

# Standard Glossary of Terms used in Software Testing

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## All Terms

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International Software Testing Qualifications Board

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### **abnormal end**

**Ref:** After ISO 24765

**Synonyms:** abnormal termination

The unintended termination of the execution of a component or system prior to completion.

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### **abuse case**

**See Also:** use case

A use case in which some actors with malicious intent are causing harm to the system or to other actors.

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### **acceptance criteria**

**Ref:** ISO 24765

The criteria that a component or system must satisfy in order to be accepted by a user, customer, or other authorized entity.

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### **acceptance test-driven development (ATDD)**

A collaborative approach to development in which the team and customers are using the customers own domain language to understand their requirements, which forms the basis for testing a component or system.

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### **acceptance testing**

A test level that focuses on determining whether to accept the system.

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### **accessibility**

**Ref:** After ISO 25010

The degree to which a component or system can be used by people with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use.

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### **accessibility testing**

**Ref:** Gerrard

Testing to determine the ease by which users with disabilities can use a component or system.

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### **account harvesting**

The process of obtaining user account information based on trial and error with the intention of using that information in a security attack.

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### **accountability**

**Ref:** After ISO 25010

The degree to which the actions of an entity can be traced uniquely to that entity.

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### **acting (IDEAL)**

**See Also:** IDEAL

The phase within the IDEAL model where the improvements are developed, put into practice, and deployed across the organization. The acting phase consists of the activities: create solution, pilot/test solution, refine solution and implement solution.

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### **actual result**

**Synonyms:** actual outcome

The behavior produced/observed when a component or system is tested.

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## ad hoc review

**Ref:** After ISO 20246

A review technique performed informally without a structured process.

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## adaptability

**Ref:** After ISO 25010

The degree to which a component or system can be adapted for different or evolving hardware, software or other operational or usage environments.

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## Agile Manifesto

A statement on the values that underpin Agile software development. The values are: individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, responding to change over following a plan.

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## Agile software development

A group of software development methodologies based on iterative incremental development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.

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## Agile testing

**See Also:** test-driven development

Testing practice for a project using Agile software development methodologies, incorporating techniques and methods, such as extreme programming (XP), treating development as the customer of testing and emphasizing the test-first design paradigm.

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## alpha testing

A type of acceptance testing performed in the developer's test environment by roles outside the development organization.

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## analytical test strategy

A test strategy whereby the test team analyzes the test basis to identify the test conditions to cover.

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## analyzability

**Ref:** After ISO 25010

The degree to which an assessment can be made for a component or system of either the impact of one or more intended changes, the diagnosis of deficiencies or causes of failures, or the identification of parts to be modified.

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## anomaly

**Ref:** IEEE 1044

Any condition that deviates from expectation based on requirements specifications, design documents, user documents, standards, etc., or from someone's perception or experience. Anomalies may be found during, but not limited to, reviewing, testing, analysis, compilation, or use of software products or applicable documentation.

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## anti-malware

**See Also:** malware

Software that is used to detect and inhibit malware.

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## anti-pattern

Repeated action, process, structure or reusable solution that initially appears to be beneficial and is commonly used but is ineffective and/or counterproductive in practice.

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## API testing

Testing performed by submitting commands to the software under test using programming interfaces of the application directly.

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## appropriateness recognizability

**Ref:** After ISO 25010

**Synonyms:** understandability

The degree to which users can recognize whether a component or system is appropriate for their needs.

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## assessment report

**See Also:** process assessment

A document summarizing the assessment results, e.g., conclusions, recommendations and findings.

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## assessor

A person who conducts an assessment. Any member of an assessment team.

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## atomic condition

A condition that does not contain logical operators.

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## attack vector

A path or means by which an attacker can gain access to a system for malicious purposes.

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## attacker

**See Also:** hacker

A person or process that attempts to access data, functions or other restricted areas of the system without authorization, potentially with malicious intent.

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## audio testing

Testing to determine if the game music and sound effects will engage the user in the game and enhance the game play.

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## audit

**Ref:** After IEEE 1028

An independent examination of a work product or process performed by a third party to assess whether it complies with specifications, standards, contractual agreements, or other criteria.

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## authentication

**See Also:** authorization

A procedure determining whether a person or a process is, in fact, who or what it is declared to be.

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## authenticity

**Ref:** ISO 25010

The degree to which the identity of a subject or resource can be proved to be the one claimed.

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## authorization

**See Also:** authentication

Permission given to a user or process to access resources.

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## automation code defect density

**See Also:** defect density

Defect density of a component of the test automation code.

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## automotive safety integrity level (ASIL)

**Ref:** ISO 26262

One of four levels that specify the item's or element's necessary requirements of ISO 26262 and safety measures to avoid an unreasonable residual risk.

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## automotive SPICE (ASPICE)

**Ref:** Automotive SPICE

A process reference model and an associated process assessment model in the automotive industry that conforms with the requirements of ISO/IEC 33002:2015.

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## availability

**Ref:** After ISO 25010

The degree to which a component or system is operational and accessible when required for use.

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## back-to-back-testing

**Ref:** Spillner

Testing to compare two or more variants of a test item or a simulation model of the same test item by executing the same test cases on all variants and comparing the results.

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## balanced scorecard

**See Also:** corporate dashboard, scorecard

A strategic tool for measuring whether the operational activities of a company are aligned with its objectives in terms of business vision and strategy.

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## behavior-driven development (BDD)

A collaborative approach to development in which the team is focusing on delivering expected behavior of a component or system for the customer, which forms the basis for testing.

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## beta testing

A type of acceptance testing performed at an external site to the developer's test environment by roles outside the development organization.

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## black-box test technique

**Synonyms:** black-box technique, specification-based technique, specification-based test technique

A test technique based on an analysis of the specification of a component or system.

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## botnet

A network of compromised computers, called bots or robots, which is controlled by a third party and used to transmit malware or spam, or to launch attacks.

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## boundary value

A minimum or maximum value of an ordered equivalence partition.

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## boundary value analysis

A black-box test technique in which test cases are designed based on boundary values.

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## boundary value coverage

The coverage of boundary values.

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## branch

A transfer of control from a decision point.

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## branch coverage

The coverage of branches.

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## bug hunting

An approach to testing in which gamification and awards for defects found are used as a motivator.

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## build verification test (BVT)

A set of automated tests which validates the integrity of each new build and verifies its key/core functionality, stability and testability.

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## call graph

An abstract representation of calling relationships between subroutines in a program.

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## Capability Maturity Model Integration (CMMI)

**Ref:** CMMI

A framework that describes the key elements of an effective product development and maintenance process. The Capability Maturity Model Integration covers best-practices for planning, engineering and managing product development and maintenance.

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## capacity

**Ref:** After ISO 25010

The degree to which the maximum limits of a component or system parameter meet requirements.

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## capacity testing

Testing to evaluate the capacity of a system.

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## capture/playback

**Synonyms:** capture/replay, record/playback

A test automation approach in which inputs to the test object are recorded during manual testing to generate automated test scripts that can be executed later.

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## capture/playback tool

**Synonyms:** capture/replay tool, record/playback tool

A type of test execution tool where inputs are recorded during manual testing in order to generate automated test scripts that can be executed later (i.e. replayed). These tools are often used to support automated regression testing.

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## cause-effect diagram

**Ref:** After Juran

**Synonyms:** fishbone diagram, Ishikawa diagram

A graphical representation used to organize and display the interrelationships of various possible root causes of a problem. Possible causes of a real or potential defect or failure are organized in categories and subcategories in a horizontal tree-structure, with the (potential) defect or failure as the root node.

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## cause-effect graph

A graphical representation of logical relationships between inputs (causes) and their associated outputs (effects).

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## cause-effect graphing

**Synonyms:** cause-effect analysis

A black-box test technique in which test cases are designed from cause-effect graphs.

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## certification

The process of confirming that a component, system or person complies with its specified requirements.

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## change management

(1) A structured approach to transitioning individuals and organizations from a current state to a desired future state. (2) Controlled way to effect a change, or a proposed change, to a product or service.

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## change-related testing

A type of testing initiated by modification to a component or system.

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## checklist-based review

**Ref:** ISO 20246

A review technique guided by a list of questions or required attributes.

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## checklist-based testing

An experience-based test technique whereby the experienced tester uses a high-level list of items to be noted, checked, or remembered, or a set of rules or criteria against which a product has to be verified.

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## classification tree

A tree diagram representing test data domains of a test object.

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## classification tree technique

**Ref:** Grochtmann

**Synonyms:** classification tree method

A black-box test technique in which test cases are designed using a classification tree.

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## CLI testing

Testing performed by submitting commands to the software under test using a dedicated command-line interface.

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## closed-loop-system

**Ref:** Bakshi

A system in which the controlling action or input is dependent on the output or changes in output.

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## co-existence

**Ref:** After ISO 25010

The degree to which a component or system can perform its required functions while sharing an environment and resources with other components or systems without a negative impact on any of them.

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## code coverage

The coverage of code.

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## code injection

**See Also:** malware scanning, SQL injection

A type of security attack performed by inserting malicious code at an interface into an application to exploit poor handling of untrusted data.

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## codependent behavior

Excessive emotional or psychological dependence on another person, specifically in trying to change that person's current (undesirable) behavior while supporting them in continuing that behavior. For example, in software testing, complaining about late delivery to test and yet enjoying the necessary "heroism", working additional hours to make up time when delivery is running late, therefore reinforcing the lateness.

