AACE INTERNATIONAL RECOMMENDED PRACTICE

10S-90

COST ENGINEERING TERMINOLOGY

AACE INTERNATIONAL

Rev. December 7, 2023 [Ed. Rev. April 18, 2024]

AACE® International Recommended Practice No. 10S-90

COST ENGINEERING TERMINOLOGY

TCM Framework: General Reference
(All Sections)

Rev. December 7, 2023 (Ed. Rev. April 18, 2024)

Note: As AACE International Recommended Practices evolve over time, please refer to web.aacei.org for the latest revisions.

Any terms found in AACE International Recommended Practice 10S-90, *Cost Engineering Terminology*, supersede terms defined in other AACE work products, including but not limited to, other recommended practices, the *Total Cost Management Framework*, and *Skills & Knowledge of Cost Engineering*.

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COST ENGINEERING TERMINOLOGY

TCM Framework: General Reference
(All Sections)

April 18, 2024

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INTRODUCTION

This recommended practice provides the basic meanings of terms, as they are used in the cost engineering field described in AACE International's *Total Cost Management Framework*. Some terms may have different meanings when applied in fields other than cost engineering. Some terms may have different meanings for the various disciplines within cost engineering. Multiple definitions are given for terms where applicable. Definitions specific to each discipline are often introduced by identifying the relevant discipline—e.g., "In planning and scheduling," "In estimating and budgeting," "In risk analysis," etc.

The definitions may not provide all available information on each term; nor do they explain every possible variation in application. This recommended practice intends to provide clear and concise definitions; it intends to identify common usage in the context of cost engineering.

Many of the terms are closely related. Review of the definitions of related terms is recommended for an understanding of the similarities and differences in their meaning and usage. Relationships between terms are designated as follows:

Syn.: Indicates another term with the same meaning.

See: Indicates a closely related term with a similar but slightly different meaning or usage and may be written as "See also:"

Unless otherwise noted, all terms contained in this document have been developed by various AACE International technical subcommittees, special interest groups, or project teams. All terms have been subject to a thorough review process, followed by AACE International Technical Board approval.

The date that the definition was adopted or its most recent revision date is indicated at the end of each definition.

Any terms found in AACE Recommended Practice 10S-90, *Cost Engineering Terminology*, supersede terms defined in other AACE work products, including but not limited to, other recommended practices, the *Total Cost Management Framework*, and *Skills & Knowledge of Cost Engineering*.

April 18, 2024

CHANGE LOG

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RISK SCREENING (revised)
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OPERABILITY (new)

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SUBMITTAL STATUS (new)

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COST ELEMENT (new)
COST PERFORMANCE REPORT (CPR) (new)
EARNED VALUE (EV) (revised)
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EQUIVALENT UNITS TECHNIQUE (new)
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Changes in October 10, 2013 revision:
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Changes in April 25, 2013 revision:
RISK MANAGEMENT TEAM (new)
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Changes in August 24, 2012 revision:
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April 18, 2024

TERMS AND DEFINITIONS

50/50 TECHNIQUE – In earned value, a technique to earn budget based on assignment of budget equally across two accounting months. Budget is earned at 50% when started, and the remainder at completion. This technique is limited to work package less than two months in duration. (November 2013)

ACCELERATION – Conduct by the owner or its agent (either in a directed or constructive manner) in which a contractor is required to complete performance of a contracted scope of work earlier than scheduled. A directed acceleration occurs when the owner formally directs such acceleration completion. A constructive acceleration generally occurs when a contractor is entitled to an excusable delay; the contractor requests a time extension from the owner; the owner declines to grant a time extension or grants one in an untimely manner; the owner or its agent either expressly orders completion within the original performance period or implies in a clear manner that timely completion within the original performance period is expected; and the contractor gives notice to the owner or its agent that the contractor considers this action an acceleration order. (June 2007)

ACCEPT/ACCEPTANCE –
(1) The formal process of accepting delivery of a product or a deliverable.
(2) The act of taking custody based on satisfactory verification.
(3) The act of an authorized representative, for itself or as agent for another, assumes ownership of existing identified supplies tendered or approves specific services rendered as partial or complete performance of the contract.
(4) In TCM risk management, a response strategy for both threats and opportunities.
See also: RISK RESPONSE. (December 2011)

ACCEPTANCE, FINAL (PARTIAL) – The formal action by the owner accepting the work (or a specified part thereof), following written notice from the engineer that the work (or specified part thereof) has been completed and is acceptable subject to the provisions of the contract regarding acceptance. (November 1990)

ACCEPTANCE CRITERIA – Implicit or explicit specifications that must be achieved for a product or service to be acceptable within the terms of the contract or agreement seeking its delivery. (August 2007)

ACCEPTED RISK – Risks that are identified, but for which no other risk response is taken in the risk treatment process (e.g., avoid, reduce, transfer). See also: RESIDUAL RISK; RISK RESPONSE. (December 2011)

ACCESS TO THE WORK – The right of the contractor to ingress and egress, and to occupy the work site as required to reasonably perform the work described in the contract documents. An example of denial of access to the work would be on the segment of a sewer installation project where no easements or work limits are indicated, but the contractor is ordered, after contract award, to conduct operations within a narrow work corridor necessitating different or unanticipated construction methods (e.g., use of sheeting). (November 1990)

ACCOUNTABILITY – Answerable, but not necessarily charged personally with doing the work. Accountability cannot be delegated but it can be shared. (November 1990)

ACCOUNT CODE STRUCTURE – System used to assign summary numbers to elements of the work breakdown and account numbers to individual work packages. (November 1990)

ACCOUNT NUMBER – An alphanumeric identification of a work package. An account number may be assigned to one or more activities. Syn.: SHOP ORDER NUMBER. (June 2007)

ACCOUNTS PAYABLE – The value of goods and services rendered on which payment has not yet been made. See also: TAXES PAYABLE. (November 1990)

ACCOUNTS RECEIVABLE – The value of goods shipped, or services rendered to a customer on which payment has not yet been received. Usually includes an allowance for bad debts. (November 1990)

ACCRUAL – In earned value management, the actual costs that are recorded for goods and/or material received or services rendered before payment. For example, subcontractor service for a safety inspection for a specific piece of equipment in the month of January which was validated as completed may be recorded by accrual based on an estimated cost. However, the accruals originally recorded in January for the cost of this activity are adjusted after a final cost is determined. See also: ACTUAL COST (AC) (October 2013)

ACCURACY – Correctness that the measured value is very close to the true value. See also: PRECISION. (November 2016)

ACCURACY RANGE – An expression of an estimate's predicted closeness to final actual costs or time. Typically expressed as high/low percentages by which actual results will be over and under the estimate along with the confidence interval these percentages represent. Syn.: RANGE OF ACCURACY. See also: CONFIDENCE INTERVAL; EXPECTED ACCURACY RANGE; PREDICTABILITY; RANGE. (February 2021)

ACTION – A measure taken or implemented that is intended to influence the course of the project. (June 2007)

ACTION ITEM – Something agreed to be done as a meeting outcome and usually recorded in meeting minutes. (June 2007)

ACTION OWNER – In TCM risk management, the party charged with implementing a risk response. See also: RISK OWNER. (December 2011)

ACTION PLAN – A plan that describes what needs to be done and by when. Project plans are action plans. (June 2007)

ACTIVITY – An operation or process consuming time and possibly resources (with the exception of dummy activities). An activity is an element of work that must be performed in order to complete a project. An activity consumes time and may have resources associated with it. Activities must be measurable and controllable. An activity may include one or more tasks. See also: TASK. (June 2007)

ACTIVITY ATTRIBUTES – Schedule-related characteristics and designations that uniquely describe a network activity. Attributes can include early and late start and finish dates; identification codes; resource assignments; predecessor and successor activities; and any other information that places the activity into accurate context of its place in the activity network. (August 2007)

ACTIVITY BAR – A rectangle representing an activity on the bar chart. Its length is scaled according to the time scale. See also: EARLY BAR. (June 2007)

ACTIVITY CALENDAR – In computer scheduling, calendar that defines the working and non-working patterns applicable to an activity. The activity calendar is normally overridden by the project calendar. See also: RESOURCE CALENDAR. (June 2007)

ACTIVITY CODE – Alphanumeric designation system, with code(s) assigned to an activity to group or categorize its properties. Coding is used for detail and summary reporting purposes. Syn.: ACTIVITY IDENTIFIER; ACTIVITY NUMBER. See also: CODING; WORK BREAKDOWN STRUCTURE (WBS). (June 2007)

ACTIVITY COST – The monetary amount expended to complete an activity. Depending upon the cost model and job cost system used, Activity cost may or may not include indirect costs (jobsite and home office) as well as direct costs. (June 2007)

ACTIVITY DESCRIPTION – A unique activity name and word description, which generally defines the work to be accomplished which easily identifies an activity to any recipient of the schedule. (June 2007)

ACTIVITY DEFINITION – Process of identifying specific activities that must be performed to produce project deliverables. [8] (June 2007)

ACTIVITY DURATION –
(1) Length of time from start to finish of an activity, estimated or actual, in working or calendar time units.
(2) Best estimate of continuous time (hours, days, weeks, and months) needed to complete the work involved in an activity. This takes into consideration the nature of the work, and the resources needed to complete the task. Baseline activity duration development can become very complex when productivity impacts and nonstandard production rates must be utilized to meet the constraints of the project.
See also: DURATION. (June 2007)

ACTIVITY DURATION ESTIMATING – Estimation of the number of work periods that will be needed to complete the activity. (June 2007)

ACTIVITY IDENTIFIER – Syn.: ACTIVITY CODE; ACTIVITY NUMBER. (June 2007)

ACTIVITY LIST – A table of scheduled activities listing their respective descriptions, unique identification codes, sufficiently detailed scopes, and predecessor and successor activities, so that the project team can readily discern the work of each activity and the project as a whole. (August 2007)

ACTIVITY NUMBER – Syn.: ACTIVITY CODE; ACTIVITY IDENTIFIER. (June 2007)

ACTIVITY ON ARROW (AOA) – An activity network format. Schedule activities are represented by arrows and nodes are represented by circles. AOA networks require the use of “dummy” activities to properly model work flow. (June 2007)

ACTIVITY ON NODE (AON) – An activity network format. Schedule activities are represented by boxes or bars and relationships are represented by arrows. Pure AON networks rely solely on finish-to-start relationships and do not employ the use of activity lags to model work flow. (June 2007)

ACTIVITY RELATIONSHIP – Activity relationships determine how activities relate to one another and establish schedule logic. See also: LOGIC. (June 2007)

ACTIVITY SEQUENCING – The process of identifying and documenting dependencies among schedule activities. (June 2007)

ACTIVITY SPLITTING – Dividing (i.e., splitting) an activity of stated scope, description and schedule into two or more activities which are rescoped and rescheduled. The sum of the split activities is normally the total of the original. See also: LOGIC, HARD; LOGIC, SOFT. (November 1990)

ACTIVITY STATUS – Information about the performance of an activity that is used to update schedule progress. Typical status information includes actual start and finish dates, percent complete, and remaining duration. This is information used to update the critical path method calculations periodically. (June 2007)

ACTIVITY TIMES – Time information generated through the critical path method calculation that identifies the start and finish times for each activity in the network. (November 1990)

ACTIVITY TYPE – Dictates calendar used in scheduling software for schedule calculations. Typical activity types are: independent, task, hammock, WBS, and milestone. (June 2007)

ACTIVITY TOTAL SLACK – The latest allowable end time minus earliest allowable end time. The activity slack is always greater than or equal to the slack of the activity ending event. (November 1990)

ACTS OF GOD –
(1) An extraordinary interruption by a natural cause, as a flood or earthquake, or the usual course of events that experience, foresight or care cannot reasonably foresee or prevent.
(2) An event in nature over which neither the owner nor the contractor has any control. (November 1990)

ACTUAL [DURATION, START, FINISH, LOGIC, ETC.] – Schedule information that shows what has actually occurred. For example, the actual start date for a task is the day on which the task actually started, and its actual cost is the expenditures incurred spent up to the present. (June 2007)

ACTUAL AND SCHEDULED PROGRESS – A comparison of the observable work done at a given time with the work planned up to that time. (June 2007)

ACTUAL COMPLETION DATE – The calendar date on which an activity was completed. See also: ACTUAL FINISH DATE. (November 1990)

ACTUAL COST (AC) – Syn.: ACTUAL COST OF WORK PERFORMED (ACWP). (October 2013)

ACTUAL COST OF WORK PERFORMED (ACWP) –
(1) The actual expenditures incurred by a program or project.
(2) The direct costs actually incurred, and the direct costs actually recorded and assigned in accomplishing the work performed. These costs should reconcile with the contractor's incurred cost ledgers when they are audited by the client.
(3) In earned value management, a measure of the actual cost of the work performed as of a data date.
Syn.: ACTUAL COST (AC). See also: BUDGETED COST OF WORK PERFORMED (BCWP); BUDGETED COST OF WORK SCHEDULED (BCWS); EARNED VALUE (EV); PLANNED VALUE (PV). (October 2013)

ACTUAL FINISH DATE – Date when work on an activity is substantially complete. Activity substantial completion is when only minor or remedial work remains, and successor activities may proceed without hindrance from the predecessor's remaining work. It is not necessarily the last day work will be performed on that activity. The remaining duration of this activity is zero. (June 2007)

ACTUAL START DATE – Date when work on an activity actually started with intention of completing activity within the planned duration. The actual start date is not necessarily the first date work was performed on that activity. Interim starts and stops for an activity may show the need for splitting the activity into component parts. (June 2007)

ACTUAL TIME (AT) – The number of whole project time increments from project inception through time now (data date). (November 2014)

ADDENDA – Written or graphic instruments issued prior to the date for opening of bids which may interpret or modify the bidding documents by additions, deletions, clarification, or corrections. (November 1990)

ADJUSTED INTERNAL RATE-OF-RETURN (AIRR) – The compound rate of interest that, when used to discount the terminal values of costs and benefits of a project over a given study period, will make the costs equal the benefits when cash flows are reinvested at a specified rate. [1] (November 1990)

ADM – Syn.: ARROW DIAGRAMMING METHOD (ADM). (November 1990)

ADMINISTRATIVE COST – Syn.: GENERAL & ADMINISTRATIVE COSTS (G&A). (June 2007)

ADVERSE WEATHER – Normal weather events that negatively affect the productivity of workers and/or which may affect a project's critical path or consume float. What deems weather as being adverse is defined differently for each project depending on several factors, including location of a project, the project scope, and even the terms of union construction worker labor agreements. The definition of adverse weather cannot be standardized for all projects or locations but represents conditions that should be expected during project execution that may impact work progress. See also: NORMAL WEATHER; PLANNED ADVERSE WEATHER DAY; UNUSUALLY ADVERSE WEATHER DAY; WEATHER DAY: WEATHER EVENT; WEATHER PREPARATION DAY; WEATHER RECOVERY DAY. (September 2015)

AGENT – A person authorized to represent another (the principal) in some capacity. The agent can only act within this capacity or "scope of authority" to bind the principal. Agency agreements can be oral or in writing. (November 1990)

AGGREGATE – A collection of items arbitrarily brought together as associated variables for analytical or comparative purposes. (November 1990)

AGREEMENT – The written agreement between the owner and the contractor covering the work to be performed; other contract documents are attached to the agreement and made a part thereof as provided therein. (November 1990)

ALARP – An abbreviation synonymous with residual risk describing project risk exposure or risk status *as low as reasonably practical*. See also: TARGET RISK EXPOSURE; INHERENT RISK EXPOSURE; CURRENT RISK EXPOSURE; RESIDUAL RISK; CONTINUAL RISK MANAGEMENT.

Rev. Date: December 7, 2023
Primary Subcommittee: Decision and Risk Management

ALLOCATED BASELINE – Requirements allocated to lower level system elements controlled by formal change control. (June 2007)

ALLOCATED REQUIREMENTS – Requirements apportioned to the elements of a system by applying applicable knowledge and experience. Determination of allocated requirements is not as scientifically rigorous as determination of derived requirements. (June 2007)

ALLOCATION –
(1) In planning and scheduling, the process of distributing or assigning work on an activity to specific resources.
(2) In cost estimating and budgeting, the process of distributing or assigning cost of an item or activity (often an overhead or indirect cost) to specific cost or budget accounts.
See also: COST DISTRIBUTION. (June 2007)

ALLOWANCES –
(1) For estimating, resources included in estimates to cover the cost of known but undefined requirements for an individual activity, work item, account or sub-account.
(2) For scheduling, dummy activities and/or time included in existing activities in a schedule to cover the time for known, but undefined requirements for a particular work task, activity, account or subaccount. (December 2011)

ALTERNATIVE DISPUTE RESOLUTION (ADR) – Any procedure or combination of procedures used to resolve issues in controversy without the need to resort to litigation. ADR typically includes assisted settlement negotiations, conciliation, facilitation, mediation, fact-finding, mini-trials, and arbitration. (June 2007)

AMBIGUITY – An uncertainty in the meaning of provisions of a contract, document or specification. Mere disagreement about the meaning of a provision does not indicate an ambiguity. There must be genuine uncertainty of meaning based on logical interpretation of the language used in the contract. Generally, ambiguities in contracts are construed against the drafter of the agreement. (November 1990)

AMENDMENT – A modification of the contract by a subsequent agreement. This does not change the entire existing contract but does alter the terms of the affected provisions or requirements. (November 1990)

AMORTIZATION –
(1) As applied to a capitalized asset, the distribution of the initial cost by periodic charges to operations as in depreciation. Most properly applies to assets with indefinite life.
(2) The reduction of a debt by either periodic or irregular payments.
(3) A plan to pay off a financial obligation according to some prearranged schedule. (November 1990)

ANALOGOUS CRITICAL PATH – The logic path determined by transferring the calculated critical path of the collapsed as-built onto the analogous logic path on the as-built schedule. The analogous critical path allows the analyst to reconcile the total difference in completion date between the collapsed state and the as-built state with the sum of the extracted delays, whole or in part, lying on the analogous path. (June 2007)

ANALYSIS – The examination of a complex whole and the separation and identification of its constituent parts and their relationships. (November 1990)

ANALYSIS (SCHEDULE VARIANCE) – Comparison of actual cost/schedule performance to that planned. This comparison includes identification of “potential change notices” and their cause. Derives from the monitoring of project expenditures, progress and performance. Requires application of independent review and creative thought processes to come up with a comprehensive understanding of how, why, and where project accounts are headed. Analysis should result in corrective action to offset/minimize any potential overruns and maximize any potential under runs. See also: SCHEDULE VARIANCE (SV). (June 2007)

ANALYST-CAUSED RISK – Syn.: ANALYST-INDUCED RISK; IATROGENIC RISK. (December 2011)

ANALYST-INDUCED RISK – Syn.: ANALYST-CAUSED RISK; IATROGENIC RISK. (December 2011)

AND RELATIONSHIP – Logical relationship between two or more activities that converges on or diverges from an event. The “and” relationship indicates that every one of the activities has to be undertaken. (June 2007)

ANNUAL VALUE – A uniform annual amount equivalent to the project costs or benefits taking into account the time value of money throughout the study period. Syn.: ANNUAL WORTH; EQUIVALENT UNIFORM ANNUAL VALUE. See also: AVERAGE ANNUAL COST. [1] (November 1990)

ANNUAL WORTH – Syn.: ANNUAL VALUE; EQUIVALENT UNIFORM ANNUAL VALUE. (November 1990)

ANNUALLY RECURRING COSTS – Those costs that are incurred in a regular pattern each year. (June 2007)

ANNUITY –

(1) An amount of money payable to a beneficiary at regular intervals for a prescribed period of time out of a fund reserved for that purpose.
(2) A series of equal payments occurring at equal periods of time. (November 1990)

ANTICIPATORY BREACH – A specific refusal by the contractor to perform within the terms of the contract documents before performance is due; or a clear indication that the contractor is unable or unwilling to perform. Syn.: REPUDIATION. (November 1990)

APPLICATION AREA – Projects sharing specialized components that logically segregate work by product or production technology or by user. (August 2007)

APPLICATION FOR PAYMENT – The form furnished by the owner or the engineer which is to be used by the contractor in requesting progress or final payments and which shall contain an affidavit, if required, in the general or supplementary conditions. The application for payment includes all supporting documentation as required by the contract documents. (November 1990)

APPORTIONED EFFORT –
(1) An earned value technique that status is assessed consistent with a base task(s). The earned value percent complete of the base effort is used to status the apportioned effort work package. Apportioned effort is technically related and time-phased proportionally to the base until designated.
(2) Effort that cannot be readily measured or divided into discrete work packages, but its performance can be measured in proportion to other measurable efforts. (November 2014)

APPROVE – To accept as technically satisfactory by person or persons in authority. The approval may still require confirmation by someone else at a higher level of authority for legal or commercial considerations. (November 1990)

ARBITRATION – A method for the resolution of disputes by an informal tribunal in which a neutral person or persons with specialized knowledge in the field in question renders a decision on the dispute. An arbitrator may grant any award which is deemed to be just and equitable after having afforded each party full and equal opportunity for the presentation of the case. Arbitration does not strictly follow the rules of evidence and discovery procedures found in litigation. Arbitration may be conducted under the auspices of an organization (e.g., the American Arbitration Association) which is available as a vehicle for conducting arbitration. (November 1990)

ARROW – The graphic representation of activities in ADM network. One arrow represents one activity. The tail of the arrow represents the start of the activity. The head of arrow represents the finish. The arrow is not a vector quantity and is not drawn to scale. A solid line is used for actual activities and a dashed line for dummies. It is uniquely defined by two events. (June 2007)

ARROW DIAGRAM – A network (logic diagram) on which the activities are represented by arrows between event nodes. (November 1990)

ARROW DIAGRAMMING METHOD (ADM) – A method of constructing a logical network of activities using arrows to represent the activities and connecting those head-to-tail. This diagramming method shows the sequence, predecessor and successor relationships of the activities. Syn.: ADM. (November 1990)

ARTIFACT (PLANNING) – A piece of information that is produced, modified, or used by a process, defines an area of responsibility, and is subject to version control. An artifact can be a model, a model element, or a document. A document can enclose other documents. (June 2007)

AS-BUILT SCHEDULE – Historical project record showing actual start and finish dates for work performed. Generally, shows logic used in the sequence of construction, along with actual start and finish dates. (June 2007)

AS-PLANNED SCHEDULE – The plan or baseline schedule the contractor developed to estimate/bid/contract to perform the work. The as-planned schedule incorporates planned production rates, work calendars, resource availability, logic ties, constraints and activity durations to meet contract requirements and contractor needs or desires. (June 2007)

AS-LATE-AS-POSSIBLE (ALAP) – An activity for which the scheduling application sets the early dates as late as possible without delaying the early dates of any successor. (June 2007)

AS-OF DATE – Syn.: DATA DATE; UPDATE DATE; TIME NOW. (October 2018)

AS-SOON-AS-POSSIBLE (ASAP) – An activity for which the scheduling application sets the early dates to be as soon as possible. This is the default activity type in most project management systems. (June 2007)

ASSETS – Anything owned that has a monetary value, e.g., property, both real and personal, including notes, accounts and accrued earnings or revenues receivable and cash or its equivalent. Assets may be subdivided into current, fixed, etc. Property: real, i.e. physical; or intangible, i.e. knowledge, systems, or practices. Assets are created through the investment of resources in projects. (June 2007)

ASSESSED VALUE – That value entered on the official assessor's records as the value of the property applicable in determining the amount of taxes to be assessed against that property. (November 1990)

ATTRIBUTE – In the context of asset or project planning, a characteristic or property which is appraised in terms of whether it does or does not exist, (e.g., go or not-go) with respect to a given requirement. (June 2007)

AUDIT – In the context of asset or project performance assessment, a formal, independent examination with intent to verify conformance with established requirements through surveillance and inspection. They may be either internal or external. (June 2007)

AUTHORITY –
(1) Power of influence, either granted to or developed by individuals, that leads to others doing what those individuals direct.
(2) Formal conferment of such influence through an instrument such as a project charter. [8] (June 2007)

AUTHORIZE – Give final approval; a person who can authorize something is vested with authority to give final endorsement and which requires no further approval or agreement. [8] (June 2007)

AUTHORIZED WORK – An effort that has been approved by higher authority and may or may not be definitive. (June 2007)

AVERAGE ANNUAL COST – The conversion, by an interest rate and present worth technique, of all capital and operating costs to a series of equivalent equal annual costs. As a system for comparing proposal investments, it requires assumption of a specific minimum acceptable interest rate. (November 1990)

AVERAGE-INTEREST METHOD – A method of computing required return on investment based on the average book value of the asset during its life or during a specified study period. (November 1990)

AVOID – In TCM risk management, a response strategy for threats that involves eliminating either the probability or impact. See also: RISK RESPONSE. (December 2011)

AVOIDANCE (RISK) – Risk response strategy that eliminates the threat or opportunity of a specific risk event, usually by eliminating its potential cause. See also: ACCEPT/ACCEPTANCE; MITIGATION. [8] (June 2007)

BACKCHARGE – Cost of corrective action taken by the purchaser, chargeable to supplier by contract terms. (June 2007)

BACKUP – Supporting documents for an estimate or schedule including detailed calculations, descriptions of data sources, and comments on the quality of the data. (November 1990)

BACKWARD PASS – Network schedule calculation that determines the latest each activity in the network may start (LS) and finish (LF) and still maintain the minimum overall duration of the project as calculated by the forward pass. It counts backward toward the beginning of the schedule to determine the last possible start and finish dates for each activity that will not delay project completion. See also: FORWARD PASS. (June 2007)

BALANCED SCORECARD – A strategic performance management tool that links and compares multiple key performance indicators (e.g., measures of time, cost, quality, and other business processes) into one report to enable better decision making. It encourages users to focus on measures that are the most critical and allows them to see whether improvement in one area may have been achieved at the expense of another. It may be used to introduce new KPIs to monitor new goals and initiatives, but also to evaluate whether or not old indicators are relevant to new initiatives. (August 2022)

BAR CHART – Graphic representation of a project that includes the activities that makes up the project and placed on a time scale. Bar charts are time scaled, show activity number, description, duration, start and finish dates, and an overall sequencing of the flow of work. Bar charts do not generally include the logic ties between activities. See also: GANTT CHART. (June 2007)

BASE – Syn.: BASE ESTIMATE; BASE SCHEDULE. (December 2011)

BASE DATE – Syn.: BASE TIME. (November 1990)

BASE ESTIMATE – Estimate excluding escalation, foreign currency exchange, contingency and management reserves. Syn.: POINT ESTIMATE; SINGLE POINT ESTIMATE. See also: DETERMINISTIC ESTIMATE. (December 2011)

BASE PERIOD (OF A GIVEN PRICE INDEX) – Period for which prices serve as a reference for current period prices; in other words, the period for which an index is defined as 100 (if expressed in percentage form) or as 1 (if expressed in ratio form). (November 1990)

BASE POINT FOR ESCALATION – Cost index value for a specific month or an average of several months that is used as a basis for calculating escalation. (November 1990)

BASE SCHEDULE – Schedule excluding risks (i.e., excluding contingency). (December 2011)

BASE TIME – The date to which all future and past benefits and costs are converted when a present value method is used (usually the beginning of the study period). Syn.: BASE DATE. [1] (November 1990)

BASELINE –
(1) In project control, the reference plans in which cost, schedule, scope and other project performance criteria are documented and against which performance measures are assessed and changes noted.
(2) The budget and schedule that represent approved scope of work and work plan. Identifiable plans, defined by databases approved by project management and client management, to achieve selected project objectives. It

becomes basis for measuring progress and performance and is baseline for identifying cost and schedule deviations. Syn.: CONTROL BASELINE.
(3) In earned value management systems, the general term to refer to the contractual baseline. See contract budget baseline and performance measurement baseline for the typical earned value management (EVM) definitions of the different baseline levels within the EVM baseline plan. See: CONTRACT BUDGET BASELINE (CBB); PERFORMANCE MEASUREMENT BASELINE (PMB). (October 2013)

BASELINE SCHEDULE –
(1) A fixed project schedule that is the standard by which project performance is measured. The current schedule is copied into the baseline schedule that remains frozen until it is reset. Resetting the baseline is done when the scope of the project has been changed significantly, for example after a negotiated change. At that point, the original or current baseline becomes invalid and should not be compared with the current schedule.
(2) Version of schedule that reflects all formally authorized scope and schedule changes. [9] (June 2007)

BASIS – Written documentation that describes how an estimate, schedule, or other plan component was developed and defines the information used in support of development. A basis document commonly includes, but is not limited to, a description of the scope included, methodologies used, references and defining deliverables used, assumptions and exclusions made, clarifications, adjustments, and some indication of the level of uncertainty. (June 2007)

BATTERY LIMIT – Comprises one or more geographic boundaries, imaginary or real, enclosing a plant or unit being engineered and/or erected, established for the purpose of providing a means of specifically identifying certain portions of the plant, related groups of equipment, or associated facilities. It generally refers to the processing area and includes all the process equipment, and excludes such other facilities as storage, utilities, administration buildings, or auxiliary facilities. The scope included within a battery limit must be well-defined so that all personnel will clearly understand it. On drawings, this is often referred to in the phrase: inside/outside battery limits or ISBL/OSBL. See also: OFFSITES. (June 2007)

BEGINNING EVENT – An event that signifies the beginning of an activity. Syn.: PRECEDING EVENT; PREDECESSOR EVENT; STARTING EVENT. (November 1990)

BEGINNING NETWORK EVENT – The event that signifies the beginning of a network (or subnet). (November 1990)

BEGINNING (START) NODE OF NETWORK (ADM) – A node at which no activities end, but one or more activities begin. (November 1990)

BENCHMARKING – A measurement and analysis process that compares practices, processes, and/or relevant measures to those of a selected basis of comparison (i.e., the benchmark) with the goal of improving performance. The comparison basis includes internal or external competitive or best practices, processes or measures. Examples of measures include estimated costs, actual costs, schedule durations, resource quantities, etc. See also: COMPETITITVENESS. (November 2020)

BENEFICIAL OCCUPANCY – Use of a building, structure, or facility by the owner for its intended purpose (functionally complete), although other contract work, nonessential to the function of the occupied section, remains to be completed. See also: SUBSTANTIAL COMPLETION. (November 1990)

BENEFIT COST ANALYSIS – A method of evaluating projects or investments by comparing the present value or annual value of expected benefits to the present value or annual value of expected costs. [1] (November 1990)

BENEFIT-TO-COST RATIO (BCR) – Benefits divided by costs, where both are discounted to a present value or equivalent uniform annual value. [1] (November 1990)

BEST PRACTICES – Practical techniques gained from experience that have been shown to produce best results. (June 2007)

BIAS – In TCM, it can mean any of the following:
(1) Lack of objectivity based on an enterprise or individual's position or perspective.
(2) Systematic and predictable relationships between a person's opinion or statement and his/her underlying knowledge or circumstances, for example, strategic misrepresentation (consciously) or overconfidence (subconsciously).
(3) A form of judgment error that limits prediction or forecast accuracy and is attributed to motivated reasoning (either consciously or subconsciously). Psychological bias is typically only identifiable after the fact but can be accounted for in project budgets or plans using relevant empirical, historical or reference class data.
(4) In estimating, a measurable, and generally persistent difference between estimated values and relevant historical experience or norms.

Note: biases may be intentional or unintentional.
See also: SYSTEMATIC ERROR; UNKNOWN UNKNOWN; COMMON CAUSE VARIATION; UNKNOWN KNOWN; EMERGENT RISK; RANDOM ERROR; NOISE; ESTIMATE VALIDATION; UNCERTAINTY.

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BID – To submit a price for services; a proposition either verbal or written, for doing work and for supplying materials and/or equipment. (November 1990)

BID BOND – Syn.: BOND, BID. (June 2007)

BID SECURITY – Security is provided in connection with the submittal of a bid to guarantee that the bidder, if awarded or offered the contract, will execute the contract and perform the work. The requirements for the bid security are usually designated in a specific section of the bidding documents. The bid security is payable to the owner (usually around 5% of the total bid price) in the form of either a certified or bank check or a bid bond issued by a surety satisfactory to the owner. The bid security of the successful bidder is usually retained until the bidder has executed the agreement and furnished the required contract security, whereupon the bid security is returned. Bid security of the other bidders is returned after the bid opening. (November 1990)

BID SHOPPING – An effort by a prime contractor to reduce the prices quoted by subcontractors and/or suppliers, by providing the bid price to other subcontractors or suppliers in an attempt to get the other subcontractors or suppliers to underbid the original price quoted. The reverse of this situation is when subcontractors try to get a better price out of a prime contractor. This is known as bid peddling. (November 1990)

BIDDABILITY – The clarity, accuracy, and completeness of the acquisition documents, the soundness of the owner's evaluation and selection criteria for negotiated acquisitions, and the ease of bidders or proposers to understand the owner's requirements, allowing the submission of a competitive bid or proposal that is responsive to the owner's requirements. Synonymous with the ease in which the contract documents can be understood, bid, administered, and executed to reduce potential conflicts, claims, and disputes. (September 2021)

BIDDER – The individual, partnership, or corporation, or combination thereof, acting directly or through an authorized representative, formally submitting a bid directly to the owner, as distinct from a sub-bidder, who submits a bid to a bidder. (November 1990)

BIDDING DOCUMENTS – The advertisement for bids, instructions to bidders, information available to bidders, bid form with all attachments, and proposed contract documents (including all addenda issued prior to receipt of bids). (November 1990)

BIDDING REQUIREMENTS – The advertisement for bids, instructions to bidders, supplementary instructions and all attachments therein, information to bidders and all attachments therein, and bid form and all attachments therein. (November 1990)

BILL OF MATERIALS (BOM) –
(1) Set of physical elements required to build a project.
(2) Hierarchical view of the physical assemblies, subassemblies, and components needed to fabricate a manufacturing product.
(3) Descriptive and quantitative list of materials, supplies, parts, and components required to produce a designated complete end item of materials, assembly, or subassembly.
See also: BILL OF QUANTITITES (BOQ) [8] (June 2007)

BILL OF QUANTITIES (BOQ) − Descriptive and quantitative list of materials, supplies, parts, and components required to produce a designated complete end item of materials, assembly, or subassembly. Typically includes a description of the associated "method of measurement". See also: BILL OF MATERIALS (BOM); METHOD OF MEASUREMENT. (June 2007)

BLANKET BOND – A bond covering a group of persons, articles, or properties. (November 1990)

BOND, BID – A bond that guarantees the bidder will enter into a contract on the basis of the bid. (June 2007)

BOND, PAYMENT – A bond that is executed in connection with a contract and which secures the payment of all persons supplying labor and material in the prosecution of the work provided for in the contract. (November 1990)

BOND, PERFORMANCE – A bond that is executed in connection with a contract and which secures or guarantees the completion, performance and fulfillment of all the work, undertakings, covenants, terms, conditions, and agreements contained in the contract. (June 2007)

BONDS – Instruments of security furnished by the contractor and/or surety in accordance with the contract documents. The term contract security refers to the payment bond, performance bond and those other instruments of security required in the contract documents. (November 1990)

BOOK VALUE (NET) –
(1) Current investment value on the books calculated as original value less depreciated accruals.
(2) New asset value for accounting use.
(3) The value of an outstanding share of stock of a corporation at any one time, determined by the number of shares of that class outstanding. (November 1990)

BOTTOM-LINE – Ambiguous term that in TCM cost estimating or risk management typically refers to the total overall cost or profit of a project or program. In TCM decision analysis, may refer to a stakeholder's threshold or decision-making criterion beyond which a decision not-to-proceed, approve, or accept will be made. (December 2011)

BRAINSTORMING – Process in which a group of people, selected for their creativity and knowledge, are brought together to seek solutions to particular problems or simply to find better ways of meeting objectives. Suggestions, however outlandish, are encouraged and pursued during a creativity session. From this, many ideas, some entirely new, are brought forward for analysis and ranking. (June 2007)

BREACH OF CONTRACT – Failure, by either the owner or the contractor, without legal excuse, to perform any work or duty owed to the other person. (November 1990)

BREAKDOWN STRUCTURE – A hierarchical structure by which project elements are broken down or decomposed. See also: COST BREAKDOWN STRUCTURE (CBS); ORGANIZATIONAL BREAKDOWN STRUCTURE (OBS); WORK BREAKDOWN STRUCTURE (WBS). (June 2007)

BREAKEVEN CHART – A graphic representation of the relation between total income and total costs for various levels of production and sales indicating areas of profit and loss. (November 1990)

BREAKEVEN POINT –
(1) In business operations, the rate of operations output, or sales at which income is sufficient to equal operating costs or operating cost plus additional obligations that may be specified.
(2) The operating condition, such as output, at which two alternatives are equal in economy.
(3) The percentage of capacity operation of a manufacturing plant at which income will just cover expenses. (November 1990)

BREAKOUT SCHEDULE – Jobsite schedule, generally in bar chart form, used to communicate day-to-day activities to all working levels on the project as directed by construction manager. Detail information with regard to equipment use, bulk material requirements, and craft skills distribution, as well as the work to be accomplished, forms content of schedule. Issued on a weekly basis with a two to three-week look ahead from the issue date. (June 2007)

BROWNFIELD –
(1) A project that has known constraints imposed by prior work.
(2) In construction, work on a site that has been previously developed or may be contaminated.
See also: GREENFIELD. (October 2018)

BUDGET – A planned allocation of resources. The planned cost of needed materials is usually subdivided into quantity required and unit cost. The planned cost of labor is usually subdivided into the workhours required and the wage rate (plus fringe benefits and taxes). (November 1990)

BUDGET AT COMPLETION (BAC) – The summation of time phased costs at any work breakdown structure (WBS) level. In earned value management according to the ANSI EIA 748 standard, all levels have BAC including work packages, planning packages, summary planning packages, performance management baseline (PMB), management reserve (MR), undistributed budget (UB), and contract budget baseline (CBB). (October 2013)

BUDGET ESTIMATE – An estimate generally prepared to form the basis for authorization and/or appropriation of funds. See also: COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 3 ESTIMATE. (May 2012)

BUDGETED COST OF WORK PERFORMED (BCWP) – Syn.: EARNED VALUE (EV). (October 2013)

BUDGETED COST OF WORK SCHEDULED (BCWS) – Syn.: PLANNED VALUE (PV). (October 2013)

BUDGETING – A process used to allocate the estimated cost of resources into cost accounts (i.e., the cost budget) against which cost performance will be measured and assessed. Budgeting often considers time-phasing in relation to a schedule and/or time-based financial requirements and constraints. (January 2003)

BULK MATERIAL – Material bought in lots. These items can be purchased from a standard catalog description and are bought in quantity for distribution as required. Examples are pipe (non-spooled), conduit, fittings, and wire. (November 1990)

BURDEN –

(1) In construction, the cost of maintaining an office with staff other than operating personnel. Also includes federal, state and local taxes, fringe benefits and other union contract obligations. In manufacturing, burden sometimes denotes overhead.
(2) In earned value, this is a broad term that refers to all non-direct costs including overheads, general & administrative, and cost of money as applicable. The common characteristic of a burden is the cost is expressed as a rate on top of the direct costs. (October 2013)

BURDEN OF PROOF – The necessity of proving the facts in a dispute on an issue raised between the owner and the contractor. In a claim situation, the burden of proof is always on the person filing the claim. This is true whether the contractor is claiming against the owner, or the owner is making a claim against the contractor. (November 1990)

BURN RATE – Rate at which resources such as funds or man-hours are or were being expended on a project. (June 2007)

BUSINESS PLANNING – The determination of financial, production and sales goals of a business organization; and the identification of resources, methods, and procedures required to achieve the established objectives within specified budgets and timetables. (November 1990)

BUSINESS CASE – Defines a project's or other investment's justification for business decision making purposes. Depending upon the business' decision-making criteria, it typically includes an outline of objectives, deliverables, time, cost, technical, safety, quality and other attributes in respect to how the project or investment addresses the objectives and requirements of the business. May include information on project risks (either threats or opportunities), competitive impact, resource requirements, organizational impacts, key performance indicators (particularly profitability) and critical success factors. (June 2007)

CALCULATE SCHEDULE – A modeling process that defines all critical activities and individual activity scheduling data. The process applied in most scheduling software calculates the start and finish dates of activities in two passes. The first pass calculates early start and finish dates from the earliest start date forward. The second pass calculates the late start and finish activities from the latest finish date backwards. The difference between the pairs of start and finish dates for each task is the float or slack time for the task. See also: FLOAT. (June 2007)

CALENDAR – Defined work periods and holidays that determine when project activities may be scheduled. Multiple calendars may be used for different activities, which allows for more accurate modeling of the project work plan. E.g., 5-day work week calendar vs. 7-day work week. See also: CALENDAR UNIT; GLOBAL CALENDAR. (June 2007)

CALENDAR RANGE – Span of the calendar from calendar start through end date. The calendar start date is unit number one. The calendar range is usually expressed in years. (November 1990)

CALENDAR UNIT – The smallest common/standard unit of time used in a particular calendar for scheduling an activity or a project. Calendar units are generally in hours, days, or weeks, but can also be shifts or even minutes. See also: CALENDAR; TIME UNIT. (June 2007)

CALENDAR START DATE – The date assigned to the first unit of the defined calendar; the first day of the schedule. (November 1990)

CALIBRATION –
(1) In respect to parametric modeling, the process of determining and applying adjustments to an existing model so that it better predicts results found empirically.
(2) In respect to elicitation of risk probabilities of occurrence, processes to improve alignment of subject matter expert input with observed results. (May 2021)

CAPACITY FACTOR – In cost estimating, an exponential factor used in the capacity factor estimating method. Syn.: CAPACITY UTILIZATION FACTOR; SCALING FACTOR. See also: CAPACITY FACTOR METHOD. (June 2007)

CAPACITY FACTOR METHOD − A cost estimating method in which the cost of a new facility is derived from the cost of a similar item or facility of a known, but usually different capacity. In this method, the ratio of costs between two similar facilities is equal to the ratio of their capacities taken to an exponential factor (i.e., the scaling, or capacity factor). See also: SCALING FACTOR. (June 2007)

CAPACITY UTILIZATION FACTOR − Syn.: CAPACITY FACTOR; SCALING FACTOR. (June 2007)

CAPITAL, DIRECT – Syn.: DIRECT COSTS. (June 2007)

