

INTERNATIONAL
STANDARD

ISO/
IEC/IEEE
29119-3

Second edition
2021-10

Software and systems engineering — Software testing —

Part 3: Test documentation

*Ingénierie du logiciel et des systèmes — Essais du logiciel —
Partie 3: Documentation des essais*



Reference number
ISO/IEC/IEEE 29119-3:2021(E)



Documents

ISO/IEC/IEEE 29119-3:2021(E) **Documents**

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Published in Switzerland

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Documents

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO/IEC documents should be noted. This document was drafted in accordance with the rules given in the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see <https://patents.iec.ch>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

ISO/IEC/IEEE 29119-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*, in cooperation with the Systems and Software Engineering Standards Committee of the IEEE Computer Society, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

This second edition cancels and replaces the first edition (ISO/IEC/IEEE 29119-3:2013), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the concept of test conditions has been replaced by test models, as feedback on the previous edition of this document highlighted a problem with users' understanding of 'test conditions' and their use for deriving test cases.

A list of all parts in the ISO/IEC/IEEE 29119 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

The purpose of ISO/IEC/IEEE 29119 (all parts) is to define an internationally-agreed set of standards for software testing that can be used by any organization when performing any form of software testing.

ISO/IEC/IEEE 29119-1 introduces software testing concepts. This document uses the concepts of ISO/IEC/IEEE 29119-1.

ISO/IEC/IEEE 29119-2 comprises test process descriptions that define the software testing processes at the organisational level, test management level and dynamic test levels. It supports dynamic testing, functional and non-functional testing, manual and automated testing and scripted and unscripted testing, and can be utilized within any lifecycle model, including agile and traditional methodologies. Supporting diagrams describing the processes are also provided.

ISO/IEC/IEEE 29119-4 defines software test design techniques, which can be used within any lifecycle and for any product.

ISO/IEC/IEEE 29119-5 addresses the use of keyword-driven testing.

This document defines templates and provides examples of test documentation that are produced during the test process. An overview of the test documentation is provided in [Figure 1](#). The templates are arranged within clauses reflecting the overall test process description structure in ISO/IEC/IEEE 29119-2, i.e. by the test process in which they are being produced. [Annex A](#) contains a list of all the information items identified in [Clauses 6, 7 and 8](#) with the corresponding level of conformance (shall/should/may) from ISO/IEC/IEEE 29119-2. [Annex B](#) contains an overview of the examples. [Annexes C to R](#) contain examples of the application of the templates. [Annex S](#) provides mappings to existing standards. [Annex T](#) explains why the concept of test conditions has been replaced by test models in this document. A Bibliography is provided at the end of the document.

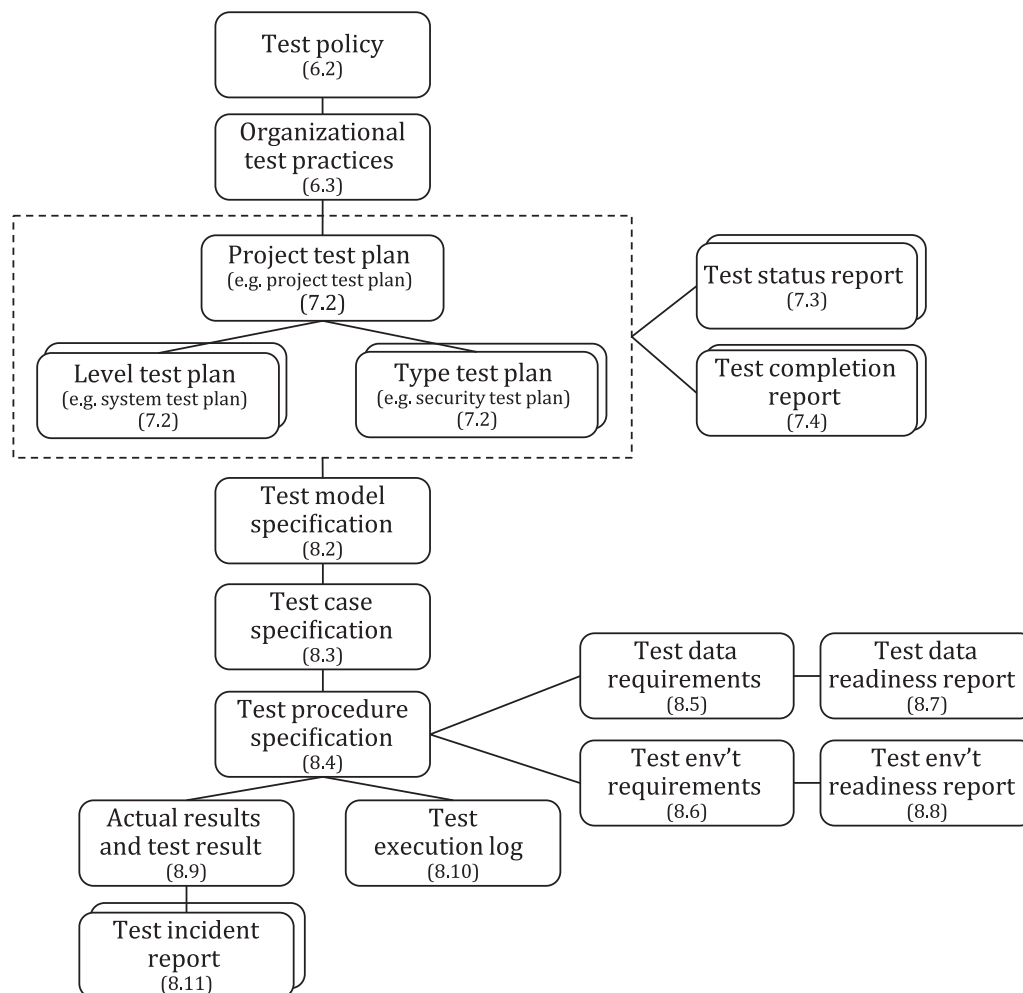


Figure 1 — Overview of test documentation

The test documentation described in this document can be on paper or in electronic form (e.g. records in test tools, spreadsheets, mind maps, white board photos).

The nomenclature of test documentation within this document (e.g. document names, section headings) and the contents of each document can be tailored to suit the unique needs of an organization, under the tailoring clause (see [Clause 4](#)).

This document uses the traditional concept of organizations and projects, but some organizations, especially those using an agile approach, do not organize their development in terms of projects; instead they run product development based on more long-lasting product teams. Users of this document can substitute the term 'product' for 'project', where appropriate.

ISO/IEC/IEEE 29119 (all parts) aims to provide stakeholders with the ability to manage and perform software testing in any organization. This document can be adopted under any lifecycle methodology including traditional (e.g. waterfall, iterative), agile or DevOps.