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## coding standard

**Ref:** ISO 24765

A standard that describes the characteristics of a design or a design description of data or program components.

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## combinatorial testing

A black-box test technique in which test cases are designed to exercise specific combinations of values of several parameters

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## command-line interface (CLI)

A type of interface in which the information is passed in form of command lines.

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## commercial off-the-shelf (COTS)

**Synonyms:** off-the-shelf software

A type of product developed in an identical format for a large number of customers in the general market.

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## compatibility

**Ref:** After ISO 25010

The degree to which a component or system can exchange information with other components or systems, and/or perform its required functions while sharing the same hardware or software environment.

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## compiler

**Ref:** IEEE 610

A software tool that translates programs expressed in a high-order language into their machine language equivalents.

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## complexity

**See Also:** cyclomatic complexity

The degree to which a component or system has a design and/or internal structure that is difficult to understand, maintain and verify.

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## compliance

**Ref:** IREB Glossary

Adherence of a work product to standards, conventions or regulations in laws and similar prescriptions.

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## compliance testing

**Synonyms:** conformance testing, regulation testing, standards testing

Testing to determine the compliance of the component or system.

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## component integration testing

**Synonyms:** link testing

Testing in which the test items are interfaces and interactions between integrated components.

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### **component testing**

**Synonyms:** module testing, unit testing

A test level that focuses on individual hardware or software components.

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### **Computer Aided Software Testing (CAST)**

The computing-based processes, techniques, and tools to support testing.

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### **computer forensics**

The practice of determining how a security attack has succeeded and assessing the damage caused.

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### **concurrency**

The simultaneous execution of multiple independent threads by a component or system.

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### **concurrency testing**

Testing to evaluate if a component or system involving concurrency behaves as specified.

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### **condition coverage**

**Synonyms:** branch condition coverage

The coverage of condition outcomes.

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### **confidence interval**

In managing project risks, the period of time within which a contingency action must be implemented in order to be effective in reducing the impact of the risk.

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### **confidentiality**

**Ref:** After ISO 25010

The degree to which a component or system ensures that data are accessible only to those authorized to have access.

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### **configuration item**

**Ref:** ISO 24765

An aggregation of work products that is designated for configuration management and treated as a single entity in the configuration management process.

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### **configuration management**

A discipline applying technical and administrative direction and surveillance to identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify that it complies with specified requirements.

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### **confirmation testing**

**Synonyms:** re-testing

A type of change-related testing performed after fixing a defect to confirm that a failure caused by that defect does not reoccur.

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### **connectivity**

**Ref:** After ISO 2382

The degree to which a component or system can connect to other components or systems.

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## consultative test strategy

**Synonyms:** directed test strategy

A test strategy whereby the test team relies on the input of one or more key stakeholders to determine the details of the strategy.

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## content-based model

**Synonyms:** content reference model

A process model providing a detailed description of good engineering practices, e.g., test practices.

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## context of use

**Ref:** ISO 9241-11

Users, tasks, equipment (hardware, software and materials), and the physical and social environments in which a software product is used.

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## continuous integration

An automated software development procedure that merges, integrates and tests all changes as soon as they are committed.

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## continuous representation

**Ref:** CMMI

A capability maturity model structure wherein capability levels provide a recommended order for approaching process improvement within specified process areas.

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## continuous testing

An approach that involves a process of testing early, testing often, test everywhere, and automate to obtain feedback on the business risks associated with a software release candidate as rapidly as possible.

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## contractual acceptance testing

A type of acceptance testing performed to verify whether a system satisfies its contractual requirements.

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## control chart

**Synonyms:** Shewhart chart

A statistical process control tool used to monitor a process and determine whether it is statistically controlled. It graphically depicts the average value and the upper and lower control limits (the highest and lowest values) of a process.

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## control flow

The sequence in which operations are performed by a business process, component or system.

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## control flow analysis

A type of static analysis based on a representation of unique paths for executing a component or system.

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## control flow testing

A white-box test technique in which test cases are designed based on control flows.

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## convergence metric

A metric that shows progress toward a defined criterion, e.g., convergence of the total number of tests executed to the total number of tests planned for execution.

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## corporate dashboard

**See Also:** balanced scorecard, dashboard

A dashboard-style representation of the status of corporate performance data.

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## cost of quality

The total costs incurred on quality activities and issues and often split into prevention costs, appraisal costs, internal failure costs and external failure costs.

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## coverage

**Ref:** After ISO 29119-1

**Synonyms:** test coverage

The degree to which specified coverage items have been determined or have been exercised by a test suite expressed as a percentage.

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## coverage item

**Ref:** After ISO 29119-1

An attribute or combination of attributes derived from one or more test conditions by using a test technique.

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## critical success factor

An element necessary for an organization or project to achieve its mission. Critical success factors are the critical factors or activities required for ensuring the success.

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## Critical Testing Processes (CTP)

**See Also:** content-based model

A content-based model for test process improvement built around twelve critical processes. These include highly visible processes, by which peers and management judge competence and mission-critical processes in which performance affects the company's profits and reputation.

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## cross-browser compatibility

The degree to which a website or web application can function across different browsers and degrade gracefully when browser features are absent or lacking.

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## cross-site scripting (XSS)

**Ref:** NIST.IR.7298

A vulnerability that allows attackers to inject malicious code into an otherwise benign website.

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## crowd testing

An approach to testing in which testing is distributed to a large group of testers.

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## custom tool

A software tool developed specifically for a set of users or customers.

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## cyclomatic complexity

**Ref:** After McCabe

**Synonyms:** cyclomatic number

The maximum number of linear, independent paths through a program.

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## dashboard

**See Also:** corporate dashboard, scorecard

A representation of dynamic measurements of operational performance for some organization or activity, using metrics represented via metaphors such as visual dials, counters, and other devices resembling those on the dashboard of an automobile, so that the effects of events or activities can be easily understood and related to operational goals.

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## data flow analysis

A type of static analysis based on the lifecycle of variables.

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## data obfuscation

Data transformation that makes it difficult for a human to recognize the original data.

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## data privacy

The protection of personally identifiable information or otherwise sensitive information from undesired disclosure.

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## data-driven testing

A scripting technique that uses data files to contain the test data and expected results needed to execute the test scripts.

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## debugging

The process of finding, analyzing and removing the causes of failures in a component or system.

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## debugging tool

**Synonyms:** debugger

A tool used by programmers to reproduce failures, investigate the state of programs and find the corresponding defect. Debuggers enable programmers to execute programs step by step, to halt a program at any program statement and to set and examine program variables.

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## decision

**Ref:** After ISO 29119-1

A type of statement in which a choice between two or more possible outcomes controls which set of actions will result.

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## decision condition testing

A white-box test technique in which test cases are designed to execute condition outcomes and decision outcomes.

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## decision coverage

The coverage of decision outcomes.

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## decision table testing

A black-box test technique in which test cases are designed to exercise the combinations of conditions and the resulting actions shown in a decision table.

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## decision testing

A white-box test technique in which test cases are designed to execute decision outcomes.

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## defect

**Ref:** After ISO 24765

**Synonyms:** bug, fault

An imperfection or deficiency in a work product where it does not meet its requirements or specifications.

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## defect density

**Ref:** After ISO 24765

**Synonyms:** fault density

The number of defects per unit size of a work product.

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## Defect Detection Percentage (DDP)

**See Also:** escaped defect

**Synonyms:** Fault Detection Percentage (FDP)

The number of defects found by a test level, divided by the number found by that test level and any other means afterwards.

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## defect management

The process of recognizing, recording, classifying, investigating, resolving and disposing of defects.

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## defect management committee

**Synonyms:** defect triage committee

A cross-functional team of stakeholders who manage reported defects from initial detection to ultimate resolution (defect removal, defect deferral, or report cancellation). In some cases, the same team as the configuration control board.

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## defect report

**See Also:** incident report

**Synonyms:** bug report

Documentation of the occurrence, nature, and status of a defect.

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## defect taxonomy

**Synonyms:** bug taxonomy

A list of categories designed to identify and classify defects.

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## defect-based test technique

**Synonyms:** defect-based technique, defect-based test design technique

A test technique in which test cases are developed from what is known about a specific defect type.

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## definition-use pair

The association of a definition of a variable with the subsequent use of that variable.

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## demilitarized zone (DMZ)

**See Also:** network zone

A physical or logical subnetwork that contains and exposes an organization's external-facing services to an untrusted network, commonly the Internet.

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## Deming cycle

**Ref:** After Deming

An iterative four-step problem-solving process (plan-do-check-act) typically used in process improvement.

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## denial of service (DoS)

A security attack that is intended to overload the system with requests such that legitimate requests cannot be serviced.

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## device-based testing

A type of testing in which test suites are executed on physical or virtual devices.

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## diagnosing (IDEAL)

**See Also:** IDEAL

The phase within the IDEAL model where it is determined where one is, relative to where one wants to be. The diagnosing phase consists of the activities to characterize current and desired states and develop recommendations.

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## driver

**Synonyms:** test driver

A temporary component or tool that replaces another component and controls or calls a test item in isolation.

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## dynamic analysis

**Ref:** After ISO 24765

The process of evaluating a component or system based on its behavior during execution.

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## dynamic testing

**Ref:** After ISO 29119-1

Testing that involves the execution of the test item.