CAPITAL, FIXED – The total original value of physical facilities which are not carried as a current expense on the books of account and for which depreciation is allowed by the Federal Government. It includes plant equipment, building, furniture and fixtures, and transportation equipment used directly in the production of a product or service. It includes all costs incident to getting the property in place and in operating condition, including legal costs, purchased patents, and paid-up licenses. Land, which is not depreciable, is often included. Characteristically it cannot be converted readily into cash. (November 1990)

CAPITAL, INDIRECT – Syn.: INDIRECT COSTS. (October 2013)

CAPITAL, OPERATING – Capital associated with process facilities inside battery limits. (November 1990)

CAPITAL BUDGETING – A systematic procedure for classifying, evaluating, and ranking proposed capital expenditures for the purpose of comparison and selection, combined with the analysis of the financing requirements. (November 1990)

CAPITAL EFFECTIVENESS – The degree to which a capital project system supports achievement of the enterprise's objectives (e.g., profitability). See also: COMPETITIVENESS. (November 2020)

CAPITAL PROJECT – A project in which the cost of the end result or product is capitalized (i.e., cost will be depreciated). The product is usually a physical asset such as property, real estate or infrastructure, but may include other assets that are depreciable. (June 2007)

CAPITAL RECOVERY –
(1) Charging periodically to operations amounts that will ultimately equal the amount of capital expenditure.
(2) The replacement of the original cost of an asset plus interest.
(3) The process of regaining the net investment in a project by means of revenue in excess of the costs from the project. (Usually implies amortization of principal plus interest on the diminishing, unrecovered balance.)
See also: AMORTIZATION; DEPLETION; DEPRECIATION. (November 1990)

CAPITAL RECOVERY FACTOR – A factor used to calculate the sum of money required at the end of each of a series of periods to regain the net investment of a project plus the compounded interest on the unrecovered balance. (November 1990)

CAPITAL, SUSTAINING – The fixed capital requirements to: 1) Maintain the competitive position of a project throughout its commercial life by improving product quality, related services, safety, or economy; or, 2) Required to replace facilities which wear out before the end of the project life. (November 1990)

CAPITAL, TOTAL – Sum of fixed and working capital. (November 1990)

CAPITAL, VENTURE – Capital invested in technology or markets new at least to the particular organization. (November 1990)

CAPITAL, WORKING – The funds in addition to fixed capital and land investment which a company must contribute to the project (excluding startup expense) to get the project started and meet subsequent obligations as they come due. Working capital includes inventories, cash and accounts receivable minus accounts payable. Characteristically, these funds can be converted readily into cash. Working capital is normally assumed recovered at the end of the project. (November 1990)

CAPITALIZED COST –
(1) The present worth of a uniform series of periodic costs that continue for an indefinitely long time (hypothetically infinite).
(2) The value at the purchase date of the asset of all expenditures to be made in reference to this asset over an indefinite period of time. This cost can also be regarded as the sum of capital which, if invested in a fund earning a stipulated interest rate, will be sufficient to provide for all payments required to maintain the asset in perpetual service. (November 1990)

CARDS-ON-THE-WALL PLANNING – A planning technique in which team members interact to create a project strategy, tactical approach, and resulting network by locating and interconnecting task cards using walls as the work space. The wall data are transferred into a computer model for scheduling, critical path analysis and iteration. (June 2007)

CASH COSTS – Total cost excluding capital and depreciation spent on a regular basis over a period of time, usually one year. Cash costs consist of manufacturing cost and other expenses such as transportation cost, selling expense, research and development cost or corporate administrative expense. (November 1990)

CASH FLOW – Inflow and outflow of funds within a project. A time-based record of income and expenditures often presented graphically. (June 2007)

CASH FLOW (NET) – The net flow of funds into or out of a project. The sum, in any time period, of all cash receipts, expenses, and investments. Also called cash proceeds or cash generated. The stream of monetary values–costs and benefits–resulting from a project investment. [1] (June 2007)

CASH FLOW MANAGEMENT – The planning of project expenditures relative to income or authorized funding in such a way as to minimize the carrying cost of the financing for the project or keep within the constraints of a time-phased budget. This may be achieved by accelerating or delaying some activities, but at the risk of ineffective performance, late completion and consequent increased cost. (June 2007)

CASH RETURN, PERCENT OF TOTAL CAPITAL – Ratio of average depreciation plus average profit, to total fixed and working capital, for a year of capacity sales. Under certain limited conditions, this figure closely approximates that calculated by profitability index techniques where it is defined as the difference, in any time period, between revenues and all cash expenses, including taxes. (November 1990)

CAUSATION – An explanation or description of the facts and circumstances that produce a result, the cause and effect for which the contractor claims entitlement to compensation from the owner under the contract. (November 1990)

CAUSE OF RISK – Syn.: RISK DRIVERS. (December 2011)

CERTAINTY – Unquestionable. Free of doubt. No risk involved. (June 2007)

CHAIN – A series of elements joined together in sequence, such as a logical series of activities or occurrences. (June 2007)

CHANGE – Alteration or variation to the project scope of work or service, cost, price, and/or the schedule for completing the work. (May 2023)

CHANGE, CARDINAL – Work that is beyond the scope of that specified in the contract and consequently unauthorized. The basic tests for a cardinal change are whether the type of work was within the contemplation of the parties when they entered into the contract and whether the job as modified is still the same basic job. (November 1990)

CHANGE, CONSTRUCTIVE – An act or failure to act by the owner or the engineer that is not a directed change, but which has the effect of requiring the contractor to accomplish work different from that required by the existing contract documents. (November 1990)

CHANGE, UNILATERAL – Syn.: MODIFICATION, UNILATERAL. (November 1990)

CHANGE CONTROL –
(1) Process of accepting or rejecting changes to the project's baselines. Lack of change control is one of the most common causes of scope creep.
(2) Process of implementing procedures that ensure that proposed changes are properly assessed and, if approved, incorporated into the project plan. Uncontrolled changes are one of the most common causes of delay and failure.
(3) Risk abatement process of accepting or rejecting changes to the project's baselines, based on predetermined criteria or "trigger points."
See also: CHANGE MANAGEMENT. (June 2007)

CHANGE DIRECTIVE – Syn. WORK DIRECTIVE CHANGE (May 2021)

CHANGE DOCUMENTATION/LOG – Records of changes proposed, accepted and rejected. (June 2007)

CHANGE DRIVER – A project modification that influences scope, quality, schedule, or cost. (November 2020)

CHANGE IN SCOPE – A change in the defined deliverables or resources used to provide them. Syn.: SCOPE CHANGE. (June 2007)

CHANGE IN SEQUENCE – A change in the order of work initially specified or planned by the contractor. If this change is ordered by the owner and results in additional cost to the contractor, the contractor may be entitled to recovery under the changes clause. (November 1990)

CHANGE MANAGEMENT – The formal process through which changes to the project plan are identified, assessed, reviewed, approved and introduced. (June 2007)

CHANGE NOTICE – The form that is used by the owner to communicate a change in scope or baseline to the contract. See also: CHANGE ORDER. (October 2013)

CHANGE ORDER – A document requesting and/or authorizing a scope and/or baseline change or correction. 1) From the owner's perspective, it is an agreement between the project team and higher authority approving a change in the project control baseline. 2) From a contractor's perspective, it is an agreement between the owner and the contractor to compensate for a change in scope or other conditions of a contract. It must be approved by both the client and the contractor before it becomes a legal change to the contract. (June 2007)

CHANGE ORDER REQUEST (COR) – A proposal from a claimant concerning a requested change to the contract's compensation amount or payment terms, time of completion, product or performance specification, or other terms within the contract. The change order request should address the elements identified and defined in RP 120R-21. See also: CHANGE ORDER. (August 2022)

CHANGED CONDITIONS – Syn.: DIFFERING SITE CONDITIONS. (November 1990)

CHART OF ACCOUNTS – Syn.: CODE OF ACCOUNTS (COA). (June 2007)

CHILD – A lower-level element in a hierarchical structure. See also: PARENT. (June 2007)

CHILD ACTIVITY – Subordinate task belonging to a 'parent' task existing at a higher level in the work breakdown structure. (June 2007)

CLAIM – A demand or assertion of rights by one party against another for damages sustained under the terms of a legally binding contract. Damages might include money, time, or other compensation to make the claimant whole. (August 2007)

CLIENT –
(1) Party to a contract who commissions the work. On capital projects, may also be referred to as the "owner".
(2) Customer, principal, owner, promoter, buyer, or end user of the product or service created by the project. [8] (June 2007)

CLOSEOUT – The completion of project work. The phase at the end of a project lifecycle just before the operations begins. (June 2007)

CODE – A referencing system typically applied to the elements of work and cost breakdown structures. (June 2007)

CODE OF ACCOUNTS (COA) – A systematic coding structure for organizing and managing scope, asset, cost, resource, work, and schedule activity information. A COA is essentially an index to facilitate finding, sorting, compiling, summarizing, or otherwise managing information that the code is tied to. A complete code of accounts includes definitions of the content of each account. Syn.: CHART OF ACCOUNTS. See also: COST CODES. (June 2007)

CODING – The process of applying a code. See also: ACTIVITY CODE; CODE OF ACCOUNTS (COA). (June 2007)

COMMISSIONING – Activities performed to substantiate the capabilities of individual units and systems to function as designed. May include performance tests on mechanical equipment, water washing, flushing and drying of equipment and piping, control systems operability checks, checking of safety and fire protection devices, and operation of systems on inert fluids. Commissioning normally follows mechanical completion and ends with initial operation or startup. See also: STARTUP. (June 2007)

COMMITTED COST – A cost which has not yet been paid, but an agreement, such as a purchase order or contract, has been made that the cost will be incurred. See also: COMMITMENTS. (June 2007)

COMMITMENTS – The sum of all financial obligations made, including incurred costs and expenditures as well as obligations, which will not be performed until later. (November 1990)

COMMODITY – In price index nomenclature, a good and sometimes a service. (November 1990)
COMPANY – Term used primarily to refer to a business first party, the purpose of which is to supply a product or service. In a capital project, typically refers to the contractor who is performing services for an owner or client. (June 2007)

COMMON CAUSE VARIATION – Fluctuation caused by unknown factors resulting in a steady but random distribution of output around the average of the data. It is the remaining variation after removing special causes. See also: SPECIAL CAUSE VARIATION. (October 2018)

COMPETITIVENESS – In respect to benchmarking, the quality of practices, processes and/or measures (e.g., cost, schedule, profit, etc.) being as good as or better in comparison to that of competitors or to one's past. See also: BENCHMARKING; CAPITAL EFFECTIVENESS. (November 2020)

COMPLETED ACTIVITY – An activity with an actual completion date and remaining duration of zero. An activity that is finished, ended and/or concluded in accordance with requirements. (June 2007)

COMPLETION (CONTRACT) – When the entire work has been performed to the requirements of the contract, except for those items arising from the provisions of warranty, and is so certified. (June 2007)

COMPLETION DATE (PLANNED) – The calculated date for completion derived from estimating, planning and risk evaluation taking into account contingencies for identified risks. (June 2007)

COMPOSITE PRICE INDEX – An index which measures the price change of a range or group of commodities. (May 2012)

COMPOUND AMOUNT – The future worth of a sum invested (or loaned) at compound interest. (November 1990)

COMPOUND AMOUNT FACTOR –
(1) The function of interest rate and time that determines the compound amount from a stated initial sum.
(2) A factor which when multiplied by the single sum or uniform series of payments will give the future worth at compound interest of such single sum or series. (November 1990)

COMPOUND INTEREST –
(1) The type of interest that is periodically added to the amount of investment (or loan) so that subsequent interest is based on the cumulative amount.
(2) The interest charges under the condition that interest is charged on any previous interest earned in any time period, as well as on the principal. (November 1990)

COMPOUND RISK – Syn.: RISK (IMPACT) COMPOUNDING. (December 2011)

COMPOUNDING, CONTINUOUS –
(1) A compound interest situation in which the compounding period is zero and the number of periods infinitely great. A mathematical concept that is practical for dealing with frequent compounding and small interest rates.
(2) A mathematical procedure for evaluating compound interest factors based on a continuous interest function rather than discrete interest periods. (November 1990)

COMPOUNDING PERIOD – The time interval between dates at which interest is paid and added to the amount of an investment or loan. Designates frequency of compounding. (November 1990)

CONCEPT DEFINITION DOCUMENT – A document describing the concept selected for development and the results of investigating alternative system concepts. It is used to derive the system specifications and the statement of work. Syn.: SYSTEM CONCEPT DOCUMENT. (June 2007)

CONCEPT PHASE – First phase of a project in which need is examined, alternatives are assessed, the goals and objectives of the project are established and a sponsor is identified. (June 2007)

CONCEPTUAL ESTIMATE – An estimate generally prepared based on very limited information. See also: COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 4 ESTIMATE; COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 5 ESTIMATE. (May 2012)

CONCEPTUAL SCHEDULE – Similar to a proposal schedule except it is usually time-scaled and developed from the abstract or conceptual design of the project. Used primarily to give the client a general idea of the project scope and on overview of activities. (June 2007)

CONCERN – In TCM risk management, something that worries stakeholders because it may give rise to a risk event or condition. See also: CONDITION (RISK CONDITION); EVENT. (December 2011)

CONCURRENCY – Degree to which independent activities may be, or are performed at the same time (fully or partially). Degree to which phases, stages, or activities may be overlapped. (June 2007)

CONCURRENT ACTIVITIES – Independent activities that may be, or are performed at the same time (fully or partially). (June 2007)

CONCURRENT DELAYS –
(1) Two or more delays that take place or overlap during the same period, either of which occurring alone would have affected the ultimate completion date. In practice, it can be difficult to apportion damages when the concurrent delays are due to the owner and contractor respectively.
(2) Concurrent delays occur when there are two or more independent causes of delay during the same time period. The "same" time period from which concurrency is measured, however, is not always literally within the exact period of time. For delays to be considered concurrent, most courts do not require that the period of concurrent delay precisely match. The period of "concurrency" of the delays can be related by circumstances, even though the circumstances may not have occurred during exactly the same time of period. [10]
(3) True concurrent delay is the occurrence of two or more delay events at the same time, one an employer risk event, the other a contractor risk event and the effects of which are felt at the same time. The term 'concurrent delay' is often used to describe the situation where two or more delay events arise at different times, but the effects of them are felt (in whole or in part) at the same time. To avoid confusion, this is more correctly termed the 'concurrent effect' of sequential delay events. [12]
(4) Concurrent delay occurs when both the owner and contractor delay the project or when either party delays the project during an excusable but non-compensable delay (e.g., abnormal weather). The delays need not occur simultaneously but can be on two parallel critical path chains. [13]
(5) The condition where another delay-activity independent of the subject delay is affecting the ultimate completion of the chain of activities. (June 2007)

CONDITION, RISK – Any specific identifiable circumstance that might affect the outcome of the project. When used in the phrase "risk events and conditions", the phrase encompasses the totality of risks (e.g., both systemic and project specific). See also: RISK; RISK EVENT, DISCRETE; UNCERTAINTY, DISCONTINUOUS.

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CONDITIONAL BRANCHING – Schedule analysis that allows for changes in schedule logic and/or durations depending on the occurrence of risk events or conditions. See also: DYNAMIC RISK ANALYSIS. (December 2011)

CONDITIONAL RISK – Risk that occurs under certain conditions or is accepted provided that certain conditions are met. (June 2007)

CONFIDENCE INTERVAL –

(1) The probability that a result will be within a range.
(2) In the context of estimate accuracy, the confidence interval is typically expressed as the probability that the estimate may be between a low probability of underrun and a high value of underrun. For example, an 80% confidence interval for an estimate accuracy range defines the range between the estimate value at a 10% probability of underrun (P10 value) and a 90% probability of underrun (P90 value). See also: CONFIDENCE LEVEL; EXPECTED ACCURACY RANGE; P-VALUE. (February 2021)

CONFIDENCE LEVEL – The probability: 1) That results will be equal to or more favorable than the amount estimated or quoted; or 2) That the decision made will achieve the desired results; or 3) That the stated conclusion is true. For example, a 50% confidence level for an estimate value (often noted as a P50 value) indicates an expected 50% probability that the final result will be less than (more favorable) or equal to the P50 value. Note: Confidence level may also be expressed as "equal to or less favorable". If that is the case, it should so be noted. Without such a note, the definition shown is assumed. See also: CONFIDENCE INTERVAL; EXPECTED ACCURACY RANGE; P-VALUE. (February 2021)

CONFIGURATION – A collection of an item's descriptive and governing characteristics, which can be expressed: 1) In functional terms, i.e. what performance the item is expected to achieve; and 2) In physical terms, i.e. what the item should look like and consist of when it is completed. (June 2007)

CONFIGURATION CONTROL – A system of procedures that monitors emerging project scope against the scope baseline. Requires documentation and management approval on any change to the baseline. (June 2007)

CONFIGURATION MANAGEMENT – Technical and administrative activities concerned with the creation, maintenance and controlled change of configuration throughout the life of the product. Configuration management is an integral part of life-cycle management. (June 2007)

CONFLICT – Two or more parties having differing interests or perspectives that require resolution to achieve project goals. The state that exists when two groups have goals that will affect each other differently. (June 2007)

CONFLICT IN PLANS AND SPECIFICATIONS – Statements or meanings in the contract documents (including drawings and specifications) that cannot be reconciled by reasonable interpretation on the part of the contractor and which may require the owner to provide an interpretation between alternatives. (November 1990)

CONFLICT MANAGEMENT – Handling of conflicts between project participants or groups in order to create optimal project results. (June 2007)

CONSENT OF SURETY – An acknowledgement by a surety that its bond, given in connection with a contract, continues to apply to the contract as modified; or, at the end of a contract, permission from the surety to release all retainage to the contractor. (November 1990)

CONSEQUENCE – In risk management, the impact or effect of a risk event or condition. Syn.: EFFECT; IMPACT. See also: CONDITION (RISK CONDITION); EVENT. (December 2011)

CONSTANT BASKET – A set of goods and services with quantities fixed in relation to a given time period, used for computing composite price indexes. (November 1990)

CONSTANT BASKET PRICE INDEX – A price index which measures price changes by comparing the expenditures necessary to provide the same set of goods and services at different points in time. (November 1990)

CONSTANT DOLLARS – Dollars of uniform purchasing power exclusive of general inflation or deflation. Constant dollars are tied to a reference year. Syn.: REAL DOLLARS. [1] (November 1990)

CONSTANT UTILITY PRICE INDEX – A composite price index which measures price changes by comparing the expenditures necessary to provide substantially equivalent sets of goods and services at different points in time. (November 1990)

CONSTRAINT –
(1) In planning and scheduling, any external factor that affects when an activity can be scheduled. A restriction imposed on the start, finish or duration of an activity. The external factor may be resources, such as labor, cost or equipment, or, it can be a physical event that must be completed prior to the activity being restrained. Constraints are used to reflect project requirements more accurately. Examples of date constraints are: Start-no-earlier-than, finish-no-later-than, mandatory start, and as-late-as-possible.
(2) In decision and risk management, something that limits the potential achievement of objectives.
Syn.: RESTRAINT. (December 2011)

CONSTRAINT DATE – Syn.: PLUG DATE. (November 1990)

CONSTRUCTABILITY – A process for optimally integrating construction knowledge in the engineering and design process, balancing various project and environmental constraints to maximize all project goals and objectives. It includes early detailed construction planning to support optimization of construction sequencing, development of the project schedule. The goal of a constructability review is to consider field operations, and construction means and methods in the engineering and design process. (February 2022)

CONSTRUCTION COST – The sum of all costs, direct and indirect, inherent in converting a design plan for material and equipment into a project ready for start-up, but not necessarily in production operation; the sum of field labor, supervision, administration, tools, field office expense, materials, equipment, and subcontracts. (June 2007)

CONSTRUCTION MANAGEMENT –
(1) Project management as applied to construction.
(2) A professional service that applies to effective management techniques to the planning, design, and construction of a project from inception to completion for the purpose of controlling time, cost, and quality. [6] (June 2007)

CONSTRUCTION PROGRESS – Construction progress is monitored and reported as percent complete. Actual work units completed are measured against the planned work units for each applicable account in the bill of materials or quantities. Usually reported against individual accounts by area and total project and summarized by area and total project. (June 2007)

CONSTRUCTION PROGRESS REPORT – A report that informs management of overall construction progress (physical percent complete), costs, performance and manpower at a specific reporting cut-off date. Typically includes major accomplishments, objectives for the upcoming report period, areas of concern, and other pertinent information necessary for management and control. (June 2007)

CONSTRUCTIVE ACCELERATION – An owner’s action or inaction, in absence of a specific direction to accelerate, that results in the contractor accelerating its work to maintain scheduled completion date(s). Case law has identified five elements normally required to establish a claim for constructive acceleration and include: 1) An excusable delay must exist; 2) Timely notice of the delay and a proper request for a time extension must have been given; 3) The time extension must have been postponed or refused; 4) Owner must have ordered (either by coercion, direction or some other manner) the project completed within its original performance period; and 5) Contractor must actually accelerate its performance, thereby incurring excess costs. (June 2007)

CONSTRUCTIVE CHANGE – An owner's action or inaction that impacts the contractor's working conditions and constitutes an unauthorized modification of contract intent. (June 2007)

CONSTRUCTIVE DELAY – An act or omission by the owner or its agent, which in fact delays completion of the work. (June 2007)

CONSUMABLE RESOURCE – A type of resource that remains available until consumed (for example, a material). (June 2007)

CONSUMABLES – Supplies and materials used up during construction. Includes utilities, fuels and lubricants, welding supplies, worker's supplies, medical supplies, etc. (November 1990)

CONSUMERS PRICE INDEX (CPI) – A measure of time-to-time fluctuations in the price of a quantitatively constant market basket of goods and services, selected as representative of a special level of living. (November 1990)

CONTINGENCY –
(1) An amount added to an estimate to allow for items, conditions, or events for which the state, occurrence, or effect is uncertain and that experience shows will likely result, in aggregate, in additional costs. Typically estimated using statistical analysis or judgment based on past asset or project experience.
Contingency usually excludes:
a) Major scope changes such as changes in end product specification, capacities, building sizes, and location of the asset or project;
b) Extraordinary events such as major strikes and natural disasters;
c) Management reserves; and
d) Escalation and currency effects.
Some of the items, conditions, or events for which the state, occurrence, and/or effect is uncertain include, but are not limited to, planning and estimating errors and omissions, minor price fluctuations (other than general escalation), design developments and changes within the scope, and variations in market and environmental conditions. Contingency is generally included in most estimates and is expected to be expended. (See also: MANAGEMENT RESERVE.)
(2) In earned value management (based upon the EIA 748 Standard), an amount held outside the performance measurement baseline for owner level cost reserve for the management of project uncertainties is referred to as contingency.
(3) An amount of funds or duration that are added to the base estimate to achieve a given probability of not overrunning the estimate, given the relative stability of the project scope. When contingency is established at the 50% confidence level (or mean value) of the estimate probability distribution resulting from a risk analysis, it is expected to be spent to complete the project or activity. (February 2021)

CONTINGENCY PLAN – A risk response plan made to address identified residual risks if they occur. Syn.: FALLBACK PLAN. See also: CONTINGENT RISK RESPONSE; RESIDUAL RISK. (December 2011)

CONTINGENT RISK RESPONSE –
(1) in the context of the risk treatment process in TCM, a planned alternative response to a risk that will be taken only in defined circumstances.
(2) In a risk quantification context, the ex-post treatment actions taken only in defined circumstances to address the consequences of a risk event that has occurred. They largely define the scope of the risk impact estimate in the defined circumstances.
See also: RISK RESPONSE (without contingent designation). (May 2021)

CONTINUAL RISK MANAGEMENT – Sometimes abbreviated as CRM, this is a subprocess of a broader or holistic project risk management process. For example, it is used to reconcile progress reporting and forecasts with details that established the basis of original QRA calculations or risk-informed decision-making (RIDM). It is the combination of RIDM and CRM that underpins the broader definition of project risk management. See also: RISK MANAGEMENT;

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CURRENT RISK EXPOSURE; TARGET RISK EXPOSURE; RESIDUAL RISK; ALARP; RISK INFORMED DECISION MAKING; CHANGE MANAGEMENT.

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CONTRACT – Legal agreement between two or more parties, which may be of the types enumerated below:

1. CONTRACT, COST PLUS CONTRACTS – In cost plus contracts the contractor agrees to furnish to the client services and material at actual cost, plus an agreed upon fee for these services. This type of contract is employed most often when the scope of services to be provided is not well defined.

a. CONTRACT, COST PLUS CONTRACTS, COST PLUS PERCENTAGE BURDEN AND FEE – the client will pay all costs as defined in the terms of the contract, plus "burden and fee" at a specified percent of the labor costs which the client is paying for directly. This type of contract generally is used for engineering services. In contracts with some governmental agencies, burden items are included in indirect cost.

b. CONTRACT, COST PLUS CONTRACTS, COST PLUS FIXED FEE – the client pays costs as defined in the contract document. Burden on reimbursable technical labor cost is considered in this case as part of cost. In addition to the costs and burden, the client also pays a fixed amount as the contractor's "fee".

c. CONTRACT, COST PLUS CONTRACTS, COST PLUS FIXED SUM – the client will pay costs defined by contract plus a fixed sum which will cover "non-reimbursable" costs and provide for a fee. This type of contract is used in lieu of a cost plus fixed fee contract where the client wishes to have the contractor assume some of the risk for items which would be reimbursable under a cost plus fixed fee type of contract.

d. CONTRACT, COST PLUS CONTRACTS, COST PLUS PERCENTAGE FEE – the client pays all costs, plus a percentage for the use of the contractor's organization.

2. CONTRACT, FIXED PRICE CONTRACTS – Fixed price types of contract are ones wherein a contractor agrees to furnish services and material at a specified price, possibly with a mutually agreed upon escalation clause. This type of contract is most often employed when the scope of services to be provided is well defined.

a. CONTRACT, FIXED PRICE CONTRACTS, LUMP SUM – contractor agrees to perform all services as specified by the contract for a fixed amount. A variation of this type may include a turn-key arrangement where the contractor guarantees quality, quantity and yield on a process plant or other installation.

b. CONTRACT, FIXED PRICE CONTRACTS, UNIT PRICE – contractor will be paid at an agreed upon unit rate for services performed. For example, technical work-hours will be paid for at the unit price agreed upon. Often field work is assigned to a subcontractor by the prime contractor on a unit price basis.

c. CONTRACT, FIXED PRICE CONTRACTS, GUARANTEED MAXIMUM (TARGET PRICE) – a contractor agrees to perform all services as defined in the contract document guaranteeing that the total cost to the client will not exceed a stipulated maximum figure. Quite often, these types of contracts will contain special share-of-the-saving arrangements to provide incentive to the contractor to minimize costs below the stipulated maximum.

d. CONTRACT, FIXED PRICE CONTRACTS, BONUS-PENALTY – a special contractual arrangement usually between a client and a contractor wherein the contractor is guaranteed a bonus, usually a fixed sum of money, for each day the project is completed ahead of a specified schedule and/or below a specified cost, and agrees to pay a similar penalty for each day of completion after the schedule date or over a specified

cost up to a specified maximum either way. The penalty situation is sometimes referred to as liquidated damages. (November 1990)

3. CONTRACT, TIME AND MATERIALS (T&M) – Provides reimbursement for direct labor hours at specified fixed hourly rates or fixed unit rates that include wages, overhead, general and administrative expenses, and profit by labor category (e.g., senior structural engineer, junior mechanical engineer, operating engineer, general laborer) with a pass through of the actual cost for materials plus, in some instances, material handling costs. Subcontractor, and other direct costs and expenses, may be a straight pass through to the client, or with an added markup based on the negotiated terms. (August 2022)

CONTRACT BUDGET BASELINE (CBB) – In earned value management according to the ANSI EIA 748 standard, the budget for the project at the total contract level. The CBB reconciles with the project authorization documents from the owner. The CBB plus fee is the total contract value. CBB = performance measurement baseline (PMB) + management reserve (MR) unless an over target baseline (OTB) has been implemented. (October 2013)

CONTRACT CHANGE – An authorized modification to terms of a contract. May involve but is not limited to: 1) A change in the volume or conditions of the work involved; 2) The number of units to be produced; 3) The quality of the work or units; 4) The time for delivery; and/or 5) The consequent cost involved. (June 2007)

CONTRACT COMPLETION DATE – The date established in the contract for completion of all or specified portions of the work. This date may be expressed as a calendar date or as a number of days after the date for commencement of the contract time is issued. (November 1990)

CONTRACT DATES – The start, intermediate, or final dates specified in the contract that impact the project schedule. See also: SCHEDULED DATES. (June 2007)

CONTRACT DOCUMENTS – The agreement, addenda (which pertain to the contract documents), contractor's bid (including documentation accompanying the bid and any post-bid documentation submitted prior to the notice of award) when attached as an exhibit to the agreement, the bonds, the general conditions, the supplementary conditions, the specifications and the drawings as the same are more specifically identified in the agreement, together with all amendments, modifications and supplements issued pursuant to the general conditions on or after the effective date of the agreement. (November 1990)

CONTRACT MASTER SCHEDULE – The management summary schedule that shows the overall plan for the total contract. (June 2007)

CONTRACT PLAN – The conditions, methods, schedule, etc. for carrying out the work of the contract as agreed between the parties at the time of signing the contract. (June 2007)

CONTRACT PRICE – The monies payable by the owner to the contractor under the contract documents as stated in the agreement. (November 1990)

CONTRACT "READ AS A WHOLE" – Reading an entire contract document, instead of reading each clause in the contract in isolation. If a clause is ambiguous and can be interpreted in more than one way, the meaning that conforms to the rest of the document is usually the accepted meaning. (November 1990)

CONTRACT TIME – The number of days within which, or the dates by which, the work, or any specified part thereof, is to be completed. (November 1990)

CONTRACTOR –
(1) A business entity that enters into contracts to provide goods or services to another party.

(2) A person or organization that undertakes responsibility for the performance of a contract. One that agrees to furnish materials or perform services at a specified price. (June 2007)

CONTROL –
(1) Management action, either preplanned to achieve the desired result or taken as a corrective measure prompted by the monitoring process.
(2) To take timely corrective action. Control occurs only if monitoring and forecasting activities indicate an undesirable final result is likely to occur and that a different final result is possible.
(3) Process of comparing actual performance with planned performance, analyzing the differences, and taking the appropriate corrective action. (June 2007)

CONTROL ACCOUNT (CA) – A management control point where earned value measurement takes place. It is the place where scope, schedule and budget, are integrated at the organizational level responsible for day to day management of a segment of the project. Syn.: COST ACCOUNT. (October 2013)

CONTROL ACCOUNT MANAGER (CAM) – The single person responsible for management of the scope, schedule, and budget of the control account. The CAM has control either through delegation or supervisory responsibility for all of the staff performing the control account work. (October 2013)

CONTROL AND COORDINATION – Control is the process of developing targets and plans; measuring actual performance and comparing it against planned performance and taking the steps to correct the situation. Coordination is the act of ensuring that work is being carried out in different organizations and places to fit together effectively in time, content and cost in order to achieve the project objectives effectively. (June 2007)

CONTROL BASELINE – Syn.: BASELINE. (June 2007)

CONTROL GATE – A major project milestone at which the project client has the opportunity to exercise a ‘go/no-go’ decision upon continuation into the succeeding phase. (June 2007)

CONTROL SCHEDULE – The most recent update to a project schedule including current progress status and accepted changes. This is the current schedule used to manage the project on a regular basis as defined in the contract. The control schedule is distinct from a baseline schedule, which is fixed. See also: CURRENT SCHEDULE; SCHEDULE UPDATE. (November 2020)

CONTROLLING PATH – An alternate term used in place of ‘as-built critical path’ in order to technically preserve the use of the term critical path to denote only to activity paths identified by float calculation using early and late dates. By definition, as-built activities do not have early and late dates. (June 2007)

CONTROLLING RELATIONSHIP – In planning and scheduling, the predecessor activity logic tie to an activity, with multiple predecessors, which “controls” or “drives” that activity and establishes it’s latest early finish. (June 2007)

CORRECTION PERIOD – The period of time within which the contractor shall promptly, without cost to the owner and in accordance with the owner's written instructions, either correct defective work, or if it has been rejected by the owner, remove it from the site and replace it with non-defective work, pursuant to the general conditions. (November 1990)

CORRELATION – The measure of the relationship between two or more quantitative elements. (December 2011)

COST – In project control and accounting, it is the amount measured in money, cash expended, or liability incurred, in consideration of goods and/or services received. From a total cost management perspective, cost may include any investment of resources in strategic assets including time, monetary, human, and physical resources. (January 2002)

COST ACCOUNT – Syn.: CONTROL ACCOUNT (CA). (October 2013)

COST ACCOUNTING – The historical reporting of actual and/or committed disbursements (costs and expenditures) on a project. Costs are denoted and segregated within cost codes that are defined in a chart of accounts. In project control practice, cost accounting provides the measure of cost commitment and/or expenditure that can be compared to the measure of physical completion (or earned value) of an account. (January 2003)

COST ANALYSIS – A historical and/or predictive method of ascertaining for what purpose expenditures on a project were made and utilizing this information to project the cost of a project as well as costs of future projects. The analysis may also include application of escalation, cost differentials between various localities, types of buildings, types of projects, and time of year. (November 1990)

COST APPROACH – One of the three approaches in the appraisal process. Underlying the theory of the cost approach is the principle of substitution, which suggests that no rational person will pay more for a property than the amount with which he/she can obtain, by purchase of a site and construction of a building without undue delay, a property of equal desirability and utility. (November 1990)

COST AT COMPLETION (CAC) – The amount an activity or group of activities will cost when it has been completed. It is the sum of the cost expended to date and the estimated cost to complete. See also: INDICATED TOTAL COST. (June 2007)

COST AVOIDANCE – An action taken in the present designed to decrease costs in the future. (June 2007)

COST BASELINE – A time-phased budget used to measure and monitor cost performance. It is developed by summing estimated costs by period and is usually displayed in the form of an S-curve. See also: BASELINE. (October 2013)

COST BREAKDOWN STRUCTURE (CBS) –
(1) A hierarchical structure that divides budgeted resources into elements of costs, typically labor, materials and other cost categories. The lowest level, when assigned responsibility, typically defines a cost center.
(2) Hierarchical breakdown of a project into cost elements or cost categories.
See also: COST CATEGORY; COST CENTER. (October 2019)

COST CATEGORY – A specifically defined division in a system of classification for estimated and/or expended money for which costs are to be summarized. (June 2007)

COST CENTER – The smallest unit of activity or area of responsibility against which costs are accumulated; defined sections in the corporate system, representing units of responsibility as well as accounting units. (June 2007)

COST CODES – Codes allocated to items or activities that allow costs to be consolidated according to the elements of the coding structure. See also: CHART OF ACCOUNTS; CODE OF ACCOUNTS (COA). (June 2007)

COST CONTROL – The application of procedures to monitor expenditures and performance against progress of projects or manufacturing operations; to measure variance from authorized budgets and allow effective action to be taken to achieve minimum costs. (November 1990)

COST CONTROL SYSTEM – Any system of managing costs within the bounds of budgets or standards based upon work actually performed. Cost control is typically performed at designated levels in the work breakdown structure. (June 2007)

COST CURVE – A graph that plots cumulative cost (e.g., planned, expended, incurred, etc.) against a time scale. See also: CASH FLOW. (June 2007)

COST DISTRIBUTION – Distribution or allocation of overhead (indirect) costs on some logical basis, e.g., the time or cost of all associated direct cost activities. See also: ALLOCATION. (June 2007)

COST ELEMENT – In earned value, a basic unit of planning such as: labor, travel, material, subcontracts, and other cost categories as applicable. (October 2019)

COST ENGINEER – A professional whose judgment and experience are used in the application of scientific principles and techniques to the areas of business planning and management science, profitability analysis, estimating, decision and risk management, cost control, planning, scheduling, and dispute resolution, etc. to support asset, project, program, and portfolio management. (April 2019)

COST ENGINEERING – The application of scientific principles and techniques to the areas of business planning and management science, profitability analysis, estimating, decision and risk management, cost control, planning, scheduling, and dispute resolution, etc. to support asset, project, program, and portfolio management. (April 2019)

COST ESTIMATE – The prediction of the probable costs of a project or effort, for a given and documented scope, a defined location, and point of time in the future. (February 2021)

COST ESTIMATE CATEGORY – Syn.: COST ESTIMATE CLASS; COST ESTIMATE CLASSIFICATION SYSTEM; COST ESTIMATE TYPE. (January 2004)

COST ESTIMATE CLASS – Syn.: COST ESTIMATE CATEGORY; COST ESTIMATE CLASSIFICATION SYSTEM; COST ESTIMATE TYPE. (January 2004)

COST ESTIMATE CLASSIFICATION SYSTEM – There are numerous characteristics that can be used to categorize project cost estimate types. Some of these characteristics are: level of project definition, end usage of the estimate, estimating methodology, and the effort and time needed to prepare the estimate. AACE recommends that the primary characteristic used to define the classification category is the level of project definition. The other characteristics are considered secondary.

The level of project definition defines maturity, or the extent and types of input information available to the estimating process. Such inputs include project scope definition, requirements documents, specifications, project plans, drawings, calculations, lessons learned from past projects, reconnaissance data, and other deliverables and information that must be developed to define the project. Each industry will have a typical set of defining deliverables that are used to support the type of estimates used in that industry. The set of deliverables becomes more definitive and complete as the level of project definition (e.g., project engineering) progresses.

For projects, the estimate class designations that follow below are labeled Class 1, 2, 3, 4, and 5. A Class 5 estimate is based upon the lowest level of project definition, and a Class 1 estimate is closest to full project definition and maturity. This “countdown” approach considers that estimating is a process whereby successive estimates are prepared until a final estimate closes the process.

1. COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 5 ESTIMATE –
(Typical level of project definition required: >0% to 2% of full project definition.)
Class 5 estimates are generally prepared based on very limited information, and subsequently have wide accuracy ranges. As such, some companies and organizations have elected to determine that due to the inherent inaccuracies, such estimates cannot be classified in a conventional and systemic manner. Class 5 estimates, due to the requirements of end use, may be prepared within a very limited amount of time and with little effort

expended. Class 5 estimates are prepared for any number of strategic business planning purposes, such as but not limited to market studies, assessment of initial viability, evaluation of alternate schemes, project screening, project location studies, evaluation of resource needs and budgeting, long-range capital planning, etc.

2. COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 4 ESTIMATE –
(Typical level of project definition required: 1% to 15% of full project definition.)
Class 4 estimates are generally prepared based on limited information and subsequently have fairly wide accuracy ranges. They are typically used for project screening, determination of feasibility, concept evaluation, and preliminary (but generally not final) budget approval. Class 4 estimates are prepared for a number of purposes, such as but not limited to, detailed strategic planning, business development, project screening at more developed stages, alternative scheme analysis, confirmation of economic and/or technical feasibility, and preliminary budget approval or approval to proceed to next stage.

3. COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 3 ESTIMATE –
(Typical level of project definition required: 10% to 40% of full project definition.)
Class 3 estimates are generally prepared to form the basis for budget authorization, appropriation, and/or funding. Class 3 estimates are typically prepared to support full project funding requests and become the first of the project phase "control estimate" against which all actual costs and resources will be monitored for variations to the budget. They are used as the project budget until replaced by more detailed estimates. In many owner organizations, a Class 3 estimate may be the last estimate required and could well form the only basis for cost/schedule control.

4. COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 2 ESTIMATE –
(Typical level of project definition required: 30% to 75% of full project definition.)
Class 2 estimates are generally prepared to form a detailed control baseline against which all project work is monitored in terms of cost and progress control. For contractors, this class of estimate is often used as the "bid" estimate to establish contract value.

5. COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 1 ESTIMATE –
(Typical level of project definition required: 65% to 100% of full project definition.)
Class 1 estimates are generally prepared for discrete parts or sections of the total project rather than for the entire project. The parts of the project estimated at this level of detail will typically be used by subcontractors for bids, or by owners for check estimates. The updated estimate is often referred to as the current control estimate and becomes the new baseline for cost/schedule control of the project. Class 1 estimates may be prepared for parts of the project to comprise a fair price estimate or bid check estimate to compare against a contractor's or vendor's bid estimate, or to evaluate/dispute claims or change orders.