Software and systems engineering — Software testing —

Part 3:

Test documentation

1 Scope

This [document](#) ~~part of ISO/IEC/IEEE 29119~~ specifies software test documentation templates that can be used ~~for~~ [by](#) any organization, project or ~~smaller~~ testing activity. It describes the test documentation that is an output of the processes specified in ISO/IEC/IEEE 29119-2 ~~Test Processes~~. ~~An overview of the documents is provided in Figure 1 below. A slightly larger version of this figure is provided in Annex A.~~

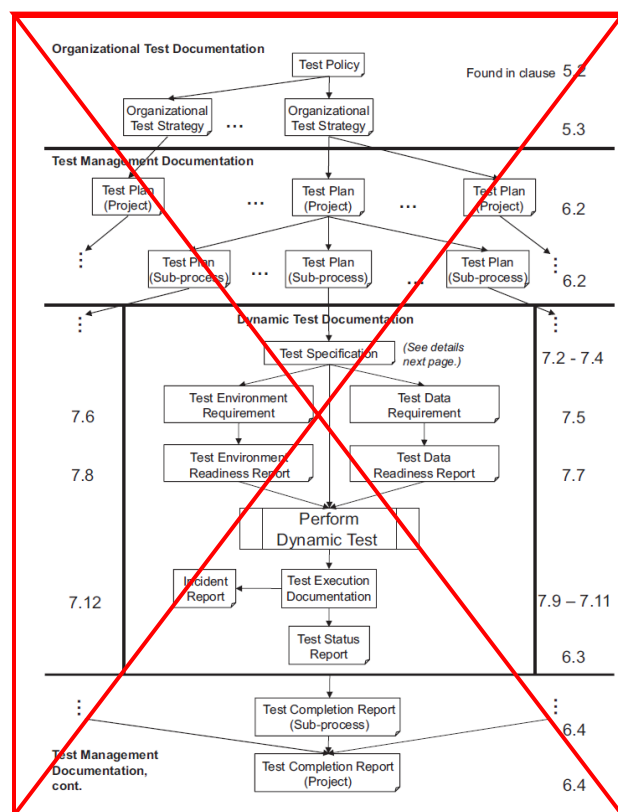


Figure 1—The hierarchy of test documentation

This [document](#) ~~part of ISO/IEC/IEEE 29119~~ is applicable to testing in all software development lifecycle models. This [document](#) ~~part of ISO/IEC/IEEE 29119~~ is intended for, but not limited to, testers, test managers, developers, and project managers, particularly those responsible for governing, managing, and implementing software testing.

~~The documents described in this part of ISO/IEC/IEEE 29119 may be issued in several versions over time. However, the handling of multiple versions of documents is out of scope of this part of ISO/IEC/IEEE 29119, because this is a configuration management issue.~~

2 Normative references

[There are no normative references in this document.](#)

~~The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.~~

~~ISO/IEC/IEEE 15289:2011, *Systems and software engineering — Content of life cycle information products (documentation)*~~

~~ISO/IEC/IEEE 29119-1, *Software and systems engineering — Software testing — Part 1: Concepts and definitions*~~

~~ISO/IEC/IEEE 29119-2, *Software and systems engineering — Software testing — Part 2: Test processes*~~

~~Other standards useful for the implementation and interpretation of this standard are listed in the Bibliography.~~

3 Terms and definitions

For the purposes of this document, the [following](#) terms and definitions ~~given in ISO/IEC/IEEE 24765 and the following~~ apply.

ISO, IEC and IEEE maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at [https:// www.iso.org/obp](https://www.iso.org/obp)
- IEC Electropedia: available at [https:// www.electropedia.org/](https://www.electropedia.org/)
- IEEE Standards Dictionary Online: available at [https:// ieeexplore.ieee.org/xpls/dictionary.jsp](https://ieeexplore.ieee.org/xpls/dictionary.jsp)

NOTE For additional terms and definitions in the field of systems and software engineering, see ISO/IEC/ IEEE 24765, which is published periodically as a “snapshot” of the SEVOCAB (Systems and software Engineering Vocabulary) database and is publicly accessible at [https:// www.computer.org/sevocab](https://www.computer.org/sevocab).

~~NOTE—Use of the terminology in this part of ISO/IEC/IEEE 29119 is for ease of reference and is not mandatory for conformance with this part of ISO/IEC/IEEE 29119. The following terms and definitions are provided to assist with the understanding and readability of this part of ISO/IEC/IEEE 29119. Only terms critical to the understanding of this part of ISO/IEC/IEEE 29119 are included. This clause is not intended to provide a complete list of testing terms. The Systems and Software Engineering vocabulary ISO/IEC/IEEE 24765 can be referenced for terms not defined in this clause. All terms defined in this clause are also intentionally included in ISO/IEC/IEEE 29119-1, as that international standard includes all terms that are used in ISO/IEC/IEEE 29119-1, 2, 3 and 4.~~

3.1

actual results

set of behaviours or conditions of a test item, or set of conditions of associated data or the test environment, observed as a result of test execution

EXAMPLE Output to screen, outputs to hardware, changes to data, reports, and communication messages sent.

4.2

~~coverage item~~

~~see test coverage item (4.15)~~

3.2

expected results

observable predicted behaviour of the test item under specified conditions based on its specification or another source

3.3

incident

anomalous or unexpected event, set of events, condition, or situation at any time during the life cycle of a project, product, service, or system

4.4

~~feature set~~

~~logical subset of the test item(s) that could be treated independently of other feature sets in the subsequent test design activities~~

~~Note 1 to entry: This could be the set of all features for the item (its full feature set), or a subset identified for a specific purpose (the functional feature set, etc.).~~

3.4

incident report

documentation of the occurrence, nature, and status of an *incident* [\(3.3\)](#)

Note 1 to entry: Incident reports are also known as anomaly reports, bug reports, defect reports, error reports, issues, problem reports and trouble reports, amongst other terms.

3.5

organizational test [practices](#) ~~Strategy~~

[documentation](#) ~~document~~ that expresses the [recommended approaches or methods](#) ~~generic requirements~~ for the testing to be performed ~~on all the projects run~~ within an organization, providing detail on how the testing is to be performed

Note 1 to entry: The organizational test [practices](#) ~~Strategy~~ is aligned with the ~~Organizational~~ test policy [\(3.20\)](#).

Note 2 to entry: An organization [can](#) ~~could~~ have more than one organizational test [practices](#) ~~document~~ ~~Strategy~~ to cover markedly different ~~project~~ contexts, [such one for mobile apps and one for safety-critical systems](#).

Note 3 to entry: The organizational test [practices can](#) ~~Strategy could~~ incorporate the context of the test policy where no separate test policy is available.