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## effectiveness

**Ref:** ISO 9241 **See Also:** efficiency

Extent to which correct and complete goals are achieved.

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## efficiency

**Ref:** IREB Glossary

The degree to which resources are expended in relation to results achieved.

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## emotional intelligence

The ability, capacity, and skill to identify, assess, and manage the emotions of one's self, of others, and of groups.

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## emulator

**Ref:** ISO 24765

A device, computer program, or system that accepts the same inputs and produces the same outputs as a given system.

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## encryption

The process of encoding information so that only authorized parties can retrieve the original information, usually by means of a specific decryption key or process.

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## end-to-end testing

**Synonyms:** E2E testing

A type of testing in which business processes are tested from start to finish under production-like circumstances.

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## endurance testing

Testing to determine the stability of a system under a significant load over a significant period of time within the system's operational context.

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## entry criteria

**Ref:** Gilb and Graham **See Also:** exit criteria

**Synonyms:** definition of ready

The set of conditions for officially starting a defined task.

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## environment model

**Ref:** Wallentowitz

An abstraction of the real environment of a component or system including other components, processes, and environment conditions, in a real-time simulation.

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## epic

**Ref:** Agile Alliance

A large user story that cannot be delivered as defined within a single iteration or is large enough that it can be split into smaller user stories.

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## equivalence partition

**Synonyms:** equivalence class

A subset of the value domain of a variable within a component or system in which all values are expected to be treated the same based on the specification.

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## equivalence partition coverage

The coverage of equivalence partitions.

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## equivalence partitioning

**Ref:** After ISO 29119-1

**Synonyms:** partition testing

A black-box test technique in which test cases are designed to exercise equivalence partitions by using one representative member of each partition.

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## equivalent manual test effort (EMTE)

Effort required for running tests manually.

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## error

**Ref:** ISO 24765

**Synonyms:** mistake

A human action that produces an incorrect result.

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## error guessing

**Ref:** ISO 29119-1

A test technique in which tests are derived on the basis of the tester's knowledge of past failures, or general knowledge of failure modes.

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## error tolerance

**Ref:** After ISO 24765

The degree to which a component or system can continue normal operation despite the presence of erroneous inputs.

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## escaped defect

A defect that was not detected by a testing activity that is supposed to find that defect.

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## establishing (IDEAL)

**See Also:** IDEAL

The phase within the IDEAL model where the specifics of how an organization will reach its destination are planned. The establishing phase consists of the activities set priorities, develop approach and plan actions.

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## ethical hacker

A security tester using hacker techniques.

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## European Foundation for Quality Management excellence model (EFQM)

A non-prescriptive framework for an organization's quality management system, defined and owned by the European Foundation for Quality Management based on five 'Enabling' criteria (covering what an organization does), and four 'Results' criteria (covering what an organization achieves).

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## exhaustive testing

**Synonyms:** complete testing

A test approach in which the test suite comprises all combinations of input values and preconditions.

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## exit criteria

**Ref:** After Gilb and Graham

**Synonyms:** completion criteria, test completion criteria, definition of done

The set of conditions for officially completing a defined task.

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## expected result

**Ref:** After ISO 29119-1

**Synonyms:** expected outcome, predicted outcome

The observable predicted behavior of a test item under specified conditions based on its test basis.

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## experience-based test technique

**Synonyms:** experience-based technique, experience-based test design technique

A test technique only based on the tester's experience, knowledge and intuition.

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## experience-based testing

Testing based on the tester's experience, knowledge and intuition.

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## expert usability review

**See Also:** informal review

An informal usability review in which the reviewers are experts. Experts can be usability experts or subject matter experts, or both.

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## exploratory testing

**Ref:** After ISO 29119-1

An approach to testing whereby the testers dynamically design and execute tests based on their knowledge, exploration of the test item and the results of previous tests.

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## Extreme Programming (XP)

**See Also:** Agile software development

A software engineering methodology used within Agile software development whereby core practices are programming in pairs, doing extensive code review, unit testing of all code, and simplicity and clarity in code.

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## failed

The status of a test result in which the actual result does not match the expected result.

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## failover

The backup operational mode in which the functions of a system that becomes unavailable are assumed by a secondary system.

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## failure

**Ref:** After ISO 24765

An event in which a component or system does not perform a required function within specified limits.

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## failure mode

**Ref:** ISO 24765

The physical or functional manifestation of a failure.

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## Failure Mode and Effect Analysis (FMEA)

**See Also:** Failure Mode, Effect and Criticality Analysis

**Synonyms:** Software Failure Mode and Effect Analysis

A systematic approach to risk identification and analysis of identifying possible modes of failure and attempting to prevent their occurrence.

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## failure rate

**Ref:** ISO 24765

The ratio of the number of failures of a given category to a given unit of measure.

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## false-negative result

**Synonyms:** false-pass result

A test result which fails to identify the presence of a defect that is actually present in the test object.

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## false-positive result

**Synonyms:** false-fail result

A test result in which a defect is reported although no such defect actually exists in the test object.

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## fault injection

The process of intentionally adding defects to a system for the purpose of finding out whether the system can detect, and possibly recover from, a defect. Fault injection is intended to mimic failures that might occur in the field.

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## fault seeding

**Ref:** After ISO 24765

**Synonyms:** bebugging, error seeding

The process of intentionally adding known faults to those already in a component or system to monitor the rate of detection and removal, and to estimate the number of faults remaining.

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## fault seeding tool

**Synonyms:** error seeding tool

A tool for seeding (i.e., intentionally inserting) faults in a component or system.

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## fault tolerance

**Ref:** After ISO 25010

The degree to which a component or system operates as intended despite the presence of hardware or software faults.

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## Fault Tree Analysis (FTA)

**Synonyms:** Software Fault Tree Analysis

A technique used to analyze the causes of faults (defects). The technique visually models how logical relationships between failures, human errors, and external events can combine to cause specific faults to disclose.

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## feature-driven development

**See Also:** Agile software development

An iterative and incremental software development process driven from a client-valued functionality (feature) perspective. Feature-driven development is mostly used in Agile software development.

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## field testing

A type of testing conducted to evaluate the system behavior under productive connectivity conditions in the field.

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## finding

A result of an evaluation that identifies some important issue, problem, or opportunity.

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## firewall

A component or set of components that controls incoming and outgoing network traffic based on predetermined security rules.

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## formal review

**Ref:** ISO 20246

A type of review that follows a defined process with a formally documented output.

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## formative evaluation

**See Also:** summative evaluation

A type of evaluation designed and used to improve the quality of a component or system, especially when it is still being designed.

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## functional appropriateness

**Ref:** ISO 25010

**Synonyms:** suitability

The degree to which the functions facilitate the accomplishment of specified tasks and objectives.

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## functional completeness

**Ref:** ISO 25010

The degree to which the set of functions covers all the specified tasks and user objectives.

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## functional correctness

**Ref:** After ISO 25010

**Synonyms:** accuracy

The degree to which a component or system provides the correct results with the needed degree of precision.

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## functional safety

**Ref:** ISO 26262

**Synonyms:** safety

The absence of unreasonable risk due to hazards caused by malfunctioning behavior of Electric/Electronic(E/E) - Systems.

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## functional suitability

**Ref:** After ISO 25010

**Synonyms:** functionality

The degree to which a component or system provides functions that meet stated and implied needs when used under specified conditions.

---

## functional testing

**Ref:** After ISO 24765

Testing performed to evaluate if a component or system satisfies functional requirements.

---

## fuzz testing

**Synonyms:** fuzzing

A software testing technique used to discover security vulnerabilities by inputting massive amounts of random data, called fuzz, to the component or system.

---

## generic test automation architecture

Representation of the layers, components, and interfaces of a test automation architecture, allowing for a structured and modular approach to implement test automation.

---

## Goal Question Metric (GQM)

An approach to software measurement using a three-level model conceptual level (goal), operational level (question) and quantitative level (metric).

---

## graphical user interface (GUI)

A type of interface that allows users to interact with a component or system through graphical icons and visual indicators.

---

## GUI testing

Testing performed by interacting with the software under test via the graphical user interface.

---

## hacker

**See Also:** attacker

A person or organization who is actively involved in security attacks, usually with malicious intent.

---

## hardware in the loop (HiL)

**Ref:** Automotive SPICE

Dynamic testing performed using real hardware with integrated software in a simulated environment.

---

## hashing

Transformation of a variable length string of characters into a usually shorter fixed-length value or key. Hashed values, or hashes, are commonly used in table or database lookups. Cryptographic hash functions are used to secure data.

---

## heuristic

A generally recognized rule of thumb that helps to achieve a goal.

---

## heuristic evaluation

An evaluation of a work product that uses a heuristic.

---

## high-level test case

**Synonyms:** abstract test case, logical test case

A test case with abstract preconditions, input data, expected results, postconditions, and actions (where applicable).

---

## human-centered design

**Ref:** ISO 9241-210

An approach to design that aims to make software products more usable by focusing on the use of the software products and applying human factors, ergonomics, and usability knowledge and techniques.

---

## hyperlink

A pointer within a web page that leads to other web pages.

---

## hyperlink test tool

A tool used to check that no broken hyperlinks are present on a web site.

---

## IDEAL

An organizational improvement model that serves as a roadmap for initiating, planning, and implementing improvement actions. The IDEAL model is named for the five phases it describes: initiating, diagnosing, establishing, acting, and learning.