Syn.: COST ESTIMATE CATEGORY; COST ESTIMATE CLASS; COST ESTIMATE TYPE. See also: AACE Recommended Practices No. 17R-97 "Cost Estimate Classification System" and No. 18R-97 "Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries". (January 2004)

COST ESTIMATE RESOURCE – Cost estimate of physical resources needed to perform a specific construction activity which in turn drives an overall unit price. Typically includes labor resources, material resources, equipment resources, subcontractor costs and other costs. It is typically abbreviated LMESO. (December 2011)

COST ESTIMATE TYPE – Syn.: COST ESTIMATE CATEGORY; COST ESTIMATE CLASS; COST ESTIMATE CLASSIFICATION SYSTEM. (January 2004)

COST ESTIMATING – Cost estimating is the predictive process used to quantify, cost, and price the resources required by the scope of an investment option, activity, or project. Cost estimating is a process used to predict uncertain future costs. In that regard, a goal of cost estimating is to minimize the uncertainty of the estimate given the level

and quality of scope definition. The outcome of cost estimating ideally includes both an expected cost and a probabilistic cost distribution. As a predictive process, historical reference cost data (where applicable) improve the reliability of cost estimating. Cost estimating, by providing the basis for budgets, also shares a goal with cost control of maximizing the probability of the actual cost outcome being the same as predicted. (November 2012)

COST ESTIMATING METHODOLOGY, DETERMINISTIC – A methodology where the independent variables (e.g., the quantity of an item or the unit cost of an item) used in a cost estimating relationship (algorithm) are more or less a definitive measure for the item being estimated. (March 2021)

COST ESTIMATING METHODOLOGY, STOCHASTIC – A methodology where the independent variables used in a cost estimating relationship are generally something other than a direct measure of the item being estimated. The cost estimating relationship may be based on factors, metrics, and values that are associated with some level of randomness, and which may be based on models or probabilistic assessments. (March 2021)

COST ESTIMATING RELATIONSHIP (CER) – In estimating, an algorithm or formula that is used to perform the costing operation. CERs show some resource (e.g., cost, quantity, or time) as a function of one or more parameters that quantify scope, execution strategies, or other defining elements. A CER may be formulated in a manner that, in addition to providing the most likely resource value, also provides a probability distribution for the resource value. (May 2012)

COST ESTIMATOR (PROJECT) – Project cost estimators predict the cost of a project for a defined scope, to be completed at a defined location and point of time in the future. Cost estimators assist in the economic evaluation of potential projects by supporting the development of project budgets, project resource requirements, and value engineering. They also support project control by providing input to the cost control baseline. Estimators collect and analyze data on all of the factors that can affect project costs such as: materials, equipment, labor, location, duration of the project, and other project requirements. (November 2012)

COST INDEX – A number which relates the cost of an item at a specific time to the corresponding cost at some specified prior time. See also: PRICE INDEX. (June 2007)

COST LOADING – In planning and scheduling, assigning an estimated or actual cost to an activity. The estimated cost may be only direct costs or may include indirect costs. However, the CPM (critical path method) must be developed using only one cost loading method. (June 2007)

COST OF CAPITAL – A term, usually used in capital budgeting, to express as an interest rate percentage the overall estimated cost of investment capital at a given point in time, including both equity and borrowed funds. (November 1990)

COST OF LOST BUSINESS ADVANTAGE – The cost associated with loss of repeat business and/or the loss of business due to required resources and costs. (November 1990)

COST OF OWNERSHIP – The cost of operations, maintenance, follow-on logistical support, and end item and associated support systems. See also: OPERATING COST. [3] (November 1990)

COST OF QUALITY –
(1) Consists of the sum of those costs associated with: (a) Cost of quality conformance; (b) Cost of quality nonconformance; and (c) Cost of lost business advantage.
(2) Cost incurred or expended to ensure quality, including those associated with the cost of conformance and nonconformance. [8] (June 2007)

COST OF QUALITY CONFORMANCE – The cost associated with the quality management activities of appraisal, training, and prevention. (November 1990)

COST OF QUALITY NONCONFORMANCE – The cost associated with deviations involving rework and/or the provision of deliverables that are more than required. (November 1990)

COST PERFORMANCE INDEX/INDICATOR (CPI) – The ratio of earned value to actual costs (CPI = BCWP/ACWP). A value greater than 1 indicates that costs are running under budget. A value less than 1 indicates that costs are running over budget. Often used to predict magnitude of a possible cost overrun by dividing it into the original cost estimate (original cost estimate/CPI = projected cost at completion). (June 2007)

COST PERFORMANCE REPORT (CPR) – A common report used to report earned value management (EVM) information to an owner. (October 2013)

COST TO COMPLETE – The amount that an in-progress activity or group of activities will cost to complete. (June 2007)

COST VARIANCE – The difference between the earned value and actual cost. Cost variance (CV) = budgeted cost of work performed (BCWP) – actual cost of work performed (ACWP). A negative cost variance indicates that the activity(ies) is running over budget. (June 2007)

COST OF LIVING INDEX – In modern usage, a price index based on a constant utility concept as opposed to a constant basket concept. (November 1990)

COST/SCHEDULE CONTROL SYSTEM CRITERIA (C/SCSC) – A standard method of earned value management used on US Government projects. C/SCSC combined time and cost measures to better measure performance in an integrated way. This standard was superseded by a government earned value management system (EVMS) standard. (June 2007)

COSTING –
(1) The application of cost and resources to a quantified scope.
(2) A process of determining actual costs from actual expenditures. The way costs are estimated, and the way money is spent are rarely the same, making it necessary to analyze and redistribute actual expenditures to arrive at cost data that is useful for future estimating purposes. (May 2012)

COSTING, ACTIVITY BASED (ABC) – Costing in a way that the costs budgeted to an account truly represent all the resources consumed by the activity or item represented in the account. (January 2003)

CPM – Syn.: CRITICAL PATH METHOD (CPM). (June 2007)

CRASH COSTS – The cost of reducing an activity to its crash duration. (June 2007)

CRASH DURATION – When needing to shorten a network critical path, activities may be 'crashed'. This represents drastic action to reduce the duration of a critical activity and should only be taken in exceptional circumstances due to a dramatic increase in resource consumption. (June 2007)

CRASHING – Action to decrease the duration of an activity or project by increasing the expenditure of resources. (June 2007)

CREW – A set of workers and work equipment designated to perform an activity. (January 2014)

CREW HOUR – An hour of effort for a crew of workers. For example, if a crew has 2 workers, a crew hour includes 2 labor hours. (June 2007)

CREW RATE – Labor cost per crew hour for a given crew. The labor cost may include only wages or wages plus benefits, burdens, and other markups. The labor cost may also include an allowance for the costs of tools and equipment used by the crew in performance of their work. See also: LABOR COST. (June 2007)

CRITICAL ACTIVITY – An activity on the critical path. See also: CRITICAL PATH; NEAR-CRITICAL ACTIVITY.

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CRITICAL CHAIN – That set of tasks which determines the overall duration of a project, after considering resource capacity. It is typically regarded as the constraint or leverage point of a project. (June 2007)

CRITICAL CHAIN METHOD – Differentiated from the critical path method, this project planning and management technique considers resources that constrain the work, not only the precedence of activities. The method determines the longest-duration sequence of resource-constrained activities through a project network–thus, the shortest-possible project duration–the critical chain. Algorithms for application of the method are both deterministic and stochastic. Time buffers are included to protect completion dates and provide adequate solutions, since contingency is removed from durations of individual activities. (August 2007)

CRITICAL ELEMENT – A cost element or a profit element which, due to its potential variability, can change the bottom-line, either favorably or unfavorably, by an amount equal to or greater than its critical variance. See also: CRITICAL VARIANCE. (December 2011)

CRITICAL PATH – The longest path of activities through the project schedule to a milestone, such as: interim milestone(s); substantial completion; final completion, etc. See also: LONGEST PATH.

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CRITICAL PATH ANALYSIS – Procedure for calculating the critical path and floats in a network. (June 2007)

CRITICAL PATH METHOD (CPM) –
(1) Technique used to predict project duration by analyzing which sequence of activities has least amount of scheduling flexibility. Early dates are figured by a forward pass using a specific start date and late dates are figured by using a backward pass starting from a completion date.
(2) Network scheduling using activity durations and logic ties between activities to model the plan to execute the work. CPM scheduling is the method of choice for managing projects of long duration, complex technical integration, or the need to coordinate fast or early completion of the work. Syn.: CPM. (June 2007)

CRITICAL RELATIONSHIP – A driving relationship between two critical activities, thus defining which activity influences the final completion of the project. (June 2007)

CRITICAL SEQUENCE – Sequence of activities having zero float after resource limits are taken into account in calculating float. (June 2007)

CRITICAL SEQUENCE ANALYSIS – A process of calculating a critical sequence of activities while taking into account resource limits that reflects an activity's flexibility. (June 2007)

CRITICAL TASK – A task that must finish on time for the entire project to finish on time. If a critical task is delayed, the project completion date is also delayed. A critical task has zero slack time. A series of critical tasks make up the project's critical path. (June 2007)

CRITICAL VARIANCE – A percentage of the bottom-line used to identify critical elements. The percentage is a function of the class of estimate (Class 1 or 2 vs. Class 3, 4, or 5) and the type of bottom-line (cost or profit). If necessary, the percentage can be increased to a maximum of twice its base value in order to reduce the number of qualifying elements to an acceptable number (typically 20 or so) in order to avoid introducing iatrogenic risk. See also: BOTTOM-LINE; CRITICAL ELEMENT. (December 2011)

CRITICALITY – A measure of the significance or impact of failure of a product, process, or service to meet established requirements. (November 1990)

CRITICALITY INDEX – Describes how often a particular task was on the critical path during the quantitative risk analysis (e.g., Monte Carlo computer simulation). Expressed as a factor between 0 and 1 or as a percentage. Tasks with a high criticality index appear more frequently on the critical path. When combined with the duration sensitivity, it determines the cruciality index. (December 2011)

CRUCIALITY – The degree that a change in a risk model element produces a change in the overall outcome (i.e., strong risk drivers have high cruciality). In schedule risk, cruciality of an activity increases with its criticality (i.e., sometimes referred to as the product of sensitivity and criticality). See also: CRITICALITY; RISK DRIVERS. (December 2011)

CRUDE MATERIALS – Includes products entering the market for the first time which have not been fabricated or manufactured but will be processed before becoming finished goods (e.g., steel scrap, wheat, raw cotton). Syn.: RAW MATERIALS. (November 1990)

CUMULATIVE IMPACT –
1) The unforeseeable disruption of productivity resulting from the synergistic effect of an undifferentiated group of changes.
2) The impact on unchanged work (throughout all or a portion of a project and not necessarily temporally or physically close) that is not attributable to any one change but flows from the synergy of the number and scope of changes issued on a project.
3) The impact may result in a delay to the work, whether on or off the critical path(s). (May 2023)

CURRENT COST ACCOUNTING (CCA) – a methodology prescribed by the Financial Accounting Board to compute and report financial activities in constant dollars. (November 1990)

CURRENT DATE LINE – A vertical line in a Gantt chart, resource graph, or other charts with dates on one axis, indicating the current date. (June 2007)

CURRENT DOLLARS – Dollars of purchasing power in which actual prices are stated, including inflation or deflation. In the absence of inflation or deflation, current dollars equal constant dollars. [1] (November 1990)

CURRENT FINISH DATE – The current estimate of the calendar date when an activity will be completed. (June 2007)

CURRENT PERIOD (OF A GIVEN PRICE INDEX) – Period for which prices are compared to the base period prices. (November 1990)

CURRENT RISK EXPOSURE – A term used to describe risk management progress or analyze and communicate discrete-time series risk data and potential changes in risk exposure. The current level of risk exposure is established

at the time of reporting, describing the extent or benefit of any risk control or risk treatment measures that have been employed to date. See also: INHERENT RISK EXPOSURE; TARGET RISK EXPOSURE; RESIDUAL RISK; ALARP.

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CURRENT SCHEDULE – Schedule update, which reflects actual progress to date, plus forecast progress going forward and is accepted/used for monitoring and controlling the work. See also: CONTROL SCHEDULE. (November 2020)

CURRENT START DATE – The current estimate of the calendar date when an activity will begin. (June 2007)

CURRENT STATUS – In project control, a report that compares actual progress with planned progress as of the last reporting date. (June 2007)

CUSTOM IN THE INDUSTRY – An established practice in a particular industry in the general area. It may be used to show the practice to be followed in a particular circumstance. (November 1990)

CUSTOMER – The ultimate consumer, user, client, beneficiary or second party who will be responsible for acceptance of the project's deliverables. (June 2007)

CUSTOMER FURNISHED EQUIPMENT (CFE) – Equipment provided to the contractor doing the project by the customer for the project and typically specified in the contract. Also referred to as owner furnished material/equipment (OFM/OFE). (June 2007)

CUTOFF DATE – The ending date in a reporting period. (June 2007)

CYCLE TIME – The time duration that it takes to create a deliverable. Includes time for both direct effort on the deliverable and time spent on other activities, projects or processes that intentionally or unintentionally add to the duration. (June 2007)

DAILY CREW OUTPUT – The amount of work accomplished by a crew in one day (typically 8 hours). This is a special form of production rate. (January 2014)

DAMAGES, ACTUAL – The increased cost to one party resulting from another party's acts or omissions affecting the contract but not incorporated into a contract modification. (November 1990)

DAMAGES, LIQUIDATED – An amount of money stated in the contract as being the liability of a contractor for failure to complete the work by the designated time(s). Liquidated damages ordinarily stop at the point of substantial completion of the project or beneficial occupancy by the owner. Also, can apply to contract defined output performance. Syn.: LIQUIDATED DAMAGES. (June 2007)

DAMAGES, RIPPLE – Syn.: IMPACT COST. (April 2004)

DANGLE – An activity in a network that has neither predecessors nor successors. (June 2007)

DATA DATE –
(1) The point in time (typically reported as a calendar date) *through* [*] which progress is incorporated into the schedule (actual dates, percent complete, remaining durations, actual resources, etc.), separating actual data from the forecast.
(2) The point in time (typically reported as a calendar date) *to* [*] which progress is incorporated into the schedule (actual dates, percent complete, remaining durations, actual resources, etc.), separating actual data from the forecast.

[*] The method chosen should be used consistently throughout the project.
Syn.: AS-OF DATE; UPDATE DATE; TIME NOW. See also: PROGRESS DATE; STATUS DATE; SCHEDULE UPDATE. (October 2018)

DATE CONSTRAINT – A fixed date imposed on an activity to force it to start or finish by or on a certain date in a schedule model. A date constraint overrides the logic of the schedule and can, if improperly used, cause unintended results. (June 2007)

DATE FOR THE COMMENCEMENT OF THE CONTRACT TIME – The date when the contract time commences to run and on which the contractor shall start to perform the contractor's obligations under the contract documents. (November 1990)

DATE OF ACCEPTANCE – Date on which the client agrees to final acceptance of the project. Commitments against the authorized funds usually cease at this time. This is an event. See also: DELIVERY. (June 2007)

DAY WORK ACCOUNT – A method of payment for work not included in the scope of the contract that the construction contractor is obliged to perform at the request or direction of the owner or its agent. Generally, such day work account is paid for on unit-price or cost-plus terms. (June 2007)

DE-SCOPE – For earned value, project scope removed with a separate contractual action. It is scope with schedule and budget that is returned to the owner for other uses. The net result is the total project budget is reduced, and the overall duration of the project may also be reduced. Alternately, the amount of project scope removed may be kept in Undistributed Budget/Schedule Margin until returned to the owner. See also: PROJECT SCOPE. (October 2013)

DECELERATION – The opposite of acceleration. A direction, either expressed or implied, to slow down job progress. (November 1990)

DECISION ANALYSIS (DA) – A systematic and typically quantitative process for selecting the optimum of two or more alternatives in order to address a problem or opportunity. (December 2011)

DECISION BASIS – Refers to the definition of the components or criteria on which a decision is based. Generally includes defined alternatives, information, and preferences. See also: DECISION POLICY. (December 2011)

DECISION DRIVER – Variables in a decision model that influence decision outcomes. (December 2011)

DECISION EVENT – State in the progress of a project when a decision is required before the start of any succeeding activity. The decision determines which of a number of alternative paths is to be followed. (June 2007)

DECISION FRAMING – Methods to identify, define, layout or frame the decision to be addressed during the structuring step of decision analysis. See also: DECISION ANALYSIS (DA). (December 2011)

DECISION IMPLEMENTATION – In decision analysis, this refers to the process step for implementing the selected alternative and performing continuous improvement. (December 2011)

DECISION MODEL – A quantitative model that that provides a base methodology that supports objective, consistent and appropriate decision making by an organization considering all agreed model inputs and outputs. See also: DECISION POLICY. (June 2007)

DECISION POLICY – Definitive position of an organization on how investment or project decisions will be made. Establishes the basis for decision models. Provides a basis for consistent and appropriate decision making and defines authority and accountability within the organization. See also: POLICY. (June 2007)

DECISION QUALITY CHAIN – A generally recognized quality management model for decision analysis. It includes the following elements: a. Appropriate frame, b. Creative, doable alternatives, c. Meaningful, reliable information, d. Clear values and trade-offs, e. Logically correct reasoning, and f. Commitment to action. See also: DECISION ANALYSIS. (December 2011)

DECISION TREE – A graphical representation of the decision process. Sequential decisions are drawn in the form of branches of a tree, stemming from an initial decision point and extending all the way to final outcomes. Each path through branches of the tree represents a separate series of decisions and probabilistic events. (June 2007)

DECISIONS UNDER CERTAINTY – Simple decisions that assume complete information and no uncertainty connected with the analysis of the decisions. (November 1990)

DECISIONS UNDER RISK – A decision problem in which the analyst elects to consider several possible futures, the probabilities of which can be estimated. (November 1990)

DECISIONS UNDER UNCERTAINTY AND RISK – A decision for which the analyst elects to consider several possible futures, the probabilities of which cannot be estimated. (December 2011)

DECLINING BALANCE DEPRECIATION – Method of computing depreciation in which the annual charge is a fixed percentage of the depreciated book value at the beginning of the year to which the depreciation applies. Syn.: PERCENT ON DIMINISHING VALUE. (November 1990)

DECOMPOSITION – Separation of the scope of work and requirements into smaller, component packages, so that work effort can be more effectively monitored and controlled. (August 2007)

DE-ESCALATE – A method to convert present-day costs or costs of any point in time to costs at some previous date via applicable indexes. (November 1990)

DEFECT – A deviation of a severity sufficient to require corrective action. (November 1990)

DEFECTIVE – An adjective which, when modifying the work, refers to work that is unsatisfactory, faulty or deficient, or does not conform to the contract documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the contract documents, or has been damaged prior to the engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by the owner at substantial completion in accordance with the contract documents). (November 1990)

DEFECTIVE SPECIFICATIONS – Specifications and/or drawings which contain errors, omissions, and/or conflicts, which affect or prevent the contractor's performance of the work. (November 1990)

DEFECT, LATENT – A defect in the work which cannot be observed by reasonable inspection. (November 1990)

DEFECT, PATENT – A defect in the work which can be observed by reasonable inspection. (November 1990)

DEFINITION (PROJECT) – Process of quantifying performance and interface requirements during system decomposition and elaboration phase of a project. See also: LIFE CYCLE; LIFE CYCLE, PROJECT LIFE CYCLE. (June 2007)

DEFINITION PHASE – An early phase in the project life cycle when the scope is defined. Syn.: DEVELOPMENT PHASE; FRONT END; PLANNING PHASE. (June 2007)

DEFINITIVE ESTIMATE – An estimate generally involving a high degree of deterministic estimating methods. It is generally prepared in great detail. See also: COST ESTIMATE CLASSIFICATION, CLASS 1 ESTIMATE; COST ESTIMATE CLASSIFICATION, CLASS 2 ESTIMATE. (May 2012)

DEFLATION – A persistent decrease in the level of consumer prices, or a persistent increase in the purchasing power of money caused by a decrease in available currency and credit relative to the proportion of available goods and services (i.e., negative inflation). See also: INFLATION. (December 2011)

DELAY – To cause the work or some portion of the work to start or be completed later than planned or later than scheduled. (April 2004)

DELAY, COMPENSABLE –
(1) Delays that are caused by the owner's actions or inactions. Contractor is entitled to a time extension and damage compensation for extra costs associated with the delay.
(2) If the delay is deemed compensable the party will be entitled to additional compensation for the costs of delay, as well as additional time for contract performance. However, it is possible for a delay to be compensable without extending the contract performance time. Generally speaking, a delay that could have been avoided by due care of one party is compensable to the innocent party suffering injury or damage as a result of the delay's impact. [10]
(3) A contractor is entitled to recover for delay costs and a time extension provided that three conditions are satisfied: 1) The delay is caused by the owner or is within the owner's control; 2) The delay results in additional costs to the contractor; and 3) The contractor has not assumed the risk of delay. Because this entitlement is implied in every contract, it does not need to be expressly stated in the contract. [11] (June 2007)

DELAY, CONCURRENT – Two or more delays in the same time frame or which have an independent effect on the end date. The owner/engineer and the contractor may each be responsible for delay in completing the work. This may bar either party from assessing damage against the other. This may also refer to two or more delays by the same party during a single time period. (November 1990)

DELAY, EXCUSABLE – Any delay beyond the control and without the fault or negligence of the contractor or the owner, caused by events or circumstances such as, but not limited to, acts of God or of the public enemy, acts of interveners, acts of government other than the owner, fires, floods, epidemics, quarantine restrictions, freight embargoes, hurricanes, tornadoes, labor disputes, etc. Generally, a delay caused by an excusable delay to another contractor is compensable when the contract documents specifically void recovery of delay costs. (November 1990)

DELAY, INEXCUSABLE – Any delay caused by events or circumstances within the control of the contractor, such as inadequate crewing, slow submittals, etc., which might have been avoided by the exercise of care, prudence, foresight, or diligence on the part of the contractor. (November 1990)

DELAY, NONPREJUDICIAL – Any delay impacting a portion of the work within the available total float or slack time, and not necessarily preventing completion of the work within the contract time. (November 1990)

DELAY, PACING –
(1) Deceleration of the project work, by one of the parties to the contract, due to a delay to the end date of the project caused by the other party, so as to maintain steady progress with the revised overall project schedule.
(2) A delay resulting from a conscious and contemporaneous decision to pace progress of an activity against another activity experiencing delay due to an independent cause.
(3) The consumption of float created by another delay, in performing work on an activity not directly dependent on the progress of the work experiencing the other delay. (June 2007)

DELAY, PARENT – The alleged owner-caused delay that created or increased the relative total float consumed by the pacing delay. The parent delay must start or exist prior to the pacing delay. Also, the parent delay must be on the critical path or have a lower float value than the paced activity prior to pacing. (June 2007)

DELAY, PREJUDICIAL – Any excusable or compensable delay impacting the work and exceeding the total float available in the progress schedule, thus preventing completion of the work within the contract time unless the work is accelerated. (November 1990)

DELAYING RESOURCE – In resource planning and scheduling, inadequate availability of one or more resources may require that completion of an activity be delayed beyond the date on which it could otherwise be completed. The delaying resource is the first resource on an activity that causes the activity to be delayed. (June 2007)

DELIVERABLE –
(1) A report or product of one or more tasks that satisfy one or more objectives and must be delivered to satisfy contractual requirements.
(2) Another name for products, services, processes, or plans created as a result of doing a project. A project typically has interim as well as final deliverables (June 2007)

DELIVERY – Transfer or handover of a product from one party to another. Syn.: TURNOVER. (June 2007)

DELPHI TECHNIQUE – A forecasting technique that seeks expert consensus by sharing their opinions with each other anonymously after each round of forecasts. Based on the array of anonymous expert opinions then shared, panel participants rethink and reforecast for the next round. When forecasts are congruent or nearly so, the forecasting process is complete. (August 2007)

DEMAND FACTOR –
(1) The ratio of the maximum instantaneous production rate to the production rate for which the equipment was designed.
(2) The ratio between the maximum power demand and the total connected load of the system. (November 1990)

DEMING CYCLE – Syn.: PLAN-DO-CHECK-ACT (PDCA) CYCLE. (June 2007)

DEMURRAGE – A charge made on cars, vehicles, or vessels held by or for consignor or consignee for loading or unloading, for forwarding directions or for any other purpose. (November 1990)

DEPENDENCIES – Relationships between products or tasks. For example, one product may be made up of several other 'dependent' products or a task may not begin until a 'dependent' task is complete. See also: RELATIONSHIP. (June 2007)

DEPENDENCY – A relation between activities, such that one requires input from the other. (June 2007)

DEPENDENT VARIABLE – An event or condition whose impact or probability of occurrence depends on another variable. See also: INDEPENDENT VARIABLE. (December 2011)

DEPLETION –
(1) A form of capital recovery applicable to extractive property (e.g., mines). Depletion can be on a unit-of-output basis related to original or current appraisal of extent and value of the deposit. (Known as percentage depletion.)
(2) Lessening of the value of an asset due to a decrease in the quantity available. Depletion is similar to depreciation except that it refers to such natural resources as coal, oil, and timber in forests. (November 1990)

DEPRECIATED BOOK VALUE – The first cost of the capitalized asset minus the accumulation of annual depreciation cost charges. (November 1990)

DEPRECIATION –
(1) Decline in value of a capitalized asset.
(2) A form of capital recovery applicable to a property with a life span of more than one year, in which an appropriate portion of the asset's value is periodically charged to current operations. (November 1990)

DESCRIPTIVE – Portrayal of content in words, either orally or written. When applied to instructions, implies information concerning how something is to be done, rather than step by step details of what is to be done, i.e. prescriptive. (June 2007)

DESIGN & DEVELOPMENT PHASE – Definition phase in a generic project life cycle that encompasses detailed technical, commercial and organizational decisions. There is often substantial opportunity to optimize these decisions without expenditure of significant resources by modeling, prototyping and testing. Management approval gates are necessary where major decisions will be made. In some industries, this phase is dealt with as two separate phases with a management gate between the two. This allows design to be matured before approval is given for significant resource expenditure on full design/development. Equally, the gate may be required before major procurement decisions and commitments are made after initial design but prior to full design/development. See also: DEFINITION PHASE. (June 2007)

DESIGN DEVELOPMENT – Process of identifying and verifying technical solutions to meet requirements of conceptual design. Takes conceptual design to next level of detail, but not as detailed as the detailed design stage. Depending on size and nature of project, it may be a separate stage in the project life cycle. (June 2007)

DESIGN REVIEW – A formal, documented, comprehensive and systematic examination of a design to evaluate design requirements and capability of the design to meet these requirements and to identify problems and propose solutions. (June 2007)

DESIRABLE LOGIC – Network logic that is desirable for the contractor (but not necessarily for the client), based on some preference or advantage. Desirable logic may impose unnecessary conditions that preclude an optimum solution. See also: IRREFUTABLE LOGIC; PREFERENTIAL LOGIC. (June 2007)

DETAILED ENGINEERING – The detailed design, drafting, engineering, and other related services necessary to purchase equipment and materials and construct a facility. (November 1990)

DETAILED REQUIREMENT – A requirement that describes the specific function that a particular product provides at a level of detail sufficient to support execution of the work. [8] (June 2007)

DETAIL(ED) SCHEDULE –
(1) A schedule used to communicate the day-to-day activities to working levels on the project. The detailed schedule would typically cover activities up to at least the next major milestone. The detailed schedule supports and is consistent with the master schedule.
(2) A schedule, which displays the lowest level of detail necessary to control the project through job completion. The intent of this schedule is to finalize remaining requirements for the total project. (June 2007)

DETERMINISTIC ESTIMATE – An estimate where none of the variables are probabilistic and that is developed using deterministic methods (i.e., not subject to significant conjecture). In some usage, this term is synonymous with BASE ESTIMATE (even if the base estimate is developed using stochastic methods). (December 2011)

DETERMINISTIC NETWORK/MODEL –

(1) A network with no facilities to accommodate probabilistic dependencies. Precedence networks are said to be deterministic.
(2) A deterministic model, as opposed to a stochastic model, contains no random elements and for which, therefore, the future course of the system is determined by its state at present (and/or in the past). (June 2007)

DEVELOPMENT – Process of working out and extending theoretical, practical, and/or useful application of an idea, concept, or preliminary design. (June 2007)

DEVELOPMENT COSTS – Those costs specific to a project, either capital or expense items, which occur prior to commercial sales and which are necessary in determining the potential of that project for consideration and eventual promotion. Major cost areas include process, product, and market research and development. (November 1990)

DEVELOPMENT PHASE – Syn.: DEFINITION PHASE; FRONT END; PLANNING PHASE. (June 2007)

DEVIATION –
(1) A departure from established requirements. Deviations occur when the work product either fails to meet or unnecessarily exceeds the requirements. The change (positive or negative) may be considered potential or it may already be in the process of actually occurring. The deviation is used to provide a detailed description and detailed estimate (or ROM estimate) of change impacts that are the result of design developments, productivity, omissions, errors, price fluctuation, supplier changes, etc., or anything else that changes the forecast cost and schedules. Deviations are documented by project controls and communicated to the project manager. A deviation provides the project team with an opportunity to mitigate an adverse impact or to optimize the outcome and is used primarily as a communication tool. Note: Deviation as used herein refers to a single point variance. Trend refers to a pattern of a data group.
(2) In systems engineering, a deviation in the work product may be classified as an imperfection, nonconformance, or defect. (June 2007)

DEVIATION COSTS – The sum of those costs, including consequential costs such as schedule impact, associated with the rejection or rework of a product, process, or service due to a departure from established requirements. Also, may include the cost associated with the provision of deliverables that are more than required. (November 1990)

DIAGRAMMING (SCHEDULE) – Syn.: SCHEDULING. (June 2007)

DIFFERING SITE CONDITIONS – Subsurface or latent physical conditions at the site differing materially from those conditions indicated in the contract documents or unknown physical conditions at the site, of an unusual nature, differing materially from conditions normally encountered and generally recognized as inherent in work of the nature provided for in the contract. (November 1990)

DIRECT COSTS – Costs of completing work that are directly attributable to its performance and are necessary for its completion. 1) In construction, the cost of installed equipment, material, labor and supervision directly or immediately involved in the physical construction of the permanent facility. 2) In manufacturing, service, and other non-construction industries: the portion of operating costs that is readily assignable to a specific product or process area. Syn.: CAPITAL, DIRECT. (June 2007)

DIRECT DISRUPTION –
1) The direct impact that changed work has on other unchanged work going on around it.
2) The immediate and direct disruption resulting from a change or other influence that lowers productivity in the performance of the changed or unchanged work. Direct impact is considered foreseeable and the disrupting relationship to unchanged work can be related in time and space to a specific change. Direct disruption may result in a delay to the work, whether on or off the critical path(s). (May 2023)

DIRECT PACING – When the paced event has a logical relationship to the parent delay. (June 2007)

DISCIPLINE –
(1) Area of technical expertise or specialty. [8]
(2) A discrete area of study and endeavor where only specialized education and experience enable the full comprehension of the content of the subject matter and its appropriate application. (August 2007)

DISCONTINUOUS ACTIVITY – An activity in which the interval between start and finish dates is allowed to exceed its duration in order to satisfy start-to-start and finish-to-finish relationships with other activities. (June 2007)

DISCOUNTED CASH FLOW –
(1) The present worth of a sequence in time of sums of money when the sequence is considered as a flow of cash into and/or out of an economic unit.
(2) An investment analysis which compares the present worth of projected receipts and disbursements occurring at designated future times in order to estimate the rate of return from the investment or project. Also called discounted cash flow rate of return, interest rate of return, internal rate of return, investor's method or profitability index. Syn.: INVESTOR'S METHOD. (November 1990)

DISCOUNTED PAYBACK PERIOD (DPP) – The time required for the cumulative benefits from an investment to pay back the investment cost and other accrued costs considering the time value of money. [1] (November 1990)

DISCOUNT FACTOR – A multiplicative number (calculated from a discount formula for a given discount rate and interest period) that is used to convert costs and benefits occurring at different times to a common time. [1] (November 1990)

DISCOUNTING – A technique for converting cash flows that occur over time to equivalent amounts at a common time. [1] (November 1990)

DISCOUNT RATE – The rate of interest reflecting the investor's time value of money, used to determine discount factors for converting benefits and costs occurring at different times to a base time. The discount rate may be expressed as nominal or real. [1] (November 1990)

DISCOVERY WORK – In the context of maintenance turnarounds, work that is discovered during the turnaround execution window, when equipment is opened and inspected. (March 2021)

DISCRETE EFFORT – Tasks that have a specific measurable end product or end result. Discrete tasks are ideal for earned value measurement. See also: WORK PACKAGE. (June 2007)

DISCRETE MILESTONE – A milestone that has a definite scheduled occurrence. (June 2007)

DISCRETE TASK – A measurable activity with an output. (June 2007)

DISCRETIONARY DEPENDENCY – Dependency defined by preference, rather than necessity. These are typically employed in preferential or soft logic. (June 2007)

DISINFLATION – A decrease in the rate of inflation (for example, a change in the rate of inflation from 4% to 2%). Differs from, but may portend deflation. (December 2011)

DISPATCHING – The selecting and sequence of jobs to be run at individual work stations and the assignment of these jobs to workers. In many companies, dispatching is done by the actual shop line supervisor, set-up worker or lead

worker. A dispatcher is usually a representative of the production control department which handles this job assignment task. (November 1990)

DISPUTE – A disagreement between the owner and the contractor as to a question of fact or contract interpretation which cannot be resolved to the mutual satisfaction of the parties. (November 1990)

DISRUPTION – An interference (action or event) with the orderly progress of a project or activity(ies). Disruption has been described as the effect of change on unchanged work and manifests itself primarily as adverse labor productivity impacts. If such disruption is caused by owner or engineer action (or failure to act), the contractor may be entitled to recover any resulting costs. See also: RIPPLE EFFECT. (June 2007)

DISTRIBUTABLES – The portion of a project's cost that cannot be associated with any specific direct account. In construction, this includes the field non-manual staff, field office, office supplies, temporary construction, utilities, small tools, construction equipment, weather protection, snow removal, lost time, labor burden, etc. When completion cost reports are prepared, the distributable costs may be distributed across the direct accounts for fixed asset accounting. See also: INDIRECT COSTS. (June 2007)

DOCUMENT –
(1) (noun) Words or images assembled for a communicative purpose within a bounded physical medium–typically on sheets of paper or in digital memory files.
(2) (verb) To record communications, events, actions, or circumstances within a bounded physical medium. (August 2007)

DRAWINGS, PLANS – The drawings, plans or reproductions thereof, which show location, character, dimensions, and details of the work to be performed and which are referred to in the contract documents. (November 1990)

DRIVING RELATIONSHIP – A relationship between two activities in which the start or completion of the predecessor activity determines the early dates for the successor activity with multiple predecessors. See also: FREE FLOAT. (June 2007)

DRIVING ACTIVITY – The predecessor activity(ies) that determines another activity's early start. (June 2007)

DUMMY ACTIVITY – Used only in activity on arrow (AOA) networks to create logic relationships between activities denoting a dependency, but not an action. Dummies are "activities" with zero duration, but are not milestones. Dummy activities are typically drawn as dotted lines. (June 2007)

DUMMY START ACTIVITY – An activity entered into the network for the sole purpose of creating a single start for the network. (November 1990)

DURABLE GOODS – Generally, any producer or consumer goods whose continuous serviceability is likely to exceed three years (e.g., trucks, furniture). (November 1990)

DURATION – The amount of time estimated to complete an activity in the time scale used in the schedule (hours, days, weeks, etc.). Planned production rates and available resources will define the duration used in a given schedule. The following four types of duration are used: 1) Original duration: Duration input by the planner; 2) Current duration: Duration based on latest progress date for in-progress activities. Calculated rate of progress provides a new completion estimate; 3) Actual duration: Duration based on activity's actual start and actual finish. Applies only to completed activities; and 4) Remaining duration: The expected time required to complete an activity. It is calculated as the difference between the data date and the expected finish date for in-progress activities. (Equal to the original duration for non-progressed activities. Equal to zero for completed activities.) See also: ACTIVITY DURATION; CYCLE TIME. (June 2007)

DURATION COMPRESSION – Shortening project schedule without reducing project scope. Duration compression is not always possible and often requires an increase in project cost. See also: CRASHING; FAST-TRACK(ING). (August 2007)

DURATION SENSITIVITY – the measure of the correlation between the duration of a task and the duration of a project. When combined with the criticality index, it determines the cruciality index. (December 2011)

DYNAMIC RISK – Risk for which the characteristics, probability and/or impact change over time or with the occurrence of preceding events. See also: STATIC RISK. (December 2011)

DYNAMIC RISK ANALYSIS – Risk analysis which addresses dynamic risks. May employ elements of systems dynamics. See also: SYSTEMS DYNAMICS. (December 2011)

EARLIEST EXPECTED COMPLETION DATE – The earliest calendar date on which the completion of an activity work package or summary item occurs. [4] (November 1990)

EARLY BAR – An activity bar shown on the bar chart starting at the earliest date its predecessors' completion will allow it to begin. (June 2007)

EARLY DATES – Calculated in the forward pass of time analysis, early dates are the earliest dates on which an activity can start and finish. (June 2007)

EARLY EVENT TIME (EET) – The earliest time at which an event may occur. (November 1990)

EARLY FINISH (EF) – The earliest date or time an activity may finish as calculated by the schedule during the forward pass. Equal to the early start of the activity plus its remaining duration. (June 2007)

EARLY START (ES) – The earliest date or time an activity may start as calculated by the schedule during the forward pass. (June 2007)

EARLY WORK SCHEDULE – Predicated on the parameters established by the proposal schedule and any negotiated changes, the early work schedule defines reportable pieces of work within major areas. The format is developed into a logic network including engineering drawings, bid inquiries, purchase orders, and equipment deliveries, and can be displayed as a time-phased network. The detail of this schedule concentrates on projected engineering construction issue drawings released and equipment deliveries. The activities of the early part of construction are more defined than in the proposal or milestone schedule. (November 1990)

EARNED HOURS (EH) – The time in standard hours credited as a result of the completion of a given task or a group of tasks. (June 2007)

EARNED SCHEDULE (ES) –
(1) The number of whole plus partial project planned value (PV) time increments that equates to the earned value accrued.
(2) An extension of earned value management (EVM) practices that develops counterparts to conventional EVM metrics calculated and expressed in terms of duration (time) instead of monetary value. These metrics are differentiated from their EVM counterparts by listing their time dependence (e.g., the ES metrics for schedule variance and schedule performance index are SV(t) and SPI(t) respectively). This distinction is often emphasized by labeling the cost dependence of conventional cost-based earned value metrics (e.g., the traditional EVM metrics schedule variance and schedule performance index are SV($) and SPI($) respectively). The use of the monetary

denotation for conventional EVM metrics tends to be used only in discussions when ES and EVM are discussed together. (March 2016)

EARNED VALUE (EV) - Measure of the value of work performed so far, also called the budgeted cost of work performed (BCWP). The "value" of the work earned at the date of analysis (data date). The cost of the work that has been accomplished in terms of the BCWS. Represents the budget value of work performed, rather than the actual cost of the work performed. In comparison to planned value (PV), provides a measure of performance taking into account both time and cost expended. Syn.: BUDGETED COST OF WORK PERFORMED (BCWP). See also: ACTUAL COST (AC); PLANNED VALUE (PV). (October 2013)

EARNED VALUE CONCEPT – In general (non-EVMS) terms, the objective measurement at any time of work accomplished (performed) in terms of budgets planned for that work, and the use of these data to indicate contract cost and schedule performance. (June 2007)

EARNED VALUE MANAGEMENT [SYSTEM] (EVM[S]) – A project progress and performance control system that integrates work scope, schedule, and resources to enable objective comparison of the earned value to the actual cost and the planned schedule of the project. (May 2021)

EARNED VALUE REPORTS – Cost and schedule performance reports that are part of the performance measurement system. These reports make use of the earned value concept of measuring work accomplishment. (November 1990)

EARNINGS VALUE – The present worth of an income producer's probable future net earnings, as prognosticated on the basis of recent and present expense and earnings and the business outlook. (November 1990)

ECONOMIC COSTS – A valuation measure used in decision making that combines accounting costs and opportunity costs. See also: OPPORTUNITY COSTS. (December 2011)

ECONOMIC EVALUATION METHODS – A set of economic analysis techniques that considers all relevant costs associated with a project investment during its study period, comprising such techniques as life-cycle cost, benefit-to-cost ratio, savings-to-investment ratio, internal rate of return, and net savings. [1] (November 1990)

ECONOMIC LIFE (CYCLE) – Syn.: LIFE CYCLE, ASSET LIFE CYCLE. (June 2007)

ECONOMIC RETURN – The profit derived from a project or business enterprise without consideration of obligations to financial contributors and claims of others based on profit. (November 1990)

ECONOMIC VALUE – The value of property in view of all its expected economic uses, as distinct from its value in view of any particular use. Also, economic value reflects the importance of a property as an economic means to an end, rather than as an end in itself. (November 1990)

ECONOMY – The cost or profit situation regarding a practical enterprise or project as in economy study, engineering economy, and project economy. (November 1990)

EFFECT – Syn.: CONSEQUENCE; IMPACT. (December 2011)

EFFECTIVE DATE OF THE AGREEMENT – The date indicated in the agreement on which it becomes effective, but if no such date is indicated, the date on which the agreement is signed and delivered by the last of the two parties to sign and deliver. (November 1990)

EFFECTIVE INTEREST – The true value of interest rate computed by equations for compound interest rate for a 1-year period. (November 1990)

EFFICIENCY – Syn.: PRODUCTIVITY. (June 2007)

EFFICIENCY FACTOR – A measure of overall performance used in a work measurement system. It is calculated by dividing the standard time to perform the work by the actual time. (June 2007)

EFFORT – The number of labor units necessary to complete work. Effort is usually expressed in staff hours, staff days or staff weeks and should not be confused with duration. (June 2007)

EFFORT REMAINING – Estimate of effort remaining to complete an activity. A far more useful measure of progress than percentage complete. (June 2007)

EFFORT-DRIVEN ACTIVITY – An effort-drive activity provides the option to determine activity duration through resource usage. The resource requiring the greatest time to complete the specified amount of work on the activity will determine its duration. (June 2007)

EIGHTY-HOUR RULE – Method of breaking down each project activity or task into work packages that require no more than 80 hours of effort to complete. [8] (June 2007)

EIGHTY-TWENTY RULE – A statistical principle named after Italian economist Vilfredo Pareto, who observed that 80% of the wealth in Italy was controlled by 20% of the population. In cost management, it is commonly used to describe the situation where a small subset of cost items, activities, and so on, are the source of most of the total cost, duration, etc. Syn.: PARETO'S LAW. (December 2011)

ELEMENTARY COMMODITY GROUPS (ELEMENTARY GROUPS) – The lowest level of goods and services for which a consistent set of value weights is available. (November 1990)

EMERGENT RISK – At a given point in time, a new or unforeseen risk that has not been fully contemplated or managed. Its potential for harm or loss is not fully known. Within TCM, emerging risks typically first appear within cost or schedule forecasts and will require reconciliation with the approved or current budget. Syn.: EMERGING RISK; SPECIAL CAUSE VARIATION. See also: CONTINUAL RISK MANAGEMENT; UNKNOWN UNKNOWN; SYSTEMATIC ERROR; BIAS.

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EMERGING RISK – Syn.: EMERGENT RISK.