3.6

organizational test specification

[documentation](#) ~~document~~ that provides information about testing for an organization, i.e. information that is not project specific

EXAMPLE The most common examples of organizational test specifications are the [test policy \(3.20\)](#) and [organizational test practices \(3.5\)](#). ~~Policy and Organizational Test Strategy.~~

[3.7](#)

[test basis](#)

[information used as the basis for designing and implementing test cases](#)

[Note 1 to entry: The test basis can take the form of documentation, such as a requirements specification, design specification, or module specification, but can also be an undocumented understanding of the required behaviour.](#)

[4.8](#)

[product risk](#)

~~risk that a product could be defective in some specific aspect of its function, quality, or structure~~

[4.9](#)

[project risk](#)

~~risk related to the management of a project~~

~~EXAMPLE—Lack of staffing, strict deadlines, changing requirements.~~

[4.11](#)

[retesting](#)

~~re-execution of test cases that previously returned a "fail" result, to evaluate the effectiveness of intervening corrective actions~~

~~Note 1 to entry: Also known as confirmation testing.~~

4.12

test case

~~set of test case preconditions, inputs (including actions, where applicable), and expected results, developed to drive the execution of a test item to meet test objectives, including correct implementation, error identification, checking quality, and other valued information~~

~~Note 1 to entry: A test case is the lowest level of test input (i.e. test cases are not made up of test cases) for the test sub-process for which it is intended.~~

~~Note 2 to entry: Test case preconditions include: test environment, existing data (e.g. databases), software under test, hardware, etc.~~

~~Note 3 to entry: Inputs are the data information used to drive test execution.~~

~~Note 4 to entry: Expected results include success criteria, failures to check for, etc.~~

3.8

test case specification

documentation of a set of one or more test cases

3.9

test completion report

test summary report

report that provides a summary of the testing that was performed

~~Note 1 to entry: Also known as a Test Summary Report.~~

4.15

test coverage item

~~attribute or combination of attributes that is derived from one or more test conditions by using a test design technique that enables the measurement of the thoroughness of the test execution~~

4.16

test data

~~data created or selected to satisfy the input requirements for executing one or more test cases, which could be defined in the Test Plan, test case or test procedure~~

~~Note 1 to entry: Test data could be stored within the product under test (e.g., in arrays, flat files, or a database), or could be available from or supplied by external sources, such as other systems, other system components, hardware devices, or human operators.~~

3.10

test data readiness report

documentation ~~document~~ describing the status of each test data requirement

3.11

test environment item

element of a test environment that can be considered separately from other parts of the test environment

EXAMPLE Hardware, software, interfaces, peripherals, tools.

3.12

test environment readiness report

[documentation](#) ~~document~~ that describes the [status](#) ~~fulfillment~~ of each test environment requirement

Note 1 to entry: This can list the status of each of the *test environment requirements* (3.13).

4.18

Test Design Specification

~~document specifying the features to be tested and their corresponding test conditions~~

4.19

test design technique

~~activities, concepts, processes, and patterns used to construct a test model that is used to identify test conditions for a test item, derive corresponding test coverage items, and subsequently derive or select test cases~~

4.20

test environment

~~facilities, hardware, software, firmware, procedures, and documentation intended for or used to perform testing of software~~

Note 1 to entry: A test environment could contain multiple environments to accommodate specific test sub-processes (e.g. a unit test environment, a performance test environment, etc.).

3.13

test environment requirements

[documentation](#) ~~description~~ of the necessary properties of the test environment

Note 1 to entry: All or parts of the test environment requirements [can](#) ~~could~~ reference where the information can be found, e.g. in the appropriate *organizational test* [practices \(3.5\)](#) [document](#) ~~Strategy~~, *test plan* [\(3.19\)](#), and/or *test specification* [\(3.23\)](#).

3.14

test execution log

[record](#) ~~document that records details~~ of the execution of one or more test procedures

3.15

[test incident](#)

[event occurring during the execution of a test that requires investigation](#)

3.16

[test model](#)

[representation of the test item, which allows the testing to be focused on particular characteristics or qualities](#)

[EX AMPLE Requirements statements, equivalence partitions, state transition diagram, use case description, decision table, input syntax, source code, control flow graph, parameters and values, classification tree, natural language.](#)

Note 1 to entry: The test model and the required test coverage are used to identify test coverage items.

Note 2 to entry: A separate test model can be required for each different type of required test coverage included in the test completion criteria.

Note 3 to entry: A test model can include one or more test conditions.

Note 4 to entry: Test models are commonly used to support test design (e.g. they are used to support the test design in ISO/IEC/IEEE 29119-4, and they are used in model-based testing). Other types of models exist to support other aspects of testing, such as test environment models, test maturity models and test architecture models.

3.17

test model specification

documentation specifying the *test model* (3.16)

3.18

test organization

management structure responsible for testing within an organization

Note 1 to entry: The test organization is typically technically, managerially and financially independent from the development organization.

4.24

test item

~~work product that is an object of testing~~

~~EXAMPLE — A system, a software item, a requirements document, a design specification, a user guide.~~

3.19

test plan

detailed description of test objectives to be achieved and the means and schedule for achieving them, organized to coordinate testing activities for some test item or set of test items

Note 1 to entry: A project ~~can~~ ~~could~~ have more than one test plan, for example there ~~can~~ ~~could~~ be a project test plan (also known as a master test plan) that encompasses all testing activities on the project; further detail of particular test activities ~~can~~ ~~could~~ be defined in one or more test ~~level/test type sub-process~~ plans (e.g. a system test plan or a performance test plan).

Note 2 to entry: ~~Typically~~ A test plan is ~~typically~~ a written document, ~~although~~ ~~though~~ other formats ~~can~~ ~~could~~ be possible as defined locally within an organization or project.

Note 3 to entry: Test plans ~~can~~ ~~could~~ also be written for non-project activities, for example a maintenance test plan.

3.20

test policy

organizational test policy

~~an~~ executive-level documentation ~~document~~ that describes the purpose, goals, principles and scope of testing within an organization

Note 1 to entry: The test policy defines what testing is performed and what it is expected to achieve but does not detail how testing is to be performed.

Note 2 to entry: The test policy can provide a framework for establishing, reviewing and continually improving the organization's testing.

3.21

test procedure specification

test script

documentation specifying one or more test procedures, ~~which are collections of test cases to be executed for a particular objective~~

~~Note 1 to entry: The test cases in a test set are listed in their required order in the test procedure.~~

~~Note 2 to entry: Also known as a manual test script. A test procedure specification for an automated test run is usually called a test script.~~

3.22

test result

indication of whether or not a specific test case has passed or failed, i.e. if the *actual results* [\(3.1\)](#) corresponds to the *expected results* [\(3.2\)](#) or if deviations were observed

4.29

~~test set~~

~~collection of test cases for the purpose of testing a specific test objective~~

~~Note 1 to entry: The test sets will typically reflect the feature sets, but they could contain test cases for a number of feature sets.~~

~~Note 2 to entry: Test cases for a test set could be selected based on the identified risks, test basis, retesting and/or regression testing.~~

3.23

test specification

complete documentation of the test design, test cases and test procedures for a specific test item

Note 1 to entry: A test specification can ~~could~~ be detailed in one document, in a set of documents, or in other ways, for example in a mixture of documents and database entries.

