
**Systems and software engineering —
Requirements for testers and reviewers
of user documentation**

*Ingénierie des systèmes et du logiciel — Exigences pour testeurs et
vérificateurs de documentation utilisateur*

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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.

ISO/IEC 26513 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

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Introduction

Anyone who uses application software needs accurate information about how the software will help the users accomplish a task. The documentation might be the first tangible item that the users see, and so influences the first impressions the users have of the product. If the information is supplied in a convenient form and is easy to find and understand, the users can quickly become proficient at using the product. Therefore, well-designed documentation not only assists the users and helps to reduce the cost of training and support, but also enhances the reputation of the product, its producer, and its suppliers.

This International Standard addresses the evaluation and testing of user documentation. It applies to both initial development and subsequent releases of the software and user documentation.

This International Standard is independent of the software tools that might be used to produce documentation, and applies to both printed documentation and on-screen documentation. Much of its guidance is applicable to user documentation for systems including hardware as well as to software user documentation.

This International Standard conforms with ISO/IEC 26514:2008 *Systems and software engineering — Requirements for designers and developers of user documentation*, ISO/IEC 15288:2008, *Systems and software engineering — System life cycle processes*, and ISO/IEC 12207:2008, *Systems and software engineering — Software life cycle processes*. This International Standard was developed to assist those who test and review software user documentation as part of the software life cycle process. This International Standard defines the Documentation Management and Validation processes of ISO/IEC 12207:2008 from the tester's standpoint. This International Standard may be used as a conformance or a guidance document for products, projects and organizations claiming conformance to ISO/IEC 15288:2008 or ISO/IEC 12207:2008.

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Systems and software engineering — Requirements for testers and reviewers of user documentation

1 Scope

This International Standard supports the interest of software users in receiving consistent, complete, accurate, and usable documentation. This International Standard defines the process in which user documentation products are tested.

This International Standard is intended neither to encourage nor discourage the use of either printed or electronic (on-screen) media for documentation, or of any particular documentation testing or management tools or methodologies.

This International Standard specifies processes for use in testing and reviewing of user documentation (Clause 5). It is not limited to the test and review phase of the life cycle, but includes activities throughout the Information Management and Documentation Management processes.

This International Standard provides the minimum requirements for the testing and reviewing of user documentation (Clause 6), including both printed and on-screen documents used in the work environment by the users of systems software. It applies to printed user manuals, online help, tutorials, and user reference documentation.

The order of clauses in this International Standard does not imply that the software user documentation should be tested in this order.

In each clause, the requirements are media-independent, as far as possible. The informative checklists found in Annexes A and B may be used at each phase of the documentation process to verify that the appropriate steps have been carried out, and that the finished product has acceptable quality.

This International Standard can be helpful for testing and reviewing the following types of documentation:

- documentation of products other than software, for example, hardware or devices;
- multimedia systems using animation, video, and sound;
- computer-based training (CBT) packages and specialized course materials intended primarily for use in formal training programs;
- documentation produced for installers, computer operators, or system administrators who are not end users;
- maintenance documentation describing the internal operation of systems software.

This International Standard is applicable to testers, reviewers, and other related roles, including a variety of specialists:

- usability testers, documentation reviewers, and subject-matter experts;
- information designers and architects who plan the structure and format of products in a documentation set;

- usability specialists and business analysts who identify the tasks the intended users will perform with the software.

The International Standard can also be consulted by those with other roles and interests in the documentation process.

Managers of the software development process or the documentation process should consider the testing of documentation as part of their planning and management activities. Project managers, in particular, have an important role in planning the testing and reviewing of documentation.

Testing of the documentation is likely to highlight any defects or nonconformances in tools that are used to create or display on-screen documentation. Similarly, usability testing of the documentation is likely to highlight defects or nonconformances with the presentation or layout of documentation and associated graphics and other media. As a result, there are a number of roles that should be involved in the testing of documentation because their work affects the content, display or presentation of documentation for the user, for example, developers of tools for creating on-screen documentation, graphic designers producing material displayed as part of the documentation, and human-factors experts who identify principles for making documentation more accessible and easily used, also user interface designers and ergonomics experts working together to design the presentation of the documentation on-screen. In some organizations these roles may have different titles, or an individual may perform more than one of these roles.