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EMERGENT WORK – In the context of maintenance turnarounds, this is work that arises after scope freeze and before the start of shutdown. It usually arises because an item has unexpectedly failed in service or broken down and now requires repair. However, it inevitably sometimes includes forgotten or overlooked work; work that should have been known before scope freeze, but which was somehow missed off the original scope due to a human or system error. (March 2021)

END ACTIVITY – An activity with no logical successors. (June 2007)

END EVENT (OF A PROJECT) – Event with preceding, but no succeeding activities. There may be more than one end event. (June 2007)

END ITEM – A final combination of end products components, parts or materials that is ready for its intended use. See also: DELIVERABLE; PRODUCT. [7] (June 2007)

ENDING NODE OF NETWORK (ADM) – A node where no activities begin, but one or more activities end. (November 1990)

END NETWORK EVENT – The event that signifies the end of a network. (November 1990)

ENDOWMENT – A fund established for the support of some project or succession of donations or financial obligations. (November 1990)

ENGINEER (IN CONTRACTS) – The individual, partnership, corporation, joint venture, or any combination thereof, named as the engineer in the agreement who will have the rights and authority assigned to the engineer in the contract documents. The term "the engineer" means the engineer or the engineer's authorized representative. (November 1990)

ENGINEERED ITEMS – Items that are purchased to be used for a particular purpose and are engineered to unique specifications, as opposed to commodity materials. This typically includes tagged items and materials that require detailed engineering data sheets. (June 2007)

ENGINEERING CHANGE NOTICE (ECN) – The formal release of an engineering change. (June 2007)

ENGINEERING CHANGE PROPOSAL (ECP) – A proposal submitted by the seller in response to a buyer request for an ECP to change the existing contract effort. Only the buyer can initiate the request for an engineering change proposal. This activity is usually preceded by a request for change. The user, buyer, or the seller can initiate a request for change to the contract. It is an exploratory activity. (June 2007)

ENGINEERING CHANGE REQUEST (ECR) – Request to consider a technical change to the technical baseline submitted to client or its agent. (June 2007)

ENGINEERING PROCUREMENT CONSTRUCTION (EPC) – A form of project execution where an owner / client contracts with an entity to perform capital construction work scope which includes engineering (design), procurement, and construction. Often, the three EPC phases will overlap in duration. On infrastructure and building construction projects, this delivery methodology may be referred to as a “design / build” form of contracting. (August 2022)

ENHANCE – In TCM risk management, a response strategy for opportunities that involves increasing the probability and/or impact of risk. (December 2011)

ENTERPRISE –
(1) A business organization involved in economic activity and taking risks for purposes of profit.
(2) In total cost management, any endeavor, business, government, group, individual or other entity that owns, controls, or operates strategic assets. (June 2007)

ENTERPRISE PROJECT MANAGEMENT – Application of project management discipline throughout an enterprise. A concept based on principle that prosperity depends on adding value to business, and that value is added by systematically implementing new projects, i.e. projects of all types across the organization. (June 2007)

ENTERPRISE RESOURCE PLANNING (ERP) – Program/project resource planning of activities, supported by multi-module application software and processes to help an enterprise manage key parts of its business which may include product planning, maintaining inventories, supply chain processes, providing customer services, human resources

planning, etc. It may include other system involving any kind of resource consumption that can benefit from integration of information across many functional areas. (June 2007)

ENTERPRISE RISK MANAGEMENT – The risk management process applied to the overall enterprise, portfolio and program level objectives, not to just a single business unit, asset or project. (April 2013)

EQUITABLE ADJUSTMENT – A contract adjustment in price or time under, certain contract clauses, or both, to compensate the contractor expense incurred due to actions of the owner or to compensate the owner for contract reductions. An equitable adjustment includes an allowance for profit. Certain contract clauses provided for adjustments, excluding profit, and are not considered "equitable adjustments." (June 2007)

EQUIVALENT SETS OF COMMODITIES – Sets of commodities which provide the same total satisfaction to a given group of consumers (without necessarily being identical). (November 1990)

EQUIVALENT UNIFORM ANNUAL VALUE – Syn.: ANNUAL VALUE; ANNUAL WORTH. (November 1990)

EQUIVALENT UNITS TECHNIQUE – An earned value technique that assigns a pre-assigned equal weight to a unit of completion (e.g. drawings complete). (October 2013)

ERRORS AND OMISSIONS – Deficiencies, usually in design or drafting, in the plans and specifications that must be corrected in order for the facility to operate properly. Errors in plans and specifications are normally items that are shown incorrectly, while omissions are normally items that are not shown at all. (November 1990)

ESCALATION – A provision in costs or prices for uncertain changes in technical, economic, and market conditions over time. Inflation (or deflation) is a component of escalation. (December 2011)

ESCALATOR CLAUSE – Clause contained in collective agreements or purchase orders, providing for an automatic price adjustment based on changes in specified indices. (June 2007)

ESTIMATE – A prediction or forecast of the resources (i.e., time, cost, materials, etc.) required to achieve or obtain an agreed upon scope (i.e., for an investment, activity, project, etc.). See also: COST ESTIMATE; FORECAST. (May 2012)

ESTIMATE BACKUP – Basic data, project objectives, scope, drawings, quotes, estimating data, qualifications and assumptions used in preparing the estimate and supporting the basis. (June 2007)

ESTIMATE AT COMPLETION (EAC) – An estimate of the total cost an activity or group of activities will accumulate upon final completion. See also: ESTIMATE AT COMPLETION [EAC(t)]. (June 2007)

ESTIMATE AT COMPLETION [EAC(t)] – The estimated project duration in time increments. See also: ESTIMATE AT COMPLETION (EAC). (November 2014)

ESTIMATE COST STRATEGY – A statement in the basis of estimate and the estimate requirements describing the objective of the estimating process and the general approach to achieving that objective. (November 2020)

ESTIMATE REVIEW – A quality assurance process, typically qualitative in nature, to test or assure that an estimate of cost or time technically conforms to project scope and estimating requirements. (November 2020)

ESTIMATE TO COMPLETE (ETC) –
(1) In general terms, the estimated resources (i.e., work hours, costs, time, and/or materials) required to complete a scope of work.

(2) In earned value management, an estimate of the remaining costs required to complete an activity or group of activities. ETC = estimate at completion (EAC) – actual cost (AC), is often used to calculate the estimated cost to complete the project or program under discussion. (October 2013)

ESTIMATE VALIDATION –
(1) A quality assurance process, typically quantitative in nature, to test or assure that an estimate of cost meets the project objectives and estimate cost strategy in regards to its appropriateness and purpose (which may include competitiveness or other organizational strategies identified for the estimate).
(2) A form of benchmarking that compares relevant estimate cost, time and/or resource measures (e.g., metric ratios) to those of a selected basis of comparison. (November 2020)

ESTIMATED ACTUAL COSTS – In earned value management according to the ANSI EIA 748 standard, these are cost added to cost from the accounting system to create the appropriate actual cost of work performed (ACWP). Estimated actuals are sometimes necessary to ensure the ANSI – EIA 748 requirement that budgeted cost of work performed (BCWP) is on the same basis as the reported ACWP. The basis for estimated actuals is documented and reversed which in the cost is accrued in the accounting books of record. Example of records may include invoices received, material purchase orders, submitted journal vouchers. (October 2013)

ESTIMATED COMPLETION DATE – The predicted date at which all requirements for a defined task will be completed. (June 2007)

EVENT – In planning and scheduling, a point in time when certain conditions have been fulfilled, such as the start or completion of one or more activities or phases. Graphically, it is represented by a node (milestone in the schedule). An event occurs only when all work preceding it has been completed. It has zero duration.
See also: MILESTONE.

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EVENT NAME – An alphanumeric description of an event. [4] (November 1990)

EVENT NUMBER – A numerical description of an event for computation and identification. (November 1990)

EVENT ORIENTED – Planning approach focusing on events rather than activities. (June 2007)

EVENT SLACK – The difference between the latest allowable date and the earliest date for an event. (November 1990)

EVENT TIMES – Time information generated through the network analysis calculation, which identifies the start and finish times for each event in the network. (November 1990)

EXCEPTION REPORT – A report that lists exceptions to the expected norm as progress and forecast information is compared against the plan. (June 2007)

EXCEPTIONS – Those occurrences that cause deviation from a plan, such as issues, change requests and risks. Exceptions can also refer to items that the cost variance and schedule variance exceed predefined thresholds. (June 2007)

EXCLUSIVE OR RELATIONSHIP – Logical relationship indicating that only one of the possible activities can be undertaken. (June 2007)

EXCUSABLE COMPENSABLE DELAYS – Delays that are caused by the owner's actions or inactions. Contractor is entitled to a time extension and damage compensation for extra costs associated with the delay. See also: CONCURRENT DELAYS; EXCUSABLE DELAYS; EXCUSABLE NON-COMPENSABLE DELAYS; NON-EXCUSABLE DELAYS. (June 2007)

EXCUSABLE DELAYS – Delays not attributable to contractor's action or inactions. Excusable delays when founded, entitle contractor to a time extension if the completion date is affected. See also: CONCURRENT DELAYS; EXCUSABLE COMPENSABLE DELAYS; EXCUSABLE NON-COMPENSABLE DELAYS; NON-EXCUSABLE DELAYS. (June 2007)

EXCUSABLE NON-COMPENSABLE DELAYS – Delays that are neither contractor's nor owner's fault. The contractor is entitled to a time extension but not to damage compensation. Non-excusable delays, i.e. delays that are caused by the contractor's or its subcontractor's actions or inactions. Consequently, the contractor is not entitled to a time extension or delay damages. On the other hand, owner may be entitled to liquidated or other damages. See also: CONCURRENT DELAYS; EXCUSABLE COMPENSABLE DELAYS; EXCUSABLE DELAYS; NON-EXCUSABLE DELAYS. (June 2007)

EXECUTE/EXECUTING – Accomplish a preconceived objective by directing and implementing activities. (August 2007)

EXEMPT EMPLOYEES – Employees exempt from overtime compensation by federal wage and hours guidelines. (June 2007)

EXIT CRITERIA – Conditions that must be satisfied before the process element is considered complete. [8] (June 2007)

EXPANSION – Any increase in the capacity of a plant facility or unit, usually by added investment. The scope of its possible application extends from the elimination of problem areas to the complete replacement of an existing facility with a larger one. (November 1990)

EXPECTED ACCURACY RANGE – A probabilistic assessment of how far a project’s final actual cost or duration can be expected to vary from the estimate. The range of values is driven by the risks and uncertainties associated with the estimated cost or duration. The estimate accuracy range should be expressed in terms of a range of values (in absolute terms) for a declared confidence interval. If the estimate accuracy range is expressed as a +/- percentage around a single estimate value, then the confidence level (probability of underrun) of that single estimate value must be identified (e.g., the estimate range is -12% to +18% around the estimate value at a 50% probability of underrun). See also: ACCURACY RANGE; CONFIDENCE INTERVAL; CONFIDENCE LEVEL; EXPECTED ESTIMATE ACCURACY; RANGE. (February 2022)

EXPECTED BEGIN DATE – Syn.: TARGET START DATE. (November 1990)

EXPECTED DURATION – The length of time anticipated for a particular activity in the PERT method or in arrow or precedence diagramming methods (ADM, PDM). (November 1990)

EXPECTED ESTIMATE ACCURACY –
(1) An indication of the degree to which the value of a cost or duration estimate may vary from the final actual outcome of the completed project or activity.
(2) An expression of an estimate’s predicted closeness to final actual costs or time.
See also: ACCURACY RANGE; CONFIDENCE INTERVAL; RANGE; PREDICTABILITY. (February 2021)

EXPECTED VALUE – In risk analysis, the product of probability times impact; i.e., a risk weighted measure of impact. In statistical usage, synonymous with the mean. (December 2011)

EXPECTED VALUE METHOD – In quantitative risk analysis and contingency estimating, a method that employs the product of a risk's probability times its impact as the primary approach to quantifying risks. See also: EXPECTED VALUE. (December 2011)

EXPENSE – Expenditures of short-term value, including depreciation, as opposed to land and other fixed capital. See also: PLANT OVERHEAD. (November 1990)

EXPERT JUDGMENT –
(1) Opinions, advice, recommendations, or commentary proffered, usually upon request, by a person or persons recognized, either formally or informally, as having specialized knowledge or training in a specific area. [8]
(2) Deliberate discernment of a situation or proposed course of action by those whose knowledge, skills, and abilities are developed from specialized education and experience, which enable them to better understand the situation or propose an optimal course of action than could those whose professional backgrounds are not so specialized. (August 2007)

EXTERNAL CONSTRAINT – A constraint from outside the project network. (June 2007)

EXPLOIT – In TCM risk management, a response strategy for opportunities that involves taking steps that increase the probability that the opportunity will occur. (December 2011)

EXPOSURE – In risk management, refers to the potential or actual impact of one or more risk events or conditions. See also: CONDITION (RISK CONDITION); EVENT. (December 2011)

EXPOSURE WINDOW – In risk management, refers to the time during which there is a potential or actual impact of one or more risk events or conditions. Syn.: RISK IMPACT WINDOW. See also: CONDITION (RISK CONDITION); EVENT. (December 2011)

FACILITY – In project work, this term usually refers to the constructed environment, e.g., buildings, structures, infrastructure, plant and equipment. (June 2007)

FACTORY EXPENSE – Syn.: PLANT OVERHEAD. (November 1990)

FAIR VALUE – That estimate of the value of a property that is reasonable and fair to all concerned, after every proper consideration has been given due weight. (November 1990)

FALLBACK PLAN – Syn.: CONTINGENCY PLAN. (December 2011)

FAST-TRACK(ING) – Scheduling activities to run simultaneously instead of consecutively as much as possible, in order to speed work completion. Fast-tracked activities thus typically begin before the predecessor activity is finished. See also: CRASHING; SCHEDULE COMPRESSION. (August 2007)

FAULT TREE ANALYSIS (FTA) – A risk analysis method used to evaluate risk threats employing a deductive logic tree linking a parent event to the combinations of sub-events that could cause it. (December 2011)

FEE – The charge for the use of one's services to the extent specified in the contract. (November 1990)

FIELD COST – Engineering and construction costs associated with the construction site rather than with the home office. (November 1990)

FIELD INDIRECTS – Refers to costs necessary to support the direct work. These generally include: 1) Temporary construction and consumables; 2) Field supervision and field office costs; and 3) Construction equipment and tools. (June 2007)

FIELD LABOR OVERHEAD – The sum of the cost of payroll burden, temporary construction facilities, consumables, field supervision, and construction tools and equipment. See also: FIELD INDIRECTS. (November 1990)

FIELD ORDER – A written order issued by the engineer to the contractor which orders minor changes in the work but which does not involve an adjustment in the contract price or the contract time. (November 1990)

FIELD SUPERVISION COSTS – The cost of salaries and wages of all field supervision personnel (excluding general foreman), plus associated payroll burdens, home office overhead, living and travel allowances, and field office operating costs. (June 2007)

FIELD SUPERVISION – Project site supervisory and support staff personnel (excluding general foreman). (June 2007)

FIFO (FIRST IN, FIRST OUT) – A method of determining the cost of inventory used in a product. In this method, the costs of materials are transferred to the product in chronological order. Also used to describe the movement of materials. See also: LIFO (LAST IN, FIRST OUT). (November 1990)

FINANCIAL LIFE – Syn.: VENTURE LIFE. (November 1990)

FINISH DATE – Actual or estimated time associated with an activity's completion. (June 2007)

FINISH FLOAT – Amount of excess time an activity has between its early finish and late finish dates. This may be referred to as slack time. All floats are calculated when a project has its schedule computed. See also: FREE FLOAT. (June 2007)

FINISH-TO-FINISH LAG – The minimum amount of time that must pass between the finish of one activity and the finish of its successor(s). All lags are calculated when a project has its schedule computed. Finish-to-finish lags are often used with start-to-start lags. (June 2007)

FINISH-TO-FINISH (FF) – A relationship in which the successor activity depends upon and can finish only after the predecessor activity finishes. The predecessor must finish first and then the successor can finish. (June 2007)

FINISH-TO-START LAG – The minimum amount of time that must pass between the finish of one activity and the start of its successor(s). The default finish-to-start lag is zero. All lags are calculated when a project has its schedule computed. In most cases, finish-to-start lags are not used with other lag types. (June 2007)

FINISH-TO-START (FS) – A relationship in which the successor activity can start only after the predecessor activity finishes. This is the most common relationship used. (June 2007)

FINISHED GOODS – Commodities that will not undergo any further processing and are ready for sale to the user (e.g., apparel, automobiles, bread). (November 1990)

FIRST COST – Costs incurred in placing a facility into service, including but not limited to costs of planning, design, engineering, site acquisition and preparation, construction, purchase, installation, property taxes paid and interest during the construction period, and construction-related fees. Syn.: INITIAL COST; INITIAL INVESTMENT COST. [1] (November 1990)

FIRST EVENT NUMBER – The number of the first event in time for a work package or summary item. This event number defines the beginning of the work package or summary item in relation to the network. (November 1990)

FIXED COST – Those costs independent of short term variations in output of the system under consideration. Includes such costs as maintenance; plant overhead; and administrative, selling and research expense. For the purpose of cash flow calculation, depreciation is excluded (except in income tax calculations). In construction this includes general and administrative costs. (June 2007)

FIXED DATE – A calendar date (associated with a plan) that cannot be moved or changed during the schedule. (June 2007)

FIXED START – Syn.: IMPOSED START DATE. (June 2007)

FIXED-DURATION SCHEDULING – A scheduling method in which, regardless of the number of resources assigned to the task, the duration remains the same. (June 2007)

FLOAT –
(1) In manufacturing, the amount of material in a system or process, at a given point in time, that is not being directly employed or worked upon.
(2) In projects, the amount of time that an activity may slip in its start and completion before becoming critical.
Syn.: PATH FLOAT; SLACK. See also: FREE FLOAT; NETWORK FLOAT; PROJECT FLOAT; TOTAL FLOAT (TF). (June 2007)

FLOAT PATH – A theoretical sequence of activities that share the same float and thus act as a unit when considering project completion. The concept of float paths allows for summarization and simplification of work packages by allowing management or other stakeholders to visualize larger work packages than those used at the base work level. (March 2010)

FLOAT TREND CHARTS – A chart showing the progressive change over time in schedule float values. (June 2007)

FLOW DIAGRAM – A graphic representation that utilizes symbols, labels, and arrows as to depict the details and sequence of operation of a procedure or process system. (June 2007)

FOLLOW-ON WORK – Work that is expected to flow the result of current work. This may be a subsequent project, an enhancement, or the maintenance of the product of the current project. (June 2007)

FORECAST –
(1) An estimate and prediction of future conditions and events based on information and knowledge available at the time of the forecast.
(2) When in respect to resource requirements, considering future conditions and events, it is a synonym for an estimate.
See also: ESTIMATE. (June 2007)

FORECASTING –
(1) The work performed to estimate or predict future conditions and events. Forecasting establishes the range of possibilities within which one can come to focus on the objectives one will commit to achieve. Forecasting is the work involved in anticipating future events, while establishing objectives is the work necessary to commit oneself to accomplish predetermined results.
(2) When in respect to resource requirements, considering future conditions and events, it is a synonym for cost estimating. Forecasting and cost estimating are often confused with budgeting, which is a definite allocation of resources and not a prediction or estimate. (June 2007)

FORMAL REPROGRAMMING – In earned value, a term referring to restructuring the earned value performance measurement baseline (PMB). It may include an over-target schedule and or cost and may include a program single point adjustment. See also: REPROGRAMMING. (October 2013)

FORWARD PASS –
(1) In projects, network calculations that determine the earliest start/earliest finish time (date) of each activity and establishes the critical path.
(2) In manufacturing, often referred to as forward scheduling, a scheduling technique where the scheduler proceeds from a known start date and computes the completion date for an order usually proceeding from the first operation to the last. (June 2007)

FRAGNET –
(1) A subnet of the overall project network schedule. A fragnet is typically made up of related work activities, logically connected, to allow greater detail and better control of the work.
(2) A portion or fragment of a CPM network usually used to illustrate changes to the whole network.
(3) In change management, a fragment of a network schedule constructed to model the event under analysis. It should contain a network of one or more activities comprising the elements of the event and their logical relationships to the appropriate activities in the unimpacted schedule.
Syn.: SUBNETWORK. See also: WORK BREAKDOWN STRUCTURE (WBS). (June 2017)

FREE FLOAT –
Maximum amount by which an activity can be delayed beyond its early dates without delaying any successor activity beyond its early dates. See also: FREE SLACK. (June 2007)

FREE HAUL – The distance every cubic yard of excavated material is entitled to be moved without an additional charge for haul. (November 1990)

FREE SLACK – For a task without successors, this is the amount of time the task can be delayed without delaying the finish date of the project. See also: FREE FLOAT. [15] (June 2007)

FRINGE BENEFITS – Employee welfare benefits, i.e., expenses of employment such as holidays, sick leave, health and welfare benefits, retirement fund, training, supplemental union benefits, etc. (November 1990)

FRONT END – Syn.: DEFINITION PHASE; DEVELOPMENT PHASE; PLANNING PHASE. (June 2007)

FRONT END LOADING (FEL) –
1. In the context of the project development process, defining the project scope and plans in a way that assures the best practical level of definition is achieved as needed to support a project decision gate.
2. In the context of pricing proposals, a technique used in the development of the project schedule of values to influence cash flow. See also: UNBALANCING. (August 2022)

FRONT END SCHEDULE – Usually, a bar chart schedule that is used to provide a project work schedule and a status reporting system early in the work. Definition and planning are generally still under way on the CPM schedule of activities. It is considered a project level schedule. (June 2007)

FUNCTION – An expression of conceptual relationships useful in model formulations (e.g., productivity is a function of hours worked). (November 1990)

FUNCTIONAL REPLACEMENT COST – The current cost of acquiring the same service potential as embodied by the asset under consideration. (November 1990)

FUNCTIONAL USE AREA – The net usable area of a building or project – exclusive of storage, circulation, mechanical, and similar types of space. (November 1990)

FUNCTIONAL SYSTEM – An assembly of parts or components and/or subsystems having one primary end use in the project. It should be noted that secondary and tertiary uses for functional systems are common. (November 1990)

FUTURE VALUE – The value of a benefit or a cost at some point in the future, considering the time value of money. Syn.: FUTURE WORTH. [1] (November 1990)

FUNCTIONAL WORTH – The lowest overall cost for performing a function. Four types are as follows:
1. FUNCTIONAL WORTH, COST VALUE – the monetary sum of labor, material, burden, and all other elements of cost required to produce an item or provide a service.
2. FUNCTIONAL WORTH, ESTEEM VALUE – the monetary measure of the properties of a product or service, which contribute to desirability or salability but not to required functional performance.
3. FUNCTIONAL WORTH, EXCHANGE VALUE – the monetary sum at which a product or service can be traded.
4. FUNCTIONAL WORTH, USE VALUE – the monetary measure of the necessary functional properties of a product or service that contribute to performance. (November 1990)

FUTURE WORTH – Syn.: FUTURE VALUE. [1] (November 1990)

GANTT CHART – A time-scaled bar chart named after Henry L. Gantt. See also: BAR CHART. (June 2007)

GENERAL & ADMINISTRATIVE COSTS (G&A) – The fixed cost incurred in the operation of a business. G&A costs are also associated with office, plant, equipment, staffing, and expenses thereof, maintained by a contractor for general business operations. G&A costs are not specifically applicable to any given job or project. Syn.: ADMINISTRATIVE COST. See also: OVERHEAD. (June 2007)

GENERAL REQUIREMENTS – Non-technical specifications defining the scope of work, payments, procedures, implementation constraints, etc. pertaining to the contract. (June 2007)

GENERAL TERMS AND CONDITIONS –
(1) That part of a contract, purchase order, or specification that is not specific to the particular transaction but applies to all transactions.
(2) General definition of the legal relationships and responsibilities of the parties to the contract and how the contract is to be administered. They are usually standard for a corporation and/or project. (June 2007)

GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP) – Principles established by a Financial Accounting Standards Board that provide a foundation for 'acceptable' accounting practices. The GAAP represent a set of guidelines and, as a practical matter, necessitate subjectivity in their application. (June 2007)

GIVEN YEAR – The year or period selected for comparison, relative to the base year or base period. (November 1990)

GLOBAL CALENDAR – Calendar which sets typical workweek, workdays and holidays. It is the default calendar used for activities. See also: CALENDAR. (June 2007)

GRAPHICAL EVALUATION AND REVIEW TECHNIQUE (GERT) – Network analysis technique that allows for conditional and probabilistic treatment of logical relationships (i.e., some activities may not be performed). (June 2007)

GREENFIELD –
(1) A project that lacks any known constraints imposed by prior work.
(2) In construction, work on a previously undeveloped site that contain no structures or contamination.

See also: BROWNFIELD. (October 2018)

GROSS AREA – Generally, the sum of all the floor or slab areas of a project that are enclosed by the exterior skin of the building. (November 1990)

GROSS CONCURRENCY – The method of counting concurrent delay events based purely on contemporaneous occurrence without regard to CPM principles. (June 2007)

GROSS NATIONAL PRODUCT (GNP) – The total national output of goods and services at the market prices for the stated year. (November 1990)

GUIDELINE – A recommended or customary method of working to accomplish an objective. A guideline is not enforced but is generally followed. (June 2007)

HALF-STEP/DUAL-TRACKING SCHEDULE UPDATES – Half-step, also known as dual-tracking, is a schedule update maintenance method designed to isolate the effect of actual progress in an update period from changes made to the CPM schedule itself. See also: SCHEDULE UPDATE. (June 2018)

HAMMOCK ACTIVITY – An aggregate or summary activity. All related activities are tied as one summary activity and reported at the summary level. It has no duration of its own but derives one from the time difference between the two points to which it is connected. The hammock activity does not affect schedule dates of the activities it spans. (June 2007)

HANGER – An unintended break in a network path. (June 2007)

HAUL DISTANCE – The distance measured along the center line or most direct practical route between the center of mass of excavation and the center of mass finally placed. It is the average distance material is moved by a vehicle. (November 1990)

HEDGE – In master production scheduling, a quantity of stock used to protect against uncertainty in demand. The hedge is similar to safety stock, except that a hedge has the dimension of timing as well as amount. (November 1990)

HEURISTIC – An experience-based technique used as a general way of solving a problem, e.g., Rule of Thumb. (December 2011)

HIERARCHICAL CODING STRUCTURE – A coding system that can be represented as a multi-level tree structure in which every code except those at the top of the tree has a parent code. (June 2007)

HIERARCHICAL PLANNING – Planning approach where each managerial level breaks planning tasks down into those activities that must be done at that level. Typically, upper-level planning establishes the objectives for the next lower-level manager's planning. (June 2007)

HIERARCHY (HIERARCHICAL) – A ranking of items according to their logical relationships. (June 2007)

HIGHEST AND BEST USE – The valuation concept that requires consideration of all appropriate purposes or uses of the subject property in order to determine the most profitable likely utilization. (November 1990)

HISTORIC RECORDS – Documentation from past projects that can be used to predict trends, analyze feasibility and highlight problem areas/pitfalls on future similar projects. (June 2007)

HISTORICAL DATABASE – Records accumulating past project experience stored as data for use in planning, estimating, forecasting and predicting future events. Often includes data that has been processed so as to facilitate planning and other purposes such as validation and benchmarking (e.g., metrics, etc). (June 2007)

HOLDING TIME – Time that an item is not operational so that it may be serviced. (November 1990)

HOLIDAY – An otherwise valid working day that has been designated as exempt. Holidays typically occur on a yearly basis. In the US, holidays may include New Years' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas. (June 2007)

HOME OFFICE COST – Those necessary costs, typically not incurred at the project site, involved in the conduct of everyday business, which can be directly assigned to specific projects, processes, or end products, such as engineering, procurement, expediting, legal fees, auditor fees inspection, estimating, cost control, taxes, travel, reproduction, communications, etc. (June 2007)

HYBRID RISK ANALYSIS – A quantitative risk analysis performed by employing more than one method for the purpose of: 1) utilizing an analytical method most suited to each specific type of risk or problem under analysis, 2) establishing a control for comparative purposes or 3) combining complementary approaches, e.g., when both systemic and project-specific risks are present, to form a QRA model.
See also: RISK, SYSTEMIC; RISK, PROJECT-SPECIFIC; PARAMETRIC RISK ANALYSIS.

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HYPERCRITICAL – A condition when an imposed date has been set such that the critical path leading to that point is too long to finish by that date. The critical path then becomes hypercritical and possesses negative float. (June 2007)

HYPERCRITICAL ACTIVITIES – Activities on the critical path with negative float. This can be achieved through the imposition of constraints such as target dates. (June 2007)

I-NODE – In an activity on arrow (AOA) schedule, the node at the beginning of the activity arrow. (June 2007)

I-J NOTATION – A system of numbering nodes in an activity-on-arrow network. The I-node is always the beginning of the activity, while the J-node is always the finish. (June 2007)

IATROGENIC RISK – In a risk analysis, an understatement of true risk caused by faulty risk analysis practices including, but not limited to: failing to identify significant threats risks and/or opportunities, assigning probability density functions to too many elements in a Monte Carlo Analysis or range estimate, incorrectly assuming independence between input elements for risk analysis simulations, and failing to adequately quantify the ranges of input elements. Syn.: ANALYST-CAUSED RISK; ANALYST-INDUCED RISK. (December 2011)

IDENTIFIER – An alphanumeric code depicting a name or hierarchy. See also: CODE. (June 2007)

IDLE EQUIPMENT COST – The cost of equipment that remains on site ready for use but is placed in a standby basis. Ownership or rental costs are still incurred while the equipment is idle. (November 1990)

IDLE TIME – A time interval during which either the worker, the equipment or both do not perform useful work. (June 2007)

IMMEDIATE ACTIVITY – An activity that can be forced to start on its earliest feasible date by resource scheduling, even if that means overloading a resource. (June 2007)

IMPACT- Syn.: CONSEQUENCE; EFFECT. (December 2011)

IMPACT COST – Added expenses due to the indirect results of a changed condition, delay, or changes that are a consequence of the initial event. Examples of these costs are premium time, lost efficiency, and extended field and home office overhead. Syn.: DAMAGES, RIPPLE. (April 2004)

IMPACT VERSUS PROBABILITY RATING – Syn.: RISK MATRIX. (December 2011)

IMPACTED SCHEDULE – The resultant schedule after incorporating a fragnet or other impacts into the unimpacted schedule. See also: UNIMPACTED SCHEDULE. (June 2017)

IMPERFECT INFORMATION – information or data for which there exists some uncertainty. (December 2011)

IMPERFECTION – A deviation that does not affect the use or performance of the product, process, or service. In practice, imperfections are deviations that are accepted as-is. (November 1990)

IMPOSED DATE –
(1) A predetermined calendar date set (usually externally) without regard to logical considerations of the network.
(2) A date externally assigned to an activity that establishes the earliest or latest date in which the activity is allowed to start or finish. (June 2007)

IMPOSED FINISH DATE – A predetermined calendar date set without regard to logical considerations of the network, fixing the end of an activity and all other activities preceding that ending node. (November 1990)

IMPOSED START DATE – A start date imposed on an activity by an external constraint. Syn.: FIXED START. (June 2007)

IMPOSSIBILITY – An inability to meet contract requirements because it was in fact physically impossible to do so (actual impossibility). (November 1990)

IMPRACTICABILITY – Inability to perform because of extreme and unreasonable difficulty, expense, injury, or loss involved. This is sometimes considered practical impossibility. (November 1990)

IMPUTATION (OF PRICE MOVEMENT) – The assignment of known price changes to a certain commodity on the basis of the assumed similarity of price movement. (November 1990)

IN-PLACE VALUE – Value of a physical property, e.g., market value plus costs of transportation to site and installation. (November 1990)

IN-PROGRESS ACTIVITY – An activity that has been started but not completed on a given reporting/data date. (June 2007)

IN-PROGRESS INVENTORY – Syn.: WORK-IN-PROCESS. (June 2007)

INCLUSIVE OR RELATIONSHIP – Logical relationship indicating that at least one, but not necessarily all, of the activities have to be undertaken. (June 2007)

INCOME – Used interchangeably with profit. Avoid using income instead of sales revenue. See also: PROFIT. (November 1990)

INCREMENTAL COST (BENEFIT) – The additional cost (benefit) resulting from an increase in the investment in a project. Syn.: MARGINAL COST (BENEFIT). [1] (November 1990)

INCREMENTAL MILESTONE TECHNIQUE – An earned value technique that pre-assigns budget to technical milestone completions. When the milestone is completed 100% of the budgeted "weight" assigned to the milestone is earned. (October 2013)

INDEPENDENT EVENT – An event which in no way affects the probability of the occurrence of another event. (November 1990)

INDEPENDENT ESTIMATE AT COMPLETION (IEAC) – In terms of earned value, a calculation of the final estimated cost for a project usually through EVM efficiency rates (e.g., CPI and SPI). Usually a range of estimates at completion are calculated from distinct equations that allow for an enhanced capability (often described as a statistical forecast) to analyze the project's performance throughout its life-cycle. See also: INDEPENDENT ESTIMATE AT COMPLETION [IEAC(t)]. (March 2016)

INDEPENDENT ESTIMATE AT COMPLETION [IEAC(t)] – In terms of earned schedule, the difference between the baseline project duration and the estimated project duration in time increments. See also: INDEPENDENT ESTIMATE AT COMPLETION (IEAC). (March 2016)

INDEPENDENT FLOAT – The degree of flexibility that an activity has which does not affect the float available on any preceding or succeeding activities. (June 2007)

INDEPENDENT VARIABLE – An event or condition whose impact or probability is not certain, but which does not depend in any way on the value or probability of any other event or condition. See also: DEPENDENT VARIABLE. (December 2011)

INDICATED TOTAL COST – An estimated final cost of a project, program or endeavor based on current progress and forecast effort to complete. See also: ESTIMATE AT COMPLETION (EAC). (June 2007)

INDIRECT COSTS –
Costs not directly attributable to the completion of an activity, which are typically allocated or spread across all activities on a predetermined basis.
(1) In construction, (field) indirects are costs which do not become a final part of the installation, but which are required for the orderly completion of the installation and may include, but are not limited to, field administration, direct supervision, capital tools, startup costs, contractor's fees, insurance, taxes, etc.
(2) In manufacturing, costs not directly assignable to the end product or process, such as overhead and general purpose labor, or costs of outside operations, such as transportation and distribution. Indirect manufacturing cost sometimes includes insurance, property taxes, maintenance, depreciation, packaging, warehousing and loading.
Syn.: CAPITAL, INDIRECT. See also: BURDEN; DISTRIBUTABLES; FIELD INDIRECTS; HOME OFFICE COST. (October 2013)

INDIRECT PACING – When the paced event does not have a logical relationship to the parent delay. The fact that the indirect pacing delay and the parent delay occur during the same period is merely a function of schedule timing, not mandatory logic. (June 2007)

INDIVIDUAL PRICE INDEX – An index which measures the price change for a particular commodity, and which may be computed as the ratio of its prices at two points in time. (November 1990)

INDIVIDUAL WORK PLAN – The lowest level of the technical plan that defines the tasks and responsibilities of an individual team member. (June 2007)

INEFFICIENCY – The state of being less productive or efficient than expected or planned. Syn.: LOSS OF PRODUCTIVITY/EFFICIENCY; LOST PRODUCTIVITY. (June 2007)

INEXCUSABLE DELAYS – Project delays those are attributable to negligence on the part of the contractor, which lead in many cases to penalty payments. (June 2007)

INFLATION – A persistent increase in the level of consumer prices, or a persistent decline in the purchasing power of money, caused by an increase in available currency and credit beyond the proportion of available goods and services. See also: DEFLATION. (December 2011)

INFLUENCE DIAGRAM – A graphical display of the relationships among factors influencing a decision. The diagram shows the influencing relationships among controllable decisions, uncertain conditions, objective variables, and dependent variables. (August 2007)

INHERENT RISK – A risk that exists (but may or may not be identified) due to the very nature of the asset, project, task, element, or situation being considered. (December 2011)

INHERENT RISK EXPOSURE – A term used to analyze and communicate discrete-time series risk data and potential changes in risk exposure. The inherent level of risk exposure is established at the initial time of reporting, typically before any risk mitigation effort has been expended but may account for the extent or benefit of any risk control or risk treatment measures that may or may have not been employed at that time. See also: CURRENT RISK EXPOSURE; TARGET RISK EXPOSURE; RESIDUAL RISK; ALARP.

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INHERENT VARIABILITY – Variability in a project cost or duration that is due to the very nature of the asset, project, task, element, or situation being considered. It is not caused by risks that are explicitly identifiable and therefore cannot be reduced but may be quantified. See also: RISK, BACKGROUND; RISK, CONTINGENT; RISK EVENT; UNCERTAINTY; COMMON CAUSE VARIATION.

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INITIAL COST – Syn.: FIRST COST; INITIAL INVESTMENT COST. [1] (November 1990)

INITIAL INVESTMENT COST – Syn.: FIRST COST; INITIAL COST. [1] (November 1990)

INITIATION – The process of preparing for, assembling resources and getting work started. May apply to any level, e.g., program, project, phase, activity, task. (June 2007)

INPUT MILESTONES – Imposed target dates or target events that are to be accomplished, and which control the plan with respect to time. (June 2007)

INPUT-OUTPUT ANALYSIS – A matrix which provides a quantitative framework for the description of an economic unit. Basic to input-output analysis is a unique set of input-output ratios for each production and distribution process. If the ratios of input per unit of output are known for all production processes, and if the total production of each end product of the economy, or of the section being studied is known, it is possible to compute precisely the production levels required at every intermediate stage to supply the total sum of end products. Further, it is possible to determine the effect at every point in the production process of a specified change in the volume and mix of end products. (November 1990)

INTANGIBLES –
(1) In economy studies, conditions or economy factors that cannot be readily evaluated in quantitative terms as in money.

(2) In accounting, the assets that cannot be reliably evaluated (e.g., goodwill). (November 1990)

INTEGRATED CHANGE CONTROL – The process of reviewing all change requests, approving changes and controlling changes to deliverables and organizational process assets. See also: CHANGE CONTROL; CHANGE MANAGEMENT; CONFIGURATION MANAGEMENT. (June 2007)

INTEGRATED COST/SCHEDULE REPORTING – The development of reports that measure actual versus budget, S-curves, BCWS, BCWP, and ACWP. See also: EARNED VALUE MANAGEMENT [SYSTEM] (EVM[S]) (August 2007)

INTEGRATED PRODUCT TEAMS (IPT) – An organizational element responsible for a segment of the work breakdown structure (WBS). Typically, they are cross functional and assigned a charter of responsibility to function as an organizational breakdown structure (OBS) manager in earned value terminology. See also: ORGANIZATIONAL BREAKDOWN STRUCTURE (OBS). (October 2013)

INTEGRATED PROJECT PLAN (IPP) – Syn.: PROJECT EXECUTION PLAN (PEP) (November 2020)

INTERDEPENDENT EVENT – Not subject to a reciprocal relationship. (June 2007)

INTEREST –
(1) Financial share in a project or enterprise.
(2) Periodic compensation for the lending of money.
(3) In economy study, synonymous with required return, expected profit, or charge for use of capital.
(4) The cost for the use of capital. Sometimes referred to as the time value of money. (November 1990)

INTEREST RATE – The ratio of the interest payment to the principal for a given unit of time and is usually expressed as a percentage of the principal. (November 1990)

INTEREST RATE, COMPOUND – The rate earned by money expressed as a constant percentage of the unpaid balance at the end of the previous accounting period. Typical time periods are yearly, semiannually, monthly, and instantaneous. (November 1990)

INTEREST RATE, EFFECTIVE – An interest rate for a stated period (per year unless otherwise specified) that is the equivalent of a smaller rate of interest that is more frequently compounded. (November 1990)

INTEREST RATE, NOMINAL – The customary type of interest rate designation on an annual basis without consideration of compounding periods. A frequent basis for computing periodic interest payments. (November 1990)

INTEREST RATE OF RETURN – Syn.: PROFITABILITY INDEX (PI). (November 1990)

INTERFACE – A common physical or functional boundary between different organizations or contractor's products. It is usually defined by an interface specification and managed by a system integration organization. (June 2007)

INTERFACE ACTIVITY – An activity connecting a node in one sub-net with a node in another sub-net, representing logical interdependence. The activity identifies points of interaction or commonality between the project activities and outside influences. (June 2007)

INTERFACE MANAGEMENT – The management of communication, coordination and responsibility across a common boundary between two organizations, phases, or physical entities, which are interdependent. (June 2007)

INTERFACE NODE – A common node for two or more subnets representing logical interdependence. (November 1990)

INTERFERENCE – Conduct that interrupts the normal flow of operations and impedes performance. A condition implied in every construction contract is that neither party will do anything to hinder the performance of the other party. (November 1990)

INTERIM DATES – Dates established which designate the start or the completion of designated facilities or features of a facility. Also referred to as intermediate access or intermediate completion dates. (June 2007)

INTERIM DELIVERABLES – Intermediate deliverables that will be produced as precursors to the final deliverable. (June 2007)

INTERMEDIATE EVENTS – Detailed events and activities, the completion of which are necessary for and lead to the completion of a major milestone. (November 1990)

INTERMEDIATE MATERIALS – Commodities that have been processed but require further processing before they become finished goods (e.g., fabric, flour, sheet metal). (November 1990)

INTERMEDIATE NODE – A node where at least one activity begins and one activity ends. (November 1990)

INTERNAL RATE OF RETURN (IRR) – The compound rate of interest that, when used to discount study period costs and benefits of a project, will make their time-values equal. See also: PROFITABILITY INDEX (PI). [1] (August 2007)

INTERRUPTION – A stopping or hindering of the normal process or flow of an activity. (June 2007)

INVENTORY – Raw materials, products in process, and finished products required for plant operation or the value of such material and other supplies, e.g., catalysts, chemicals, spare parts. (November 1990)

INVESTMENT – The sum of the original costs or values of the items that constitute the enterprise; used interchangeably with capital; may include expenses associated with capital outlays such as mine development. (November 1990)

INVESTMENT COST – Includes first cost and later expenditures that have substantial and enduring value (generally more than one year) for upgrading, expanding, or changing the functional use of a facility, product, or process. [1] (November 1990)

INVESTOR'S METHOD – Syn.: DISCOUNTED CASH FLOW. (November 1990)

IRREFUTABLE LOGIC – Network logic that is rational and compelling and cannot be disputed on the basis of reason. See also: DESIRABLE LOGIC. (June 2007)

ISHIKAWA DIAGRAM – Diagram used to illustrate how various causes and sub-causes create a specific effect. Named after its developer Kaoru Ishikawa. Also called cause-and effect diagram or fishbone diagram. [8] (June 2007)

ISSUE – In risk management, a risk that has occurred or an unplanned question, decision, or uncertainty that needs to be treated by a function other than risk management. See also: RISK, SYSTEMIC. (February 2021)

ISSUES MANAGEMENT – Management of issues that remain unresolved because they are either in dispute, are uncertain, lack information, or lack authority or commitment for their resolution. (June 2007)

J-NODE – In an activity on arrow (AOA) schedule, the node at the end of the activity arrow. (June 2007)

JOB – A group of contiguous operations related by similarity of functions that can be completed by one or more workers without interference or delay. (June 2007)

JUDGMENTAL SAMPLING – A procedure of selecting the sample which is based on specific criteria established by sample designers. The selection of priced items and outlets is not a probability sample – that is, it is not based on random chance. (November 1990)

JUNIOR FLOAT – The lowest free float of all preceding activities. (March 2010)

JUST-IN-TIME – A 'pull' logistical system driven by actual demand. The goal is to produce, provide or deliver parts or supplies just in time for the next operation. The approach reduces stock inventories or storage costs but leaves no room for error. As much a managerial philosophy as it is an inventory system. (June 2007)

KEY ACTIVITY – An activity that is considered of major significance. A key activity is sometimes referred to as a milestone activity. (November 1990)

KEY EVENT SCHEDULE – A schedule comprised of key events or milestones. 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. This is often referred to as a milestone schedule. (June 2007)

KEY EVENTS – Major events the achievement of which that are deemed to be critical to the execution of the project. A key event is sometimes referred to as a milestone. (June 2007)

KEY PERFORMANCE – Performance that is critical to the project or a project system. See also: KEY PERFORMANCE INDICATORS (KPI). (June 2007)

KEY PERFORMANCE INDICATORS (KPI) – Indicators that: 1) Are determined at process/project initiation and listed in order of priority; 2) Reflect directly on key process/project objectives [goals]; and 3) Provide basis for trade-off decisions made during execution. At process/project completion these KPIs: 1) Will be the most relevant measures to confirm process/project acceptability and its product by the process/project's stakeholders as being "successful"; and 2) Can be reasonably measured in some way, at some time, on some scale with some level of confidence. Syn.: KEY SUCCESS INDICATORS (KSI). (June 2007)

KEY PERFORMANCE PARAMETER – A vital characteristic, function, requirement, or design basis, that if changed, would have a major impact on the facility, system or project performance, scope, schedule, cost and/or risk, or the ability to meet its objectives. (September 2021)

KEY SUCCESS INDICATORS (KSI) – Syn.: KEY PERFORMANCE INDICATORS (KPI). (June 2007)

KNOWN – A quantity or condition characterized by certainty. (December 2011)

KNOWN UNKNOWN – In TCM, a known unknown typically but not exclusively, refers to experience or knowledge of a known trigger or cause that will have an unknown impact on project objectives or business goals. Known unknowns are typically risk events and constitute most if not all risk register entries that require ongoing or continual risk management. See also: RISK EVENT, DISCRETE; UNCERTAINTY, DISCONTINUOUS; RISK, CONTINGENT; METALANGUAGE; COMMON CAUSE VARIATION; RANDOM ERROR; NOISE; EMERGENT RISK; SYSTEMATIC ERROR; BIAS; CONTINUAL RISK MANAGEMENT.