3.24

test status report

report that provides information about the status of the testing that is being performed in a specified reporting period

3.25

test strategy

part of the *test plan* (3.19) that describes the approach to testing for a specific ~~test~~ project, test level or test type ~~sub-process or sub-processes~~

Note 1 to entry: The test strategy levels and ~~is a distinct entity from the Organizational Test Strategy.~~

~~Note 2 to entry: The test strategy~~ usually describes some or all of the following: the test ~~practices used;~~ the test types ~~sub-processes~~ to be implemented; the retesting and regression testing to be employed; the test design techniques and corresponding test completion criteria to be used; test data; test environment and testing tool requirements; and expectations for test deliverables.

3.26

test traceability matrix

[verification cross reference matrix](#)

[requirements test matrix](#)

[requirements verification table](#)

document, spreadsheet, or other ~~automated~~ tool used to identify related items in documentation and software, such as requirements with associated tests

~~Note 1 to entry: Also known as: verification cross reference matrix, requirements test matrix, requirements verification table, and others.~~

Note 2 to entry: Different test traceability matrices [can](#) ~~could~~ have different information, formats, and levels of detail.

4 Conformance

4.1 Intended usage

[4.1.1 General](#)

The requirements in this [document](#) ~~part of ISO/IEC/IEEE 29119~~ are contained in Clauses [4](#), [5](#), [6](#), [7](#), [8](#) and [Annex A 7](#).

This document provides requirements for test documentation across the complete software testing lifecycle. Test documentation ~~In this part of ISO/IEC/IEEE 29119, for simplicity of reference, each document is described as if it were published as a separate hardcopy document. Document titles and contents provided in this part of ISO/IEC/IEEE 29119 may be modified (added to, combined or re-titled) and use of the nomenclature of the specific records in Clauses 5, 6 and 7 is not required to claim conformance. Documents~~ shall be considered as conforming if it is ~~they are unpublished but~~ available in an electronic format (e.g. records in a test management tool or spreadsheet) ~~form~~, divided into separate documents ~~or volumes~~, or combined with other documents into one document.

In this document, for simplicity, each item of test documentation is described as if it were a separate hardcopy document. Test documentation titles, headings and layout described in this document may be modified (e.g. added to, combined or re-titled). The use of the nomenclature used in Clauses 5, 6, 7 and 8 is not mandatory.

The information items identified in Clauses ~~5, 6, 7 and 8~~ ~~7 of this part of ISO/IEC/IEEE 29119~~ correspond to the outputs of the test processes in ISO/IEC/IEEE 29119-2 ~~Test Processes~~. Annex A ~~B is normative and~~ provides an overview of the ~~normative~~ requirements for ~~the~~ clauses in ISO/IEC/IEEE 29119-2 where the creation of the information items defined in Clauses ~~5, 6, and 7~~ and 8 are ~~of this part of ISO/IEC/IEEE 29119 is~~ described.

~~This part of ISO/IEC/IEEE 29119 provides requirements for a number of test documents suitable for use during the complete software lifecycle.~~ It is recognized that some ~~particular projects or organizations,~~ projects or teams may not need to use all of the test documentation ~~documents~~ defined by this document ~~part of ISO/IEC/IEEE 29119~~. Therefore, implementation of this document ~~part of ISO/IEC/IEEE 29119~~ typically involves selecting a set of test documentation ~~documents~~ suitable for the organization, ~~or~~ project or team. There are two ways that an implementation organization ~~can be claimed~~ claim to conform to the provisions of this document: ~~part of ISO/IEC/IEEE 29119;~~ full conformance and ~~or~~ tailored conformance. ~~Conformance may be claimed for organizations, projects, multi-supplier projects and services, as identified in the claim of conformance.~~

The organization shall assert whether it is claiming full or tailored conformance to this document.

NOTE 1 Options for conformance are provided for needed flexibility in the application of this document.

NOTE 2 When this document is used to help develop an agreement between an acquirer and a supplier, clauses of this document can be selected for incorporation in the agreement with or without modification. In this case, it is more appropriate for the acquirer and supplier to claim compliance with the agreement than conformance with this document.

NOTE 3 An organization (for example, national, industrial association, company) imposing this document, as a condition of trade, can specify and make public the minimum set of test documentation, which constitute suppliers' compliance with the conditions of trade.

NOTE 4 Requirements of this document are marked by the use of the verb "shall". Recommendations are marked by the use of the verb "should". Permissions are marked by the use of the verb "may". However, despite the verb that is used, the requirements for conformance are selected as described previously.

4.1.2 Full conformance

Full conformance shall be achieved by providing evidence that all requirements (i.e. shall statements) of the test documentation defined in Clauses 5 to 8 and Annex A have been met.

~~The minimum set of required information items is all of those information items specified in Clauses 5, 6 and 7 of this part of ISO/IEC/IEEE 29119.~~

~~NOTE— Full conformance could be claimed for selected documents even if full conformance with the entire standard is not claimed.~~

~~**2.2 Types of conformance**~~

~~The following types of conformance shall be asserted. The selected type shall be identified in the claim of conformance documentation.~~

4.1.3 Tailored conformance

When this document is used as a basis for establishing a set of test documentation that does not qualify for full conformance, the subset of test documentation for which tailored conformance is claimed, shall be recorded. Tailored conformance is achieved by demonstrating that all requirements (i.e. shall statements) for the recorded subset of test documentation defined in Clauses 5 to 8 and Annex A have been satisfied.

~~The content of the test documents defined in Clauses 5, 6 and 7 of this part of ISO/IEC/IEEE 29119 may be tailored based on the tailored conformance to ISO/IEC/IEEE 29119-2 Test Processes and/or based on the specific needs of an organization or project.~~ Where tailoring occurs, justification shall be provided (either directly or by reference), whenever the requirements (i.e. shall statements) of test documentation ~~an information item~~ defined in Clauses 5 to 8 ~~,6~~ and Annex A ~~are 7 of this part of ISO/IEC/IEEE 29119~~ is not met ~~prepared~~. All tailoring decisions shall be recorded with their rationale, including the consideration of any applicable risks. Tailoring decisions shall be agreed by the relevant stakeholders.

EXAMPLE Where organizations follow information item management processes in standards such as ISO 15489-1 or ISO 9001 or use similar internal organizational processes, they can decide to use information items produced by those processes in place of the test documentation defined in this document.