---

## impact analysis

**Ref:** After ISO 24765

The identification of all work products affected by a change, including an estimate of the resources needed to accomplish the change.

---

## incident

**Synonyms:** deviation, software test incident, test incident

An event occurring that requires investigation.

---

## incident management tool

**See Also:** defect management tool

A tool that facilitates the recording and status tracking of incidents.

---

## incident report

**Ref:** ISO 29119-1

**Synonyms:** deviation report, software test incident report, test incident report

Documentation of the occurrence, nature, and status of an incident.

---

## incremental development model

**Ref:** After PMBOK

A type of software development lifecycle model in which the component or system is developed through a series of increments.

---

## independence of testing

**Ref:** After DO-178C

Separation of responsibilities, which encourages the accomplishment of objective testing.

---

## independent test lab (ITL)

An organization responsible to test and certify that the software, hardware, firmware, platform, and operating system follow all the jurisdictional rules for each location where the product will be used.

---

## indicator

**Ref:** ISO 25040

A measure that provides an estimate or evaluation of specified attributes derived from a model with respect to defined information needs.

---

## informal review

A type of review that does not follow a defined process and has no formally documented output.

---

## information assurance

**Ref:** NIST.IR.7298

Measures that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation. These measures include providing for restoration of information systems by incorporating protection, detection, and reaction capabilities.

---

## initiating (IDEAL)

**See Also:** IDEAL

The phase within the IDEAL model where the groundwork is laid for a successful improvement effort. The initiating phase consists of the activities: set context, build sponsorship and charter infrastructure.

---

## insider threat

A security threat originating from within the organization, often by an authorized system user.

---

## insourced testing

Testing performed by people who are co-located with the project team but are not fellow employees.

---

## inspection

**Ref:** After ISO 20246

A type of formal review to identify issues in a work product, which provides measurement to improve the review process and the software development process.

---

## installability

**Ref:** After ISO 25010

The degree to which a component or system can be successfully installed and/or uninstalled in a specified environment.

---

## integration testing

A test level that focuses on interactions between components or systems.

---

## integrity

**Ref:** After ISO 25010

The degree to which a component or system allows only authorized access and modification to a component, a system or data.

---

## interface testing

**Ref:** After ISO 24765

A type of integration testing performed to determine whether components or systems pass data and control correctly to one another.

---

## interoperability

**Ref:** After ISO 25010

The degree to which two or more components or systems can exchange information and use the information that has been exchanged.

---

## interoperability testing

Testing to determine the interoperability of a software product.

---

## intrusion detection system (IDS)

**See Also:** malware scanning

A system which monitors activities on the 7 layers of the OSI model from network to application level, to detect violations of the security policy.

---

## iterative development model

A type of software development lifecycle model in which the component or system is developed through a series of repeated cycles.

---

## keyword-driven testing

**Synonyms:** action word-driven testing

A scripting technique in which test scripts contain high-level keywords and supporting files that contain low-level scripts that implement those keywords.

---

## lead assessor

The person who leads an assessment. In some cases, for instance CMMI and TMMi when formal assessments are conducted, the lead assessor must be accredited and formally trained.

---

## learnability

**Ref:** After ISO 25010

The degree to which a component or system can be used by specified users to achieve specified goals of learning with satisfaction and freedom from risk in a specified context of use.

---

## learning (IDEAL)

**See Also:** IDEAL

The phase within the IDEAL model where one learns from experiences and improves one's ability to adopt new processes and technologies in the future. The learning phase consists of the activities: analyze and validate, and propose future actions.

---

## level of intrusion

The level to which a test object is modified by adjusting it for testability.

---

## level test plan

**See Also:** test plan

A test plan that typically addresses one test level.

---

## linear scripting

A simple scripting technique without any control structure in the test scripts.

---

## load generation

**See Also:** load testing

The process of simulating a defined set of activities at a specified load to be submitted to a component or system.

---

## load generator

A tool that generates a load for a system under test.

---

## load management

The control and execution of load generation, and performance monitoring and reporting of the component or system.

---

## load profile

Documentation defining a designated number of virtual users who process a defined set of transactions in a specified time period that a component or system being tested may experience in production.

---

## load testing

**Ref:** After ISO 29119-1 **See Also:** performance testing, stress testing

A type of performance testing conducted to evaluate the behavior of a component or system under varying loads, usually between anticipated conditions of low, typical, and peak usage.

---

## low-level test case

**See Also:** high-level test case

**Synonyms:** concrete test case

A test case with concrete values for preconditions, input data, expected results and postconditions and detailed description of actions (where applicable).

---

## maintainability

**Ref:** After ISO 25010

The degree to which a component or system can be modified by the intended maintainers.

---

## maintenance

**Ref:** After ISO 24765

The process of modifying a component or system after delivery to correct defects, improve quality characteristics, or adapt to a changed environment.

---

## maintenance testing

Testing the changes to an operational system or the impact of a changed environment to an operational system.

---

## malware

Software that is intended to harm a system or its components.

---

## malware scanning

**See Also:** intrusion detection system

Static analysis aiming to detect and remove malicious code received at an interface.

---

## man-in-the-middle attack

The interception, mimicking and/or altering and subsequent relaying of communications (e.g., credit card transactions) by a third party such that a user remains unaware of that third party's presence.

---

## management review

**Ref:** After ISO 24765, IEEE 1028

A systematic evaluation of software acquisition, supply, development, operation, or maintenance process, performed by or on behalf of management that monitors progress, determines the status of plans and schedules, confirms requirements and their system allocation, or evaluates the effectiveness of management approaches to achieve fitness for purpose.

---

## manufacturing-based quality

**Ref:** After Garvin **See Also:** product-based quality, transcendent-based quality, user-based quality, value-based quality

A view of quality, whereby quality is measured by the degree to which a product or service conforms to its intended design and requirements. Quality arises from the process(es) used.

---

## master test plan

**See Also:** test plan

A test plan that is used to coordinate multiple test levels or test types.

---

## math testing

Testing to determine the correctness of the pay table implementation, the random number generator results, and the return to player computations.

---

## maturity

**Ref:** ISO 25010

(1) The capability of an organization with respect to the effectiveness and efficiency of its processes and work practices. (2) The degree to which a component or system meets needs for reliability under normal operation.

---

## maturity level

**Ref:** TMMi

Degree of process improvement across a predefined set of process areas in which all goals in the set are attained.

---

## maturity model

A structured collection of elements that describe certain aspects of maturity in an organization, and aid in the definition and understanding of an organization's processes.

---

## MBT model

Any model used in model-based testing.

---

## mean time between failures (MTBF)

The average time between failures of a component or system.

---

## mean time to repair (MTTR)

The average time a component or system will take to recover from a failure.

---

## measure

**Ref:** After ISO 25040

The number or category assigned to an attribute of an entity by making a measurement.

---

## measurement

**Ref:** After ISO 24765

The process of assigning a number or category to an entity to describe an attribute of that entity.

---

## memory leak

A memory access failure due to a defect in a program's dynamic store allocation logic that causes it to fail to release memory after it has finished using it.

---

## method table

**Ref:** ISO 26262

A table containing different test approaches, testing techniques and test types that are required depending on the Automotive Safety Integrity Level (ASIL) and on the context of the test object.

---

## methodical test strategy

A test strategy whereby the test team uses a pre-determined set of test conditions such as a quality standard, a checklist, or a collection of generalized, logical test conditions which may relate to a particular domain, application or type of testing.

---

## metric

A measurement scale and the method used for measurement.

---

## model coverage

The coverage of model elements.

---

## model in the loop (MiL)

**Ref:** Automotive SPICE

Dynamic testing performed using a simulation model of the system in a simulated environment.

---

## model-based test strategy

A test strategy whereby the test team derives testware from models.

---

## model-based testing (MBT)

Testing based on or involving models.

---

## moderator

**Synonyms:** facilitator

(1) The person responsible for running review meetings. (2) The person who conducts a usability test session.

---

## modifiability

**Ref:** After ISO 25010

**Synonyms:** changeability

The degree to which a component or system can be changed without introducing defects or degrading existing product quality.

---

## modified condition / decision coverage (MC/DC)

**Synonyms:** condition determination coverage, modified multiple condition coverage, MC/DC coverage

The coverage of all outcomes of the atomic conditions that independently affect the overall decision outcome.

---

## modified condition / decision testing

**Synonyms:** condition determination testing, modified multiple condition testing

A white-box test technique in which test cases are designed to exercise outcomes of atomic conditions that independently affect a decision outcome.

---

## modularity

**Ref:** After ISO 25010

The degree to which a system is composed of discrete components such that a change to one component has minimal impact on other components.

---

## monitoring tool

**Ref:** ISO 24765

A software tool or hardware device that runs concurrently with the component or system under test and supervises, records and/or analyzes the behavior of the component or system.

---

## multiplayer testing

Testing to determine if many players can simultaneously interact with the casino game world, with computer-controlled opponents, game servers, and with each other, as expected according to the game design.

---

## multiple condition coverage

**Synonyms:** branch condition combination coverage, condition combination coverage

The coverage of all possible combinations of all single condition outcomes within one statement.

---

## multiple condition testing

**Synonyms:** branch condition combination testing, condition combination testing

A white-box test technique in which test cases are designed to exercise outcome combinations of atomic conditions.

---

## Myers-Briggs Type Indicator (MBTI)

An indicator of psychological preference representing the different personalities and communication styles of people.