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LABOR – Effort expended by people for wages or salary. Generally classified as either direct or indirect. Direct labor is applied to meeting project objectives and is a principal element used in costing, pricing, and profit determination; indirect labor is a component of indirect cost, such as overhead or general and administrative costs. [8] (October 2006)

LABOR BURDEN – Fringe benefits plus taxes and insurances the employer is required to pay by law based on labor payroll, on behalf of or for the benefit of labor. (In some countries, these include government retirement benefits, unemployment insurance tax, and worker's compensation). Syn.: PAYROLL BURDEN. (May 2012)

LABOR COST –

1. LABOR COST, BARE LABOR – Gross direct wages paid to the worker.
2. LABOR COST, BURDENED LABOR – Gross direct wages paid to the worker, plus labor burden.
3. LABOR COST, ALL IN LABOR – Gross direct wages paid to the worker, plus labor burden, plus field indirects, plus general & administrative cost, plus profit.

Syn.: WAGE RATE. (June 2007)

LABOR EFFICIENCY VARIANCE – A cost variance can be broken into efficiency and rate variance elements. Efficiency is calculated as: (budgeted cost of work performed rate) X (budgeted cost of work performed hours – actual hours). See: COST VARIANCE; LABOR RATE VARIANCE. (October 2013)

LABOR HOUR – A worker hour of effort. Syn.: WORKHOUR. (June 2007)

LABOR NORM – Syn.: LABOR PRODUCTIVITY NORM. (January 2014)

LABOR NORM PREAMBLE – A narrative to precisely describe the content (inclusion and exclusions), the normal conditions, the unit of measurement and method of measurement of an activity and its applicable labor norm. (January 2014)

LABOR PRODUCTIVITY – A measure of production output relative to labor input. In economics, industrial engineering, and earned value management, quantity/work hour measures are common (higher values reflect higher productivity or efficiency). In cost estimating, inverse measures such as work hours/quantity or unit hours are common (where lower values reflect higher productivity or efficiency). Regardless of the measure used, labor productivity (or efficiency) is improved by increasing production for a given work hour or decreasing work hours for a given production. (June 2007)

LABOR PRODUCTIVITY FACTOR – A value by which a labor productivity measure for a reference project or activity is multiplied to obtain an adjusted productivity measure for the same of similar project or activity under a different set of conditions. Proper factor use requires that the user ascertain the type of labor productivity measure it will be applied against (e.g., consider whether the labor productivity measure to be factored is expressed in the form of work hours/quantity or quantity/work hours). Syn.: PRODUCTIVITY FACTOR. (June 2007)

LABOR PRODUCTIVITY NORM – A value set as the agreed reference or benchmark labor productivity for a specific activity under a specific set of stated conditions or qualifications. Syn.: LABOR NORM (January 2014)

LABOR RATE – Labor cost expressed on a per unit of labor effort basis (e.g., labor costs/labor hour). See also: LABOR COST. (June 2007)

LABOR RATE VARIANCE – A cost variance can be broken into efficiency and rate variance elements. Rate variance is calculated as: (budgeted cost of work performed hours) X (budgeted cost of work performed rate – actual cost of work performed rate). See: COST VARIANCE; LABOR EFFICIENCY VARIANCE. (October 2013)

LADDER – In planning and scheduling, a sequence of parallel activities connected at their starts or finishes, or both. The start and finish of each succeeding activity are linked only to the start and finish of the preceding activity by lead and lag activities, which consume only time. (June 2007)

LADDER ACTIVITY – A type of activity identified in network scheduling. An arrangement in which two or more series of activities progress concurrently but in lockstep because of dependent links between the same rungs of each ladder. (June 2007)

LADDERING – A method of showing the logic relationship of a set of several parallel activities with the arrow technique. (November 1990)

LAG – Time that an activity follows or is delayed from the start or finish of its predecessor(s). Sometimes called an offset. A lag may have a negative value tied to the finish of a previous activity, reflecting a fast track approach. However, the use of negative lags when building baseline schedule models is poor technique and often prohibited by specification. (June 2007)

LAG DURATION – A duration by which a given task must be completed before the succeeding activity can begin. (June 2007)

LAG RELATIONSHIP – The four basic types of lag relationships between the start and/or finish of a work item and the start and/or finish of another work item are:
1) Finish-to-start (FS);
2) Start-to-finish (SF);
3) Finish-to-finish (FF); and
4) Start-to-start (SS).
See also: FINISH-TO-FINISH (FF); FINISH-TO-FINISH LAG; FINISH-TO-START (FS); FINISH-TO-START LAG; START-TO-FINISH (SF); START-TO-START (SS); START-TO-START LAG. (November 1990)

LAG TIME – The amount of time delay between the completion of one task and the start of its successor task. (June 2007)

LATE DATES – Calculated in the backward pass of time analysis, late dates are the latest dates on which an activity can start and finish without delaying a successor activity. (June 2007)

LATE EVENT DATE – Calculated from backward pass, it is the latest date an event can occur. (June 2007)

LATE FINISH (LF) – The latest date or time an activity may finish as calculated by the backward pass. (June 2007)

LATE START (LS) – The latest date or time an activity may start so the project may be completed on time as calculated during the backward pass. (June 2007)

LATENT CONDITION – A concealed, hidden, or dormant condition that cannot be observed by a reasonable inspection. (November 1990)

LATEST EVENT TIME (LET) – The latest time an event may occur without increasing the project's scheduled completion date. (November 1990)

LATE START – The latest time at which an activity can start without lengthening the project. (November 1990)

LATEST REVISED ESTIMATE – In earned value, the sum of the actual incurred costs plus the latest estimate-to-complete for a work package or summary item as currently reviewed and revised, or both (including applicable overhead where direct costs are specified). (June 2007)

LATIN HYPERCUBE METHOD – A stratified random sampling technique similar to the Monte Carlo method, which converges with fewer samples. See also: MONTE CARLO SIMULATION. (December 2011)

LAWS AND REGULATIONS – Laws, rules, regulations, ordinances, codes and/or orders. (November 1990)

LEAD – Time that an activity precedes the start of its successor(s). Lead is the opposite of Lag. (June 2007)

LEAD DURATION/LEAD TIME – A duration or time by which a given task must be started before the succeeding activity can begin. (June 2007)

LEARNING CURVE – A graphic representation of the progress in production effectiveness as time passes. Learning curves are useful planning tools, particularly in the project-oriented industries where new products and workers are phased in rather frequently. The basis for the learning curve calculation is the fact that workers will be able to perform work more quickly after they get used to performing it. (June 2007)

LESSONS LEARNED – A project team's learning, usually defined during close out. Should be limited to capturing/identifying work process improvements. A ‘finding’ that established policies or procedures were not followed is not a valid lessons learned. (June 2007)

LETTER OF CREDIT – A vehicle that is used in lieu of retention and is purchased by the contractor from a bank for a predetermined amount of credit that the owner may draw against in the event of default in acceptance criteria by the contractor. Also applies when an owner establishes a line of credit in a foreign country to provide for payment to suppliers of contractors for goods and services supplied. (November 1990)

LEVEL FINISH/SCHEDULE (FS) – The date when the activity is scheduled to be completed using the resource allocation process. (June 2007)

LEVEL FLOAT – The difference between the level early finish and the late finish date. (June 2007, Ed. Rev. April 2024)

LEVELIZED FIXED-CHARGE RATE – The ratio of uniform annual revenue requirements to the initial investment, expressed as a percent. (November 1990)

LEVEL OF DETAIL – All projects need to determine the level of detail requirements for estimates, accounting reports, cost reports, scheduling reports, and types of schedules. The level of detail is generally constrained by the level of scope definition. Determining the level of detail should consider requirements to execute the project and meet historical data requirements. (June 2007)

LEVEL OF EFFORT (LOE) –
(1) Support effort (e.g., supervision) that does not readily lend itself to measurement of discrete accomplishment. It is generally characterized by a uniform rate of activity over a specific period of time.
(2) An earned value technique used to estimate progress of work that is generally not measurable. Support effort (e.g. management, security, project controls) that does not lend itself to measurement of discrete accomplishment. LOE work is characterized by a planned and sometimes level of support over a specific period of time. Performance is claimed by the passage of time and may not accurately reflect the amount of work that is actually accomplished. (November 2014)

LEVEL START/SCHEDULE (SS) – The date the activity is scheduled to begin using the resource allocation process. This date is equal to or later in time than early start. (November 1990)

LEVELING – Syn.: RESOURCE LEVELING; RESOURCE OPTIMIZATION. (June 2007)

LEVELS OF SCHEDULES – The level of schedule is differentiated by the degree of detail in the schedules. The three main levels of scheduling are the following: Management Summary, Project Level, and Control Level.

1. LEVELS OF SCHEDULES, MANAGEMENT SUMMARY SCHEDULE (LEVEL 1 SCHEDULE) – The level of schedule containing the least amount of detail, typically including major functions, milestone objectives, master schedules, and bar chart summaries of project status. Used by management and the client to monitor all aspects of the project. It is a roll up of the project level schedule (level 2).
2. LEVELS OF SCHEDULES, PROJECT LEVEL SCHEDULE (LEVEL 2 SCHEDULE) – An activity- and deliverable-centered schedule containing a middle amount of detail in time-scaled network diagrams or bar charts. It integrates the project's engineering, procurement, and construction activities by network logic, identifies critical path and key project dates, and provides measurement of accomplishments against established objectives. The CPM (critical path method) scheduling technique is used to develop the project level schedule. The status of the detail activities summarizes to the management summary schedule (level 1 schedule).

3. LEVELS OF SCHEDULES, CONTROL LEVEL SCHEDULE (LEVEL 3 SCHEDULE) – Represents detail and individual work tasks, which summarize at the project level II activities and deliverables. Clearly, shows work by discipline or responsibility, and usually presented in bar chart or tabular form. Maintained by each discipline/contractor in the engineering phase and by superintendents and contractors in the construction phase. Immediate term schedules, also referred to as weekly work schedules, and should provide enough detail to manage work at the foreman level. (June 2007)

LEVERAGE (TRADING ON EQUITY) – The use of borrowed funds or preferred stock in the intent of employing these "senior" funds at a rate of return higher than their cost in order to increase the return upon the investment of the residual owners. (November 1990)

LIFE –

1. LIFE, PHYSICAL – That period of time after which a machine or facility can no longer be repaired in order to perform its design function properly.
2. LIFE, SERVICE – The period of time that a machine or facility will satisfactorily perform its function without a major overhaul.

See also: ECONOMIC LIFE (CYCLE); STUDY PERIOD; VENTURE LIFE. (November 1990)

LIFE CYCLE – The stages, or phases that occur during the lifetime of an object or endeavor. A life cycle presumes a beginning and an end with each end implying a new beginning. In life cycle cost or investment analysis, the life cycle is the length of time over which an investment is analyzed (i.e., study period). The following are typical life cycles:

1. LIFE CYCLE, ASSET LIFE CYCLE – The stages, or phases of asset existence during the life of an asset. Asset life cycle stages typically include ideation, creation, operation, modification, and termination. Syn.: ECONOMIC LIFE (CYCLE).
2. LIFE CYCLE, PRODUCT LIFE CYCLE − Complete history of a product through its concept, definition, production, operation, and obsolescence or disposal phases. The distinction between product life cycle and project life cycle is that the latter does not include the last two phases.
3. LIFE CYCLE, PROJECT LIFE CYCLE – The stages or phases of project progress during the life of a project. Project life cycle stages typically include ideation, planning, execution, and closure. Syn.: PROJECT LIFE. (June 2007)

See also: LIFE; STUDY PERIOD. [1]

LIFE CYCLE COST (LCC) METHOD – A technique of economic evaluation that sums over a given study period the costs of initial investment (less resale value), replacements, operations (including energy use), and maintenance and repair of an investment decision (expressed in present or annual value terms). [1] (November 1990)

LIFE CYCLE COSTING – Consideration of all costs when designing a project's product, including costs from concept, through implementation and startup, to dismantling. It is typically used for making decisions between alternatives. (June 2007)

LIFE CYCLE VALUE ANALYSIS (LCVA) – A methodology that analyzes the impacts on valuation of a project or asset over their life cycle and identifies opportunities for improved outcomes. (December 2011)

LIFO (LAST IN, FIRST OUT) – A method of determining the cost of inventory used in a product. In this method, the costs of material are transferred to the product in reverse chronological order. LIFO is used to describe the movement of goods. See also: FIFO (FIRST IN, FIRST OUT). (November 1990)

LIMIT (LOT SIZE INVENTORY MANAGEMENT INTERPOLATION TECHNIQUE) – A technique for looking at the lot sizes for groups of products to determine what effect economic lot sizes will have on the total inventory and total setup costs. (November 1990)

LINE OF BALANCE (LOB) – A graphical display of scheduled units versus actual units over a given set of critical schedule control points on a particular day. The line of balance technique is oriented towards the control of production activities. (June 2007)

LINE OF CREDIT – Generally an informal understanding between the borrower and the bank as to the maximum amount of credit that the bank will provide the borrower at any one time. (November 1990)

LINEAR PROGRAMMING – Mathematical techniques for solving a general class of optimization problems through minimization (or maximization) of a linear function subject to linear constraints. For example, in blending aviation fuel, many grades of commercial gasoline may be available. Prices and octane ratings, as well as upper limits on capacities of input materials which can be used to produce various grades of fuel are given. The problem is to blend the various commercial gasolines in such a way that: 1) Cost will be minimized (profit will be maximized); 2) A specified optimum octane rating will be met; and 3) The need for additional storage capacity will be avoided. (November 1990)

LINEAR RESPONSIBILITY CHART – A special type of matrix in which the rows list the series of functions, activities, or tasks in some logic sequence, such as the project life cycle, and the adjacent columns identify the positions, titles or people involved. At the intersection of each adjacent column and its line item is placed a distinguishing symbol representing the level or type of responsibility involved by that person. (June 2007)

LINEAR SCHEDULING METHOD (LSM) – Scheduling method that may be used on horizontal projects (pipelines, highways, etc.) Highly repetitive tasks make up the majority of the work. LSM schedules use 'velocity' diagrams representing each activity. LSM scheduling is not widely used. (June 2007)

LINK – A dependency between tasks that specifies when a task begins or ends relative to another task. (June 2007)

LINKED BAR CHART – A bar chart drawn to show dependency links between activities/tasks. (June 2007)

LINKED PROJECTS – Multiple related projects connected at interface points. Often depicted by use of a bar chart showing dependency links between activities on different projects. (June 2007)

LINKING PROCEDURE – A procedure by which a 'new' series of indexes is connected to an 'old' series in a given link period, generally because of a change in baskets. Actually, indexes of the new series with link period as time base are multiplied by the old index for the link period as the given period. (November 1990)

LIQUIDATED DAMAGES – Syn.: DAMAGES, LIQUIDATED. (June 2007)

LMESO – Syn.: COST ESTIMATE RESOURCE (December 2011)

LOAD FACTOR –
(1) A ratio that applies to physical plant or equipment average load/maximum demand, usually expressed as a percentage. It is equivalent to percent of capacity operation if facilities just accommodate the maximum demand.
(2) The ratio of average load to maximum load. (November 1990)

LOAD LEVELING – The technique of averaging, to a workable number, the amount or number of people working on a given project or in a given area of a project at a particular point in time. Load leveling is a benefit of most scheduling techniques and is necessary to insure a stable use of resources. Syn.: WORK POWER LEVELING. (November 1990)

LOCAL COST – The cost of local labor, equipment taxes, insurance, equipment, and construction materials incorporated in a construction project, with local currencies. This includes the finishing of imported goods using local labor and materials, the cost of transforming imported raw or semi-finished products using local labor and plant facilities, and the marketing of locally produced products. (June 2007)

LOCATION FACTOR – An instantaneous (current – has no escalation or currency exchange projection) overall total project factor for translating the summation of all project cost elements of a defined construction project scope of work, from one geographical location to another. Location factors include given costs, freights, duties, taxes, field indirects, project administration, and engineering and design. Location factors do not include the cost of land, scope/design differences for local codes and conditions, and the cost for various operating philosophies. (June 2007)

LOGIC – Relationship describing the interdependency of starts and finishes between activities or events. Every activity should have a predecessor (except for the initial activity or event), and every activity should have a successor (except for the ending activity or event). Activity logic is determined by need to meet competing constraints defined by contract requirements, physical capabilities of trades performing work, safety concerns, resource allocations, and preferential activity relationships. (June 2007)

LOGIC, DYNAMIC (CONDITIONAL) – A logic structure which allows for changes in schedule logic depending on the occurrence of risk events or conditions (typically includes conditional branching.) See also: CONDITIONAL BRANCHING; LOGIC, STATIC (FIXED); LOGIC DIAGRAM; NETWORK. (January 2014)

LOGIC, HARD –
(1) Mandatory logic.
(2) Clearly understood work scope allows one to define work activities and logic with precision. The opposite of soft logic. (June 2007)

LOGIC, SOFT – Activity(ies) and logic that with current knowledge cannot be modeled in detail. As design and construction evolves, soft logic is transformed into detailed or hard logic, with activities being split into component parts and logic ties refined. See also: DISCRETIONARY DEPENDENCY. (June 2007)

LOGIC, STATIC (FIXED) – A logic structure which does not allow for changes in schedule logic depending on the occurrence of risk events or conditions (typically excludes conditional branching). See also: CONDITIONAL BRANCHING; LOGIC, DYNAMIC (CONDITIONAL); LOGIC DIAGRAM; NETWORK. (January 2014)

LOGIC CONSTRAINT – A restraint inserted in an activity of arrow (AOA) network, which defines dependent relationships between two activities. (June 2007)

LOGIC DIAGRAM – Graphic diagram of a network schedule showing the relationships between a particular activity and its predecessors and successors. Syn.: LOGIC NETWORK DIAGRAM; NETWORK DIAGRAM. See also: NETWORK. (June 2007)

LOGIC NETWORK – Syn.: NETWORK (June 2007)

LOGIC NETWORK DIAGRAM – Syn.: LOGIC DIAGRAM; NETWORK DIAGRAM. (June 2007)

LOGIC RESTRAINT –
(1) A dummy, which defines the dependency of one part of the network on another part of it.
(2) A dummy arrow or constraint connection that is used as a logical connector but that does not represent actual work items. It is usually represented by a dotted line and is sometimes called a dummy because it does not represent work. It is an indispensable part of the network concept when using the arrow diagramming method of CPM scheduling. (June 2007)

LOGIC SEQUENCING – The arranging of project activities in to a self-evident or reasoned and progressive series. (June 2007)

LONG LEAD ITEMS – Those components of a system or piece of equipment for which the times to design and fabricate are the longest and for which an early commitment of funds may be desirable or necessary in order to meet the earliest possible date of system completion. (June 2007)

LONG LEAD PROCUREMENT – Early procurement of material or parts to accommodate early use or long procurement spans. Contractors may choose to seek buyer-approved pre-award commitments of funds to meet long lead requirements. (June 2007)

LONGEST PATH – The continuous sequence(s) of activities that determines the project duration. See also: CRITICAL PATH.

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LONGEST PATH VALUE – A numerical calculation assigned to every activity in a CPM schedule that determines how near that activity is to being considered a member of the longest path. It is expressed in the same time units as the total float for that activity. A longest path float value of zero would indicate that the activity is on the longest path. (March 2010)

LOOK-AHEAD SCHEDULE – A short period (two or three weeks) schedule, typically presented in bar chart format showing what needs to be accomplished to keep the project on schedule. Look-ahead schedules are often discussed at weekly project meetings to coordinate and control the following week's work. (June 2007)

LOOP/LOGIC LOOP – A circular sequence of dependency links between activities in a network. Creates an error in network logic resulting from successor activities also being a predecessor to the activity in question. Also known as circular logic. Logic loops can be very frustrating and time consuming to eliminate in complex network schedules. (June 2007)

LOSS OF PRODUCTIVITY/EFFICIENCY – Syn.: INEFFICIENCY; LOST PRODUCTIVITY. (June 2007)

LOST PRODUCTIVITY – Syn.: INEFFICIENCY; LOSS OF PRODUCTIVITY/EFFICIENCY. (June 2007)

LOT BATCH – A definite quantity of some product manufactured under conditions of production that are considered uniform. (November 1990)

LOT SIZE – The number of units in the lot. (November 1990)

LOWEST MANAGEMENT LEVEL (LML) – A term used in the dynamic baseline model hierarchy in which a project may be positioned and is the control point for a project. It represents the level at which the project must be managed on an on-going basis in order to deal effectively with the dynamic issues below the LSB.
a) For a production project the LML is the supervisor level. A supervisor is the lowest management level with sufficient capacity and authority to deal effectively with a dynamic procedures baseline.
b) For a construction project the LML is the manager level. A manager is the lowest management level with sufficient capacity and authority to deal effectively with a dynamic construction baseline.
c) For a development project the LML is the director level. A director is the lowest management level with sufficient capacity and authority to deal effectively with a dynamic requirements baseline.
d) For an evolution project the LML is the owner level. The project owner is the lowest management level with sufficient capacity and authority to deal effectively with a dynamic objectives baseline. (June 2007)

LOWEST STATIC BASELINE (LSB) – Using the flow down of organizational objectives from corporate values to project objectives to functional requirements to product design, the LSB is the lowest level that is relatively fixed for a given project in the hierarchy and is therefore readily "baseline-able". A term used in the dynamic baseline model hierarchy in which a project may be positioned. A project can only be expected to meet its LSB, and therefore success or failure should only realistically be measured relative to that baseline. (June 2007)

LUMP-SUM – The complete in-place cost of a system, a subsystem, a particular item, or an entire project. (June 2007)

MAINTENANCE AND REPAIR COST – The total of labor, material, and other related costs incurred in conducting corrective and preventative maintenance and repair on a facility, on its systems and components, or on both. Maintenance does not usually include those items that cannot be expended within the year purchased. Such items must be considered as fixed capital. [2] (November 1990)

MAJOR COMPONENTS – Part of the aggregation structure of a price index (e.g., a CPI can be subdivided into major components of food, housing, clothing, transportation, health and personal care, recreation, reading and education, tobacco and alcohol). (November 1990)

MAJOR MILESTONE – The most significant milestones in the project's life or duration, representing major accomplishments or decision points; usually associated with the first breakdown level in the work breakdown structure. [4] (November 1990)

MAJOR SYSTEM ACQUISITION PROJECTS – Those projects that are directed at and are critical to fulfilling a mission, entail the allocation of relatively large resources, and warrant special management attention. (November 1990)

MANAGEMENT BY EXCEPTION – Issuance of management reports only when action is called for. Helps avoid wading through voluminous reports where progress is going according to plan. However, system may require subjective judgment by someone who is not as well placed to do so as the manager himself. Exception reports tend to be harbingers of bad news, lacking good news and hence seen as detrimental rather than beneficial. (June 2007)

MANAGEMENT BY METHODS (MBM) – Level 2 of a five level dynamic baseline model in which those proficient in MBR build on their knowledge base, level 1 (MBR) with customized project management processes and procedures. At this level practitioners get acquainted with, and become proficient in the use of, standard project management

tools, frameworks and templates. The work breakdown structure, the responsibility assignment matrix, scheduling techniques, cost/schedule performance control and monitoring and configuration management are the hallmarks of level 2 learning. At this level, an employee has the capacity to use the tools to analyze project performance data and to make recommendations for corrective actions accordingly. (June 2007)

MANAGEMENT BY OBJECTIVES (MBO) – A management theory that calls for managing people based on documented work statements mutually agreed to by manager and subordinate. Progress on these work statements is periodically reviewed, and in a proper implementation, compensation is tied to MBO performance. Level 3 of a five level dynamic baseline model structure in which establishing and maintaining the project objectives as the reference point and managing and manipulating the methods at level 2 (MBM) and the rules at level 1 (MBR) as appropriate to that horizon. (June 2007)

MANAGEMENT BY POLITICS (MBP) – A potential level 5 of a five level dynamic baseline model structure. This is an extrapolation of the model, which would lead to a management approach where the essential values of the corporation are a dynamic baseline. This would entail dealing with some higher order issues wherein project managers would contend with harmonizing various corporate agendas in a politicized environment. A level 5 MBP would be dealing with an intangible product with a focus on governance issues. The LML at level 5 would be in essence a politician. (June 2007)

MANAGEMENT BY RULES (MBR) – Level 1 of a five level dynamic baseline model structure at which behavior is the first level of learning. MBR is indoctrination into the official operations for an organization. Employees are encouraged to develop a strong sense of affiliation with the organization's institutional framework – rules, regulations, policies, procedures, directives, laws, acts, etc. At this level of learning, an employee is taught how to apply existing rules to conduct business, and on occasions, to interpret rules in some new way for the purpose of addressing project issues not readily covered in the existing framework. (June 2007)

MANAGEMENT BY VALUES (MBV) – Level 4 of a five level dynamic baseline model structure in which an employee has the capacity to manipulate and evolve the objective throughout the project life cycle as appropriate to the overarching corporate values. MBV practitioners are expected to revisit and adjust project objectives with their attention focused on the corporate values horizon. In turn, this requires the capacity to manipulate the tools and the rules with the knowledge and experience to understand the implications as per level 3 (MBO). (June 2007)

MANAGEMENT BY WALKING AROUND (MBWA) – Part of the Hewlett Packard legacy and popularized by management theorist Tom Peters. MBWA works on the assumption that a manager must circulate to fully understand the team's performance and problems. The best managers, according to Peters, spend 10 percent of their time in their offices, and 90 percent of their time talking and working with their people, their customers, and their suppliers. (June 2007)

MANAGEMENT CONTROL POINT – A point in the project life cycle, usually separating major phases or stages, at which senior management has the opportunity to confirm or deny continuation into the next phase or stage. See also: CONTROL GATE. (June 2007)

MANAGEMENT CONTROL SYSTEMS – The systems (e.g., planning, scheduling, budgeting, estimating, work authorization, cost accumulation, performance measurement, etc.) used by owners, engineers, architects, and contractors to plan and control the cost and scheduling of work. [4] (November 1990)

MANAGEMENT RESERVE –
(1) An amount added to an estimate to allow for discretionary management purposes outside of the defined scope of the project, as otherwise estimated. May include amounts that are within the defined scope, but for which management does not want to fund as contingency or that cannot be effectively managed using contingency. Syn.: RESERVE; RESERVE ALLOWANCE.

(2) In earned value management according to the EIA 748 standard, an amount held outside the performance measurement baseline, commensurate with the level of risks and opportunities identified by the project or withheld for management control purposes. Management reserve has no scope, is not specifically associated to individual risks, and is not time-phased. It is typically not estimated or negotiated and is created in the budget development process. (May 2021)

MANAGEMENT SCHEDULE RESERVE (MSR) – A designated amount of time to account for risks that cannot be quantified and/or managed with contingency, or to allow time for management discretionary purposes and the use of management reserve generally requires a formal baseline change. Management reserves are generally not related to schedule contingency. See also: MANAGEMENT RESERVE (MR). (October 2013)

MANAGEMENT SCIENCE – The application of methods and procedures including sophisticated mathematical techniques to facilitate decision making in the handling, direction, and control of projects and manufacturing operations. (November 1990)

MANDATORY DEPENDENCY – Dependency inherent in the nature of the work being done, such as a physical limitation. Used in hard logic. [8] (June 2007)

MANPOWER LOADING CHART – Histogram showing the allocation of labor by period. See also: RESOURCE HISTOGRAM. (June 2007)

MANPOWER PLANNING – Process of forecasting an organization's manpower needs over time, in terms of numbers and skills, and obtaining the human resources required to match an organization’s needs. See also: RESOURCE PLANNING. (June 2007)

MANUFACTURABILITY – A process for optimally integrating manufacturing knowledge in the engineering and design process, balancing various production and environmental constraints to maximize all production goals and objectives, including ease of manufacturing. It includes analysis of alternate materials, manufacturing technologies, and standardization (e.g., the use of common parts for different products). (February 2022)

MANUFACTURING COST – The total of variable and fixed or direct and indirect costs chargeable to the production of a given product, usually expressed in cents or dollars per unit of production, or dollars per year. Transportation and distribution costs, and research, development, selling and corporate administrative expenses are usually excluded. See also: OPERATING COST. (November 1990)

MANUFACTURING RESOURCE PLANNING (MRP II) – A method for the effective planning of all the resources of a manufacturing company. Ideally, it addresses operational planning in units, financial planning in dollars, and has a simulation capability to answer "what if" questions. It is made up of a variety of functions, each linked together: business planning, production planning, master production scheduling, material requirements planning, capacity requirements planning, and the execution systems for capacity and priority. Outputs from these systems would be integrated with financial reports such as the business plan, purchase commitment report, shipping budget, inventory projections in dollars, etc. Manufacturing resource planning is a direct outgrowth and extension of material requirement planning (MRP). Syn.: MRP II. See also: MATERIAL REQUIREMENTS PLANNING (MRP). (November 1990)

MAPI METHOD –
(1) A procedure for replacement analysis sponsored by the Machinery and Allied Products Institute.
(2) A method of capital investment analysis which has been formulated by the Machinery and Allied Products Institute. This method uses a fixed format and provides charts and graphs to facilitate calculations. A prominent feature of this method is that it explicitly includes obsolescence. (November 1990)

MARGINAL ANALYSIS – An economic concept concerned with those incremental elements of costs and revenue which are associated directly with a specific course of action, normally using available current costs and revenue as a base and usually independent of traditional accounting allocation procedures. (November 1990)

MARGINAL COST (BENEFIT) – Syn.: INCREMENTAL COST (BENEFIT). (November 1990)

MARKETING – The broad range of activities concerned primarily with the determination of consumer or user demands or desires, both existing and potential; the satisfaction of these demands or desires through innovation or modification; and the building of buyer awareness of product or service availability through sales and advertising efforts. (November 1990)

MARKETING COST ANALYSIS – The study and evaluation of the relative profitability or costs of different marketing operations in terms of customer, marketing units, commodities, territories, or marketing activities. Typical tools include cost accounting. (November 1990)

MARKETING RESEARCH – The systematic gathering, recording, and analyzing of data about problems relating to the marketing of goods and services. Such research may be undertaken by impartial agencies or by business firms, or their agents. Marketing research is an inclusive term which includes various subsidiary types:

1. MARKETING RESEARCH, MARKET ANALYSIS – Of which product potential is a type, which is the study of size, location, nature, and characteristics of markets.

2. MARKETING RESEARCH, SALES ANALYSIS (OR RESEARCH) – Which is the systematic study and comparison of sales (or 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. Typical analyses would include: a) Promotion Evaluation; b) Quota Assignment; and c) Territory Assignment.

3. MARKETING RESEARCH, CONSUMER RESEARCH – Of which motivation research is a type which is concerned chiefly with the discovery and analysis of consumer attitudes, reactions, and preferences. (November 1990)

MARKET VALUE – The monetary price upon which a willing buyer and a willing seller in a free market will agree to exchange ownership, both parties knowing all the material facts but neither being compelled to act. The market value fluctuates with the degree of willingness of the buyer and seller and with the conditions of the sale. The use of the term market suggests the idea of barter. When numerous sales occur on the market, the result is to establish fairly definite market prices as the basis of exchanges. (November 1990)

MARK-UP – As variously used in construction estimating, includes such percentage applications as general overhead, profit, and other indirect costs. When mark-up is applied to the bottom of a bid sheet for a particular item, system, or other construction price, any or all of the above items (or more) may be included, depending on local practice. (November 1990)

MASTER PRODUCTION SCHEDULE (MPS) – In manufacturing, for selected items, a statement of what the company expects to manufacture. It is the anticipated build schedule for those selected items assigned to the master scheduler. The master scheduler maintains this schedule and, in turn, it becomes a set of planning numbers which "drives" MRP. It represents what the company plans to produce expressed in specific configurations, quantities, and dates. The MPS should not be confused with a sales forecast, which represents a statement of demand. The master production schedule must take forecast plus other important considerations (backlog, availability of material, availability of capacity, management policy and goals, etc.) into account prior to determining the best manufacturing strategy. (November 1990)

MASTER SCHEDULE – A consolidated schedule incorporating multiple, related projects or parts of a project so that they may be monitored and controlled as a unit. See also: LEVEL OF SCHEDULES, MANAGEMENT SUMMARY SCHEDULE (LEVEL 1 SCHEDULE). (June 2007)

MASTER SCHEDULE ITEM – In manufacturing, a part number selected to be planned by the master scheduler. The item would be deemed critical in terms of its impact on lower level components and/or resources such as skilled labor, key machines, dollars, etc. A master schedule item may be an end item, a component, a pseudo number, or a planning bill of material. (November 1990)

MASTER SCHEDULER – The person who manages the master project or production schedule. (June 2007)

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. (November 1990)

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. (November 1990)

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. Syn.: MRP. See also: MANUFACTURING RESOURCE PLANNING (MRP II). (November 1990)

MAXIMUM OUT-OF-POCKET CASH – The highest year-end negative cash balance during project life. (November 1990)

MEANS AND METHODS – Syn.: METHOD OF PERFORMANCE. (June 2007)

MECHANICAL COMPLETION – Unit is essentially complete for startup operation and test run. All major work is completed. Minor work not interfering with operation may not be completed, such as punch list and minor touchup work. Acceptance letter will have been submitted to the client. Precise definition may vary and is usually a contractual provision. Client custody may commence. It is important that this definition be clearly defined in the contract. (June 2007)

MERGE BIAS – In PERT and other deterministic schedule analysis methods, a bias that is introduced because the method does not recognize that parallel slack paths can contribute to risk at the merge points. (December 2011)

MERGE NODE – Syn.: MERGE POINT (October 2017)

MERGE POINT – In a network diagram, a node at which two or more activities precede the start of subsequent activity. Syn.: MERGE NODE. (October 2017)

MERIT SHOP – Syn.: OPEN SHOP. (November 1990)

METALANGUAGE – In risk identification, a structured description of cause, risk and effect. For example: “Due to <cause>, there is a threat/opportunity that <risk> may occur, which may lead to <effect>.” (December 2011)

METHOD OF MEASUREMENT – The procedure, usually standardized, according to which the quantities of work expressed in a bill of quantities (BOQ) shall be measured. See also: BILL OF QUANTITIES (BOQ); RULES OF CREDIT. (June 2007)

METHOD OF PERFORMANCE – 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 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. Syn.: MEANS AND METHODS. (June 2007)

MICRO-SCHEDULING – Scheduling of activities with a duration less than one day (in minutes, hours or fractional days). (June 2007)

MILESTONE – A zero duration activity or event which is used to denote a particular point in time for reference or measurement. Milestones are not true activities in that they do not consume time or resources. Often used for management summary reporting. A milestone should be capable of validation by meeting all of the items prescribed in a defining checklist as agreed with the stakeholders. See also: KEY ACTIVITY; KEY EVENTS. (June 2007)

MILESTONE DICTIONARY – A description of exactly what is required to satisfy each milestone. (June 2007)

MILESTONE FLAG – A numeric code that may be entered on an event to flag the event as a milestone. (November 1990)

MILESTONE LEVEL – The level of management at which a particular event is considered to be a key event or milestone. (November 1990)

MILESTONE, PAYMENT – Those milestones on which payments fall due. (June 2007)

MILESTONE PLAN – A plan containing only milestones that highlight key activities or events of the project. See also: MILESTONE SCHEDULE. (June 2007)

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. (November 1990)

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. (November 1990)

MISREPRESENTATION – Inaccurate factual information furnished by either party to a contract, even if done unintentionally. Syn.: SUPERIOR KNOWLEDGE. (November 1990)

MITIGATION – A risk response strategy for threats intended to reduce consequences and/or the probability of occurrence. In contracting, refers to the affirmative obligation of each party to a contract to take action to decrease, lessen or minimize damages (time and money) to the other party. (December 2011)

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. (November 1990)

MODEL PRICING – The techniques of using verbal, symbolic, or analog models to depict cost relationships, and the form which they take. Mathematics and computers are basic analytical tools for model pricing. (November 1990)

MODELING – Creation of a physical representation or mathematical description of an object, system or problem that reflects the functions or characteristics of the item involved. Model building may be viewed as both a science and an art. Cost estimate and CPM schedule development should be considered modeling practices and not exact representations of future costs, progress and outcomes. (June 2007)

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. (November 1990)

MODIFICATION, UNILATERAL – A modification to the contract issued by the owner without the agreement of the contractor as to the time or price adjustment. (November 1990)

MONETARY EQUIVALENTS – The expression or valuation of various objectives and requirements of the enterprise (e.g., environmental, safety, etc.) in terms of monetary units to provide a single measure to be used in decision modeling. (December 2011)

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. (November 1990)

MONTE CARLO SIMULATION – A computer sampling technique based on the use of “pseudo-random numbers” that selects samples for a simulation of a range of possible outcomes. See also: LATIN HYPERCUBE. (December 2011)

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. (November 1990)

MONTH-TO-MONTH PRICE INDEX – A price index for a given month with the preceding month as the base period. (November 1990)

MOST LIKELY TIME – The most realistic time estimate for completing an activity under normal conditions. Used in probabilistic scheduling. See also: PERT (PROGRAM (OR PROJECT) EVALUATION AND REVIEW TECHNIQUE). (June 2007)

MOST LIKELY VALUE – In risk analysis, usually refers to the mode of a distribution. If the distribution is multimodal, uniform or complex, this may express the estimator’s judgment. (December 2011)

MOVING AVERAGE – Smoothing a time series by replacing a value with the mean of itself and adjacent values. (November 1990)

MRP – Syn.: MATERIAL REQUIREMENTS PLANNING (MRP). (November 1990)

MRP II – Syn.: MANUFACTURING RESOURCE PLANNING (MRP II). (November 1990)

MULTI-PROJECT SCHEDULING – Technique used to consolidate multiple projects’ CPM schedules into a master schedule. The technique is used to monitor and control an overall program. See also: PROGRAM (June 2007)

MULTIPLE FINISH NETWORK – A network that has more than one finish activity or finish event. (November 1990)

MULTIPLE START NETWORK – A network that has more than one start activity or event. (November 1990)

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. (November 1990)

MUST FINISH – Date an activity must finish by. It is a constraint date. See also: IMPOSED FINISH DATE. (June 2007)

MUST FINISH BY DATE – Date used by scheduling software to calculate the final completion status of the project. Without the imposition of a must finish by date, the end of the project would float out to its natural completion. (June 2007)

MUST START – Date an activity must start by. It is a constraint date. See also: IMPOSED START DATE. (June 2007)

NEAR-CRITICAL ACTIVITY – An activity not on the critical path that could become critical and could delay the project if delayed during an update period. See also: CRITICAL ACTIVITY.