~~Tailored conformance can be achieved by:~~

- ~~a) — The minimum set of required test documentation is determined by the tailoring of the processes and activities in accordance with Clause 2 of ISO/IEC/IEEE 29119-2 Test Processes; and/or~~
- ~~b) — The minimum set of required test documentation is determined according to specific organization and/or project needs; and/or~~
- ~~c) — The minimum set of required information items within documents is determined according to specific organization and/or project needs.~~

~~NOTE 1 — In projects, particularly those following an agile approach, tailoring can be applied to all Part 3 documents to allow them to be condensed or presented in an alternate format (e.g. verbal or slide presentation).~~

~~NOTE 2 — Different document names could be used, but when this is done and conformity needs to be demonstrated, a mapping is often produced between this part of ISO/IEC/IEEE 29119 and local usage to aid conformity assessment.~~

5 Common information for all test documentation

5.1 Overview

This clause defines the common information elements that shall be captured for all test documentation types covered in Clauses 6, 7 and 8. The common information elements listed in 5.2 shall be included in each applicable piece of test documentation.

NOTE — The test documentation described in this document can be issued in several versions over time. Whilst a simple level of version control information is defined in Clause 5, the overall handling of multiple versions of test documentation (including reviewing and maintaining test documentation) is out of scope of this document, as that is a configuration management issue that is handled in other ISO standards.

5.2 Common information elements

5.2.1 Unique identifier

Uniquely identifies the test documentation or record.

EXAMPLE — The unique identifier can include the title of the test documentation, the date of issue, version, and/or documentation status (e.g. draft, reviewed, corrected, final).

5.2.2 Issuing organization

Specifies the organization responsible for preparing and releasing the [test documentation or record document](#). It may also include ~~the~~ author(s).

5.2.3 Approval authority

Identifies the designated person(s) who have the responsibility for ~~reviewing and~~ signing off on the [test documentation or record document](#) (possibly electronically). It may also include ~~the~~ reviewers and pertinent managers.

5.2.4 Change history

Includes a log of all of ~~the~~ changes [made](#) ~~that have occurred~~ to the [test documentation or record document](#) since its inception.

EXAMPLE This [can consist of](#) ~~could include a table that includes list including~~ the present version of the [test documentation document](#) and any predecessor [versions, with](#) ~~documents containing~~ the unique [identifier](#) ~~identification~~ of each [version, a document](#), description of [documentation document](#) changes with respect to the previous [version, document in the list, reason for changes, and](#) the name and role of the person making the changes [and reasons for changes](#).

~~EXAMPLE 2~~ Reasons for [change can](#) ~~changes could~~ include [addressing](#) audit [comment](#) ~~comments~~, team review [comments or](#) ~~, and~~ system changes. [The](#) ~~, and~~ person making the change [can include the test documentation](#) ~~could be document~~ author, project manager [or](#), system owner.

5.2.5 Status

[Defines the status of each item of test documentation.](#)

EXAMPLE [Test documentation status can include "not yet started", "in design", "in review" and "approved."](#)

5.2.6 Introduction

Explains the context and structure of the test documentation or record.

5.2.7 Scope

Identifies the extent of the coverage of the subject area by the test documentation or record, and describes any inclusions, exclusions, assumptions and/or limitations.

5.2.8 References

Lists other referenced documents or records and identifies repositories for system, software, and test information. The references may be separated into “external” references that are imposed from outside the organization and “internal” references that are imposed from within the organization.

EXAMPLE Referenced documents can be policies, plans, procedures, and other source data.

5.2.9 Glossary

Provides a lexicon for the terms, abbreviations, and acronyms, if any, used in the test documentation or record.

NOTE This section can be an annex, or it can refer to another item of test documentation that provides a general glossary. All or part of the glossary and/or acronym list can be online, as a separate testing specific glossary or incorporated in a larger organizational glossary (including more terms than just those that are related to testing).

6 Organizational test process documentation

6.1 Overview

Organizational test specifications describe information about testing at the organization level, and are not project dependent. Typical examples of organizational test specifications developed in the organizational test process include:

- test policy;
- organizational test [practices Strategy](#).

The full templates with explanatory text for [these items of test documentation can be found](#) ~~the document follow~~ in [6 sub-clauses 5.2 Test Policy](#) and [6 5.3 Organizational Test Strategy](#). Annex A provides an abbreviated overview of each [item of test documentation along with the requirements, recommendations and permissions \(shall, should and may\) for each section of the test documentation document](#). Annexes [C and D](#) ~~and E~~ provide examples of a test policy and organizational test [practices Strategy](#) for example projects.

6.2 Test policy

6.2.1 Overview

The test policy defines the objectives and principles of software testing to be applied within the organization. It defines what should be accomplished by testing, but does not detail how testing is performed. The policy provides a framework for establishing, reviewing, and continually improving the organization's test policy.

~~Annex A.3 2.2~~ provides an outline of the organizational test policy, while [C annexes D.1](#) and [C D.2](#) provide examples that demonstrate how Organizational Test Policies [can](#) ~~could~~ be developed for two different example projects.

The contents of the test policy [are specified in 6.2.2 to 6.2.11](#). ~~include:~~

~~5.2.2 Document specific information~~

~~5.2.2.1 Overview~~

~~This information identifies the document and describes its origins and history.~~

~~NOTE The information could be placed on an early page in a document, or in a central place, if the contents are kept in electronic form, e.g. in a database.~~

~~5.2.2.2~~ Unique identification of document

~~Uniquely identifies a version of the document.~~

~~EXAMPLE—The unique identifier could include the title of the document, the date of issue, version, and/or document status (e.g. draft, reviewed, corrected, final).~~

~~5.2.3~~ Introduction

~~Provides explanatory information about the context and structure of the document.~~

~~5.2.3.1~~ Scope

~~Identifies the extent of the coverage of the subject area by the document, and describes any inclusions, exclusions, assumptions and/or limitations.~~

~~5.2.3.2~~ References

~~Lists referenced documents and identifies repositories for system, software, and test information. The references may be separated into “external” references that are imposed from outside the organization and “internal” references that are imposed from within the organization.~~

~~EXAMPLE—Referenced documents could be policies, plans, procedures, and other source data.~~

~~5.2.3.3~~ Glossary

~~Provides a lexicon for the terms, abbreviations, and acronyms, if any, used in the document.~~

~~NOTE—This section could be an annex, or it could refer to another document providing a general glossary. All or part of the glossary and/or acronym list could be online, as a separate testing-specific glossary or incorporated in a larger organizational glossary (including more terms than just those that are testing-related).~~

5.2.4 ~~Test policy statements~~

6.2.2 Objectives of testing

Describes the purpose, goals, and overall scope of the testing within the organization. States the organization's position on why testing is performed and what they look to achieve.