---

## N-switch coverage

**Ref:** Chow

**Synonyms:** Chow's coverage metrics

The coverage of sequences of N+1 transitions.

---

## negative testing

**Synonyms:** dirty testing, invalid testing

Testing a component or system in a way for which it was not intended to be used.

---

## neighborhood integration testing

A type of integration testing in which all of the nodes that connect to a given node are the basis for the integration testing.

---

## network zone

A sub-network with a defined level of trust. For example, the Internet or a public zone would be considered to be untrusted.

---

## non-functional testing

Testing performed to evaluate that a component or system complies with non-functional requirements.

---

## non-repudiation

**Ref:** After ISO 25010

The degree to which actions or events can be proven to have taken place, so that the actions or events cannot be repudiated later.

---

## offline MBT

Model-based test approach whereby test cases are generated into a repository for future execution.

---

## online MBT

**Synonyms:** on-the-fly MBT

Model-based test approach whereby test cases are generated and executed simultaneously.

---

## open-source tool

**Synonyms:** open source tool

A software tool that is available to all potential users in source code form, usually via the internet. Its users are permitted, usually under license, to study change, improve and, at times, to distribute the software.

---

## open-loop-system

**Ref:** Bakshi

A system in which controlling action or input is independent of the output or changes in output.

---

## operability

**Ref:** After ISO 25010

The degree to which a component or system has attributes that make it easy to operate and control.

---

## operational acceptance testing

**Synonyms:** production acceptance testing

A type of acceptance testing performed to determine if operations and/or systems administration staff can accept a system.

---

## operational profile

An actual or predicted pattern of use of the component or system.

---

## operational profiling

**See Also:** operational profile

The process of developing and implementing an operational profile.

---

## outsourced testing

Testing performed by people who are not co-located with the project team and are not fellow employees.

---

## pair testing

An approach in which two team members simultaneously collaborate on testing a work product.

---

## pairwise integration testing

A type of integration testing that targets pairs of components that work together as shown in a call graph.

---

## pairwise testing

**Ref:** After ISO 29119-4

A black-box test technique in which test cases are designed to exercise pairs of parameter-value pairs.

---

## par sheet testing

Testing to determine that the game returns the correct mathematical results to the screen, to the players' accounts, and to the casino account.

---

## Pareto analysis

A statistical technique in decision making that is used for selection of a limited number of factors that produce significant overall effect. In terms of quality improvement, a large majority of problems (80%) are produced by a few key causes (20%).

---

## pass/fail criteria

**Ref:** After ISO 29119-1

Decision rules used to determine whether a test item has passed or failed.

---

## passed

The status of a test result in which the actual result matches the expected result.

---

## password cracking

**Ref:** after NIST.IR.7298

A security attack recovering secret passwords stored in a computer system or transmitted over a network.

---

## path

**Synonyms:** control flow path

A sequence of consecutive edges in a directed graph.

---

## path coverage

The coverage of paths.

---

## path testing

A white-box test technique in which test cases are designed to execute paths in a control flow graph.

---

## peer review

**Ref:** After ISO 20246

A review performed by others with the same abilities to create the work product.

---

## penetration testing

A testing technique aiming to exploit security vulnerabilities (known or unknown) to gain unauthorized access.

---

## performance efficiency

**Ref:** After ISO 25010

The degree to which a component or system uses time, resources and capacity when accomplishing its designated functions.

---

## performance indicator

**Ref:** After ISO 33001

**Synonyms:** key performance indicator

A metric that supports the judgment of process performance.

---

## performance testing

Testing to determine the performance efficiency of a component or system.

---

## performance testing tool

A test tool that generates load for a designated test item and that measures and records its performance during test execution.

---

### **perspective-based reading**

**Synonyms:** perspective-based reviewing

A review technique in which a work product is evaluated from the perspective of different stakeholders with the purpose to derive other work products.

---

### **pharming**

A security attack intended to redirect a web site's traffic to a fraudulent web site without the user's knowledge or consent.

---

### **phase containment**

The percentage of defects that are removed in the same phase of the software lifecycle in which they were introduced.

---

### **phishing**

An attempt to acquire personal or sensitive information by masquerading as a trustworthy entity in an electronic communication.

---

### **planning poker**

**Ref:** Mountain Goat Software

A consensus-based estimation technique, mostly used to estimate effort or relative size of user stories in Agile software development. It is a variation of the Wideband Delphi method using a deck of cards with values representing the units in which the team estimates.

---

### **player perspective testing**

Testing done by testers from a player's perspective to validate player satisfaction.

---

### **pointer**

**Ref:** ISO 24765

A data item that specifies the location of another data item.

---

### **portability**

**Ref:** After ISO 25010

The degree to which a component or system can be transferred from one hardware, software or other operational or usage environment to another.

---

### **post-release testing**

A type of testing to ensure that the release is performed correctly and the application can be deployed.

---

### **postcondition**

The expected state of a test item and its environment at the end of test case execution.

---

### **precondition**

The required state of a test item and its environment prior to test case execution.

---

### **priority**

The level of (business) importance assigned to an item, e.g., defect.

---

### **PRISMA**

A systematic approach to risk-based testing that employs product risk identification and analysis to create a product risk matrix based on likelihood and impact. Term is derived from Product RISK Management.

---

---

### probe effect

An unintended change in behavior of a component or system caused by measuring it.

---

### process assessment

**Ref:** after ISO 15504

A disciplined evaluation of an organization's software processes against a reference model.

---

### process model

A framework in which processes of the same nature are classified into an overall model.

---

### process-compliant test strategy

A test strategy whereby the test team follows a set of predefined processes, whereby the processes address such items as documentation, the proper identification and use of the test basis and test oracle(s), and the organization of the test team.

---

### process-driven scripting

A scripting technique where scripts are structured into scenarios which represent use cases of the software under test. The scripts can be parameterized with test data.

---

### product risk

**See Also:** risk

A risk impacting the quality of a product.

---

### product-based quality

A view of quality, wherein quality is based on a well-defined set of quality characteristics. These characteristics must be measured in an objective and quantitative way. Differences in the quality of products of the same type can be traced back to the way the specific quality characteristics have been implemented.

---

### project retrospective

A structured way to capture lessons learned and to create specific action plans for improving on the next project or next project phase.

---

### project risk

**See Also:** risk

A risk that impacts project success.

---

### proximity-based testing

A type of testing to confirm that sensors can detect nearby objects without physical contact.

---

### quality

**Ref:** After ISO 25010

The degree to which a component or system satisfies the stated and implied needs of its various stakeholders.

---

### quality assurance (QA)

**Ref:** After ISO 24765 **See Also:** quality management

Activities focused on providing confidence that quality requirements will be fulfilled.

---

## quality characteristic

**Ref:** ISO 24765

**Synonyms:** software product characteristic, software quality characteristic, quality attribute

A category of quality attributes that bears on work product quality.

---

## quality control (QC)

**Ref:** after ISO 24765 **See Also:** testing

A set of activities designed to evaluate the quality of a component or system.

---

## quality function deployment (QFD)

**Ref:** ISO 24765

A facilitated workshop technique that helps determine critical characteristics for new product development.

---

## quality management

**Ref:** After ISO 24765

Coordinated activities to direct and control an organization with regard to quality that include establishing a quality policy and quality objectives, quality planning, quality control, quality assurance, and quality improvement.

---

## quality risk

**See Also:** quality characteristic, product risk

A product risk related to a quality characteristic.

---

## RACI matrix

A matrix describing the participation by various roles in completing tasks or deliverables for a project or process. It is especially useful in clarifying roles and responsibilities. RACI is an acronym derived from the four key responsibilities most typically used: Responsible, Accountable, Consulted, and Informed.

---

## ramp-down

A technique for decreasing the load on a system in a measurable and controlled way.

---

## ramp-up

A technique for increasing the load on a system in a measurable and controlled way.

---

## random testing

A black-box test technique in which test cases are designed by generating random independent inputs to match an operational profile.

---

## Rational Unified Process (RUP)

A proprietary adaptable iterative software development process framework consisting of four project lifecycle phases: inception, elaboration, construction and transition.

---

## reactive test strategy

A test strategy whereby the test team waits to design and implement tests until the software is received, reacting to the actual system under test.

---

## reactive testing

Testing that dynamically responds to the behavior of the test object and to test results being obtained.

---

## reconnaissance

**Synonyms:** footprinting

The exploration of a target area aiming to gain information that can be useful for an attack.

---

## recoverability

**Ref:** After ISO 25010

The degree to which a component or system can recover the data directly affected by an interruption or a failure and re-establish the desired state of the component or system.

---

## regression testing

A type of change-related testing to detect whether defects have been introduced or uncovered in unchanged areas of the software.

---

## regression-averse test strategy

A test strategy whereby the test team applies various techniques to manage the risk of regression such as functional and/or non-functional regression test automation at one or more levels.

---

## regulatory acceptance testing

A type of acceptance testing performed to verify whether a system conforms to relevant laws, policies and regulations.

---

## reliability

**Ref:** After ISO 25010

The degree to which a component or system performs specified functions under specified conditions for a specified period of time.

---

## reliability growth model

A model that shows the growth in reliability over time of a component or system as a result of the defect removal.

---

## remote test lab

A facility that provides remote access to a test environment.

---

## replaceability

**Ref:** After ISO 25010

The degree to which a component or system can replace another specified component or system for the same purpose in the same environment.