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NEAR-CRITICAL PATH – An activity or set of activities that are almost critical or are at risk of becoming critical if delayed past their expected completion times. Inclusion in this list may be made by using total float, longest path value, or multiple critical paths. The value associated with these near-critical path activities typically are approximately one half of the reporting period's duration or less. (March 2010)

NEAR-TERM ACTIVITIES – Activities that are planned to begin, be in process, or be completed during a relatively short period, such as 30, 60, or 90 days. (June 2007)

NEGATIVE FLOAT –
(1) The amount of time by which the early date of an activity exceeds its late date. It is how far behind an activity is from its planned early start/finish date.
(2) Time by which the duration of an activity or path has to be reduced in order to permit a limiting imposed date to be achieved. (June 2007)

NEGATIVE LAG – A lag that has a negative value. In general, negative lags should be avoided. See also: LAG. (October 2013)

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. (November 1990)

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. (November 1990)

NET BENEFITS (SAVINGS) – The difference between the benefits and the costs – where both are discounted to present or annual value dollars. [1] (November 1990)

NET PRESENT VALUE – Syn.: PRESENT VALUE; PRESENT WORTH. (November 1990)

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. See also: PROFIT MARGIN. (November 1990)

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. (November 1990)

NETWORK – The series of activities required to complete a project. Typically includes 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. Syn.: LOGIC NETWORK. See also: CRITICAL PATH METHOD (CPM); LOGIC DIAGRAM. (June 2007)

NETWORK ANALYSIS – Process of identifying early and late start and finish dates for activities by use of a forward and backward pass through the CPM model. Syn.: PROJECT NETWORK ANALYSIS. See also: CRITICAL PATH METHOD (CPM). (June 2007)

NETWORK DIAGRAM – Syn.: LOGIC DIAGRAM; LOGIC NETWORK DIAGRAM. (June 2007)

NETWORK FLOAT – The total float values that exist on the various chains of activities within the CPM network. Distinguish from project float. See also: PROJECT FLOAT. (June 2007)

NETWORK INTERFACE – Activity or event common to two or more network diagrams. (June 2007)

NETWORK LOGIC – The collection of activity dependencies that make up a project network diagram. See also: LOGIC. (June 2007)

NETWORK OPEN END – A condition where at least one CPM network activity other than the first has no predecessor or other than the last has no successor. (August 2007)

NETWORK PATH – Any continuous series of connected activities in a project network diagram. (June 2007)

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. (November 1990)

NETWORK SCHEDULING – Method of planning and scheduling a project where activities are arranged based on predecessor and successor relationships. Network calculations determine when activities may be performed and which activities are critical or have float. See also: CRITICAL PATH METHOD (CPM). (August 2007)

NODE – In an activity on arrow (AOA) schedule, the event marking the start (I-node) or finish (J-node) of an activity. Nodes are typically represented graphically as a circle. (June 2007)

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. [1] (November 1990)

NON-CASH – A term frequently used for tangible commodities to be used from inventory and not replaced. (November 1990)

NON-CRITICAL ACTIVITIES OR WORK ITEMS – Activities or work items that have positive float. i.e. within defined limits, can take longer to complete than planned without affecting total project duration. (June 2007)

NON-DURABLE GOODS – Goods whose serviceability is generally limited to a period of less than three years (such as perishable goods and semi-durable goods). (November 1990)

NON-EXCUSABLE DELAYS –
(1) Delays that are caused by the contractor's or its subcontractor's actions or inactions. Consequently, the contractor is not entitled to a time extension or delay damages. On the other hand, owner may be entitled to liquidated or other damages.
(2) A non-excusable delay is one for which the party assumes the risk of the cost and consequences, not only for itself but possibly for the resulting impact on others as well. The concept of non-excusability is used primarily as a defense to requests for time extensions or claims for delay. [10]
See also: CONCURRENT DELAYS; EXCUSABLE COMPENSABLE DELAYS; EXCUSABLE DELAYS; EXCUSABLE NON-COMPENSABLE DELAYS. (June 2007)

NON-EXEMPT EMPLOYEES – Employees not exempt from overtime compensation by federal wage and hours guidelines. (June 2007)

NON-SPLITTABLE ACTIVITY – An activity that, once started, has to be completed to plan without interruption. Resources should not be diverted from a non-splittable activity. (June 2007)

NON-WORK UNIT – A calendar-specified time unit during which work will not be scheduled. (November 1990)

NOISE – In data analysis and decision-making, noise is irrelevant or extraneous information that causes judgment error or forecast accuracy. Also described as occasion noise, it can be caused by a wide array of seemingly irrelevant factors. See also: EMERGENT RISK; CHANGE; CONTINUAL RISK MANAGEMENT; UNCERTAINTY; UNCERTAINTY, CONTINOUS; COMMON CAUSE VARIATION; RANDOM ERROR; UNCERTAINTY, KNIGHTIAN; BIAS.

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NORMALIZATION − In database management, a process used to modify data so that it conforms to a standard or norm (e.g., conform to a common basis in time, currency, location, etc.) (June 2007)

NORMAL WEATHER – Weather that is expected for a period of time based upon the historical weather conditions of a particular locale. Normal weather includes weather that is and is not adverse as would be expected for a particular location. See also: ADVERSE WEATHER; PLANNED ADVERSE WEATHER DAY; SEVERE WEATHER; UNUSUALLY ADVERSE WEATHER DAY; WEATHER DAY: WEATHER EVENT; WEATHER PREPARATION DAY; WEATHER RECOVERY DAY. (September 2015)

NOT EARLIER THAN – A restriction on an activity that indicates that it may not start or end earlier than a specified date. (June 2007)

NOT LATER THAN – A restriction on an activity that indicates that it may not start or end later than a specified date. (June 2007)

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. (November 1990)

NOTICE TO PROCEED (NTP) – Formal notification to a contractor or supplier, requesting the start of the work or a defined phase of work. May be in the form of a limited NTP (LNTP), which authorizes only limited areas of a program or project to begin within stated boundaries in anticipation of a subsequent NTP. (June 2007)

OBJECTIVE – Something one wants to get done. A specific statement of quality, quantity and time values. In contract/procurement management, to define the method to follow and the service to be contracted or resource to be procured for the performance of work. In time management, a predetermined result, toward which effort is directed. (June 2007)

OBJECTIVE EVENT – An event that signifies the completion of a path through the network. A network may have more than one objective event. (November 1990)

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. (November 1990)

OCCURRED RISK – A risk event or condition that was identified during risk assessment and that actually occurred. (December 2011)

OFFSITES – General facilities outside the battery limits of all process units, such as field storage, service facilities, utilities, main electric substation, administrative buildings, rail tracks and storage yard, etc. (June 2007)

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. (November 1990)

ON-STREAM FACTOR – The ratio of actual operating days to calendar days per year. (November 1990)

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. Syn.: MERIT SHOP. (November 1990)

OPEN-ENDED ACTIVITIES – CPM activities that do not have a predecessor or a successor may be said to be “open-ended.” Aside from the one activity starting the CPM network and the last activity in that network, open-ended activities “break” the logical network and may not exhibit correct float calculations. (March 2010)

OPERABILITY –
(1) A process for optimally integrating engineering and design decisions to minimize the lifecycle cost (ensuring safety, reliability, minimization of resources, etc.) of the process, product, or facility.
(2) A process for evaluating the readiness to turn over a facility, system, or project from a project delivery stage to an operation and maintenance stage (e.g., from construction to operations). An operability review ensures compliance with the plans and specifications prior to turnover.
See also: COMMISSIONING; STARTUP. (February 2022)

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 also: MANUFACTURING COST. (November 1990)

OPERATION – Ongoing endeavor, or activities that utilize strategic assets for a defined function or purpose. (January 2002)

OPERATION PHASE – Period when the completed deliverable is used and maintained in service for its intended purpose. The operation phase is part of the asset or product life cycle as distinct from the project life cycle. See also: LIFE CYCLE – ASSET LIFE CYCLE. (June 2007)

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. (November 1990)

OPPORTUNITY – Uncertain event that could improve the results or improve the probability that the desired outcome will happen. See also: RISK; THREAT; UNCERTAINTY. (June 2007)

OPPORTUNITY COSTS – The value of a lost opportunity of an alternative that is not selected. See also: ECONOMIC COSTS. (December 2011)

OPPORTUNITY COST OF CAPITAL – The rate of return available on the next best available investment of comparable risk. [1] (November 1990)

OPTIMISTIC DURATION – The shortest of the three durations in the three-duration technique or PERT. (June 2007)

OPTIMISTIC TIME ESTIMATE – The minimum time in which the activity can be completed if everything goes exceptionally well. (June 2007)

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. (November 1990)

ORDER OF MAGNITUDE ESTIMATE – An estimate prepared based on little or no project definition. See also: COST ESTIMATE CLASSIFICATION SYSTEM, CLASS 5 ESTIMATE. (May 2012)

ORGANIZATION BREAKDOWN STRUCTURE (OBS) – A hierarchical relationship of the organization, including subcontractors, responsible for managing a designated scope of work within the work breakdown structure (WBS). See also: WORK BREAKDOWN STRUCTURE (WBS). (January 2014)

ORGANIZATIONAL CODES – Numerical or alphabetized characters that the user specifies for the system to associate with a particular activity for sorting purposes. See also: CODE. (November 1990)

ORIGINAL DURATION – First estimate of work time/duration needed to execute an activity. The most common units of time are hours, days and weeks. See also: BASELINE. (June 2007)

OUT-OF-SEQUENCE PROGRESS – Progress that has been reported even though activities that have been deemed predecessors in project logic have not been completed. Scheduling software may include a “switch” to turn on or off how the calculations deal with out-of-sequence progress. (June 2007)

OUTLIER – A value on the outer range of all values for a sample or population. (December 2011)

OUTPUT – Goods, services, or other results created by a process. (August 2007)

OVER TARGET BASELINE (OTB) – In earned value management according to the ANSI EIA 748 standard, under unusual circumstances a performance measurement baseline (PMB) may no longer be reasonable for performance measurement. Typically, this is when there is a significant difference between estimate at completion (EAC) and budget at completion (BAC) at the total project level. An OTB is when the estimate to complete (ETC) is planned for the future as the baseline, resulting in a performance measurement baseline (PMB) value that may exceed the contract budget base (CBB). An OTB may be in conjunction with an over target schedule (OTS) and/or a single point adjustment. (October 2013)

OVER TARGET SCHEDULE (OTS) – In earned value management according to the ANSI EIA 748 standard, under unusual circumstances, a performance measurement baseline (PMB) may no longer be reasonable for performance measurement. Typically, this is when there is a significant difference between the forecast finish and the baseline finish at the total project level. An OTS is when the schedule is baselined to a date that exceeds the contract requirements. (October 2013)

OVERHAUL – The distance in excess of that given as the stated haul distance to transport excavated material. (November 1990)

OVERHEAD – A cost or expense inherent in the performing of an operation, (e.g., 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. See also: GENERAL & ADMINISTRATIVE COSTS (G&A). (May 2012)

OVERLOAD – In planning and scheduling and resource planning, an amount by which the resource required exceeds its resource limit. (June 2007)

OVERPLAN (UNDERPLAN) – 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. (November 1990)

OVERRUN (UNDERRUN) – The actual costs for the work performed to date minus the estimate or value for that same work. If the actual costs are greater, it is an overrun; if the actual costs are less, it is an underrun. See also: PROBABILITY OF UNDERRUN (OR OVERRUN). (June 2007)

OWNER – Entity, 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, See also: CLIENT. (June 2007)

OWNER FURNISHED FIXTURES & EQUIPMENT (OFFE) – That items the responsibility of the owner to furnish that become incorporated into the contractor's work. The timing, interface and quality of OFFE are often the subject of dispute, delaying and affecting the contractor's work. (June 2007)

PARALLEL ACTIVITIES – Two or more activities than can be done at the same time. Allows a project to be completed faster than if activities were arranged sequentially. See also: FAST-TRACK(ING). (August 2007)

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. (January 2003)

PARAMETRIC RISK ANALYSIS – Methods using parametric estimating wherein the input parameters are risk drivers and the outputs are a quantification of risk. Typically applied for systemic risks. See also: RISK, SYSTEMIC; RISK ANALYSIS. (December 2011)

PARENT – A higher-level element in a hierarchical structure. See also: CHILD. (June 2007)

PARENT ACTIVITY – Task within the work breakdown structure that embodies several subordinate child tasks. (June 2007)

PARETO DIAGRAM – A histogram, arranged by frequency of occurrence, which shows how many results were generated by each identified cause. (June 2007)

PARETO'S LAW – Syn.: EIGHTY-TWENTY RULE. (December 2011)

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. (November 1990)

PATH – A continuous chain of activities within a network. (June 2007)

PATH CONVERGENCE – A condition where multiple CPM activities precede a shared event. (August 2007)

PATH DIVERGENCE – A condition where multiple CPM activities succeed a shared event. (August 2007)

PATH FLOAT – Syn.: FLOAT; SLACK. (June 2007)

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 also: DISCOUNTED PAYBACK PERIOD (DPP); SIMPLE PAYBACK PERIOD (SPP). [1] (November 1990)

PAYOFF (PAYBACK) PERIOD – Syn.: PAYOUT TIME. (November 1990)

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 (PAYBACK) PERIOD. See also: SIMPLE PAYBACK PERIOD (SPP). (November 1990)

PAYROLL BURDEN – Syn.: LABOR BURDEN. (May 2012)

PDM – Syn.: PRECEDENCE DIAGRAMMING METHOD (PDM). (November 1990)

PDM ARROW – A graphical symbol in PDM networks used to represent the lag describing the relationship between work items. (November 1990)

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. (November 1990)

PDM FINISH TO START RELATIONSHIP – The standard node relationship, where a successor activity starts after the predecessor finishes. Routinely used in ADM. (August 2007)

PDM START TO FINISH RELATIONSHIP – The relationship restricts the finish of the work item until some duration following the start of another work item. (November 1990)

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. (November 1990)

PERCENT COMPLETE – An estimate of the percentage complete for an element as of a particular data date. Percent complete is calculated differently in different context:
(1) In scheduling, this term means completed duration over total duration.
(2) In earned value, a comparison of the technical work completed compared with the current project of total work required. It is not based on resources expended but rather technical scope completed. In other words, technical accomplishment (earned value) percent complete is work accomplished divided by total scope.
(3) In earned value, overall earned value (EV) percent complete can be calculated as Budgeted Cost of Work Performed /Budget at Completion (or BCWP/BAC).
(4) In earned value, percent complete as spent is Actual Cost of Work Performed/Estimate at Completion (or ACWP/EAC). (October 2013)

PERCENT ON DIMINISHING VALUE – Syn.: DECLINING BALANCE DEPRECIATION. (November 1990)

PERFECT (AND IMPERFECT) INFORMATION – Perfect information is information or data that is known to be absolutely correct (i.e., there is no uncertainty associated with it). Imperfect information is information or data for which there exists uncertainty. See also: VALUE OF PERFECT INFORMATION. (December 2011)

PERFORMANCE MEASUREMENT BASELINE (PMB) –
(1) The time-phased budget plan against which contract performance is measured.
(2) In earned value management according to the ANSI EIA 748 standard, the assignment of budgets to scheduled segments of work produces a plan against which actual performance can be compared. The PMB is the time-phased project execution plan against which performance is measured. It includes direct and indirect costs and all cost elements. It also contains undistributed budget. PMB + management reserve (MR) = contract budget base (CBB) unless an over target baseline (OTB) has been implemented. See also: BASELINE. (October 2013)

PERFORMANCE MEASUREMENT SYSTEM –
(1) An organization’s defined processes for monitoring and updating project and/or organization progress at a detailed level over time.
(2) A quantitative tool (for example, rate, ratio, index, percentage) that provides an indication of an organization's performance in relation to a specified process or outcome.
See also: KEY PERFORMANCE INDICTATORS (KPI). (June 2007)

PERT (PROGRAM (OR PROJECT) EVALUATION AND REVIEW TECHNIQUE) – Along with CPM, PERT is a probabilistic technique for planning and evaluating progress of complex programs. Attempts to determine the time required to complete each element in terms of pessimistic, optimistic, and best-guess estimates. (June 2007)

PERT ANALYSIS – A process by which you evaluate a probable outcome based on three scenarios: 1) Best-case; 2) Expected-case; and 3) Worst-case. The outcome in question may be duration of a task, its start date, or its finish date. (June 2007)

PERT CHART – A flowchart that shows all tasks and task dependencies. Tasks are represented by boxes and task dependencies are represented by lines connecting the boxes. In this instance, a PERT chart is not based on PERT probabilistic activity durations. (June 2007)

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. (November 1990)

PHANTOM FLOAT – The difference between the "theoretical remaining" total float and the "actual remaining" total float. (March 2010)

PHASE – A major period in the life of an asset or project. A phase may encompass several stages. See also: LIFE CYCLE. (June 2007)

PHASED CONSTRUCTION – 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. See also: FAST-TRACK(ING). (August 2007)

PHYSICAL PERCENTAGE COMPLETE – Percentage of technical work scope of an activity or project achieved as of a particular date. Physical completion of any activity represents the most accurate, unbiased measure or appraisal, tempered with judgment and experience. Physical completion is not linked to work hours budgeted or expended. (October 2013)

PHYSICAL PROGRESS – The status of a task, activity, or discipline based on pre-established guidelines related to the amount or extent of work completed. See also: METHOD OF MEASUREMENT; PHYSICAL PERCENTAGE COMPLETE. (November 1990)

PHYSICAL RESTRAINT – A situation in which a physical activity or work item must be completed before the next activity or work items in the sequence can begin (e.g., concrete must harden before removing formwork). (June 2007)

PLAN –
(1) Formalized, written method of accomplishing a project task.
(2) An intended future course of action.
(3) The basis for project controls.
(4) A generic term used for a statement of intentions whether they relate to time, cost or quality in their many forms.
(5) 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. (June 2007)

PLAN-DO-CHECK-ACT (PDCA) CYCLE –
(1) Universal improvement methodology, advanced by W. Edwards Deming and based on the work of Walter Shewart, designed to continually improve processes by which an organization produces a product or delivers a service.
(2) The foundation for the Total Cost Management (TCM) process.
Syn.: DEMING CYCLE. [8] (June 2007)

PLANNED ADVERSE WEATHER DAY – Expressed as the number of days within a period of time (typically specified month) that a project can be expected to be affected by adverse weather. The number of planned adverse weather days is calculated by a review of historical weather data obtained from a reliable weather source supplemented or validated by actual experience at or near the work site. See also: ADVERSE WEATHER; NORMAL WEATHER; UNUSUALLY ADVERSE WEATHER DAY; WEATHER DAY: WEATHER EVENT; WEATHER PREPARATION DAY; WEATHER RECOVERY DAY. (September 2015)

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. (November 1990)

PLANNED DURATION (PD) – The planned project schedule duration in time increments. (November 2014)

PLANNED DURATION OF WORK REMAINING (PDWR) – The unearned portion of the project planned duration. (November 2014)

PLANNED VALUE (PV) – Measure of the amount of money budgeted to complete the scheduled work as of the data date. PV changes are subject to baseline control restrictions. Syn.: BUDGETED COST OF WORK SCHEDULED (BCWS). (October 2013)

PLANNER – In project control, a team member with the responsibility for planning, scheduling and tracking of projects. They are often primarily concerned with schedule, progress and manpower resources. (June 2007)

PLANNING –
(1) The determination of a project's objectives with identification of the activities to be performed, methods and resources (cost, hours, time, materials, etc.) to be used for accomplishing the tasks, assessment of both value and risks, assignment of responsibility and accountability, and establishment of an integrated plan to achieve completion as required.
(2) In planning and scheduling, the identification of the project objectives and the ordered activity necessary to complete the project (the thinking part) and not to be confused with scheduling; the process by which the duration of the project task is applied to the plan. It involves answering the questions: 1) What must be done in the future to reach the project objective?; 2) How it will be done?; 3) Who will do it?; and 4) When it will be done? (October 2006)

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. See also: MRP; MRP II. (November 1990)

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, level of effort (LOE), or apportioned effort. See also: WORK PACKAGE. (November 1990)

PLANNING PHASE – Syn.: DEFINITION PHASE; DEVELOPMENT PHASE; FRONT END. (June 2007)

PLANNING SESSION – A meeting of the principal members of the project team for the purpose of establishing a consistent scope basis for control by defining manageable segments that meet the specific needs of the project. (June 2007)

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. (November 1990)

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. (November 1990)

POINT ESTIMATE – Syn.: BASE ESTIMATE; SINGLE POINT ESTIMATE. (December 2011)

POLICY – Definitive position of an organization on a specific issue. A policy provides a basis for consistent and appropriate decision making and defines authority and accountability within the organization. See also: DECISION POLICY. (June 2007)

PORTFOLIO – An array of assets–projects, programs, or other valuable and often revenue-producing items–that are grouped for management convenience or strategic purpose. When strategically combined, the portfolio assets serve to create synergies among and otherwise complement one-another. (August 2007)

PORTFOLIO MANAGEMENT –
(1) Direction and oversight of an array of assets grouped together for strategic purpose or convenience.
(2) In total cost management (TCM), this is considered an aspect of strategic asset management (SAM).
See also: PORTFOLIO. (August 2007)

POSITIVE FLOAT – Amount of time available to complete non-critical activities or work items without affecting the total project duration. See also: FLOAT. (June 2007)

PRECEDENCE DIAGRAMMING METHOD (PDM) –
(1) A notation of a network that places the activity on a single node. A superset of the activity on node (AON) method, which allows additional precedent relationships along with lead and lag times. See also: FINISH-TO-FINISH (FF); START-TO-FINISH (SF); START-TO-START (SS).
(2) An activity-oriented system in which activities are displayed in uniform boxes complete with activity number, start duration and finish dates. The logical relation between activity boxes is shown by logic connector lines. Lead and lag times can also be shown. The display is more effective than arrow diagramming and is also easier to revise, update, and program on computer.
Syn.: PDM. See also: CRITICAL PATH METHOD (CPM); PERT (PROJECT EVALUATION AND REVIEW TECHNIQUE). (June 2007)

PRECEDING EVENT – Syn.: BEGINNING EVENT; PREDECESSOR EVENT; STARTING EVENT. (November 1990)

PRECISION – Consistency that the value of repeated measurements are clustered and have little scatter. See also: ACCURACY. (November 2016)

PRECONSTRUCTION CPM – A plan and schedule of the construction work developed during the design phase preceding the award of contract. (November 1990)

PREDECESSOR – An activity that immediately precedes another activity. (March 2004)

PREDECESSOR ACTIVITY –
(1) An activity that must necessarily be completed before its successor activity may start.
(2) Any activity that exists on a common path with the activity in question and occurs before the activity in question. (June 2007)

PREDECESSOR EVENT – Syn.: BEGINNING EVENT; PRECEDING EVENT; STARTING EVENT. (November 1990)

PREDICTABILITY – The degree of uncertainty in respect to predictions of behavior or occurrence (in TCM, typically used in respect to cost and schedule predictions and expressed as an accuracy range). See also: ACCURACY RANGE; CONFIDENCE INTERVAL; RANGE. (November 2020)

PREFERENTIAL LOGIC –
(1) Contractor's approach to sequencing work over and above those sequences indicated in or required by 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.
(2) Modeling execution work flow in a CPM schedule using logic ties, constraints and other mechanisms contrary to the expected norm for that type of effort. May or may not be an attempt at float suppression, float ownership, or necessary to model the expected means and methods actually used in this instance more accurately. The term preferential logic normally has a negative connotation.
See also: DISCRETIONARY DEPENDENCY. (June 2007)

PRELIMINARY CPM PLAN – CPM analysis of the construction phase made before the award of contracts to determine a reasonable construction period. See also: PRECONSTRUCTION CPM. (November 1990)

PRELIMINARY ENGINEERING – Includes all design-related services during the evaluation and definition phases of a project. (November 1990)

PREMISE DOCUMENT – In the context of maintenance turnarounds this refers to a scoping document produced in the early stages of preparation & planning for a turnaround. It explains the reasons for holding the turnaround, the objectives to be achieved by the turnaround (both in terms of improved and more reliable operation and in terms of targets for the turnaround team). (March 2021)

PRESCRIPTIVE – Laid down as a guide, direction, or rule of action specified. Usually implies instructions that are given step-by-step in some detail and that are to be followed without questioning, i.e. what is to be done, rather than how it is to be done, i.e. descriptive. (June 2007)

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. Syn.: NET PRESENT VALUE; PRESENT WORTH. [2] (November 1990)

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. [2] (November 1990)

PRESENT WORTH – Syn.: NET PRESENT VALUE; PRESENT VALUE. (November 1990)

PRESENT WORTH FACTOR – Syn.: PRESENT VALUE FACTOR. (November 1990)

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. (November 1990)

PRICE – The amount of money asked or given for a product (e.g., exchange value). The chief function of price is rationing the existing supply among prospective buyers. (November 1990)

PRICE INDEX – A number which relates the price of an item at a specific time to the corresponding price at some specified time. See also: COST INDEX. (May 2012)

PRICING – In estimating practice, after costing an item, activity, or project, 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. (June 2007)

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. See also: PRICING. (November 1990)

PRICING, RETROSPECTIVE – The pricing of work after it has been accomplished. See also: PRICING. (November 1990)

PRIMARY CLASSIFICATION – The classification of commodities by "commodity type." (November 1990)

PRIME CONTRACTOR – The principal (or only) contractor performing a contract for an owner. (June 2007)

PROACTIVE – Acting in anticipation of future problems, needs, or changes. See also: MITIGATION. (June 2007)

PROBABILISTIC DEPENDENCIES – Dependencies between activities that indicate alternative sequences of logic that have probabilities attached to them. (June 2007)

PROBABILISTIC NETWORK – Network containing alternative paths with which probabilities are associated rather than deterministic relationships between activities. (June 2007)

PROBABILISTIC RISK ASSESSMENT – a quantitative process used to evaluate risks in a way that provides probabilistic information. (December 2011)

PROBABILITY OF UNDERRUN OR OVERRUN − In risk analysis and contingency estimating, the chance that the cost or time will be less (underrun) or more (overrun) than a given cost or time from the distribution of outcomes of the risk analysis model. See also: CONFIDENCE LEVEL. (December 2011)

PROCEDURE – A prescribed method for performing specified work. (June 2007)

PROCESS – Set of steps or activities required to achieve an output. (June 2007)

PROCESS CONTROL – Managing a process to a proven standard. (June 2007)

PROCESS DESIGN – Design of a process, which may be a management process either as required in corporate management, or technical as in commercial or industrial engineering. (June 2007)

PROCUREMENT – A process for establishing contractual relationships to accomplish project objectives. Typically, the acquisition (and directly related matters) of equipment, material, and non-personal 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. The assembly, tendering and award of contracts or commitment documents. Specific procedures should be established for the procurement process. (June 2007)

PROCUREMENT LOG – The procurement log (also known as a procurement register, and similar to the submittal log, or submittal register) is a detailed list of all items requiring formal submittal, approval, fabrication, and delivery to the project site. Each action within the process is recorded establishing the date each phase of the procurement process starts and finishes. (December 2016)

PROCUREMENT SCHEDULE – The procurement schedule is a subset of the CPM project schedule that tracks the procurement process through the submittal process, fabrication, and delivery to the project site. The level of detail of this schedule is less than what is recorded in the procurement log and submittals may be grouped by submittal package, or selected significant items, unless specific tracking is required. Each line item should be linked in a path

from preparation, approval, fabrication, delivery, and then to the schedule activity that actually installs the material and/or equipment within the project. Such schedule activities help ensure that the procurement process is moving forward, and the delivery of material and/or equipment does not delay the project. (December 2016)

PRODUCT – The output from a process in tangible or intangible form. Examples include the project brief as an output from the planning phases, or the completed facility as an output from the producing phases. See also: DELIVERABLE; END ITEM. (June 2007)

PRODUCT BREAKDOWN STRUCTURE (PBS) – Structure that identifies the products that are required and that must be produced. It displays the system in a hierarchic way. (June 2007)

PRODUCTION (New) – The amount of manufacturing or construction output accomplished; the measure of output (i.e., things produced). (May 2023)

PRODUCTION PLAN – The agreed upon strategy that comes from the production planning function. See also: PRODUCTION PLANNING. (November 1990)

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. (November 1990)

PRODUCTION RATE – The amount of work accomplished during a given unit of time. (May 2023)

PRODUCTION SCHEDULE –
(1) In manufacturing, a plan which authorizes the factory to manufacture a certain quantity of a specific item. Usually initiated by the production planning department.
(2) In projects, a short-interval schedule used to plan and coordinate a group of activities. (June 2007)

PRODUCTIVITY – A measure of output relative to input. Productivity (or efficiency) is improved by increasing output for a given input or decreasing input for a given output. If the input is specifically work hours, the term commonly used is labor productivity. Syn.: EFFICIENCY. See also: LABOR PRODUCTIVITY. (June 2007)

PRODUCTIVITY FACTOR – Syn.: LABOR PRODUCTIVITY FACTOR. (June 2007)

PROFIT –

1. GROSS PROFIT – Earnings from an on-going business after direct and project indirect 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. (June 2007)

PROFIT ELEMENT – A quantified element of a profitability model whose change in value produces a favorable change in the bottom line. Syn.: PROFIT ITEM. (December 2011)

PROFIT ITEM – Syn.: PROFIT ELEMENT. (December 2011)

PROFIT MARGIN – A ratio of profit to either total cost or total revenue. Usage often varies depending on the type of company. Retail companies generally use the profit to revenue ratio. Wholesale companies and contractors generally use the profit to cost ratio. (June 2007)

PROFITABILITY – A measure of the excess income over expenditure during a given period of time. (November 1990)

PROFITABILITY ANALYSIS – The evaluation of the economics of a project, manufactured product, or service within a specific time frame. (November 1990)

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. (November 1990)

PROGRAM –
(1) A grouping of related projects usually managed using a master schedule.
(2) A set of projects with a common strategic goal.
(3) In Europe and elsewhere, the term 'program' or ‘programme’ may be used to mean a network schedule. (June 2007)

PROGRAM MANAGEMENT – Management of a series of related projects designed to accomplish broad goals, to which the individual projects contribute, and typically executed over an extended period of time. (June 2007)

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. (November 1990)

PROGRESS –
(1) Development to a more advanced stage. Progress relates to a progression of development and therefore shows relationships between current conditions and past conditions.
(2) Partial completion of a project, or a measure of it. Also, the act of entering current progress update information into project management software.
See also: LIFE CYCLE; STATUS. (June 2007)

PROGRESS DATE – Date used in order to calculate the progress of the project. All estimates to complete or remaining durations should be assessed in accordance with the progress date. See also: AS-OF-DATE; DATA DATE; TIME NOW. (June 2007)

PROGRESS LINE – A visual representation of the progress of a project, displayed on the Gantt chart. For a given progress date, the progress line connects in-progress tasks, thereby creating a graph on the Gantt chart with peaks pointing to the left for work that is behind schedule and peaks pointing to the right for work that is ahead of schedule. The distance of a peak from the vertical line indicates the degree to which the task is ahead of or behind schedule at the progress date. (June 2007)

PROGRESS MEASUREMENT – Measurement of the current amount of work completed for purposes of assessing progress of the project or contract, as well as for determining amounts due under contract agreements. See also: METHOD OF MEASUREMENT; PHYSICAL PROGRESS. (June 2007)

PROGRESS MILESTONES – Those project milestones identified as the basis for earning progress and/or making progress payments. (June 2007)

PROGRESS OVERRIDE – One of two types of scheduling software logic used to handle activities that occur out of sequence. When specified, it treats an activity with out-of-sequence progress as though it has no predecessor constraints; its remaining duration is scheduled to start immediately, rather than wait for the activities predecessors to complete. See also: RETAINED LOGIC. (June 2007)

PROGRESS REPORT – A report that informs management of overall project progress (physical percent complete), costs, performance and manpower at a specific reporting cut-off date. Includes major accomplishments, objectives for the upcoming report period, areas of concern, and other pertinent information necessary for management and control. See also: STATUS REPORT. (June 2007)

PROGRESS TREND – Syn.: TREND. (June 2007)

PROJECT – A temporary endeavor with a specific objective to be met within the prescribed time and monetary limitations and which has been assigned for definition or execution. (June 2007)

PROJECT ATTRIBUTES – A group of descriptive characteristics and parameters to define project key information and data sets. Project attributes is the foundation for sorting, selecting, filtering, and analyzing data sets. These sets can be independent or relational in nature. (April 2019)

PROJECT BOUNDARY – Boundary that defines how project interacts with other projects and non-project activity both within and outside the organization. See also: BATTERY LIMIT. (June 2007)

PROJECT CALENDAR – Calendar that defines global project working and non-working periods. See also: CALENDAR. (June 2007)

PROJECT CODE – Set of symbols assigned to a set of cost classes or sub-divisions of the scope of work in a project. The code reflects a systematic (or hierarchic) sub-division of scope. See also: CODE, CODE OF ACCOUNTS. (May 2012)

PROJECT CONTROL – A management 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 measurement against the project plans; and 4) Taking corrective, mitigating, or improvement action as may be determined through forecasting and further planning activity. (June 2007)

PROJECT DEFINITION – Process of exploring thoroughly all aspects of proposed project and to explore relations between required performance, development time and cost. See also: DEFINITION (PROJECT); DEVELOPMENT PHASE; FRONT END. (June 2007)

PROJECT DURATION –
(1) The elapsed duration from project start date through project finish date.
(2) The overall duration a project within which it is scheduled to be completed. Contractual requirements may impose a given project duration for successful completion, from which the schedule is developed to achieve. (June 2007)

PROJECT EXECUTION PLAN (PEP) – A high-level management guide to the means, methods and tools that will be used by the team to manage the project. The PEP is an integration of individual project plans that covers a project life cycle view and stresses alignment of all plans. It covers all functions (or phases) including engineering, procurement, contracting strategy, fabrication, construction, commissioning and startup within the scope of work. The PEP also includes stakeholder management, safety, quality, project controls, risk, information, communication and other supporting functions. Syn.: INTEGRATED PROJECT PLAN (IPP). (November 2020)

PROJECT FINISH DATE (SCHEDULE) – The latest scheduled calendar finish date of all activities on the project. (November 1990)

PROJECT FLOAT – The time that exists between the early finish of the last activity of a CPM network and the contractual completion date of the project. Project float can be internalized into the network and become network float. See also: NETWORK FLOAT. (June 2007)

PROJECT LIFE – Syn.: LIFE CYCLE, PROJECT LIFE CYCLE. (June 2007)

PROJECT MANAGEMENT –
(1) 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.
(2) The art and science of managing a project from inception to closure as evidenced by successful product delivery and transfer. (June 2007)

PROJECT MANAGEMENT SOFTWARE – A class of computer applications specifically designed to aid with planning and controlling project resources, costs and schedules. (June 2007)

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. [4] (November 1990)

PROJECT NETWORK ANALYSIS – Syn.: NETWORK ANALYSIS. (June 2007)

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. (November 1990)

PROJECT PHASES – The main elements of a project life cycle. For engineering and construction projects, they typically include preplanning, design, procurement, construction, start-up, operation, and final disposition. See also: LIFE CYCLE – PROJECT LIFE CYCLE. (June 2007)

PROJECT PLAN – The primary document for project activities. It covers the project from initiation through completion. See also: PLAN. (November 1990)

PROJECT SCOPE – Syn.: SCOPE. (June 2007)

PROJECT START DATE – The date a project is scheduled to start. Scheduling software uses the project start date as the starting date for all network calculations until a data date is used for calculating updated progress. (June 2007)

PROJECT TIME – The time dimension in which the project is being planned. (November 1990)

PROJECT WORK BREAKDOWN STRUCTURE (PWBS) – A summary WBS tailored by project management to the specific project and identifying the elements unique to the project. (November 1990)

PROJECTED FINISH DATE – The current estimate of the calendar date when an activity or project will be completed. (June 2007)

PROJECTED START DATE – The current estimate of the calendar date when an activity or project will begin. (June 2007)

PROJECTION – An extension of a series, or any set of values, beyond the range of the observed data. See also: FORECASTING. (November 1990)

PROMPT LIST – A risk breakdown structure (RBS) or similar document used as a checklist during risk identification, monitoring and other risk management process steps. (December 2011)

PROPOSAL SCHEDULE – The first schedule issued on a project; accompanies either the client's request or the contractor's proposal. (November 1990)

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). (November 1990)

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). (November 1990)

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. (November 1990)

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. (November 1990)

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). (November 1990)

PURE PRICE CHANGE – Change in the price of a particular commodity which is not attributable to change in its quality or quantity. (November 1990)

P-VALUE – In the context of estimate accuracy and risk analysis, the P-value of a particular estimate value indicates the expected probability that the final result (cost or duration) will be equal to or less than the specified estimate value. For example, a P50 estimate value indicates an expected 50% probability that the final result will be equal to or less than that estimated value. (February 2021)

QUALIFICATION SUBMITTALS – Data pertaining to a bidder's qualifications which shall be submitted as set forth in the instructions to bidders. (November 1990)

QUALIFICATIONS & ASSUMPTIONS – Items that are not completely defined in the project documents for which the estimator is required to use judgment in developing the estimate. (June 2007)

QUALITATIVE RISK ASSESSMENT (QLRA) – Risk assessment used to screen risks wherein risk probabilities of occurrence and impacts are expressed narratively or in ranked categories of severity. Typically incorporates use of a risk matrix. See also: QUANTITATIVE RISK ANALYSIS (QRA); RISK ANALYSIS; RISK MATRIX. (August 2022)

QUALITY – Conformance to established requirements (not a degree of goodness). (November 1990)

QUALITY ACCEPTANCE CRITERIA – Specified limits placed on characteristics of a product, process, or service defined by codes, standards, or other requirement documents. (November 1990)

QUALITY ACTIVITIES – Those activities directly associated with appraisal, training, and prevention. (November 1990)

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. (November 1990)

QUALITY ASSURANCE – All those planned or systematic actions necessary to provide adequate confidence that a product, process, or service will conform to established requirements. (November 1990)

QUALITY AUDIT – A formal, independent examination with intent to verify conformance with established processes and acceptance criteria. An audit does not include surveillance or inspection for the purpose of process control or product acceptance. (January 2016)

QUALITY CONFORMANCE – Quality management activities associated with appraisal, training, and prevention adapted to achieve zero deviations from the established requirements. (November 1990)

QUALITY CONTROL – Inspection, test, evaluation or other necessary action to verify that a product, process, or service conforms to established requirements and specifications. (November 1990)

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. (November 1990)

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. (November 1990)

QUALITY MANAGEMENT COSTS – The sum of those costs associated with appraisal, training, and prevention activities. (November 1990)

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. (November 1990)

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. (November 1990)

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. See also: TAKE-OFF. (January 2003)

QUANTITATIVE RISK ANALYSIS (QRA) – Risk analysis used to estimate a numerical value (usually probabilistic) on risk outcomes wherein risk probabilities of occurrence and impact values are used directly rather than expressing severity narratively or by ranking as in qualitative methods. See also: QUALITATIVE RISK ASSESSMENT (QLRA); RISK ANALYSIS. (August 2022)

QUANTITY SURVEY – In traditional terms means using standard methods of measuring all labor and material required for a specific project, building, or a structure, and itemizing these detailed quantities in a book or bill of quantities. See also: BILL OF QUANTITIES (BOQ); METHOD OF MEASUREMENT. (June 2007)

QUANTITY SURVEYING – A formalized method of periodically (typically monthly) detailing the actual progress accomplished on individual activities and the units of work performed or put in place. This is usually done in accordance with an established method of measurement against a bill of quantities. Often used on unit price contracts and on international civil works projects. See also: BILL OF QUANTITIES (BOQ); METHOD OF MEASUREMENT; REMEASUREMENT. (June 2007)

QUANTITY SURVEYOR – In the United Kingdom and elsewhere, 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. In many countries, the quantity surveyor has to undergo extensive technical training and must pass a series of professional examinations. In the United Kingdom and elsewhere a quantity surveyor establishes the quantities for all bidders and is professionally licensed to do so. (June 2007)

RACI – Acronym for a chart or matrix indicating which individuals on a team responsible, accountable, consulted and informed are regarding identified project deliverables. (December 2011)

RACSI – Acronym for a chart or matrix indicating which individuals responsible, accountable, consulted, supporting and informed are regarding identified project deliverables. (December 2011)

RAMP – Acronym for risk analysis and management for projects. (December 2011)

RANDOM ERROR – Random error limits prediction or forecast accuracy and refers to both random variability or system noise and a statistical error that is completely due to chance. Random error is a measurement or method error that cannot be repeated and is distinguished from systematic error or bias. See also: COMMON CAUSE VARIATION; NOISE; UNCERTAINTY, CONTINOUS; EMERGENT RISK; UNCERTAINTY, DISCONTINOUS; SYSTEMATIC ERROR; BIAS; UNCERTAINTY.

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RANGE – The absolute difference between the maximum and minimum (or some stated confidence interval) values in a set of values; the simplest measure of the dispersion of a distribution. See also: ACCURACY RANGE. (December 2011)

RANGE ESTIMATING –
(1) A formalized risk analysis technology that synergistically combines Pareto's law to identify the relatively few critical elements, heuristics governing the assignment of probabilistic ranges to such elements, and Monte Carlo simulation to provide decision making information quickly and at reasonable effort.
(2) A generic term variously used to define: a) estimating a variable in the form of a probabilistic range; b) application of Monte Carlo simulation based on a set of probabilistic ranges applied to model variables; c) a synonym for stochastic or probabilistic estimating.
See also: CRITICAL ELEMENT; HEURISTIC; MONTE CARLO SIMULATION; PARETO'S LAW; RANGE; RISK ANALYSIS. (December 2011)

RANGE OF ACCURACY – Syn.: ACCURACY RANGE. (December 2011)

RATE OF RETURN – The interest rate earned by an investment. See also: DISCOUNTED CASH FLOW; INTERNAL RATE OF RETURN (IRR); PROFITABILITY INDEX (PI); RETURN ON AVERAGE INVESTMENT; RETURN ON ORIGINAL INVESTMENT. (November 1991)

RAW MATERIALS – Syn.: CRUDE MATERIALS. (November 1990)

RBS – Syn.: RISK BREAKDOWN STRUCTURE (RBS); RISK TAXONOMY. (December 2011)

RE-BASELINING – Process whereby the project's costs, time scale or resources have to be replanned (usually in an integrated way) due to changes in objectives, deliverables to meet requirements, and/or original scope and the baseline plan is now obsolete. A need to re-baseline often results from poor project definition and/or project control (i.e., re-baselining is not a valid substitute for best practices). Reassessment of the project control process going forward is typically an element of re-baselining. See also: REPLANNING. (June 2007)

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. [1] (November 1990)

REAL DOLLARS – Syn.: CONSTANT DOLLARS. (November 1990)

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. (November 1990)

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. (November 1990)

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. (November 1990)

REBASING – Conversion of a price index from one time base to another. (November 1990)

RECASTING – Reorganizing the estimate for the purpose of organizing the estimate into a budget format for cost control. It is assumed that no net change from the estimate to the budget. (October 2019)

RECOMMENDED PRACTICE (RP) – AACE International recommended practices are reference documents on specific areas of cost engineering. Each RP is subject to a rigorous public review process and recommended for use by consensus of subject matter experts and industry practitioners. RPs are guidelines and are not standards. (October 2018)

RECOVERY SCHEDULE – A special schedule showing special efforts to recover time lost compared to the master schedule. Often a contract requirement when the projected finish date is no longer showing timely completion. (June 2007)

RECURRING TASK – A task that occurs repeatedly during the course of a project, such as a weekly staff meeting. (June 2007)

RECYCLE – Revisiting partially or fully completed activities to perform additional work due to a change. See also: REWORK. (June 2007)

REDUCE – In risk management, a response strategy for threats that involves mitigating key drivers to reduce probability and/or impact. See also: MITIGATION; RISK RESPONSE. (December 2011)

RELATIONSHIP – A logical connection between two activities. See also: LOGIC. (June 2007)

RELATIONSHIP FLOAT – Relationship free float is the amount by which lag on that relationship would have to be increased in order to delay the successor activity. Relationship total float is the amount by which it would have to be increased in order to cause a delay in the completion of the project as a whole (or the violation of a late target). See also: FREE FLOAT; TOTAL FLOAT (TF). (June 2007)

RELATIVE TOTAL FLOAT – The difference between the total float calculation on any activity or path and another activity or path, regardless of whether those activities or paths are logically linked. (June 2007)

REMAINING AVAILABLE RESOURCES – The difference between the resource availability pool and the level schedule resource requirements. It is computed from the resource allocation process. (November 1990)

REMAINING DURATION – Estimated remaining amount of time necessary to complete an in-progress activity. Should not be based solely on activity percent complete. (June 2007)

REMAINING FLOAT (RF) – The difference between the early finish and the late finish. (November 1990)

REMEASUREMENT – A type of contract (usually used in Europe) that provides for the use of quantity surveys to measure progress. Contractor's periodic payment is from a detailed survey of the actual work in place and not on milestone payments or other methods. Places a larger degree of cost risk on the owner than lump sum or milestone-based compensation schemes. (June 2007)

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 is rental invoices that indicate the amount paid for leasing such equipment. (November 1990)

REPLACEMENT – A facility proposed to take the place of an existing facility, without increasing its capacity, caused either by obsolescence or physical deterioration. (November 1990)

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. [2] (November 1990)

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. (November 1990)

REPLANNING – A change in the original plan necessitating reevaluation and changes. There are two types of replanning effort:

1. REPLANNING, INTERNAL REPLANNING – A change in the original plan that remains within the scope of the authorized contract, caused by a need to compensate for cost, schedule, or technical problems which have made the original plan unrealistic.