6.2.3 Test process

Identifies the test process that the organization will follow. This may include reference to a specific document providing details of the test process.

EXAMPLE Such a document ~~can~~ ~~could~~ be a test process in ISO/IEC/IEEE 29119-2 ~~Test Processes~~. The details of activities in the test process ~~can~~ ~~could~~ be described in more detailed test process documentation.

6.2.4 Test organization structure

Identifies the roles and structure of the test organization. A diagram to show test organization hierarchy may be used, or the information may be presented in a table.

6.2.5 Tester training

States required training and certifications for individuals performing testing ~~working~~ in the ~~test~~ organization.

6.2.6 Tester ethics

Identifies the organizational ethics code to be upheld by the testers.

6.2.7 Standards

States which standards are applicable to the testing performed within the ~~test~~ organization.

6.2.8 Other relevant policies

Identifies policies that impact the [testing performed within the test](#) organization.

EXAMPLE A policy statement [can](#) ~~could~~ be that testing will conform to the quality policy.

6.2.9 Measuring the value of testing

States how the organization determines the return on investment of testing. Identifies the objectives for measuring the value of testing.

6.2.10 Test asset archiving and reuse

States the organization's position on the archiving and reuse of test assets.

6.2.11 Test process improvement

States the method for ensuring continuous improvement of the test process.

6.3 Organizational test practices

6.3.1 Overview

The organizational test [practices](#) ~~Strategy~~ is a technical [test documentation](#) ~~document~~ that provides guidelines on how testing should be carried out within the organization, i.e. how to achieve the objectives stated in the test policy [, where one exists](#).

The ~~Organizational Test Strategy is a generic document at an~~ organizational [test practices](#) ~~level that~~ provides guidelines to projects within its scope; it is not project specific.

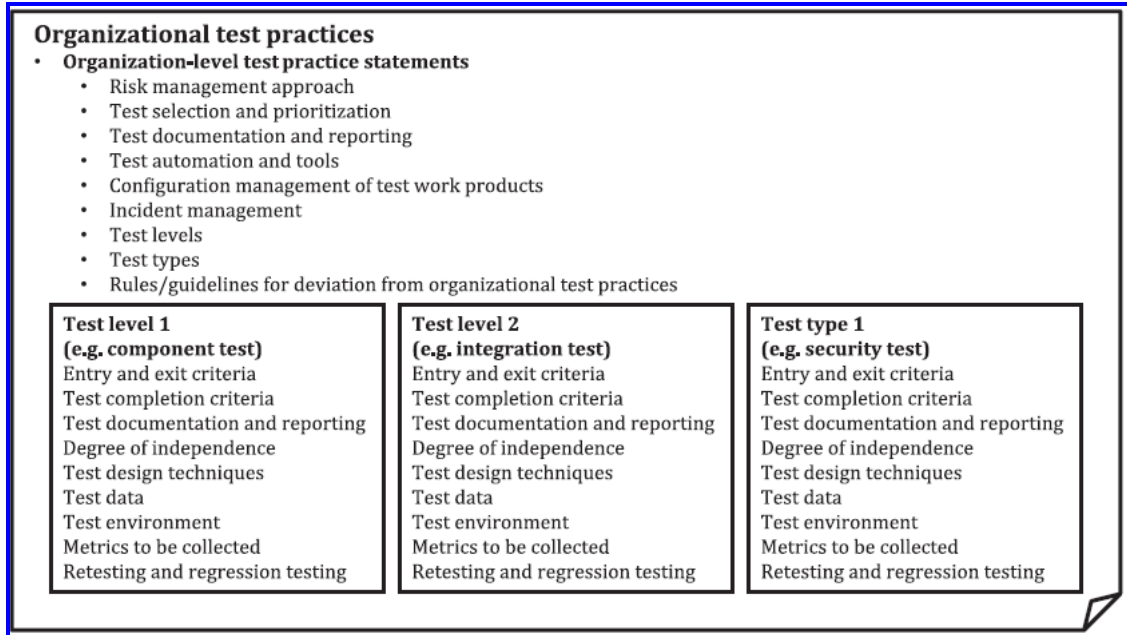
For small or highly homogenous organizations, a single set of organizational test practices documentation Strategy may cover all testing activities. An organization may have more than one set of organizational test practices documentation Strategy if the organization performs testing development in a number of significantly different ways, such as for both safety-critical products and non-safety-critical products; or if it is using both agile and V-model development models; or if its programmes are large enough to merit their own documented test practices strategy.

The organizational test practices Strategy may incorporate the content of the test policy where no separate test policy is available.

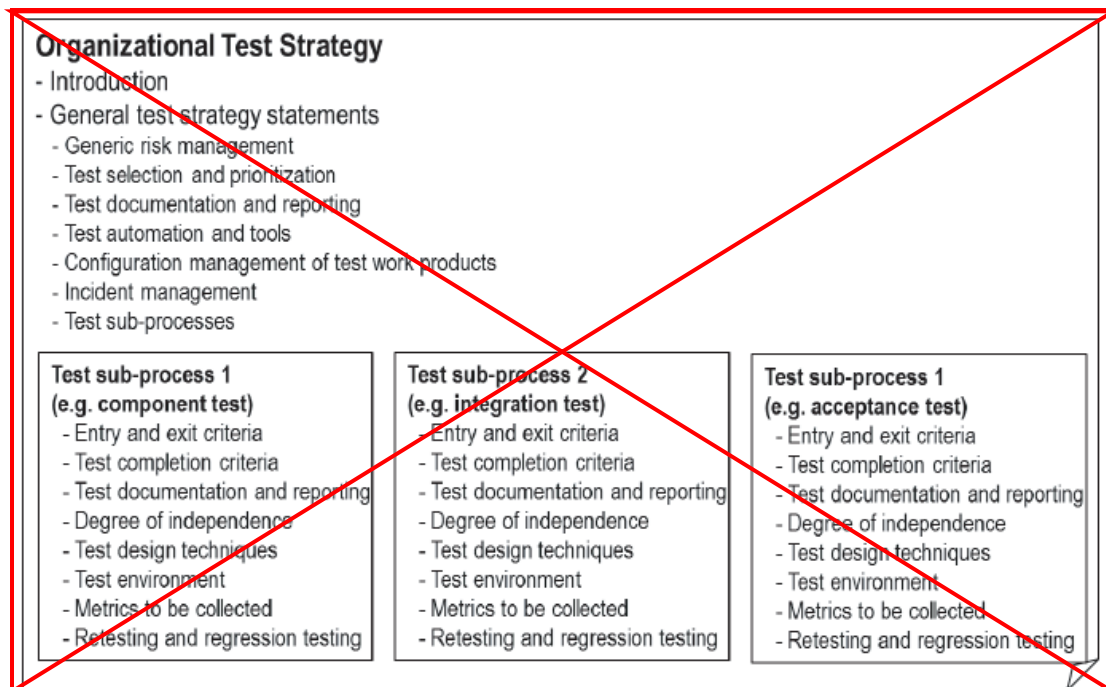
The practices are defined for the specified scope – such as at the level of a programme, project or for a specific level or type of testing.