There are other roles that need to understand the test processes for the documentation, for example authors should understand the test processes for the documentation that they have produced and acquirers of documentation prepared by another department or organization might want to know what testing has been performed and the processes followed for the documentation that they are acquiring from a supplier.

This International Standard is intended for use in all types of organizations, whether or not a dedicated documentation department is present. In all cases, it may be used as a basis for local standards and procedures. Readers are assumed to have experience or general knowledge of testing or reviewing processes.

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This International Standard deals with the evaluation of documentation only, and not with the evaluation of the software it supports. Documentation is also included in evaluation of the software product, as in the ISO/IEC 25000 series of standards. In particular, ISO/IEC 25051:2006 *Software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Requirements for quality of Commercial-Off-The-Shelf (COTS) software product and instructions for testing*.

The works listed in the Bibliography provide additional guidance on the processes of managing, preparing, and testing user documentation.

2 Conformance

This International Standard may be used as a conformance or a guidance document for projects and organizations claiming conformance to ISO/IEC 15288:2008, *Systems and software engineering — System life cycle processes*, ISO/IEC 12207:2008, *Systems and software engineering — Software life cycle processes* or both.

2.1 Definition of conformance

When the selected software life cycle processes are tailored, the organization or project may claim conformance to this International Standard for its documentation process.

Throughout this International Standard, "shall" is used to express a provision that is binding, "should" to express a recommendation among other possibilities, and "may" to indicate a course of action permissible within the limits of this International Standard. When using this International Standard as a guide, replace the term "shall" with "should".

This International Standard is meant to be tailored so that only necessary and cost-effective requirements are applied. Tailoring may take the form of specifying approaches to comply with its mandatory requirements, or altering its non-mandatory recommendations and approaches to reflect the particular software and documentation product more explicitly. Tailoring decisions should be specified in the contract.

NOTE: ISO/IEC 12207:2008 Annex A defines the tailoring process.

Use of the nomenclature of this International Standard for the parts of user documentation (that is, chapters, topics, pages, screens, windows, etc.) is not required to claim conformance.

2.2 Conformance situations

Conformance may be interpreted differently for various situations. The relevant situation shall be identified in the claim of conformance:

- a) When conformance is claimed for an organization, the organization shall make public a document declaring its tailoring of the life cycle process;

NOTE 1: One possible way for an organization to deal with clauses that cite "the documentation plan" or the "test plan" is to specify that they shall be interpreted in the project plans for any particular documentation project.

- b) When conformance is claimed for a project, the project plans or the contract shall document the tailoring of the documentation requirements;

NOTE 2: A project's claim of conformance is typically specified with respect to the organization's claim of conformance.

- c) When conformance is claimed for a multi-supplier program, it may be the case that no individual project may claim conformance because no single contract calls for all the required activities. Nevertheless, the program, as a whole, may claim conformance if each of the required activities are produced by an identified party. The program plans shall document the tailoring of the required tasks, and their assignment to the various parties, as well as the interpretation of any clauses of the standard that reference "the contract".

This International Standard may be included or referenced in contracts or similar agreements when the parties (called the acquirer and the producer or supplier) agree that the supplier shall deliver user documentation testing or reviewing and editing services in accordance with the standard. This International Standard may also be adopted as an in-house standard by a project or organization that decides to test or assess documentation in accordance with it.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE: Throughout this International Standard, the term *documentation* refers to software user documentation. Use of the terminology in this International Standard is for ease of reference and is not mandatory for conformance. ISO/IEC 24765, *Software and Systems Engineering Vocabulary* may be referenced for terms not defined in this clause. This source is available at the following Web site: <http://www.computer.org/sevocab>.