2. REPLANNING, EXTERNAL REPLANNING – Customer-directed changes to the contract in the form of a change order that calls for a modification in the original plan. Replanning is subject to baseline change control. (October 2013)

REPRODUCTION COST – The cost of reproducing substantially the identical item or facility at a price level as of the date specified. (November 1990)

REPROGRAMMING – A comprehensive replanning of the efforts remaining in the contract resulting in a revised total allocated budget which exceeds the contract budget base. (Also defined as an over target baseline.) See also: FORMAL REPROGRAMMING. (October 2013)

REPUDIATION – Syn.: ANTICIPATORY BREACH. (November 1990)

REQUEST FOR EQUITABLE ADJUSTMENT (REA) – Under specific contractual arrangements, a contractor's assertion of its right to an adjustment to the contract price and/or schedule or other terms and conditions under the applicable change provisions in its contract. See also: CHANGE ORDER REQUEST (COR).

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REQUIRED COMPLETION DATE – The required date of completion assigned to a specific activity or project. (November 1990)

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. (November 1990)

REQUIREMENT –
(1) 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.
(2) A negotiated set of measurable customer wants and needs. (June 2007)

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. [1] (November 1990)

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. (November 1990)

RESEARCH EXPENSE – Those continuing expenses required to provide and maintain the facilities to develop new products and improve present products. (November 1990)

RESERVE – Syn.: MANAGEMENT RESERVE; RESERVE ALLOWANCE. (October 2013)

RESERVE ALLOWANCE – Syn.: MANAGEMENT RESERVE; RESERVE. (October 2013)

RESERVE STOCK – Syn.: SAFETY STOCK. (November 1990)

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. (November 1990)

RESIDUAL RISK – That portion of risks that remain after risk responses are implemented in full or in part. See also: RISK RESPONSE. (December 2011)

RESOURCE – Any consumable 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. (October 2017)

RESOURCE AGGREGATION – Summation of the requirements for each resource, and for each time period. (June 2007)

RESOURCE ALLOCATION PLAN (RAP) – Scheduling of activities in a network with knowledge of certain resource constraints and requirements. This process adjusts activity level start and finish dates to conform to resource availability and use. See also: RESOURCE LEVELING. (June 2007)

RESOURCE AVAILABILITY DATE – Calendar date when a resource pool becomes available for a given resource. (June 2007)

RESOURCE AVAILABILITY POOL – The extent to which resources are available to meet the project's needs. (June 2007)

RESOURCE CALENDAR –
(1) Calendar or database used to model available resources, which is then used by project management software for resource leveling analysis.
(2) Calendar denoting when a resource or resource pool is available for work on a project. [8] (June 2007)

RESOURCE CODE – Code used to identify a given resource type. See also: CODE; CODE OF ACCOUNTS (COA). (June 2007)

RESOURCE CONSTRAINT – The limitations on available resources. See also: RESOURCE CALENDAR. (June 2007)

RESOURCE CRITICAL PATH – The longest chain of activities in the schedule when limited resources are taken into consideration in addition to CPM duration and logic considerations. This may be accomplished by adding preferential “soft” logic, manual or automatic resource leveling, or just physically practiced on the field without prior planning. (March 2010)

RESOURCE DESCRIPTION – The actual name or identification associated with a resource code. (November 1990)

RESOURCE DRIVEN TASK DURATION – Task duration that is driven by constrained resources. (June 2007)

RESOURCE GROUP – A set of resources that share some characteristics and that is categorized by a group name, such as job function, skill or contractor. See also: RESOURCE CODE. (June 2007)

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. (November 1990)

RESOURCE LEVEL – A specified quantity of resource units required by an activity per time unit. (June 2007)

RESOURCE LEVELING – Any form of network analysis in which scheduling decisions are driven by resource management concerns (e.g., limited resource availability or difficult to manage changes in resource levels). Syn.: LEVELING; RESOURCE OPTIMIZATION. See also: RESOURCE SMOOTHING. (June 2007)

RESOURCE LIMITED SCHEDULING – A schedule of activities so that a pre-imposed resource availability level (constant or variable) is not exceeded in any given project time unit. See also: RESOURCE LEVELING. (November 1990)

RESOURCE LOADING/RESOURCE ALLOCATION – The process of allocating or defining, through the use of resource calendars, the resources to be used on given activities. (June 2007)

RESOURCE OPTIMIZATION – Syn.: LEVELING; RESOURCE LEVELING. (June 2007)

RESOURCE PLANNING – The process of ascertaining future resource requirements for an organization or a scope of work and developing plans to meet those requirements. (June 2007)

RESOURCE PLOT – Syn.: RESOURCE HISTOGRAM. (November 1990)

RESOURCE REQUIREMENTS PLANNING – In manufacturing, 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. (June 2007)

RESOURCE SMOOTHING – Process of rescheduling activities such that the requirement for resources does not exceed resource limits. Smoothing is a type of resource leveling, except that the project completion date may not be delayed. Activities may only be delayed within their float. See also: RESOURCE LEVELING. (June 2007)

RESOURCE THRESHOLDS – In resource-limited scheduling it is possible to specify that a particular resource may be exceeded, if necessary, by an amount not to exceed the specified threshold for that resource. See also: RESOURCE LIMITED SCHEDULING. (June 2007)

RESPONSIBLE ORGANIZATION – The organization responsible for management of a work package. See also: ORGANIZATIONAL BREAKDOWN STRUCTURE (OBS). (November 1990)

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. (November 1990)

RESPONSIBILITY ASSIGNMENT MATRIX (RAM) – Depicts the intersection of the WBS and the OBS. The OBS relates the work breakdown structure (WBS) element to the organization and the named individual who is responsible for the assigned scope of a control account. (January 2014)

RESPONSIBILITY CODE – System of applying an alphanumeric tag to an activity for grouping, sorting and summarization purposes. The responsibility code generally identifies the entity responsible for performing the coded activities. See also: ORGANIZATIONAL CODES. (June 2007)

REST DAY – A day where no work is schedule on an activity or the project. See also: CALENDAR. (June 2007)

RESTRAINT – Syn.: CONSTRAINT. (December 2011)

RETAINAGE – Syn.: RETENTION. (June 2007)

RETAINED LOGIC – One of two types of logic used to handle activities that occur out of sequence. When used, scheduling software schedules the remaining duration of an out-of-sequence activity according to current network logic – after its predecessors. See also: PROGRESS OVERRIDE. (June 2007)

RETENTION – Usually refers to a percent of contract value retained by the purchaser until work is finished and testing of equipment is satisfactorily completed. Syn.: RETAINAGE. (June 2007)

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. (November 1990)

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. (November 1990)

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. (November 1990)

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. (November 1990)

REVERSE SCHEDULING – Method in which project completion date is fixed and task duration and dependency information is used to compute corresponding project start date. [8] (June 2007)

REVISION – In the context of planning and scheduling, a change in the network logic, activity duration, resources availability or resources demand which requires network recalculation and drawing correction(s). (June 2007)

REWORK –
(1) Correction of defective work. May take place before, during or after inspection or testing.
(2) Action taken to ensure that a defective or nonconforming item complies with requirements or specifications. [8] See also: RECYCLE. (June 2007)

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. (April 2004)

RISK –
(1) An ambiguous term that can mean any of the following: a) All uncertainty (threats + opportunities); or b) Undesirable outcomes (uncertainty = risks + opportunities); or c) The net impact or effect of uncertainty (threats – opportunities). The convention used should be clearly stated to avoid misunderstanding.
(2) Probability of an undesirable outcome.
(3) In total cost management, an uncertain event or condition that could affect a project objective or business goal. See also: CONDITION (RISK CONDITION); EVENT; OPPORTUNITY; THREAT; UNCERTAINTY. (December 2011)

RISK, BACKGROUND – Variability whose probabilities of occurrence are 100%. that is not due to identified risk elements. See also: INHERENT VARIABILITY; COMMON CAUSE VARIATION; UNCERTAINTY, GENERAL ESTIMATE; UNKNOWN KNOWN; UNCERTAINTY; INHERENT RISK.

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RISK, CONTINGENT – At a given point in time, encompasses the collection of known risk events that, if they were to occur, would affect project objectives. Their probability of occurring is less than 100%. Their impacts may be fixed or represented by a probability distribution, but the impact cannot occur unless the risk event or condition occurs. See also: RISK EVENT, DISCRETE; INHERENT VARIABILITY.

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RISK, EXTERNAL – A risk taxonomy designation for a risk that is not caused by and/or not in the direct control of the stakeholders or project team. See also: RISK, INTERNAL; RISK SOURCES; RISK TAXONOMY. (December 2011)

RISK, INTERNAL – A risk taxonomy designation for a risk that is caused by and/or in the direct control of the stakeholders or project team. See also: RISK, EXTERNAL; RISK SOURCES; RISK TAXONOMY. (December 2011)

RISK, PROJECT-SPECIFIC – A risk category designation that might be used to classify project risks for the purposes of selecting a quantitative risk analysis (QRA) method. Project-specific risks are threats or opportunities related to events, actions, and other conditions that are specific to the scope of a particular project. The impacts of project-specific risks are more or less unique to each individual project.
Depending on the context QRA method selection, there are alternate interpretations; the meaning used in any particular application should be clearly stated to avoid misunderstanding:
(1) For regression-based parametric QRA methods, project-specific risks reflect events or conditions that are not artifacts of the project system but are quantified uniquely. They exclude systemic risks.
(2) For conventional Monte-Carlo simulation methods, the only difference from *systemic* risk is in the description of the cause; in this case deriving from events and conditions other than those caused by project system characteristics.
See also: QUANTITATIVE RISK ANALYSIS (QRA); CONDITION, RISK; EVENT; PARAMETRIC RISK ANALYSIS; HYBRID RISK ANALYSIS; RISK, SYSTEMIC; RISK, BACKGROUND; UNCERTAINTY.

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RISK, SYSTEMIC – A risk category designation that might be used to classify project risks for the purposes of selecting a quantitative risk analysis (QRA) (i.e., contingency determination). Systemic risks are uncertainties (threats or opportunities) that are an artifact of an industry, company or project system, culture, strategy, complexity, technology, or similar over-arching characteristics.
Depending on the QRA method selection, the following variations apply; the meaning used in any particular application should be clearly stated to avoid misunderstanding:
(1) For parametric QRA methods, systemic risks reflect facts (are assumed certainty) about the state of the project system as addressed in the parametric model. Systemic risks have a 100 percent probability of occurrence, and all uncertainty is expressed in an aggregate impact distribution. It excludes project-specific risks which are quantified uniquely.
(2) For use in Monte-Carlo simulation, systemic risks, of which there may be multiple instances, may have any probability of occurrence. In this context, the only difference from *project-specific* risk is in the description of the special cause, deriving from various project system characteristics as opposed to other specific events and conditions.
(3) For the purposes of ongoing analysis and risk management, the project team may not tackle the issue of systemic risk directly, but risk practitioners may choose to account for it using one (or any combination) of the three forms of unknowns: known unknown, unknown known or unknown unknown. At later stages of QRA maturity, this broad and typically hidden category of risk is accounted for by using reference class data and applying an outside view, developed top-down via desk study, or bottom-up using machine learning or AI. In this manner, systemic risk is largely accounted for as an unknown unknown and may be included within models

or project simulations using a hybrid approach, as either continuous or discontinuous uncertainty depending on circumstance, evidence or insight gleaned from reference class data.

See also: QUANTITATIVE RISK ANALYSIS (QRA); CONTINGENCY; CONDITION, RISK; EVENT; PARAMETRIC RISK ANALYSIS; HYBRID RISK ANALYSIS; RISK, PROJECT-SPECIFIC; RISK, BACKGROUND; UNCERTAINTY-BACKGROUND VARIABILITY; UNKNOWN UNKNOWN; MANAGEMENT RESERVE.

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RISK ACCEPTANCE CRITERIA – Criteria used to help define when the risk profile of a project or business initiative is acceptable to the decision makers and consequently risk treatment can cease. (December 2011)

RISK ALLOCATION – In risk treatment, the process of transferring threats or sharing opportunities between parties, most commonly expressed in association with the contracting process. See also: RISK RESPONSE. (December 2011)

RISK ANALYSIS –
(1) In general, reflects an analytical approach to risk management. See also: RISK MANAGEMENT.
(2) In TCM it refers to a focus on quantitative risk analysis. Syn.: QUANTITATIVE RISK ANALYSIS (QRA). (August 2022)

RISK APPETITE – A component of the risk management plan that expresses the risk management objective in terms of a confidence interval or level for selected outcome measures. (December 2011)

RISK ASSESSMENT – In TCM, a risk management process step, which includes risk identification, qualitative risk assessment, and quantitative risk analysis. (August 2022)

RISK AVERSE – Having little or no risk tolerance. See also: RISK TOLERANCE. (December 2011)

RISK BASED INSPECTION – Risk management as applied to maintenance projects with a focus on risk-base planning of inspections. (December 2011)

RISK BREAKDOWN STRUCTURE (RBS) – A framework or taxonomy to aid risk identification and for organizing and ordering risk types throughout the risk management process. Syn.: RBS; RISK TAXONOMY; See also: PROMPT LIST. (December 2011)

RISK CONTAINMENT – Syn.: RISK SAFEGUARD. (August 2012)

RISK CONTROL – A risk management process step which includes the implementation of the risk response plan. (December 2011)

RISK (IMPACT) COMPOUNDING – The concept that the combined impact of multiple risk events or condition occurrence differs from the impact of their individual occurrence. The risk events may be dependent or independent. Syn.: COMPOUND RISK. (December 2011)

RISK DRIVERS – Events or circumstances that may influence or cause uncertainty in asset or project performance. Syn.: RISK FACTORS. See also: CONDITION (RISK CONDITION); EVENT. (December 2011)

RISK EVENT – In risk management, an incident or occurrence whose nature or result could be a threat or opportunity to the outcome of the project.
See also: RISK; CONDITION, RISK; RISK, CONTINGENT.

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RISK EVENT, DISCRETE – A discrete risk event is a non-continuous circumstance or condition that may or may not occur and whose impact on project objectives or business goals is also uncertain. See also: CONDITION, RISK; UNCERTAINTY, GENERAL ESTIMATE; UNCERTAINTY, DISCONTINUOUS; RISK, CONTINGENT; KNOWN UNKNOWN.

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RISK FACTORS – Syn.: RISK DRIVERS. (December 2011)

RISK IDENTIFICATION – A risk management process step (part of risk assessment) for identifying and describing risks for risk analysis and subsequent steps. See also: RISK BREAKDOWN STRUCTURE (RBS); RISK REGISTER. (December 2011)

RISK IMPACT WINDOW – Syn.: EXPOSURE WINDOW. (December 2011)

RISK INFORMED DECISION MAKING – Sometimes abbreviated as RIDM, this is synonymous with QRA or quantitative risk analysis. RIDM is a mandatory process step required in some heavily regulated or government projects, serving as a vehicle for good governance, transparency, and accountability. During the project lifecycle, RIDM also serves as a launchpad and reference point to facilitate continual risk management (CRM). It is the combination of RIDM and CRM that underpins the broader definition of project risk management. See also: QUANTITATIVE RISK ANALYSIS (QRA); DECISION ANALYSIS (DA); CONTINUAL RISK MANAGEMENT.

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RISK MANAGEMENT – A process for managing asset and project risks. In TCM, the process includes risk planning, risk assessment, risk treatment and risk control. (December 2011)

RISK MANAGEMENT AUDIT – An independent and documented quality assurance process to measure and assess compliance with risk management requirements and plans. (December 2011)

RISK MANAGEMENT MATURITY – Refers to the state of development and competency an organization has in risk management strategies, processes, methods, and tools. (December 2011)

RISK MANAGEMENT PLAN – The plan established by the asset planning or project team for carrying out risk assessment, risk treatment and risk control efforts. (December 2011)

RISK MANAGEMENT TEAM – A select group of project team members that will be responsible for the completion and acceptance of the qualitative analysis once risks are identified. (April 2013)

RISK MATRIX – A method used in qualitative risk assessment to rate or rank the severity of risks in terms of their combined impact (or consequence) to some output measure that is at risk and the risk's probability of occurrence. The matrix has impact on one axis and probability on the other with each intersecting node given predetermined severity rating designations (e.g., high, moderate, low). Syn.: IMPACT VERSUS PROBABILITY RATING. (August 2022)

RISK MITIGATION – A somewhat ambiguous term that typically includes any risk treatment action to reduce, transfer or eliminate a threat. See also: RISK RESPONSE; RISK TREATMENT. (December 2011)

RISK OWNER – A person(s) or entity charged with planning and implementing a specific risk response. (December 2011)

RISK PERCEPTION – Subjective attitudes, judgments and biases of an asset or project stakeholder concerning the characteristics, probability and/or impact of a risk. This affects the establishment or expression of more objective risk policy, appetite and/or tolerances. See also: RISK APPETITE; RISK POLICY; RISK TOLERANCE. (December 2011)

RISK PLANNING – In TCM, a process for planning risk management throughout the asset or project life cycle. See also: RISK MANAGEMENT PLAN. (December 2011)

RISK POLICY – In decision making, refers to the enterprise's or decision maker's established and preferably documented risk tolerance and general approach to treatment of risk in decision analysis. See also: DECISION POLICY; RISK APPETITE; RISK PERCEPTION; RISK TOLERANCE. (December 2011)

RISK PROFILE – A general term that refers to either qualitative or quantitative measures or indicators that describe the risk exposure and/or severity associated with an asset or project alternative or business initiative. (December 2011)

RISK REGISTER – A formal record of identified risks, typically including additional summary information as regards assessment, treatment and control of the risks. The content may be qualitative, quantitative or both. See also: RISK BREAKDOWN STRUCTURE (RBS); RISK IDENTIFICATION. (December 2011)

RISK RESPONSE –
(1) In a general risk management context, strategies or actions identified and planned in the risk treatment process to address risks.
(2) In a risk quantification context, the ex-post treatment actions taken to address the consequences of a risk event that has occurred. They largely define the scope of the risk impact estimate. In this context, an ex-ante (before it occurs) action to address risk is a RISK TREATMENT.
See also: CONTINGENCY PLAN which is a plan for ex-post treatment RISK RESPONSE. (May 2021)

RISK SAFEGUARD – An existing attribute or condition of an enterprise, asset or project scope (physical, planning or procedural) that may have risk treatment functionality. Syn.: RISK CONTAINMENT. (August 2012)

RISK SCREENING – In qualitative risk assessment, steps to prioritize identified risks for risk treatment and/or quantitative risk analysis (e.g., ranking by score or impact versus probability matrix). See also: QUANTITATIVE RISK ANALYSIS (QRA); QUALITATIVE RISK ASSESSMENT (QLRA); RISK MATRIX. (August 2022)

RISK SOURCES – A somewhat ambiguous term to describe categories used in risk identification and risk breakdown structures to describe process steps, stakeholders, organizational entities, environments, or other origins of risk causation. See also: RISK TAXONOMY. (December 2011)

RISK TAXONOMY – Syn.: RBS; RISK BREAKDOWN STRUCTURE (RBS). (December 2011)

RISK THRESHOLD – A risk impact measure or indicator beyond which a risk response must be planned, or a contingent response taken. See also: RISK RESPONSE. (December 2011)

RISK TOLERANCE – Refers to the ability or willingness of an asset or project stakeholder to accept potential risk impacts; the evaluation of risk tolerance guides risk treatment planning. See also: RISK APPETITE. (December 2011)

RISK TREATMENT –
(1) In a TCM context, a risk management process for identifying, evaluating and selecting responses to identified risks.
(2) In a risk quantification (non-process) context, the strategies or actions identified and planned in the risk treatment process to address risks before they occur; the cost of which are captured in the project plan. In that

context, RISK RESPONSE is the ex-post treatment actions taken to address the consequences of a risk event that has occurred; the cost of which are captured in the risk impact estimate.
See also: RISK RESPONSE (with the alternate contexts). (May 2021)

RISK TRIGGER – A measurable or observable event or condition that is a precursor to or indicator of a risk's occurrence. Typically leads to initiation of a planned risk response. See also: CONDITION (RISK CONDITION); RISK EVENT. (December 2011)

RISK TYPES – A means of characterizing risk for use in risk assessment by the type of risk. See also: RISK BREAKDOWN STRUCTURE (RBS); RISK TAXONOMY. (December 2011)

RISK-ADJUSTED CRITICAL PATH – Undeveloped theory that proposes using non-deterministic activity durations when considering the determination of the critical path. (March 2010)

ROLLING WAVE PLANNING – Refers to the process of maintaining detail short work packages for the near term and planning packages for the longer term. Typically, this is accomplished for set periods (e.g. every 6 months) or to the next program level significant milestone. The purpose is to always have a discrete plan for the near term. (October 2013)

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. (November 1990)

RUBBER BASELINE – An ambiguous term meaning a non-stable performance measurement baseline (PMB) plan. In a negative context it can refer to:
1) A baseline that is frequently single point adjusted to eliminate earned value management variances.
2) A baseline that is frequently changed to avoid variances rather than for technical performance reasons. (October 2013)

RULES OF CREDIT – In project control, a procedure according to which the progress on project activities shall be measured. See also: METHOD OF MEASUREMENT. (June 2007)

S-CURVE –
(1) In the context of risk management, a cumulative distribution of the probability of values in a defined range produced by quantitative risk analysis.
(2) In the context of project control, a cumulative distribution of costs, labor hours, progress, or other quantities plotted against time.
See also: QUANTITATIVE RISK ANALYSIS. (December 2011)

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. (November 1990)

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. (November 1990)

SALES – Orders booked by customers. (November 1990)

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. (November 1990)

SALES PROFILE – The growth or decline of historical or forecast sales volume, by years. (November 1990)

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. (November 1990)

SALES REVENUE – Revenue received as a result of sales, but not necessarily during the same time period. (November 1990)

SALVAGE VALUE –
(1) 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).
(2) The value of an asset, assigned for tax computation purposes, which is expected to remain at the end of the depreciation period. (May 2012)

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. [1] (November 1990)

SCALING FACTOR – Syn.: CAPACITY FACTOR; CAPACITY UTILIZATION FACTOR. (June 2007)

SCENARIO – A description of specific events and conditions and their probable outcomes. Usually limited to likely or probable scenarios versus all possible ones. Frequently, “most likely,” “best case,” and “worst case” scenarios are used to define the most probable outcome and the range of outcomes. (December 2011)

SCENARIO ANALYSIS – Methods to assess a range or events, conditions, and outcomes employing specific scenarios. An alternative to simulation methods for assessing ranges. See also: RANGE; SCENARIO; SENSITIVITY ANALYSIS; SIMULATION. (December 2011)

SCHEDULE –
(1) A description of when each activity in a project can be accomplished and must be finished so as to be completed timely. The simplest of schedules depict in bar chart format the start and finish of activities of a given duration. More complex schedules, general in CPM format, include schedule logic and show the critical path and floats associated with each activity.
(2) A time sequence of activities and events that represent an operating timetable. The schedule specifies the relative beginning and ending times of activities and the occurrence times of events. A schedule may be presented on a calendar framework or on an elapsed time scale. (June 2007)

SCHEDULE BASELINE – In earned value, the baseline start and completion dates used for integration with work authorization and costs. It is considered the time element of the performance measurement baseline (PMB). (October 2013)

SCHEDULE BUFFER – Syn.: SCHEDULE CONTINGENCY.

SCHEDULE COMPRESSION – A method of schedule analysis used to shorten the critical path of the schedule. This may be accomplished by re-sequencing work, employing greater resources to accomplish more work in a given time,

or otherwise reducing the duration of critical path activities. The need for schedule compression may come about because of the owner's desire to complete early, make up for delays, or to accommodate added work. (June 2007)

SCHEDULE CONTINGENCY –
(1) Duration added to a schedule activity to allow for the probability of possible or unforeseen events. Use in this manner is not recommended as the contingency is hidden and may be misused.
(2) A unique activity used to model specific float available to a project phase. Used in this manner gives ownership of float to those activities and or responsibility entity.
(3) The amount of time added to specific activities of a project (or program) schedule to mitigate (dampen/buffer) the effects of risks or uncertainties identified or associated with specific elements of that schedule. Syn.: SCHEDULE BUFFER. See also: SCHEDULE MARGIN. (October 2013)

SCHEDULE DECOMPRESSION – The opposite of schedule compression and results in lengthening the critical path. The need to reduce costs, work within limited resource constraints, and eliminate the use of overtime are some of the reasons for schedule decompression. (June 2007)

SCHEDULE GRAPHICS – Presentation charts and images used to communicate schedule progress and highlight areas of concern. Usually supplements the schedule report. Schedule graphics can include bar charts, time scaled logic diagrams, fragnets, etc. See also: SCHEDULE REPORT. (June 2007)

SCHEDULE LOG – A table used to track summary information from schedule data derived from baseline(s) and/or schedule updates developed during the course of a project. (June 2018)

SCHEDULE MARGIN (SM) – Schedule margin or schedule reserve are interchangeable terms meaning duration added to a schedule activity to allow for the probability of possible or unforeseen events. It is typically based on a schedule risk assessment and is measured in the unit of the schedule (typically days). For earned value management, schedule margin is usually limited to logical end points within the schedule. Schedule margin acts as a buffer between the baseline activities and the project end date. It may be considered management reserve (MR) in time units. Syn.: SCHEDULE RESERVE. See also: MANAGEMENT RESERVE; SCHEDULE CONTINGENCY. (October 2013)

SCHEDULE MODEL – A mathematical representation of a schedule that can be used in modeling. A CPM schedule network is the most common schedule model. See also: CRITICAL PATH METHOD (CPM); MODELING; NETWORK. (June 2007)

SCHEDULE OF VALUES – A detailed statement furnished by a construction contractor, builder, or others, apportioning the contract value into work packages. It is used as the basis for submitting and reviewing progress payments. (June 2007)

SCHEDULE PERCENT COMPLETE – The proportion of an activity or all the project's activities that has been completed. (June 2007)

SCHEDULE PERFORMANCE INDEX (SPI) – Ratio of work performed (earned value or BCWP) to work scheduled (planned value or BCWS). See also: EARNED VALUE (EV); PLANNED VALUE (PV); SCHEDULE PERFORMANCE INDEX [SPI(t)]. (June 2007)

SCHEDULE PERFORMANCE INDEX [SPI(t)] – A time-based performance index determined by earned schedule (the accomplished value in time increments) divided by the actual time increments that have elapsed. See also: SCHEDULE PERFORMANCE INDEX (SPI). (November 2014)

SCHEDULE REFINEMENT – Rework, redefinition or modification of the logic or data that may have previously been developed in the planning process as required to properly input milestones, restraints and priorities. See also: SCHEDULE REVISION. (June 2007)

SCHEDULE REPORT – A periodic report indicating status, significant progress, and/or areas of concern that may require corrective action. A schedule report typically includes a narrative, tables, and time-scaled diagrams. (October 2017)

SCHEDULE RESERVE – Syn.: SCHEDULE MARGIN. (October 2013)

SCHEDULE REVISION – A change in the network activity count, logic, original durations, resources, or historical schedule data. (October 2018)

SCHEDULE RISK – The risks (threats, opportunities, or both) the team might encounter in meeting the deadlines for the final deliverable or affecting any activity, milestone or element of the schedule plan. (December 2011)

SCHEDULE SLIP – Slippage in the final completion date of a project. See also: SLIPPAGE. (June 2007)

SCHEDULE TRACEABILITY – A broad term meaning the coding necessary in the schedule to show integration with work authorization, budgeting, accounting, and other earned value management components. Traceability demonstrates the completeness of the schedule content. (October 2013)

SCHEDULE UPDATE –
(1) The result of incorporating progress (actual dates, percent complete, remaining durations, actual resources, etc.) *through* [*] the data date and reporting that progress.
(2) The result of incorporating progress (actual dates, percent complete, remaining durations, actual resources, etc.) *to* [*] the data date and reporting that progress.
[*] The method chosen should be used consistently throughout the project.
Syn.: STATUSING. See also: CONTROL SCHEDULE; DATA DATE; HALF-STEP/DUAL-TRACKING SCHEDULE UPDATES. (November 2020)

SCHEDULE UPDATE NARRATIVE – A schedule narrative describes changes made to the schedule, current issues, problems, and related schedule notifications. (October 2017)

SCHEDULE VARIANCE (SV) –
(1) Difference between projected start/finish dates and actual or revised start/finish dates.
(2) The difference between the earned value and scheduled value. Schedule variance = budgeted cost of work performed (BCWP) - budgeted cost of work scheduled (BCWS). A negative cost variance indicates that the activity(ies) is running behind schedule. See also: SCHEDULE VARIANCE [SV(t)]. (June 2007)

SCHEDULE VARIANCE [SV(t)] – The time difference between the earned schedule (the accomplished value in time increments through a planned period) and the actual time increments that have elapsed. See also: SCHEDULE VARIANCE (SV). (November 2014)

SCHEDULE WORK UNIT – A calendar time unit when work may be performed on an activity. (June 2007)

SCHEDULED COMPLETION DATE – A date assigned for completion of activity or accomplishment of an event for purposes of meeting specified schedule requirements. (November 1990)

SCHEDULED DATES – The start, intermediate, or final dates imposed by contract or other means that impact the project schedule. See also: CONTRACT DATES. (June 2007)

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. (November 1990)

SCHEDULE SENSITIVITY – identifies and ranks the tasks most likely to influence the project duration/finish. (December 2011)

SCHEDULING –
(1) Assignment of desired start and finish times to each activity in the project within overall time cycle required for completion according to plan.
(2) Process of converting a general or outline plan for a project into a time-based schedule based on available resources and time constraints.
Syn.: DIAGRAMMING (SCHEDULE). See also: PLANNING. (June 2007)

SCHEDULING RULES – Basic rules that are spelled out ahead of time so that they can be used consistently in a scheduling system. (November 1990)

SCHEDULING TECHNIQUES – Systems and processes available for determination and presentation (modeling) of a project plan. Examples include, arrow diagramming, logic networks, bar charts, PERT, trending, etc. using a variety of software. See also: SCHEDULE MODEL. (June 2007)

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. See also: DE-SCOPE. (January 2003)

SCOPE CHANGE – Syn.: CHANGE IN SCOPE. (June 2007)

SCOPE CREEP – Gradual progressive change (usually additions to) of the project's scope such that it is not noticed by project management team or customer. Typically occurs when the customer identifies additional, sometimes minor, requirements that, when added together, may collectively result in a significant scope change, resulting in cost and schedule overruns. [8] (June 2007)

SCOPE DEFINITION – Division of the major deliverables into smaller, more manageable components to: 1) Improve the accuracy of cost, time, and resource estimates; 2) Define a baseline for performance measurement and control; and 3) Facilitate clear responsibility assignments. See also: FRONT END; FRONT END LOADING (FEL). [8] (June 2007)

SEASONAL COMMODITIES – Commodities which are normally available in the market-place only in a given season of the year. (November 1990)

SEASONAL VARIATION – That movement in many economics series which tends to repeat itself within periods of a year. (November 1990)

SECONDARY FLOAT (SF) – Same as total float, except that it is calculated from a schedule date upon an intermediate event. (November 1990)

SECONDARY RISKS – Risks that occur from actions taken to treat other risks. See also: DYNAMIC RISK. (December 2011)

SECULAR TREND – The smooth or regular movement of a long-term time series trend over a fairly long period of time. (November 1990)

SELLING EXPENSE – The total expense involved in marketing the products in question. This normally includes direct selling costs, advertising, and customer service. (November 1990)

SELLING PRICE – Syn.: SALES PRICE. (November 1990)

SENSITIVITY – The relative magnitude of the change in one or more elements of an engineering economy, estimate, schedule, risk or other planning analysis that will reverse a decision among alternatives. More generally, it is the degree to which a change in an element of a model affects the outcome. (December 2011)

SENSITIVITY ANALYSIS – A test of the outcome of an analysis by altering one or more parameters from an initially assumed value(s). [1] (November 1990)

SENTIMENTAL VALUE – A value associated with an individual's personal desire, usually related to a prior personal relationship. (November 1990)

SEQUENCE – Order in which activities will occur with respect to one another. Establishes priority and dependencies between activities. Successor and predecessor relationships are developed in a network format. Allows project participants to visualize work flow. See also: NETWORK. (June 2007)

SERVICE CONTRACT – A contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply. For example: Maintenance, overhaul, repair, servicing, rehabilitation, salvage, modernization, or modification of supplies, systems, or equipment. (November 2020)

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. (November 1990)

SERVICEABILITY – A measure of the degree to which servicing of an item will be accomplished within a given time under specified conditions. (November 1990)

SERVICING – The replenishment of consumables needed to keep an item in operating condition, but not including any other preventive maintenance or any corrective maintenance. (November 1990)

SEVERE WEATHER – A weather event, which is in itself severe and can be of violent nature. If the average weather over time is significantly different from the normal, then it is said to be other than normal. In either case, if such weather affects the job and causes a delay, it may be excusable and form the basis for a contract adjustment for time and possibly money once all relevant contract clauses are considered. See also: ADVERSE WEATHER; NORMAL WEATHER; PLANNED ADVERSE WEATHER DAY; UNUSUALLY ADVERSE WEATHER DAY; WEATHER DAY; WEATHER EVENT; WEATHER PREPARATION DAY; WEATHER RECOVERY DAY. (September 2015)

SHALL – Use of the word 'shall' in contract language means that 'you must', as opposed to ‘may’. (June 2007)

SHARE – In TCM risk management, a risk response strategy for opportunities that involves sharing the risk with a third party who is better able to manage it. See also: RISK RESPONSE. (December 2011)

SHIFTING BASE – Changing the point of reference of an index number series from one time reference period to another. (November 1990)

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. (November 1990)

SHOP ORDER NUMBER – Syn.: ACCOUNT NUMBER. (June 2007)

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. (November 1990)

SHORT-INTERVAL SCHEDULING – The process of updating CPM schedules weekly or even daily, and generally using activity duration's in hours and days. Short-interval scheduling is employed in plant shutdowns/turnarounds or for very time critical/short duration sub-projects. See also: PRODUCTION SCHEDULE. (June 2007)

SHORT-TERM ACTIVITIES – Syn.: MONTHLY GUIDE SCHEDULE. (November 1990)

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. (November 1990)

SIGNIFICANT VARIANCES – Those differences between planned and actual performance which exceed established thresholds, and which require further review, analysis and action. (November 1990)

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. (November 1990)

SIMPLE PAYBACK PERIOD (SPP) – 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. [1] (November 1990)

SIMULATION – Application of a physical or mathematical model to observe and predict probable performance of the actual item or phenomenon to which it relates. See also: LATIN HYPERCUBE METHOD; MODELING; MONTE CARLO SIMULATION. (December 2011)

SINGLE POINT ESTIMATE – Syn.: BASE ESTIMATE; POINT ESTIMATE. (December 2011)

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. (November 1990)

SITE PREPARATION – An act involving grading, landscaping, drainage, 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. (June 2007)

SLACK – Syn.: FLOAT. (June 2007)

SLACK PATHS – The sequences of activities and events that do not lie on the critical path or paths. (November 1990)

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. (November 1990)

SLIP CHART – A pictorial representation of the predicted completion dates of milestones. Also referred to as trend chart. (June 2007)

SLIPPAGE – Amount of time a task has been delayed from its original baseline plan. Slippage is the difference between scheduled start or finish date for a task and baseline start or finish date. Slippage can occur when a baseline plan is set and actual dates subsequently entered for tasks are later than baseline dates, or actual durations are longer than baseline durations. See also: SCHEDULE SLIP. (June 2007)

SMOOTHING – In resource-scheduling, refers to an option that modifies the way time-limited (and resource-limited with thresholds) scheduling works. Objective is to minimize the extent that each resource availability is exceeded. Standard algorithm gives itself the maximum flexibility to achieve this by making use of any excess already incurred. Smoothing option modifies this so that it will not use excess for a particular activity unless necessary in order to schedule that activity within its total float. (June 2007)

SPECIAL CAUSE VARIATION – Syn.: EMERGENT RISK.