The An organizational test practices Strategy includes identification of relevant-test levels expected to be used sub-processes and types and practice strategy statements for each of these. It The document may be partitioned with a subsection for each of the-identified test level and test type sub-process if the test level or test type practice sub-processes strategy statements differ significantly between each the test level or type sub-processes; this is illustrated in the-Figure 2 below.

The contents of the organizational test practices are defined in 6.3.2 and 6.3.3. Annex A.2.3 provides an outline of the organizational test practices documentation Strategy, while Annex D provides annexes E.1 and E.2 provide examples that demonstrate how organizational test practices can Strategies could be developed for two different-example organizations projects.



(New)



(Deleted)

Figure 2 — An example structure of the organizational test practices document Strategy

The contents of the Organizational Test Strategy include:

5.3.2 Document specific information

5.3.2.1 Overview

This information identifies the document and describes its origins and history.

NOTE——The information could be placed on an early page in a document, or in a central place, if the contents are kept in electronic form, e.g. in a database.

5.3.2.2 Unique identification of document

Uniquely identifies a version of the document.

EXAMPLE——The unique identifier could include the title of the document, the date of issue, version, and/or document status (e.g. draft, reviewed, corrected, final).

5.3.2.3 Issuing organization

Specifies the organization responsible for preparing and releasing the document. It may also include the author(s).

5.2.3 Approval authority

Identifies the designated person(s) who have the responsibility for ~~reviewing and~~ signing off on the test documentation or record ~~document~~ (possibly electronically). It may also include ~~the~~ reviewers and pertinent managers.

5.3.2.5 Change history

~~Includes a log of all of the changes that have occurred to the document since its inception.~~

~~EXAMPLE 1—This could include a list including the present version of the document and any predecessor documents containing the unique identification of each document, description of document changes with respect to the previous document in the list, reason for changes, and the name and role of the person making the changes.~~

~~EXAMPLE 2—Reasons for changes could include audit comments, team review, and system changes, and person making the change could be document author, project manager, system owner.~~

5.3.3 Introduction

~~Provides explanatory information about the context and structure of the document.~~

5.3.3.1 Scope

~~Identifies the extent of the coverage of the subject area by the document, and describes any inclusions, exclusions, assumptions and/or limitations.~~

5.3.3.2 References

~~Lists referenced documents and identifies repositories for system, software, and test information. The references may be separated into “external” references that are imposed from outside the organization and “internal” references that are imposed from within the organization.~~

~~EXAMPLE—Documents could be policies, plans, procedures, and other source data.~~

5.3.3.3 Glossary

~~Provides a lexicon for the terms, abbreviations, and acronyms, if any, used in the document.~~

~~NOTE—This section could be an annex, or it could refer to another document providing a general glossary. All or part of the glossary and/or acronym list could be online, as a separate testing specific glossary or incorporated in a larger organizational glossary (including more terms than just those that are testing related).~~

6.3.2 Organization-level test practice statements

6.3.2.1 General

~~5.3.4 Project-wide organizational test strategy statements~~

~~The strategy is defined for the specified scope.~~ This section includes statements that are apply to appropriate for all of the test levels and test types sub-processes to be performed in projects run within the organization (or that part of the organization that is a given project within the scope of the organizational test practices documentation) ~~strategy~~. This section may include subsections from the test policy, if needed.

6.3.2.2 ~~Generic~~ Risk management approach

Identifies the generic approach to risk management expected to be used to direct the testing activities.

EX AMPLE This can be to identify project and product risks that can be mitigated or reduced by testing.

6.3.2.3 Test selection and prioritization

Describes the ~~organization's~~ approach to selecting and prioritizing test execution, in the form of prioritized test procedures. Test procedures consist of prioritized test cases, derived from prioritized ~~feature sets via prioritized test conditions and~~ coverage items.

6.3.2.4 Test documentation and reporting

Identifies the test documentation documents expected to be produced during testing by each for the test project being run within the organization as a whole. Describes when each documentation type is prepared and the associated approval process. This is tightly connected to the test process that is specified in the test policy.

6.3.2.5 Test automation and tools

Describes the approach to test automation ~~within the organization~~. Identifies the ~~test testing~~ tools to be used throughout testing.

EXAMPLE This ~~can could~~ include test management tools, test execution tools, performance ~~test testing~~ tools, security ~~test testing~~ tools ~~and~~, usability ~~test testing~~ tools.

6.3.2.6 Configuration management of test work products

Describes the configuration management to be performed for the work products from testing; describes how these work products are to be identified, traced, stored, and made available to stakeholders.

6.3.2.7 Incident management

Describes how incidents should be managed during testing or refers to a description elsewhere.

6.3.2.8 Test levels ~~sub-processes~~

Identifies specific test levels ~~sub-processes~~ to be performed as part of the testing within the scope of the practices ~~strategy~~.

6.3.2.9 Test types

Identifies specific types of testing to be performed as part of testing within the scope of the practices.

6.3.2.10 Rules/guidelines for deviation from organizational test practices

Defines rules or guidelines for determining the conditions under which deviation from organizational test practices is possible/allowed within the organization.

EXAMPLE An organization can decide that individual projects or teams cannot change the defect severity and priority levels that are set out in the organizational test practices.

6.3.3 Test level/type ~~sub-process~~ -specific organizational test practice strategy statements

6.3.3.1 Entry and exit criteria

Criteria that specify when test processes for a given test level or type can start and stop.

~~Specifies the criteria used to determine when the test activities for the defined test sub-process should start and stop.~~

Each A test level and type ~~sub-process~~ consists of the following test processes:

- test planning;
- test design and ~~&~~ implementation;
- test environment and data management ~~set-up & maintenance;~~
- test execution; ~~and~~
- test incident reporting.

Different entry and exit criteria may be defined for each of these test processes ~~individually~~, or for selected ones, or for the entire test level or type ~~sub-process~~ as a whole.

EXAMPLE Entry criteria for test execution during system testing can include: the system test plan has been created and signed off, test cases have been created and approved by business stakeholders and test data and the test environment (including deployment of the test item) are prepared and ready for execution. Exit criteria for system testing can include: all high priority test cases have been executed and passed testing or that any severity 1 or 2 defects that remain open have been reviewed and approved by the business as not requiring addressing during system testing.

6.3.3.2 Test completion criteria

Criteria that specify when test execution for a given test level, test type or test technique can be considered complete. For test types and test levels, the test completion criteria may be the same as the exit criteria for that test level.