---

## requirement

**Ref:** ISO 24765

A provision that contains criteria to be fulfilled.

---

## requirements-based testing

An approach to testing in which test cases are designed based on requirements.

---

## resource utilization

**Ref:** After ISO 25010

**Synonyms:** storage

The degree to which the amounts and types of resources used by a component or system, when performing its functions, meet requirements.

---

## retrospective meeting

**Synonyms:** post-project meeting

A meeting at the end of a project during which the project team members evaluate the project and learn lessons that can be applied to the next project.

---

## reusability

**Ref:** After ISO 25010

The degree to which a work product can be used in more than one system, or in building other work products.

---

## review

A type of static testing in which a work product or process is evaluated by one or more individuals to detect defects or to provide improvements.

---

## review plan

A document describing the approach, resources and schedule of intended review activities. It identifies, amongst others: documents and code to be reviewed, review types to be used, participants, as well as entry and exit criteria to be applied in case of formal reviews, and the rationale for their choice. It is a record of the review planning process.

---

## reviewer

**Ref:** After ISO 20246

**Synonyms:** checker, inspector

A participant in a review who identifies issues in the work product.

---

## risk

A factor that could result in future negative consequences.

---

## risk analysis

The overall process of risk identification and risk assessment.

---

## risk assessment

The process to examine identified risks and determine the risk level.

---

## risk identification

**Ref:** ISO 31000

The process of finding, recognizing and describing risks.

---

## risk impact

**Synonyms:** impact

The damage that will be caused if the risk becomes an actual outcome or event.

---

## risk level

**Synonyms:** risk exposure

The qualitative or quantitative measure of a risk defined by impact and likelihood.

---

## risk likelihood

**Synonyms:** likelihood

The probability that a risk will become an actual outcome or event.

---

## risk management

**Ref:** After ISO 24765

The process for handling risks.

---

## risk mitigation

The process through which decisions are reached and protective measures are implemented for reducing or maintaining risks to specified levels.

---

## risk type

**Synonyms:** risk category

A set of risks grouped by one or more common factors.

---

## risk-based testing

**Ref:** After ISO 29119-1

Testing in which the management, selection, prioritization, and use of testing activities and resources are based on corresponding risk types and risk levels.

---

## robustness

**Ref:** ISO 24765

The degree to which a component or system can function correctly in the presence of invalid inputs or stressful environmental conditions.

---

## role-based reviewing

A review technique in which a work product is evaluated from the perspective of different stakeholders.

---

## root cause

**Ref:** CMMI

A source of a defect such that if it is removed, the occurrence of the defect type is decreased or removed.

---

## root cause analysis

**Synonyms:** causal analysis

An analysis technique aimed at identifying the root causes of defects. By directing corrective measures at root causes, it is hoped that the likelihood of defect recurrence will be minimized.

---

## S.M.A.R.T. goal methodology (SMART)

A methodology whereby objectives are defined very specifically rather than generically. SMART is an acronym derived from the attributes of the objective to be defined: Specific, Measurable, Attainable, Relevant and Timely.

---

## salting

**See Also:** hashing

A cryptographic technique that adds random data (salt) to the user data prior to hashing.

---

## scalability

**Ref:** After Gerrard

The degree to which a component or system can be adjusted for changing capacity.

---

## scalability testing

Testing to determine the scalability of the software product.

---

## scenario-based review

A review technique in which a work product is evaluated to determine its ability to address specific scenarios.

---

## scribe

**Ref:** After IEEE 1028

**Synonyms:** recorder

A person who records information during the review meetings.

---

## script kiddie

**See Also:** hacker

A person who executes security attacks that have been created by other hackers rather than creating one's own attacks.

---

## scripted testing

Testing (manual or automated) that follows a test script.

---

## scrum

**See Also:** Agile software development

An iterative incremental framework for managing projects commonly used with Agile software development.

---

## security

**Ref:** After ISO 25010

**Synonyms:** information security

The degree to which a component or system protects information and data so that persons or other components or systems have the degree of access appropriate to their types and levels of authorization.

---

## security attack

**Ref:** after NIST.IR.7298

An attempt to gain unauthorized access to a component or system, resources, information, or an attempt to compromise system integrity.

---

## security audit

An audit evaluating an organization's security processes and infrastructure.

---

## security policy

A high-level document describing the principles, approach and major objectives of the organization regarding security.

---

## security procedure

A set of steps required to implement the security policy and the steps to be taken in response to a security incident.

---

## security risk

A quality risk related to security.

---

## security testing

Testing to determine the security of the software product.

---

## security vulnerability

A weakness in the system that could allow for a successful security attack.

---

### **sequential development model**

A type of software development lifecycle model in which a complete system is developed in a linear way of several discrete and successive phases with no overlap between them.

---

### **service virtualization**

A technique to enable virtual delivery of services which are deployed, accessed and managed remotely.

---

### **session-based test management (SBTM)**

A method for measuring and managing session-based testing.

---

### **session-based testing**

An approach in which test activities are planned as test sessions.

---

### **severity**

The degree of impact that a defect has on the development or operation of a component or system.

---

### **short-circuiting**

A programming language/interpreter technique for evaluating compound conditions in which a condition on one side of a logical operator may not be evaluated if the condition on the other side is sufficient to determine the final outcome.

---

### **simulator**

**Ref:** ISO 24765

A device, computer program or system used during testing, which behaves or operates like a given system when provided with a set of controlled inputs.

---

### **smoke test**

**Synonyms:** confidence test, sanity test, intake test

A test suite that covers the main functionality of a component or system to determine whether it works properly before planned testing begins.

---

### **social engineering**

**Ref:** NIST.IR.7298

An attempt to trick someone into revealing information (e.g., a password) that can be used to attack systems or networks.

---

### **software development lifecycle (SDLC)**

**Synonyms:** lifecycle model

The activities performed at each stage in software development, and how they relate to one another logically and chronologically.

---

### **software in the loop (SiL)**

**Ref:** Automotive SPICE

Dynamic testing performed using real software in a simulated environment or with experimental hardware.

---

### **software lifecycle**

The period of time that begins when a software product is conceived and ends when the software is no longer available for use. The software lifecycle typically includes a concept phase, requirements phase, design phase, implementation phase, test phase, installation and checkout phase, operation and maintenance phase, and sometimes, retirement phase. Note these phases may overlap or be performed iteratively.

---

## software process improvement (SPI)

**Ref:** After CMMI

A program of activities designed to improve the performance and maturity of the organization's software processes and the results of such a program.

---

## software qualification test

**Ref:** Automotive SPICE

Testing performed on completed, integrated software to provide evidence for compliance with software requirements.

---

## Software Usability Measurement Inventory (SUMI)

**Ref:** Kirakowski93

A questionnaire-based usability testing tool that measures and benchmarks user experience.

---

## specification by example (SBE)

**See Also:** acceptance test-driven development

A development technique in which the specification is defined by examples.

---

## spike testing

Testing to determine the ability of a system to recover from sudden bursts of peak loads and return to a steady state.

---

## SQL injection

A type of code injection in the structured query language (SQL).

---

## staged representation

**Ref:** CMMI

A model structure wherein attaining the goals of a set of process areas establishes a maturity level; each level builds a foundation for subsequent levels.

---

## standard

**Ref:** After CMMI

Formal, possibly mandatory, set of requirements developed and used to prescribe consistent approaches to the way of working or to provide guidelines (e.g., ISO/IEC standards, IEEE standards, and organizational standards).

---

## standard-compliant test strategy

A test strategy whereby the test team follows a standard. Standards followed may be valid e.g., for a country (legislation standards), a business domain (domain standards), or internally (organizational standards).

---

## state transition testing

**Synonyms:** finite state testing

A black-box test technique in which test cases are designed to exercise elements of a state transition model.

---

## statement

**Synonyms:** source statement

An entity in a programming language, which is typically the smallest indivisible unit of execution.

---

## statement coverage

The coverage of executable statements.

---

## statement testing

A white-box test technique in which test cases are designed to execute statements.

---

## static analysis

**Ref:** After ISO 24765

The process of evaluating a component or system without executing it, based on its form, structure, content, or documentation.

---

## static analyzer

**Synonyms:** analyzer, static analysis tool

A tool that carries out static analysis.

---

## static code analysis

The analysis of source code carried out without execution of that software.

---

## static testing

Testing a work product without the work product code being executed.

---

## stress testing

**Ref:** ISO 24765

A type of performance testing conducted to evaluate a system or component at or beyond the limits of its anticipated or specified workloads, or with reduced availability of resources such as access to memory or servers.

---

## structural coverage

Coverage measures based on the internal structure of a component or system.

---

## structured scripting

A scripting technique that builds and utilizes a library of reusable (parts of) scripts.

---

## stub

**Ref:** After ISO 24765

A skeletal or special-purpose implementation of a software component, used to develop or test a component that calls or is otherwise dependent on it. It replaces a called component.

---

## suitability testing

Testing to determine the suitability of a software product.

---

## summative evaluation

**See Also:** formative evaluation, testing

A type of evaluation designed and used to gather conclusions about the quality of a component or system, especially when a substantial part of it has completed design.

---

## system hardening

The step-by-step process of reducing the security vulnerabilities of a system by applying a security policy and different layers of protection.

---

## system integration testing

A test level that focuses on interactions between systems.