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SPECIFICATION, DESIGN – 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. (June 2007)

SPECIFICATION, PERFORMANCE – A statement of required results, verifiable as meeting stipulated criteria, and generally free of instruction as to the method of accomplishment. (November 1990)

SPECIFICATION(S) –
(1) A detailed, exact statement of particulars, especially a statement prescribing materials, dimensions, and quality of work for something to be built, installed, or manufactured.
(2) A document that prescribes the requirements with which the product or services has to conform. (June 2007)

SPECIFICATION TREE – A graphic portrayal arranged to illustrate interrelationships of hardware and/or software performance/design requirements specifications. Normally, this portrayal is in the form of a “family tree” subdivision of specifications, with each lower level specification applicable to a hardware/software item that is part of a higher level item. [7] (June 2007)

SPLIT TASK – A task divided into two or more portions, with time gaps between one portion and another that indicate an interruption in work on the task. (June 2007)

SPLITTABLE ACTIVITY – Activity that can be interrupted in order to allow temporary transfer of its resources to another activity. (June 2007)

SPLITTING – In resource scheduling, it is possible to specify that an activity may be split if this results in an earlier scheduled finish date. This means that the specified duration may be divided into two or more pieces, while retaining the specified profile for resource requirements relative to this split duration. (June 2007)

SPOT MARKET PRICE INDEX – Daily index used as a measure of price movements of 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. (June 2007)

STAGE OF PROCESSING – A commodity's intermediate position in the value-added channel of production. (November 1990)

STAKEHOLDER – Decision makers, people or organizations that can affect or be affected by a decision. (December 2011)

STAKEHOLDER ANALYSIS – A process used to determine the degree of interest, influence and attitude of stakeholders toward a particular asset, project or business objective. (December 2011)

STAND ALONE – A system that performs its function requiring little or no assistance from interfacing systems. (June 2007)

STANDARD – A specific statement of the rules and constraints governing the naming, contents, and operations of deliverables. The rules and constraints are designed to support specific objectives. (June 2007)

STANDARD NETWORK DIAGRAM – A predefined network intended to be used more than one time in any given project. (November 1990)

STANDARD OPERATING PROCEDURE – Detailed step-by-step instructions for repetitive operations. Examples are aircraft takeoff and landing procedures. (June 2007)

STANDARD TIME – A measure of the time it should take a qualified worker to perform a particular task. (June 2007)

STARTING EVENT – Syn.: BEGINNING EVENT; PRECEDING EVENT; PREDECESSOR EVENT. (November 1990)

START EVENT OF A PROJECT – Event with succeeding, but no preceding activities. There may be more than one start event. (June 2007)

START FLOAT – Amount of excess time an activity has between its early start and late start dates. See also: FREE FLOAT. (June 2007)

START-TO-FINISH (SF) – A relationship in which the successor activity depends upon and can finish only after the predecessor activity starts. The predecessor must start first and then the successor can finish. (June 2007)

START-TO-START (SS) – A relationship between activities in which the start of a successor activity depends on the start of its predecessor. The predecessor must start prior to the successor starting. (June 2007)

START-TO-START LAG – Minimum amount of time that must pass between the start of one activity and the start of its successor(s). May be expressed in terms of duration or percentage. (June 2007)

STARTUP – The project activities (or phase) that take place between commissioning and the achievement of steady-state operation. In some usage, the term startup may include both commissioning (i.e., testing after mechanical completion) and startup (it may then be referred to as ‘startup and testing’); one must take care to ascertain what the user of this term means. Production may not be at planned capacity or quality at the end of the phase. See also: COMMISSIONING; MECHANICAL COMPLETION. (June 2007)

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. (November 1990)

STATEMENT OF WORK – A narrative description of the work to be performed. (June 2007)

STATIC RISK – Risk for which the characteristics, probability and/or impact do not change over time or with the occurrence of preceding events. See also: DYNAMIC RISK. (December 2011)

STATUS –
(1) Comparison of actual progress against the plan to determine variance and corrective action.
(2) An instantaneous snapshot of the then current conditions.
See also: PROGRESS. (June 2007)

STATUS DATE – The date that the schedule is statused through, earned value is calculated through, and actual costs are integrated with. In earned value, is also the date that variance analysis and baseline control is maintained against. See also: DATA DATE; TIME NOW. (October 2013)

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 also: DATA DATE. (November 1990)

STATUS REPORT –
(1) Description of where the project currently stands; part of the performance reporting process.
(2) Formal report on the input, issues, and actions resulting from a status meeting.
See also: PROGRESS REPORT. [8] (June 2007)

STATUSING – Syn.: SCHEDULE UPDATE (October 2018)

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. (November 1990)

STOP WORK ORDER – Request for interim stoppage of work due to non-conformance, or funding or technical limitations. See also: SUSPENSION OF WORK, DIRECTED. (June 2007)

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. (November 1990)

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. (January 2002)

STRATEGIC ASSET MANAGEMENT − A subprocess of the total cost management (TCM) process that includes the management of the total life cycle cost investment of resources in an enterprise's portfolio of strategic assets. Excludes, but integrated with, the project control process. See also: PROJECT CONTROL; STRATEGIC ASSET; TOTAL COST MANAGEMENT (TCM). (June 2007)

STRATEGIC RISK –
(1) A risk for which the potential impact threatens a project objective, even if the probability of occurrence is low or risk matrix severity rating is within screening thresholds. In projects, these risks are generally funded through management reserves.
(2) A risk that has a significant potential impact on enterprise, portfolio or other higher objectives or plans beyond the project level.
See also: TACTICAL RISK. (December 2011)

STRATEGY – Action plan to set the direction for the coordinated use of resources through programs, projects, policies, procedures, and organizational design and establishment of performance standards. [8] (June 2007)

STRETCHING – In resource scheduling it is possible to specify that an activity duration may be stretched if this results in an earlier scheduled finish date. This means that the specified duration may be increased, while the specified resource profile is reduced proportionally. (June 2007)

STUDY PERIOD – The length of time over which an investment is analyzed. Syn.: TIME HORIZON. See also: LIFE CYCLE. [1] (November 1990)

SUBCONTRACT – A contract that assigns some of the obligations of a prior contract to another party. (June 2007)

SUBCONTRACTOR – One that enters into a subcontract and assumes some of the obligations of the primary contractor. (June 2007)

SUBINDEX – A price index for a sub-aggregate of a given basket of commodities. (November 1990)

SUBMITTAL – A submittal (or vendor data) is a contractually-required document and/or sample that must be supplied to the owner's representative for review. It contains detailed information designed to help ensure that the proposed material and/or equipment meet the requirements of the contract documents. The submittal may be in the form of product data, shop drawings, samples, certifications, warrantees, or other requirements pertaining to the specified material and/or equipment will be installed in accordance with the requirements of the contract documents. (December 2016)

SUBMITTAL LOG – A detailed list of submittals sometimes grouped by specification section recording significant information such as dates when submitted to owner, returned, and when approval is obtained or required actions needed to obtain approval. (December 2016)

SUBMITTAL PACKAGE – A group of submittals required by a single specification section within the submittal log. Each package would include all of the submittals required within each specification section (e.g. mix design, product data, shop drawings, certifications, warrantees, etc.). (December 2016)

SUBMITTAL PROCESS – The process where the contracted party provides detailed information to the owner or their representative (i.e. architect, engineer, construction manager, or designer) as to required material and/or equipment to be installed as part of a project. (December 2016)

SUBMITTAL STATUS – A line item within the coordination meeting agenda that reports the status and issues of any particular submittal from preparation to delivery. (December 2016)

SUBNETWORK – Syn.: FRAGNET. (June 2007)

SUBNETWORK FLOAT – Total float on a fragnet when it is extracted from the overall network. This is relevant in dealing with delay issues particular to a certain subcontractor or a supplier responsible for only a part of the overall project. (June 2007)

SUBPROJECT –
(1) A smaller project within a larger one. Often used to segregate into components that are more manageable.
(2) Component of a project. Often contracted out to an external enterprise or another functional unit in the performing organization. [8] (June 2007)

SUBSTANTIAL COMPLETION –
(1) 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.
(2) For an activity, when the work is generally completed with the exception of minor remedial work, thus allowing any successor activities to start unimpeded. For a project this is the point where the work is complete and the owner can start using the project for its intended purpose. The only remaining work would be categorized as punch list work.
(3) The time when the facility is available to operate safely for the intended purpose. (June 2007)

SUBSTANTIAL PERFORMANCE – Considered to be reached when: 1) The work or a substantial part of it is ready for use or is being used for the purpose intended; 2) The work to be done under the contract can be completed or corrected at a cost of not more than, say, 1% to 3% of the contract price depending on the size of the contract; and 3) Is so certified by a certificate of substantial performance issued by client or its consultant. See also: SUBSTANTIAL COMPLETION. (June 2007)

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. (November 1990)

SUBTASK – Portion of a task or work element. [8] (June 2007)

SUCCESS TREE ANALYSIS (STA) – A risk analysis method used to evaluate risk opportunities employing a success tree which shows the combination of successful events leading to the success of parent event. See also: FAULT-TREE ANALYSIS. (December 2011)

SUCCESSOR – An activity that immediately succeeds another activity. (March 2004)

SUCCESSOR ACTIVITY – An activity, which logically follows the accomplishment of part or all of a given activity. (June 2007)

SUCCESSOR EVENT – The event that signifies the completion of an activity. (November 1990)

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), where n is the total anticipated life. Syn.: SUM-OF-THE-YEARS-DIGITS METHOD. (November 1990)

SUM-OF-THE-YEARS-DIGITS METHOD – Syn.: SUM-OF-DIGITS METHOD. (November 1990)

SUMMARY ITEM – An item appearing in the work breakdown structure. (November 1990)

SUMMARY LEVEL PLANNING PACKAGE (SLPP) – An optional budget level above the control account and below the reporting level to the owner. SLPPs have scope, schedule, and budget and are limited to significant outer year periods. They are allocated to control accounts and converted to planning packages at the earliest opportunity. (October 2013)

SUMMARY NETWORK – A summarization of the CPM network for presentation purposes. This network is not computed. (November 1990)

SUMMARY NUMBER – A number that identifies an item in the work breakdown structure. (November 1990)

SUMMARY SCHEDULE – A single page, usually time-scaled, project schedule. Typically included in management level progress reports. In earned value, it can be reconciled with the performance measurement baseline (PMB) schedule. See also: MASTER SCHEDULE; MILESTONE SCHEDULE. (October 2013)

SUMMARY TASK – A task that consists of a logical group of tasks, called subtasks. Primarily used for reporting purposes. See also: HAMMOCK ACTIVITY. (October 2013)

SUNK COST – A cost that has already been incurred and which should not be considered in making a new investment decision. [2] (November 1990)

SUPER-CRITICAL ACTIVITY – An activity that is behind schedule is considered to be super-critical. It has been delayed to a point where its float is calculated to be a negative value. See also: HYPERCRITICAL ACTIVITIES. (June 2007)

SUPERIOR KNOWLEDGE – Syn.: MISREPRESENTATION. (November 1990)

SUPPLEMENTARY CONDITIONS – The part of the contract documents which amends or supplements the general conditions. (November 1990)

SUPPLIER – A manufacturer, fabricator, distributor or vendor. (November 1990)

SURETY – A bonding company licensed to conduct business which guarantees the owner that the contract will be completed (performance bond) and that subcontractors and suppliers will be paid (payment bond). (November 1990)

SURVEILLANCE – A term used in an earned value management system (e.g. EVMS or C/SCSC) to mean the monitoring of continued compliance with an approved/validated management control system. (June 2007)

SUSPENSION OF WORK, CONSTRUCTIVE – An act or failure to act by the owner, or the owner's representative, which is not a directed suspension of work or work stoppage, but which has the effect of delaying, interrupting, or suspending all or a portion of the work. (November 1990)

SUSPENSION OF WORK, DIRECTED – Actions resulting from an order of the owner to delay, interrupt, or suspend any or all portions of the work for a given period of time, for the convenience of the owner. (November 1990)

SWOT – Acronym for a qualitative risk identification and assessment technique that reviews strengths, weaknesses, opportunities and threats. (December 2011)

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SYSTEM CONCEPT DOCUMENT – Syn.: CONCEPT DEFINITION DOCUMENT. (June 2007)

SYSTEMATIC ERROR – A form of error that is inherent to a system or process that limits prediction or forecast accuracy and is not attributed to chance but is repeatable. See also: BIAS; UNKNOWN UNKNOWN; EMERGENT RISK; RANDOM ERROR; NOISE.

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SYSTEMS DYNAMICS – Methods for studying the behavior of complex systems with feedback loops (e.g., chains of cause and effect). See also: DYNAMIC RISK. (December 2011)

SYSTEMS STUDIES – The development and application of methods and techniques for analyzing and assessing programs, activities and projects to review and assess efforts to date and to determine future courses and directions. These studies include cost/ benefit analysis, environmental impact analysis, assessment of the likelihood of technical success, forecasts of possible futures resulting from specific actions, and guidance for energy program planning and implementation. (November 1990)

TACTICAL RISK – Risk for which the potential impact does not significantly threaten an overall project objective or have a significant potential impact on enterprise, portfolio or other higher objectives or plans beyond the project level. See also: STRATEGIC RISK. (December 2011)

TAKE-OFF – A take-off is a specific type of quantification that is a measurement and listing of quantities of materials from drawings in order to support the estimate costing process and/or to support the material procurement process. See also: QUANTIFICATION. (January 2003)

TANGIBLES – Things that can be quantitatively measured or valued, such as items of cost and physical assets. (November 1990)

TARGET – A target is a measurement set for performance. In a project management sense, it typically refers to a project goal expressed in time or cost. (October 2013)

TARGET ACTIVITY – The activity being used to measure any resulting impact of the event, typically the contract milestone completion activity, but can be a contractually specified interim milestone. (June 2017)

TARGET DATE – Date imposed on an activity or project by the user or client that constrains or otherwise modifies the network analysis. There are two types: target start dates, and target finish dates. (June 2007)

TARGET FINISH DATE – A target date where the date imposed is on the finish date. See also: TARGET DATE. (June 2007)

TARGET PLAN – The target plan prioritized by critical total float taken from the current schedule. (June 2007)

TARGET REPORTING – A method of reporting the current schedule against some established base line schedule and the computations of variances between them. (November 1990)

TARGET RISK EXPOSURE – A term used to describe risk management goals. More specifically, the term is used to analyze and communicate discrete-time series risk data and potential changes in risk exposure. The target level of risk exposure describes the level of uncertainty that the project organization is willing to be exposed to. It should represent the result of all risk control or risk treatment measures, after they have been successfully employed, either at the time of reporting (if such controls have been fully implemented) or at an anticipated time in the future. See also: INHERENT RISK EXPOSURE; CURRENT RISK EXPOSURE; RESIDUAL RISK; ALARP.

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TARGET SCHEDULE – A schedule devised or selected as an objective measure against which actual performance can be gauged. See also: BASELINE SCHEDULE. (August 2007)

TARGET START DATE – A target date where the date imposed is on the start date. See also: TARGET DATE. (June 2007)

TASK –
(1) A cohesive, individual unit of work that is part of the total work needed to accomplish a project.
(2) Well-defined component of project work; a discrete work item. There are usually multiple tasks for one activity. [8] (June 2007)

TASK MONITOR – The individual assigned the monitoring responsibility for a major effort within the program. (November 1990)

TASK TYPES – Characterization of task by resource requirement, responsibility, discipline, jurisdiction, function, etc. (June 2007)

TAXES PAYABLE – Tax accruals due within a year. (November 1990)

TECHNICAL PERFORMANCE MEASUREMENT – A general term referring to the technical plan measurements of the program/project. Examples include Software Engineering Institute (SEI) metrics, technical plans, and specifications. These may be used in earned value as the integration points with the schedule. (October 2013)

TEMPLATE –
(1) A guideline for a document outline and its contents. A template is used to record the work activities, discussions, findings, and specification to help achieve a common understanding. In addition, it is used to provide a consistent look and feel to the project documentation. [8] Care must be taken with the use of templates to ensure that normal planning and schedule quality analysis and control processes are not bypassed or shortchanged.
(2) A document whose required content is predetermined and format is pre-structured, usually in some measure of detail, in order to speed its completion to a higher level of accuracy and uniformity. (August 2007)

TEMPORARY CONSTRUCTION COST – Includes costs of erecting, operating, and dismantling non-permanent facilities, such as offices, workshops, etc., and providing associated services such as utilities. (June 2007)

TERMINATION – Actions by the owner, in accordance with contract clauses, to end, in whole or in part, the services of the contractor. Termination may be for the convenience of the owner or for default by the contractor. (November 1990)

TERMS OF PAYMENT – Defines a specific time schedule for payment of goods and services and usually forms the basis for any contract price adjustments on those contracts that are subject to escalation. (November 1990)

THEORY OF CONSTRAINTS (TOC) – A four-step management philosophy developed by Dr. Eli Goldratt that involves: 1) Identifying the system's constraints; 2) Working to exploit those constraints (either through strengthening the constraint or getting maximum performance out of the key constraint); 3) Subordinating everything else to the above decision (given the key constraint, all operational decisions involve improving the processes as much as possible relative to this controlling constraint, e.g., a bottleneck in a production process); and 4) Working to elevate the constraint (improve or eliminate the bottleneck and then reexamine the system). Once the critical constraint is eliminated, a new constraint will arise to take its place. So, the process continues until the smallest level constraint

is identified that can impact on the whole system. In project management, the key constraint (using TOC ideas) is the critical path of the project since it determines the length of the project and hence is the key constraint. TOC is used in the critical chain approach as an alternative to CPM or PERT for determining the length of a project by using critical resource control and application. (June 2007)

THIRD PARTY CLAIM – A claim against either or both the owner or the contractor by members of the public, or other parties, usually for property damage or personal injury. (November 1990)

THREAT – In TCM risk management, an uncertainty that, if it occurs, will have an adverse or downside impact on an objective or objectives. In some usage (but not all), risks are considered synonymous with threats. (December 2011)

TIED ACTIVITY – An activity that must start within a specified time or immediately after its predecessor's completion or start. (November 1990)

TIME EXTENSION – An increase in contract time by modification or change order to complete an item of work. An excusable delay generally entitles a contractor to a time extension. Depending upon contract terms, the time extension may or may not be compensable. (June 2007)

TIME HORIZON – Syn.: STUDY PERIOD. (November 1990)

TIME IS OF THE ESSENCE – Contract requirement that completion of the work within the time limits in the contract is essential. Failure to do so is a breach for which the injured party is entitled to damages. (June 2007)

TIME LINE – Schedule line showing key dates and planned events. (June 2007)

TIME NOW – Syn. AS-OF-DATE; DATA DATE; UPDATE DATE. (October 2018)

TIME NOW LINE – The point in time that the network analysis is based upon. May or may not be the data date. See also: STATUS LINE. (November 1990)

TIME PHASING – Strategic pacing of project and overlapping between different activities or blocks of activities. For example, with the decision on whether or not to use rapid application development prototyping, concurrent engineering, simultaneous design, fast track, phased hand-over, etc. Phasing and overlapping of activities is also an important aspect of management team's skills. Properly done, it can have a significant positive impact on performance. (June 2007)

TIME UNIT – A unit of measure used in a scheduling calendar when modeling an activity duration, usually expressed in hours, days or weeks, but can also be shifts or even minutes. See also: CALENDAR UNIT. (June 2007)

TIME VALUE OF MONEY –
(1) The time-dependent value of money stemming both from changes in the purchasing power of money (that is, inflation or deflation), and from the real earning potential of alternative investments over time.
(2) The cumulative effect of elapsed time on the money value of an event, based on the earning power of equivalent invested funds.
(3) The expected interest rate that capital should or will earn.
See also: FUTURE WORTH; PRESENT WORTH. [2] (November 1990)

TIME-CONSTRAINED SCHEDULING – The network schedule calculations are constrained by the time allowed to complete the project as opposed to the resources available to do the work. (June 2007)

TIME-LIMITED RESOURCE SCHEDULING – Production of scheduled dates in which resource constraints may be relaxed in order to avoid any delay in project completion. (June 2007)

TIME-LIMITED SCHEDULING – The scheduling of activities so predetermined resource availability pools are not exceeded unless the further delay will cause the project finish to be delayed. Activities can be delayed only until their late start date. However, activities will begin when the late start date is reached, even if resource limits are exceeded. Networks with negative total float time cannot be processed by time-limited scheduling. (November 1990)

TIME-SCALED CPM – A plotted or drawn representation of a CPM network where the length of the activities indicates the duration of the activity as drawn to a calendar scale. Float is usually shown with a dashed line as are dummy activities. (November 1990)

TIME-SCALED LOGIC/NETWORK DRAWING (OR DIAGRAM) – Any project network diagram drawn in such a way that the positioning of the activity represents its expected start and finish date. Essentially, a Gantt chart that includes depiction of network logic. (June 2007)

TO COMPLETE PERFORMANCE INDEX (TCPI) – A metric that calculates the future efficiency necessary to meet a target. When compared with the cost performance index (CPI) it provides and assessment of the realism of obtaining the target. Absolute value variances of .1 or higher between the TCPI and the CPI indicate the target is not achievable. There are two variations of TCPI:
1) Budgeted Base = (budget at completion - budgeted cost of work performed)/(budget at completion - actual cost of work performed). This ratio is very limited and unrealistic when the estimate at completion (EAC) is not equal to the budget at completion (BAC). This calculates the efficiencies needed to meet the BAC.
2) EAC Base (more common) = (budget at completion - budgeted cost of work performed)/(estimate at completion - actual cost of work performed). This calculates the efficiencies necessary to achieve the EAC. This ratio is comparable with the CPI. (October 2013)

TORNADO CHART – In risk management, a graphical bar chart of quantitative risk analysis data that ranks the key risk drivers in descending order of impact or severity. (December 2011)

TOTAL ALLOCATED BUDGET (TAB) – The TAB is the total budget for the project. In earned value management according to the ANSI EIA 748 standard, it is always equal to performance measurement baseline (PMB) + management reserve (MR). In the absence of an over target baseline (OTB), TAB will equal the contract budget base (CBB). (October 2013)

TOTAL COST BIDDING – A method of establishing the purchase price of movable equipment. The buyer is guaranteed that maintenance will not exceed a set maximum amount during a fixed period and that the equipment will be repurchased at a set minimum price when the period ends. (November 1990)

TOTAL COST MANAGEMENT (TCM) – The effective application of professional and technical expertise to plan and control resources, costs, profitability and risks. Simply stated, it is a systematic approach to managing cost throughout the life cycle of any enterprise, program, facility, project, product, or service. This is accomplished through the application of cost engineering and cost management principles, proven methodologies and the latest technology in support of the management process. Can also be considered the sum of the practices and processes that an enterprise uses to manage the total life cycle cost investment in its portfolio of strategic assets. (January 2002)

TOTAL FLOAT (TF) –
(1) The maximum number of work periods by which an activity can be delayed without delaying project completion or violating a target (milestone) finish date.

(2) The number of work periods the start or finish of an activity can be delayed without affecting the project finish date. Float is measured in hours, days, weeks, or months depending on the project's planning unit, and can have negative, zero, or positive values. [14]
(3) The amount of time a task can be delayed without delaying the finish date of the project. [15] (June 2007)

TOTAL QUALITY MANAGEMENT (TQM) – The consistent integrated orchestration of the total complex of an organization's work processes and activities to achieve continuous improvement in the organization's processes and products. (November 1990)

TRACEABILITY – In earned value, traceability consists of two required relationships in the schedule; horizontal and vertical traceability. These are defined as follows:

1. TRACEABILITY, HORIZONTAL TRACEABILITY – The logic links in the schedule that insure that discrete work is linked to tasks that impact project completion.
2. TRACEABILITY, VERTICAL TRACEABILITY – A scheduling term indicating that tasks at lower levels will be shown consistent with higher levels. All tasks at the lowest schedule level should be consistent with the higher level schedule timeframes. Typically, this is insured with relationships or specific integration milestones. (October 2013)

TRACKING – Form of monitoring applied. (June 2007)

TRANSFER – In TCM risk management, a risk response strategy that involves transferring a threat(s) to a competent third party who is better able to manage it. (December 2011)

TRANSFER PRICE – A term used in economic analysis in the mineral processing industries. Used to assign a value to raw materials when the same company does the mining and processing, Usually equal to the fair market value. (November 1990)

TREND – In project control, a general tendency of events, conditions, performance, etc. In a change management system, a trend is the first indication of potential change that must be tracked and properly dealt with. A trend may later be identified as a deviation (not normally reimbursable) or a change (which is typically reimbursable in time and or money). Syn.: PROGRESS TREND. (June 2007)

TREND ANALYSES – Mathematical methods for studying trends based on past project history allowing for adjustment, refinement or revision to predict cost. Regression analysis techniques can be used for predicting cost/schedule trends using historical data. (June 2007)

TREND LINE – A line on a schedule or chart showing the pattern of progress that is being set over time, i.e. from measurement period to measurement period. (June 2007)

TREND MONITORING – A system for tracking estimated cost-schedule-resources of a project vs. those planned. (June 2007)

TREND REPORTS – Indicators of variations of project control parameters or measures against planned objectives or measures. (June 2007)
TRENDING – A review of current progress compared to last reported progress which, when displayed graphically, shows whether a course correction is necessary to achieve the baseline plan. (June 2007)

TURNOVER − Syn.: DELIVERY. (June 2007)

TURNOVER RATIO – The ratio of annual sales to investment. Inclusion of working capital is preferable, but not always done. Turnover ratio is considered by some to be reasonable basis for a guesstimate of facilities cost, for new

products similar to existing products. It ranges around 1.0 for many chemical plants. The product of turnover ratio and profit margin on sales gives a return-on-investment measure. (November 1990)

UNBALANCING – A technique used in the pricing process to allocate estimated costs to accounts whose definitions do not fully reflect the nature of the cost being allocated. The purpose of unbalancing is to achieve a business result that influences cash flow. For example, a disproportionate amount of overhead costs may be allocated in a contract bid to early project activities so that a contractor's early income would be increased. See also: FRONT END LOADING (FEL). (August 2022)

UNCERTAINTY – In TCM, a term that may have various meanings for which the convention used in any specific application should be clearly stated to avoid misunderstanding. It can mean any of the following:
(1) A synonym for all risk, including all events and conditions both positive and negative whose probabilities of occurrence are neither 0% nor 100%.
(2) The total range of events and conditions that may happen and produce risks (including both threats and opportunities) affecting a project. (Uncertainty = threats + opportunities.)
(3) Background variability, with a probability of occurrence of 100%, that may typically result from causes such as:
(a) inherent variability of the work,
(b) estimating error or error of prediction, and
(c) bias in estimation or prediction.
See also: UNCERTAINTY, KNIGHTIAN; RISK; RISK, BACKGROUND; RISK EVENT, DISCRETE; UNCERTAINTY, GENERAL ESTIMATE; UNCERTAINTY, CONTINUOUS; UNCERTAINTY, DISCONTINUOUS; COMMON CAUSE VARIATION; RANDOM ERROR.

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UNCERTAINTY, CONTINUOUS – Continuous uncertainty, typically associated with general estimate uncertainty i.e., one hundred percent likely to cause divergence, either positive or negative, from planned objectives or goals. See also: COMMON CAUSE VARIATION; INHERENT VARIABILITY; RISK, BACKGROUND; CONDITION, RISK; UNCERTAINTY, GENERAL ESTIMATE; UNKNOWN KNOWN; RANDOM ERROR; NOISE; UNCERTAINTY; UNCERTAINTY, DISCONTINUOUS; EMERGENT RISK; CONTINUAL RISK MANAGEMENT; CHANGE.

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UNCERTAINTY, DISCONTINUOUS – Discontinuous uncertainty is a subclass of overarching Knightian uncertainty, typically associated with discrete risk events i.e., less than one hundred percent likely to cause divergence from planned objectives or goals. See also: RISK EVENT, DISCRETE; RISK, CONTINGENT; KNOWN UNKNOWN; RANDOM ERROR; NOISE; EMERGENT RISK; CONTINUAL RISK MANAGEMENT; CHANGE.

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UNCERTAINTY, GENERAL ESTIMATE – General estimate uncertainty is typically associated with continuous uncertainty or unknown knowns. Addressing inherent variability associated with either monetary or duration estimates, this form of uncertainty addresses underlying conditions, usually associated with known scope. Contingency estimated for general estimate uncertainty is typically utilized to fund small or foreseeable changes to project scope. See also: INHERENT VARIABILITY; RISK, BACKGROUND; CONDITION, RISK; UNCERTAINTY, CONTINUOUS; UNKNOWN KNOWN; RANDOM ERROR; NOISE; COMMON CAUSE VARIATION; UNCERTAINTY, KNIGHTIAN; UNCERTAINTY; UNCERTAINTY, DISCONTINUOUS; EMERGENT RISK; CONTINUAL RISK MANAGEMENT; CHANGE.

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UNCERTAINTY, KNIGHTIAN – Knightian uncertainty refers to risks that cannot be quantified or measured due to a lack of historical data or understanding. See also: UNCERTAINTY; UNCERTAINTY, GENERAL ESTIMATE; KNOWN UNKNOWN; RISK; RISK EVENT, DISCRETE.

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UNDERGROUND FACILITIES – All pipelines, conduits, ducts, cables, wires, utility access-ways, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water. (November 1990)

UNDISTRIBUTED BUDGET (UB) – In earned value management according to the ANSI EIA 748 standard, it is the amount of budget temporary held before distribution to lower levels of the performance measurement baseline (PMB). UB is a part of the PMB and held for changes not able to be adequately planned at the control account or summary planning package levels. UB is not scheduled however has scope, schedule and budget integration. (October 2013)

UNIMPACTED SCHEDULE – The reviewed contract CPM schedule with a data date just prior to the event being analyzed. This may be the current baseline schedule or a progress updated baseline schedule. See also: IMPACTED SCHEDULE. (June 2017)

UNION – An organization of wage earners formed for the purpose of serving the members' interests with respect to compensation and working conditions. (June 2007)

UNIT COST – The cost of a given unit of a product or service. (June 2007)

UNIT HOURS – Work hours per unit of production. (June 2007)

UNJUST ENRICHMENT DOCTRINE – The belief in law that one person should not be allowed to profit or enrich himself or herself unfairly at the expense of another person. (November 1990)

UNKNOWN KNOWN – In TCM, an unknown known, refers to information, data, knowledge, or experience that may be present but are either unnoticed, not communicated, or undervalued. Often, addressing unknown knowns leads to better-informed decision and risk evaluations. See also: UNCERTAINTY, CONTINUOUS; INHERENT VARIABILITY; RISK, BACKGROUND; CONDITION, RISK; COMMON CAUSE VARIATION; RANDOM ERROR; NOISE; EMERGENT RISK; SYSTEMATIC ERROR; BIAS; CONTINUAL RISK MANAGEMENT; CHANGE.

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UNKNOWN UNKNOWN – A term that may have various meanings for which the convention used in any specific application should be clearly stated to avoid misunderstanding. It can mean any of the following:

(1) A quantity, value or condition that cannot be identified or foreseen, otherwise referred to as unknowable.
(2) A category of unidentified risk that is, by its very nature unforeseeable, and likely to cause harm in the absence of adequate resiliency or preparedness plans. Only fully revealed or understood in hindsight. Traditionally, this category of risk has been considered outside the remit of project controls but, with increasing knowledge and available data, funding or other action can be created to provide resiliency and minimize the potential for this form of risk event to be underestimated.

See also: EMERGENT RISK; SYSTEMATIC ERROR; BIAS; CONTINUAL RISK MANAGEMENT.

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UNLIMITED SCHEDULE – Infinite schedule, schedule produced without resource constraint. (June 2007)

UNUSUALLY ADVERSE WEATHER DAY – Expressed as the number of days of actual adverse weather that stopped or impacted a project above what was originally planned prior to the start of the project. From a contractual delay analysis standpoint, those days are compared to the number of days originally planned for in the schedule to identify excusable time extensions; i.e.: weather that negatively affects the project production in excess of the expected normal or adverse weather. See also: ADVERSE WEATHER; NORMAL WEATHER; PLANNED ADVERSE WEATHER DAY; SEVERE WEATHER; WEATHER DAY: WEATHER EVENT; WEATHER PREPARATION DAY; WEATHER RECOVERY DAY. (September 2015)

UPDATING – The regular review, analysis, evaluation, and reporting of progress of the project, including recomputation of an estimate or schedule. See also: STATUSING. (November 1990)

UPDATE – To revise the estimate, schedule or other planning deliverable to reflect the most current information on the project. (June 2007)

UPDATE DATE – Syn.: AS-OF DATE; DATA DATE; TIME NOW. (October 2018)

USEFUL LIFE – The period of time over which an investment is considered to meet its original objective. [1] (November 1990)

USER – The consumer of a service or product, sometimes but not always a project owner. See also: CUSTOMER. (August 2007)

VALIDATION – Testing to confirm that a product or service satisfies user or stakeholder needs. Note difference from verification. (August 2007)

VALUATION OR APPRAISAL – The art of estimating the fair-exchange value of specific properties. (November 1990)

VALUE, ACTIVITY – That portion of the contract price which represents a fair value for the part of the work identified by that activity. (November 1990)

VALUE ADDED BY DISTRIBUTION – The portion of the value of a product or service to the consumer or user which results from distribution activities. This value includes such components as time utility and place utility. (November 1990)

VALUE ADDED BY MARKETING – That portion of the value of a product or service to the consumer or user which results from marketing activities. This value includes such components as price reduction through economies of scale and buyer awareness of more desirable innovations in products or services. (November 1990)

VALUE OF PERFECT INFORMATION – In decision or risk analysis, a measure of what a decision maker should be willing to invest to reduce the amount of uncertainty associated with one or more decision or risk drivers. See also: DECISION DRIVER; PERFECT (AND IMPERFECT) INFORMATION; RISK DRIVERS. (December 2011)

VALUE OF WORK PERFORMED TO DATE – The planned cost for completed work. (November 1990)

VALUE EFFECTIVE – Generally used to describe decisions which have a cost impact; value-effective decisions tend to optimize the value received for the decision made and to maximize return on investments. (November 1990)

VALUE ENGINEERING – A practice function targeted at the design itself, which has as its objective the development of design of a facility or item that will yield least life-cycle costs or provide greatest value while satisfying all performance and other criteria established for it. (November 1990)

VALUE ENGINEERING COST AVOIDANCE – A decrease in the estimated overall cost for accomplishing a function. (November 1990)

VALUE ENGINEERING COST REDUCTION – A decrease in the committed and/or established overall cost for accomplishing a function. (November 1990)

VALUE ENGINEERING JOB PLAN – An aid to problem recognition, definition, and solution. It is a formal, step-by-step procedure followed in carrying out a value engineering study. (November 1990)

VARIABLE COSTS – Those costs that are a function of production, e.g., raw materials costs, by-product credits, and those processing costs that vary with plant output (such as utilities, catalysts and chemical, packaging, and labor for batch operations). (November 1990)

VARIANCE – The difference between what was originally expected and what actually happened. See also: COST VARIANCE; SCHEDULE VARIANCE. (June 2007)

VARIANCE ANALYSIS – Analysis of the following: (1) Cost variance = BCWP – ACWP; (2) Percent over/under = 100 x (ACWP – BCWP)/BCWP; (3) Unit variance analysis; (4) Labor rate; (5) Labor hours/units of work accomplished; (6) Material rate; (7) Material usage; and (8) Schedule variance = BCWP – BCWS. See also: SCHEDULE VARIANCE. (June 2007)

VARIANCE AT COMPLETION (VAC) – The schedule or budget at completion less the estimate at completion. A negative result indicates that the project is exceeds schedule or budget contractual obligations. See also: VARIANCE AT COMPLETION [VAC(t)]. (October 2013)

VARIANCE AT COMPLETION [VAC(t)] – The difference between the baseline project duration and the estimated project duration in time increments. See also: VARIANCE AT COMPLETION (VAC). (November 2014)

VARIANCE THRESHOLD – In earned value, it is the schedule, cost, and at-complete variance amounts at which formal variance analysis and typically a variance analysis report (VAR) is required. Below the threshold is typically not reportable. (October 2013)

VARIATION IN ESTIMATED QUANTITY – The difference between the quantity estimated in the bid schedule and the quantity actually required to complete the bid item. Negotiation or adjustment for variations is generally called for when an increase or decrease exceeds 15 percent. (November 1990)

VELOCITY DIAGRAM – A graphical presentation of production schedules, which shows the relationship of the output of work crews/equipment spreads as a function of time. (June 2007)

VENTURE LIFE – The total time span during which expenditures and/or reimbursements related to the venture occur. Venture life may include the research and development, construction, production and liquidation periods. Syn.: FINANCIAL LIFE. (November 1990)

VENTURE WORTH – Present worth of cash flows above an acceptable minimum rate, discounted at the average rate of earnings. (November 1990)

VERIFICATION – Testing to confirm that a product or service meets specifications. (August 2007)

VERTICAL EVENT NUMBERING – Assigning event numbers in vertical order. (November 1990)

WAGE RATE – Syn.: LABOR COST. (June 2007)

WATCH LIST – In risk control, a list of risk triggers and/or risks to be tracked or monitored. May refer to one usage of a risk register. See also: RISK REGISTER; RISK TRIGGER. (December 2011)

WBS DICTIONARY – A document that describes each element in the work breakdown structure (WBS) including a statement of work (SOW), describing work content of each WBS element, and a basis of estimate (BOE), documenting each element's budget. Additional information may include responsible organization, contract number, etc. The WBS dictionary will often result in a project or contract statement of work (SOW). See also: WORK BREAKDOWN STRUCTURE (WBS). (June 2007)

WEATHER DAY – A work day that was stopped and/or had appreciably hindered work progress due to a weather event. See also: ADVERSE WEATHER; NORMAL WEATHER; PLANNED ADVERSE WEATHER DAY; SEVERE WEATHER; UNUSUALLY ADVERSE WEATHER DAY; WEATHER EVENT; WEATHER PREPARATION DAY; WEATHER RECOVERY DAY. (September 2015)

WEATHER EVENT – A storm or significant weather condition that stops or appreciably hinders work until it has passed or the effects of the weather condition have dissipated. This may include rain, rising water, snow, ice, extreme cold, high winds, extreme heat and/or high humidity, or other weather related occurrence. The weather event may not be localized at the site as in the case of flood water from an upstream rain event or preparations for a hurricane that does not actually pass through the site. See also: ADVERSE WEATHER; NORMAL WEATHER; PLANNED ADVERSE WEATHER DAY; SEVERE WEATHER; UNUSUALLY ADVERSE WEATHER DAY; WEATHER DAY; WEATHER PREPARATION DAY; WEATHER RECOVERY DAY. (September 2015)

WEATHER PREPARATION DAY – A day where planned work progress ceases going forward or is significantly impeded while the project makes preparation for an upcoming weather event, e.g. boarding up windows before a hurricane, making the site safe by securing loose materials and unfinished structures and dismantling or securing cranes from expected high winds to mitigate any potential damage to the work. See also: ADVERSE WEATHER; NORMAL WEATHER; PLANNED ADVERSE WEATHER DAY; SEVERE WEATHER; UNUSUALLY ADVERSE WEATHER DAY; WEATHER DAY; WEATHER EVENT; WEATHER RECOVERY DAY. (September 2015)

WEATHER RECOVERY DAY – A day where a project is unable to resume work due to the after-effects of a weather event such as excessive flooding and mud after a rain storm. This would also include the time necessary to duplicate the status just prior to the weather event. See also: ADVERSE WEATHER; NORMAL WEATHER; PLANNED ADVERSE WEATHER DAY; SEVERE WEATHER; UNUSUALLY ADVERSE WEATHER DAY; WEATHER DAY; WEATHER EVENT; WEATHER PREPARATION DAY. (September 2015)

WEIGHTS – Numerical modifiers used to infer importance of commodities in an aggregative index. (November 1990)

WORK – Any and all obligations, duties, responsibilities, labor, materials, equipment, temporary facilities, and incidentals, and the furnishing thereof necessary to complete the construction which are assigned to, or undertaken by the contractor, pursuant to contract documents. In addition, the entire completed construction or various separately identifiable parts thereof required to be furnished under the contract documents. Work results from performing services, furnishing labor, and furnishing and incorporating materials and equipment into the construction, all as required by contract documents. (June 2007)

WORK BREAKDOWN STRUCTURE (WBS) –

(1) Framework for organizing and ordering the activities that makes up a project. Systematic approach to reflect a top-down product-oriented hierarchy structure with each lower level providing more detail and smaller elements of the overall work.
(2) A product-oriented family tree division of hardware, software, facilities and other items which organizes, defines and displays all of the work to be performed in accomplishing the project objectives. Some variations include the following:

1. WORK BREAKDOWN STRUCTURE (WBS), PROJECT WORK BREAKDOWN STRUCTURE (PWBS) – A summary WBS tailored by project management to the specific project with the addition of the elements unique to the project.
2. WORK BREAKDOWN STRUCTURE (WBS), CONTRACT WORK BREAKDOWN STRUCTURE (CWBS) – A work breakdown structure of the products or services to be furnished under contract. It is comprised of selected PWBS (program / project WBS) elements specified in the contractual document and the contractor's lower level extensions of those elements. [7] (October 2013)

WORK BREAKDOWN STRUCTURE ELEMENT – Any one of the individual items or entries in the WBS hierarchy, regardless of level. (November 1990)

WORK BREAKDOWN STRUCTURE LEVELS – The arrangement or configuration of a work breakdown structure, which establishes an indenture of projects to programs, systems to projects, subsystems to systems, etc. [7] (June 2007)

WORK CATEGORY – A division of work according to some distinct characteristics, such as the trade involved, e.g., mechanical, electrical, etc. See also: CODE OF ACCOUNTS (COA). (June 2007)

WORK DIRECTIVE CHANGE – A written directive to the contractor, issued on or after the effective date of the agreement and signed by the owner and recommended by the engineer ordering an addition, deletion or revision in the work, or responding to differing or unforeseen physical conditions or emergencies under which the work is to be performed as provided in the general conditions. A work directive change may not change the contract price or the contract time but is evidence that the parties expect that the change directed or documented by a work directive change will be incorporated in a subsequently issued change order following negotiations by the parties as to its effect, if any, on the contract price or contract time. Syn. CHANGE DIRECTIVE. (May 2021)

WORK FLOW – Relationship of the activities from start to finish. Work flow takes into consideration all types of activity relationships. (June 2007)

WORK ITEM –
(1) The precedence notation equivalent of an activity.
(2) A portion of the project that can be clearly identified and isolated.
See also: ACTIVITY. (June 2007)

WORK PACKAGE –
(1) A segment of effort or work scope required to complete a specific job which is within the responsibility of a single unit within the performing organization.
(2) In earned value management, it is the level at which EV (or BCWP) is assessed and schedule variance is calculated. A work package has schedule, and resources. (January 2016)

WORK PATTERN – An established and recognizable flow of work. (June 2007)

WORK POWER LEVELING – Syn.: LOAD LEVELING. (November 1990)

WORK SAMPLING – A direct method of measuring and monitoring labor productivity so that labor resources can be minimized and wasted effort eliminated from work processes. Work sampling provides information about the work

process (i.e., how work is done) in a way that supports statistical assessment of such processes in order to optimize productivity. (January 2004)

WORK SITE – The area designated in the contract where the facility is to be constructed. (November 1990)

WORK UNIT – A unit of time used to estimate the duration of activities. (November 1990)

WORK-IN-PROCESS –
(1) In manufacturing, product in various stages of completion throughout the factory, including raw material that has been released for initial processing and completely processed material awaiting final inspection and acceptance as finished product or shipment to a customer. Many accounting systems also include semi-finished stock and components in this category.
(2) In projects, product or deliverables in various stages of completion throughout the duration of a project.
Syn.: IN-PROGRESS INVENTORY. (June 2007)

WORKAROUND –
(1) An alternative solution to a potential problem. An unplanned response (that requires its own plan) to a negative event that may be accomplished in less than optimal conditions leading to productivity losses.
(2) Ad hoc action to overcome an unexpected condition or situation that would otherwise delay completion, in order to enable the work to be timely finished or finished sooner than could occur without the action.
See also: RECYCLE; REWORK. (August 2007)

WORKDAY – Any days when work can be scheduled (i.e., that are not rest days or holidays). (January 2012)

WORKER – A definition of the behavior and responsibilities of an individual. The worker represents a role played by individuals on a project and defines how they carry out work. (June 2007)

WORKHOUR – Syn.: LABOR HOUR. (June 2007)

WORKHOUR ANALYSIS – An analysis of planned versus actual staffing of the project used to determine work progress, productivity rates, staffing of the project, etc. (June 2007)

WORKING CALENDAR – The total calendar dates that cover all project activities, from start to finish. (June 2007)

WORKLOAD FACTOR – The amount of work assigned to or expected from a worker during a specified time period expressed as a multiplier of the 'standard' crew's productivity with 1.0 equal to the same productivity; and 2.0 equal to one half of the standard productivity. (January 2012)

WORKWEEK – The calendar that describes the number of workdays in a typical week. (June 2007)

WORTH – The worth of an item or groups of items, as in a complete facility, is determined by the return on investment compared to the amount invested. The worth of an item is dependent upon the analysis of feasibility of the entire item or group or items under discussion (or examination). (November 1990)

WRITTEN AMENDMENT – A written amendment of the contract, executed by the parties on or after the effective date of the agreement and normally dealing with the non-engineering or non-technical rather than strictly work-related aspects of the contract. (June 2007)

YIELD – The ratio of return or profit over the associated investment, expressed as a percentage or decimal usually on an annual basis. See also: RATE OF RETURN. (November 1990)

ZERO FLOAT – A condition where there is no excess time between activities. An activity with zero float is considered a critical activity. If the duration of any critical activity is increased (the activity slips), the project finish date will slip. An activity has zero float when the early and late start/finish dates equal each other. Activities with zero float are considered to be on the critical path(s) of the project even when there are activities with negative float. (June 2007)

REFERENCES

1. ASTM Standard No E833. (Reprinted, with permission, from the Annual Book of ASTM Standards, copyright American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. ASTM terminology may not be reproduced in any form whatsoever without the expressed written consent of ASTM.)
2. Based in part upon ASTM Standard No. E833 with modifications
3. US Department of Defense
4. PMI Representative
5. Various Bechtel project controls presentations and publications
6. Construction Management Association of America (CMAA)
7. NASA Work Breakdown Structure Reference Guide, May 1994
8. Oregon Department of Human Services – PMO Glossary
9. Westinghouse Savannah River Company EVMS Pocket Guide
10. *Construction Delay Claims*, Third Edition, Barry B. Bramble, Esq., Michael T. Callahan, Esq., Aspen Publishers, New York, NY, 2006
11. *Construction Scheduling: Preparation, Liability & Claims*, Second Edition, Jon M. Wickwire, Esq., Thomas J. Driscoll, Stephen B. Hurlbut, Esq., Scott B. Hillman, Esq., Aspen Publishers, New York, NY, 2006
12. *SCL Delay and Disruption Protocol*, Society of Construction Law, Oxon, United Kingdom, 2002
13. *How to Get Paid for Construction Changes: Preparation and Resolution Tools and Techniques*, Steven S. Pinnell, McGraw-Hill, New York, NY, 1998
14. Primavera Project Planner Documentation
15. Microsoft Project Documentation