE DEPRECIATION - method of depreciation whereby the amount to be recovered (written off) is spread uniformly over the estimated life of the asset in terms of time periods or units of output. (11/90)

STRATEGIC ASSET - any unique physical or intellectual property that is of long term or ongoing value to the enterprise. As used in total cost management, it most commonly includes capital or fixed assets, but may include intangible assets. Excludes cash and purely financial assets. Strategic assets are created by the investment of resources through projects. (1/02)

STUDY PERIOD - the length of time over which an investment is analyzed. Syn.: **LIFE CYCLE**; **TIME HORIZON**. [A] (11/90)

SUBCONTRACT - any agreement or arrangement between a contractor and any person (in which the parties do not stand in the relationship of an employer and an employee) and where neither party is the owner. (11/90)

SUBCONTRACTOR - an individual, partnership, corporation, joint venture or other combination thereof having a direct contract with the contractor or with any other subcontractor for the performance of a part of the work at the site. (11/90)

SUBINDEX - a price index for a subaggregate of a given basket of commodities. (11/90)

SUBNET - the subdivision of a network into segments usually representing some form of subproject; a portion of a larger network generally for a unique area of a project. See also FRAG NET. [P] (11/90)

SUBSTANTIAL COMPLETION - work (or a specified part thereof) which has progressed to the point where in the opinion of the engineer, as evidenced by the engineer's definitive certificate of substantial completion, it is sufficiently complete, in accordance with the contract documents, so that the work (or specified part) can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due in accordance with the general conditions. Substantial completion of the work, or specified part thereof, may be achieved either upon completion of pre-operational testing or startup testing, depending upon the requirements of the contract documents. The terms Substantially Complete and Substantially Completed as applied to any work refer to substantial completion thereof. (11/90)

SUBSYSTEM - an aggregation of component items (hardware and software) performing some distinguishable portion of the function of the total system of which it is a part. Normally, a subsystem could be considered a system in itself if it were not an integral part of the larger system. (11/90)

SUCCESSOR - An activity that immediately succeeds another activity. (3/04)

SUCCESSOR ACTIVITY - any activity that exists on a common path with the activity in question and occurs after the activity in question. (11/90)

SUCCESSOR EVENT - the event that signifies the completion of an activity. (11/90)

SUMMARY ITEM - an item appearing in the work breakdown structure. (11/90)

SUMMARY NETWORK - a summarization of the CPM network for presentation purposes. This network is not computed. (11/90)

SUMMARY NUMBER - a number that identifies an item in the work breakdown structure. (11/90)

SUMMARY SCHEDULE - see MASTER PROJECT SCHEDULE. (11/90)

SUM-OF-DIGITS METHOD - A method of computing depreciation in which the amount for any year is based on the ratio: (years of remaining life)/(1+2+3+...+n), n being the total anticipated life. Also known as sum-of-the-years-digits method. (11/90)

SUNK COST - a cost that has already been incurred and which should not be considered in making a new investment decision. [B] (11/90)