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## system of systems

**Synonyms:** multi-system

Multiple heterogeneous, distributed systems that are embedded in networks at multiple levels and in multiple interconnected domains, addressing large-scale inter-disciplinary common problems and purposes, usually without a common management structure.

---

## system qualification test

**Ref:** Automotive SPICE

Testing performed on the completed, integrated system of software components, hardware components, and mechanics to provide evidence for compliance with system requirements and that the complete system is ready for delivery.

---

## system testing

A test level that focuses on verifying that a system as a whole meets specified requirements.

---

## system throughput

**Ref:** After ISO 24765

The amount of data passing through a component or system in a given time period.

---

## system under test (SUT)

A type of test object that is a system.

---

## System Usability Scale (SUS)

A simple, ten-item attitude scale giving a global view of subjective assessments of usability.

---

## Systematic Test and Evaluation Process (STEP)

A structured testing methodology also used as a content-based model for improving the testing process. It does not require that improvements occur in a specific order.

---

## technical review

A type of formal review by a team of technically-qualified personnel that examines the quality of a work product and identifies discrepancies from specifications and standards.

---

## test

A set of one or more test cases.

---

## test adaptation layer

The layer in a test automation architecture which provides the necessary code to adapt test scripts on an abstract level to the various components, configuration or interfaces of the SUT.

---

## test analysis

The activity that identifies test conditions by analyzing the test basis.

---

## test approach

The implementation of the test strategy for a specific project.

---

## test architect

(1) A person who provides guidance and strategic direction for a test organization and for its relationship with other disciplines. (2) A person who defines the way testing is structured for a given system, including topics such as test tools and test data management.

---

### test automation

The use of software to perform or support test activities.

---

### test automation architecture

An instantiation of the generic test automation architecture to define the architecture of a test automation solution, i.e., its layers, components, services and interfaces.

---

### test automation engineer

A person who is responsible for the design, implementation and maintenance of a test automation architecture as well as the technical evolution of the resulting test automation solution.

---

### test automation framework

A tool that provides an environment for test automation. It usually includes a test harness and test libraries.

---

### test automation manager

A person who is responsible for the planning and supervision of the development and evolution of a test automation solution.

---

### test automation solution

A realization/implementation of a test automation architecture, i.e., a combination of components implementing a specific test automation assignment. The components may include commercial off-the-shelf test tools, test automation frameworks, as well as test hardware.

---

### test automation strategy

A high-level plan to achieve long-term objectives of test automation under given boundary conditions.

---

### test basis

**Ref:** After TMap

The body of knowledge used as the basis for test analysis and design.

---

### test case

A set of preconditions, inputs, actions (where applicable), expected results and postconditions, developed based on test conditions.

---

### test case explosion

The disproportionate growth of the number of test cases with growing size of the test basis, when using a certain test design technique. Test case explosion may also happen when applying the test design technique systematically for the first time.

---

### test case specification

**Ref:** ISO 29119-1 **See Also:** test specification

Documentation of a set of one or more test cases.

---

### test charter

**Synonyms:** charter

Documentation of the goal or objective for a test session.

---

### test closure

During the test closure phase of a test process data is collected from completed activities to consolidate experience, testware, facts and numbers. The test closure phase consists of finalizing and archiving the testware and evaluating the test process, including preparation of a test evaluation report.

---

### test completion

The activity that makes testware available for later use, leaves test environments in a satisfactory condition and communicates the results of testing to relevant stakeholders.

---

### test condition

**Ref:** After ISO 29119-1

**Synonyms:** test requirement, test situation

A testable aspect of a component or system identified as a basis for testing.

---

### test control

The activity that develops and applies corrective actions to get a test project on track when it deviates from what was planned.

---

### test cycle

An instance of the test process against a single identifiable version of the test object.

---

### test data

Data needed for test execution.

---

### test data preparation

The activity to select data from existing databases or create, generate, manipulate and edit data for testing.

---

### test data preparation tool

**Synonyms:** test generator

A type of test tool that enables data to be selected from existing databases or created, generated, manipulated and edited for use in testing.

---

### test definition layer

The layer in a generic test automation architecture which supports test implementation by supporting the definition of test suites and/or test cases, e.g., by offering templates or guidelines.

---

### test design

The activity that derives and specifies test cases from test conditions.

---

### test design specification

**Ref:** ISO 29119 **See Also:** test specification

Documentation specifying the features to be tested and their corresponding test conditions.

---

### test director

**See Also:** test manager

A senior manager who manages test managers.

---

### test environment

**Ref:** ISO 24765

**Synonyms:** test bed, test rig

An environment containing hardware, instrumentation, simulators, software tools, and other support elements needed to conduct a test.

---

### **test estimation**

An approximation related to various aspects of testing.

---

### **test execution**

The activity that runs a test on a component or system producing actual results.

---

### **test execution automation**

The use of software, e.g., capture/playback tools, to control the execution of tests, the comparison of actual results to expected results, the setting up of test preconditions, and other test control and reporting functions.

---

### **test execution layer**

The layer in a generic test automation architecture which supports the execution of test suites and/or test cases.

---

### **test execution schedule**

A schedule for the execution of test suites within a test cycle.

---

### **test execution tool**

A test tool that executes tests against a designated test item and evaluates the outcomes against expected results and postconditions.

---

### **test generation layer**

The layer in a generic test automation architecture which supports manual or automated design of test suites and/or test cases.

---

### **test harness**

A collection of stubs and drivers needed to execute a test suite

---

### **test hook**

A customized software interface that enables automated testing of a test object.

---

### **test implementation**

The activity that prepares the testware needed for test execution based on test analysis and design.

---

### **test improvement plan**

**Ref:** After CMMI

A plan for achieving organizational test process improvement objectives based on a thorough understanding of the current strengths and weaknesses of the organization's test processes and test process assets.

---

### **test infrastructure**

The organizational artifacts needed to perform testing, consisting of test environments, test tools, office environment and procedures.

---

### **test item**

**See Also:** test object

A part of a test object used in the test process.

---

## test leader

**See Also:** test manager

**Synonyms:** lead tester

On large projects, the person who reports to the test manager and is responsible for project management of a particular test level or a particular set of testing activities.

---

## test level

**Ref:** ISO 29119-1

**Synonyms:** test stage

A specific instantiation of a test process.

---

## test log

**Ref:** ISO 24765

**Synonyms:** test record, test run log

A chronological record of relevant details about the execution of tests.

---

## test logging

**Synonyms:** test recording

The activity of creating a test log.

---

## test management

**Ref:** ISO 29119-1

The planning, scheduling, estimating, monitoring, reporting, control and completion of test activities.

---

## test management tool

A tool that supports test management.

---

## test manager

The person responsible for project management of testing activities, resources, and evaluation of a test object.

---

## Test Maturity Model integration (TMMi)

A five-level staged framework for test process improvement, related to the Capability Maturity Model Integration (CMMI), that describes the key elements of an effective test process.

---

## test mission

**See Also:** test policy

The purpose of testing for an organization, often documented as part of the test policy.

---

## test model

A model describing testware that is used for testing a component or a system under test.

---

## test monitoring

The activity that checks the status of testing activities, identifies any variances from planned or expected, and reports status to stakeholders.

---

## test object

The work product to be tested.

---

## test objective

The reason or purpose of testing.

---

## test oracle

**Ref:** After Adrion

**Synonyms:** oracle

A source to determine an expected result to compare with the actual result of the system under test.

---

## test phase

**Ref:** After Gerrard

A distinct set of test activities collected into a manageable phase of a project, e.g., the execution activities of a test level.

---

## test plan

**Ref:** After ISO 29119-1

Documentation describing the test objectives to be achieved and the means and the schedule for achieving them, organized to coordinate testing activities.

---

## test planning

The activity of establishing or updating a test plan.

---

## Test Point Analysis (TPA)

**Ref:** TMap

A formula based test estimation method based on function point analysis.

---

## test policy

**Synonyms:** organizational test policy

A high-level document describing the principles, approach and major objectives of the organization regarding testing.

---

## test procedure

**Ref:** ISO 29119-1

A sequence of test cases in execution order, and any associated actions that may be required to set up the initial preconditions and any wrap up activities post execution.

---

## test process

The set of interrelated activities comprising of test planning, test monitoring and control, test analysis, test design, test implementation, test execution, and test completion.

---

## test process group (TPG)

**Ref:** After CMMI

A collection of (test) specialists who facilitate the definition, maintenance, and improvement of the test processes used by an organization.

---

## test process improvement

**Ref:** After CMMI

A program of activities undertaken to improve the performance and maturity of the organization's test processes.

---

## test process improvement manifesto

**Ref:** Veenendaal08

A statement that echoes the Agile manifesto, and defines values for improving the testing process. The values are: flexibility over detailed processes, best practices over templates, deployment orientation over process orientation, peer reviews over quality assurance (departments), business driven over model-driven.

---

## test process improver

A person implementing improvements in the test process based on a test improvement plan.

---

## test progress report

**Synonyms:** test status report

A type of test report produced at regular intervals about the progress of test activities against a baseline, risks, and alternatives requiring a decision.

---

## test pyramid

A graphical model representing the relationship of the amount of testing per level, with more at the bottom than at the top.

---

## test report

Documentation summarizing test activities and results.

---

## test reporting

Collecting and analyzing data from testing activities and subsequently consolidating the data in a report to inform stakeholders.