EXAMPLE The test completion criterion for state transition testing can be that test execution will continue until all states in the state model have been "visited" during testing.

~~Describes how the organization considers the testing activities for the test sub-process to be complete.~~

6.3.3.3 Test documentation and reporting

Identifies the test documentation, including reporting, used for testing activities in the test level or type sub-process. Describes when each ~~document or report~~ is prepared and the associated approval process. This is tightly connected to the test process specified in the test policy.

6.3.3.4 Degree of independence

Establishes the level of independence of those performing the testing. States how testers or groups of testers are ~~this testing group is~~ technically, managerially, and financially independent.

6.3.3.5 Test design techniques

Identifies specific test design techniques to be used during test design and implementation within the test level or type sub-process.

6.3.3.6 Test data

Identifies the test data required for the test level or type. This may include a statement of the origin of test data, where particular types of test data are located and groups or organizations responsible for creating and maintaining test data.

NOTE The data quality model defined in ISO/IEC 25012 can support the identification of test data requirements (and potentially data measurement needs).

6.3.3.7 Test environment

Identifies the test environment for the test level or type. This ~~sub-process~~ may include state where specific types of test should be performed, and may identify ~~identifies~~ groups or organizations responsible for the test environment. ~~May identify the origin of test data, state where particular types of test data are located, and groups or organizations responsible for test data.~~

6.3.3.8 Metrics to be collected

Describes the metrics for which values are to be collected during the test activities in the test level or type ~~sub-process~~.

6.3.3.9 Retesting ~~and regression testing~~

Identifies the practices ~~strategy~~, conditions, and activities for retesting in each test level or type ~~and regression testing in the test sub-process~~.

6.3.3.10 Regression testing

Identifies the practices, conditions and activities for regression testing in each test level or type.

~~testing following modifications to a test item or to its operational environment, to identify whether regression failures occur~~

~~Note 1 to entry: The sufficiency of a set of regression test cases depends on the item under test and on the modifications to that item or its operational environment.~~

7 Test management processes documentation

7.1 Overview

The [test documentation documents](#) developed in the test management processes comprise the following types:

- test plan;
- test status report;
- test completion report.

The full templates with explanatory text for [each of these items of test documentation](#) ~~the documents~~ are [specified in 7.2 to 7.4](#) ~~found below~~. Annex A provides an abbreviated overview of each [item of test documentation along with the requirements, recommendations and permissions \(shall, should and may\) for each section of the test documentation document](#). Annexes [E, F and G](#) ~~and H~~ provide examples of test plans, test status reports, and test completion reports for example projects.

7.2 Test plan

7.2.1 Overview

The test plan [is an item of test documentation that is used for](#) ~~provides a~~ test planning and test management. [It describes the decisions made during initial test planning and evolves as re-planning is performed as part of the control activity](#) ~~document~~. Some projects may have a single test plan, while for larger projects multiple test plans may be produced. Test plans may apply across multiple projects (at the programme level), or to a single project ([i.e. project test plan/master test plan](#)), or to a specific test [level or type](#) ~~sub-process~~ (e.g. system test plan, integration software test plan, subsystem test plan, subcontractor software test plan, unit software test plan, or performance test plan), or to a specific iteration of testing). If [multiple](#) ~~more~~ software test plans are created, a mapping tree may be produced to aid [the documentation of](#) ~~documenting~~ relationships and the information contained in each.

If the organization does not yet have organizational test practices defined, then there may be sections from that test documentation that need to be included in the test plan. This may include the test selection and prioritization (6.3.2.3), test automation and tools (6.3.2.5), configuration management of test work products (6.3.2.6) and incident management (6.3.2.7), as these are not repeated in the test plan template defined in this subclause.

~~The Test Plan describes the decisions made during the initial planning and evolves as re-planning is performed as part of the control activity.~~

~~Annex A.3 2.4~~ provides an outline of the test plan, while Annex E provides ~~annexes F.1 and F.2~~ ~~provide~~ examples that demonstrate how test plans can ~~could~~ be developed for two different example projects.

The contents of the test plan are specified in 7.2.2 to 7.2.10. ~~include:~~

~~6.2.2 Document specific information~~

~~6.2.2.1 Overview~~

~~This information identifies the document and describes its origins and history.~~

~~NOTE—The information could be placed on an early page in a document, or in a central place if the contents are kept in electronic form, e.g. in a database.~~

~~6.2.2.2 Unique identification of document~~

~~Uniquely identifies a version of the document.~~

~~EXAMPLE—The unique identifier could include the title of the document, the date of issue, version, and/or document status (e.g. draft, reviewed, corrected, final).~~

~~6.2.2.3~~ Issuing organization

~~Specifies the organization responsible for preparing and releasing the document. It may also include the author(s).~~

~~6.2.2.5~~ Change history

~~Includes a log of all of the changes that have occurred to the document since its inception.~~

~~EXAMPLE 1 This could include a list including the present version of the document and any predecessor documents containing the unique identification of each document, description of document changes with respect to the previous document in the list, reason for changes, and the name and role of the person making the changes.~~

~~EXAMPLE 2 Reasons for changes could include audit comments, team review, and system changes, and person making the change could be document author, project manager, system owner.~~

~~6.2.3~~ Introduction

~~Provides explanatory information about the context and structure of the document.~~

~~6.2.3.1~~ Scope

~~Identifies the extent of the coverage of the subject area by the document, and describes any inclusions, exclusions, assumptions and/or limitations.~~

~~6.2.3.2~~ References

~~Lists referenced documents and identifies repositories for system, software, and test information. The references may be separated into “external” references that are imposed from outside the organization and “internal” references that are imposed from within the organization.~~

~~EXAMPLE—References to test item documentation relevant to an individual test sub-process could include:~~

~~Requirements;~~

~~Design;~~

~~User's guide;~~

~~Operations guide; and/or~~

~~Installation guide.~~

6.2.3.3 Glossary

Provides a lexicon for the terms, abbreviations, and acronyms, if any, used in the document.

NOTE ~~This section could be an annex, or it could refer to another document providing a general glossary. All or part of the glossary and/or acronym list could be online, as a separate testing specific glossary or incorporated in a larger organizational glossary (including more terms than just those that are testing related).~~

7.2.2 Context of ~~the~~ testing

7.2.2.1 Projects / test levels / test types

~~6.2.4.1 Project(s) / test sub-process(es)~~

Identifies the projects, test levels and/or test types ~~Identifies the project(s) or the test sub-process(es)~~ for which the test plan is being written and other relevant contextual information.

7.2.2.2 Test item~~(s)~~

Identifies the test item~~(s)~~ for the testing covered by this test plan including ~~their~~ version/revision information or a reference for where this information can be found.

This section may describe the ~~mission/business~~ purpose of the test item~~(s)~~, or reference where this information can be found.