---

## test result

**Synonyms:** outcome, test outcome, result

The consequence/outcome of the execution of a test.

---

## test run

The execution of a test suite on a specific version of the test object.

---

## test schedule

A list of activities, tasks or events of the test process, identifying their intended start and finish dates and/or times, and interdependencies.

---

## test script

A sequence of instructions for the execution of a test.

---

## test selection criteria

The criteria used to guide the generation of test cases or to select test cases in order to limit the size of a test.

---

## test session

An uninterrupted period of time spent in executing tests.

---

## test specification

**Ref:** After ISO 29119-1

The complete documentation of the test design, test cases, and test scripts for a specific test item.

---

## test strategy

**Synonyms:** organizational test strategy

Documentation aligned with the test policy that describes the generic requirements for testing and details how to perform testing within an organization.

---

## test suite

**Synonyms:** test case suite, test set

A set of test scripts or test procedures to be executed in a specific test run.

---

## test summary report

A type of test report produced at completion milestones that provides an evaluation of the corresponding test items against exit criteria.

---

## test technique

**Synonyms:** test case design technique, test specification technique, test design technique

A procedure used to define test conditions, design test cases, and specify test data.

---

## test tool

Software or hardware that supports one or more test activities.

---

## test type

**Ref:** After TMap

A group of test activities based on specific test objectives aimed at specific characteristics of a component or system.

---

## test-driven development (TDD)

A software development technique in which the test cases are developed, and often automated, and then the software is developed incrementally to pass those test cases.

---

## test-first approach

**See Also:** test-driven development

An approach to software development in which the test cases are designed and implemented before the associated component or system is developed.

---

## testability

**Ref:** After ISO 25010

The degree to which test conditions can be established for a component or system, and tests can be performed to determine whether those test conditions have been met.

---

## tester

A person who performs testing.

---

## testing

The process consisting of all lifecycle activities, both static and dynamic, concerned with planning, preparation and evaluation of a component or system and related work products to determine that they satisfy specified requirements, to demonstrate that they are fit for purpose and to detect defects.

---

## testing quadrants

A classification model of test types/levels in four quadrants, relating them to two dimensions of test goals: supporting the team vs. critiquing the product and technology-facing vs. business-facing.

---

## testware

**Ref:** After ISO 29119-1

Work products produced during the test process for use in planning, designing, executing, evaluating and reporting on testing.

---

## think aloud usability testing

A usability testing technique where test participants share their thoughts with the moderator and observers by thinking aloud while they solve usability test tasks. Think aloud is useful to understand the test participant.

---

## think time

The amount of time required by a user to determine and execute the next action in a sequence of actions.

---

## time behavior

**Ref:** After ISO 25010

The degree to which a component or system can perform its required functions within required response times, processing times and throughput rates.

---

## Total Quality Management (TQM)

**Ref:** After ISO 24765

An organization-wide management approach centered on quality, based on the participation of all members of the organization and aiming at long-term success through customer satisfaction, and benefits to all members of the organization and to society. Total Quality Management consists of planning, organizing, directing, control, and assurance.

---

## tour

A set of exploratory tests organized around a special focus.

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## TPI Next

A continuous business-driven framework for test process improvement that describes the key elements of an effective and efficient test process.

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## traceability

**Ref:** After ISO 19506

The degree to which a relationship can be established between two or more work products.

---

## traceability matrix

A two-dimensional table, which correlates two entities (e.g., requirements and test cases). The table allows tracing back and forth the links of one entity to the other, thus enabling the determination of coverage achieved and the assessment of impact of proposed changes.

---

## transactional analysis

The analysis of transactions between people and within people's minds; a transaction is defined as a stimulus plus a response. Transactions take place between people and between the ego states (personality segments) within one person's mind.

---

## transcendent-based quality

**Ref:** After Garvin **See Also:** manufacturing-based quality, product-based quality, user-based quality, value-based quality

A view of quality, wherein quality cannot be precisely defined, but we know it when we see it, or are aware of its absence when it is missing. Quality depends on the perception and affective feelings of an individual or group of individuals toward a product.

---

## unit test framework

**Ref:** Graham

A tool that provides an environment for unit or component testing in which a component can be tested in isolation or with suitable stubs and drivers. It also provides other support for the developer, such as debugging capabilities.

---

## usability

**Ref:** After ISO 25010

The degree to which a component or system can be used by specified users to achieve specified goals in a specified context of use.

---

## usability evaluation

**See Also:** formative evaluation, summative evaluation

A process through which information about the usability of a system is gathered in order to improve the system (known as formative evaluation) or to assess the merit or worth of a system (known as summative evaluation).

---

## usability lab

A test facility in which unintrusive observation of participant reactions and responses to software takes place.

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## usability requirement

A requirement on the usability of a component or system.

---

## usability test participant

A representative user who solves typical tasks in a usability test.

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## usability test script

A document specifying a sequence of actions for the execution of a usability test. It is used by the moderator to keep track of briefing and pre-session interview questions, usability test tasks, and post-session interview questions.

---

## usability test session

A test session in usability testing in which a usability test participant is executing tests, moderated by a moderator and observed by a number of observers.

---

## usability test task

A usability test execution activity specified by the moderator that needs to be accomplished by a usability test participant within a given period of time.

---

## usability testing

**Ref:** After ISO 25010

Testing to evaluate the degree to which the system can be used by specified users with effectiveness, efficiency and satisfaction in a specified context of use.

---

## use case testing

**Synonyms:** scenario testing, user scenario testing

A black-box test technique in which test cases are designed to exercise use case behaviors.

---

## user acceptance testing

**See Also:** acceptance testing

A type of acceptance testing performed to determine if intended users accept the system.

---

## user error protection

**Ref:** After ISO 25010

The degree to which a component or system protects users against making errors.

---

## user experience

**Ref:** ISO 9241-210

A person's perceptions and responses resulting from the use or anticipated use of a software product.

---

## user interface

All components of a system that provide information and controls for the user to accomplish specific tasks with the system.

---

## user interface aesthetics

**Ref:** ISO 25010

**Synonyms:** attractiveness

The degree to which a user interface enables pleasing and satisfying interaction for the user.

---

## user interface guideline

A low-level, specific rule or recommendation for user interface design that leaves little room for interpretation so designers implement it similarly. It is often used to ensure consistency in the appearance and behavior of the user interface of the systems produced by an organization.

---

## user story

A user or business requirement consisting of one sentence expressed in the everyday or business language which is capturing the functionality a user needs, the reason behind it, any non-functional criteria, and also including acceptance criteria.

---

## user story testing

A black-box test design technique in which test cases are designed based on user stories to verify their correct implementation.

---

## user survey

A usability evaluation whereby a representative sample of users are asked to report subjective evaluation into a questionnaire based on their experience in using a component or system.

---

## user-agent based testing

A type of testing in which a test client is used to switch the user agent string and identify itself as a different client while executing test suites.

---

## user-based quality

**Ref:** after Garvin **See Also:** manufacturing-based quality, product-based quality, transcendent-based quality, value-based quality

A view of quality, wherein quality is the capacity to satisfy needs, wants and desires of the user(s). A product or service that does not fulfill user needs is unlikely to find any users. This is a context dependent, contingent approach to quality since different business characteristics require different qualities of a product.

---

## V-model

A sequential development lifecycle model describing a one-for-one relationship between major phases of software development from business requirements specification to delivery, and corresponding test levels from acceptance testing to component testing.

---

## validation

**Ref:** ISO 9000

Confirmation by examination and through provision of objective evidence that the requirements for a specific intended use or application have been fulfilled.

---

## value-based quality

**Ref:** After Garvin **See Also:** manufacturing-based quality, product-based quality, transcendent-based quality, user-based quality

A view of quality wherein quality is defined by price. A quality product or service is one that provides desired performance at an acceptable cost. Quality determined by means of a decision process with stakeholders on trade-offs between time, effort and cost aspects.

---

## verification

**Ref:** ISO 9000

Confirmation by examination and through provision of objective evidence that specified requirements have been fulfilled.

---

## virtual user

A simulation of activities performed according to a user operational profile.

---

## vulnerability scanner

A static analyzer that is used to detect particular security vulnerabilities in the code.

---

## walkthrough

**Ref:** After ISO 20246

**Synonyms:** structured walkthrough

A type of review in which an author leads members of the review through a work product and the members ask questions and make comments about possible issues.

---

## Web Content Accessibility Guidelines (WCAG)

A part of a series of web accessibility guidelines published by the Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C), the main international standards organization for the internet. They consist of a set of guidelines for making content accessible, primarily for people with disabilities.

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## Website Analysis and Measurement Inventory (WAMMI)

A commercial website analysis service providing a questionnaire for measuring user experience and assessing delivery of business goals online.

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## white-box test technique

**Synonyms:** structural test technique, structure-based test technique, structure-based technique, white-box technique

A test technique only based on the internal structure of a component or system.

---

## white-box testing

**Synonyms:** clear-box testing, code-based testing, glass-box testing, logic-coverage testing, logic-driven testing, structural testing, structure-based testing

Testing based on an analysis of the internal structure of the component or system.

---

## Wideband Delphi

An expert-based test estimation technique that aims at making an accurate estimation using the collective wisdom of the team members.

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## wild pointer

A pointer that references a location that is out of scope for that pointer or that does not exist.

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## XiL test environment (XiL)

A generalized term for dynamic testing in different virtual test environments.

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