3.1 accessibility

usability of a product, service, environment or facility by people with the widest range of capabilities

NOTE: Although "accessibility" typically addresses users who have disabilities, the concept is not limited to disability issues.

3.2
audience

category of users sharing the same or similar characteristics, and needs (for example, purpose in using the documentation, tasks, education level, abilities, training, experience) that determine the content, structure, and use of the intended documentation

NOTE: There might be a number of different audiences for a software product's documentation (for example, management, data entry, maintenance).

3.3
author

person designing or developing user documentation

3.4
caution

advisory in software user documentation that performing some action might lead to consequences that are unwanted or undefined, such as loss of data or an equipment problem

NOTE: See also **warning** and **note**.

3.5
context-sensitive help

information displayed relevant to the user's current context, e.g. location, sequence of user's action and operation, in the application

3.6
critical information

information on the safe use of the software, the security of the information created with the software, or the privacy of the information created by or stored with the software

3.7
customization

process of adapting a product to the needs of a particular user or group of users

3.8
design

phase of development concerned with determining what documentation shall be provided in a product and what the nature of the documentation shall be

3.9
development

activity of preparing documentation after it has been designed

3.10
display

information presented on a screen or in a window of a screen

3.11
document

an item of documentation

3.12
documentation

information that explains how to use a software product

3.13
document set

collection of documentation that has been segmented into separately identified volumes or products for ease of distribution or use

3.14 effectiveness

relation of the goals of using the product to the accuracy and completeness with which these goals might be achieved

NOTE: Common measures include percentage of task completion, frequency of defects, frequency of assists, frequency of accesses to help or documentation.

3.15 efficiency

relation of the level of effectiveness achieved to the quantity of resources expended

NOTE: Time-on-task is the main measure of efficiency. Also Completion Rate/Mean Time-On-Task (defect rates vs time to achieve task).

3.16 embedded documentation

information that is delivered as an integral part of a piece of software

EXAMPLE: On-screen help provided with the software.

3.17 evaluation

systematic determination of the extent to which an entity meets its specified criteria

3.18 function

part of an application that provides facilities for users to carry out their tasks

3.19 illustration

graphic element set apart from the main body of text and normally cited within the main text

NOTE: In this International Standard, the term *illustration* is used as the generic term for tables, figures, exhibits, screen captures, flow charts, diagrams, drawings, icons, and other graphic elements.

3.20 internationalization

process of developing information so that it is suitable for an international audience and may be localized

3.21 link

navigation method that takes the user from one item of on-screen documentation to another item

3.22 localization

creation of a national or specific regional version of a product

NOTE: Localization may be carried out separately from the translation process.

3.23 navigation

process of accessing on-screen documentation and moving between different items of information

3.24 note

helpful hint or other information that might assist the user by emphasizing or supplementing important points of the main text

NOTE: See also **caution** and **warning**.

3.25

on-screen documentation

information about the software that is intended to be read on the computer screen by the user while using the software

3.26

platform

the combination of an operating system and hardware that makes up the operating environment in which a program runs

3.27

pop-up

embedded, context-sensitive information that is displayed when invoked by user action

3.28

printed documentation

documentation that is either provided in printed form, or provided in an electronic form for the customer or user to print

3.29

procedure

ordered series of steps that a user follows to do one or more tasks

3.30

product

complete set of computer programs, procedures, and associated documentation designed for delivery to a user

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NOTE: See also **software**.

3.31

product authority

person with overall responsibility for the capabilities and quality of a product

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3.32

project

set of activities for developing a new product or enhancing an existing one

3.33

project manager

person with overall responsibility for the management and running of a project

3.34

satisfaction

user's subjective response when using the product

NOTE: Questionnaires are often used to measure user satisfaction and associated attitudes, such as usefulness and ease of use.

3.35

software

part of a product that is the computer program or the set of computer programs

NOTE: For the purposes of this International Standard, the term software does not include on-screen documentation.

3.36

software user documentation

electronic or printed body of material that provides information to users of software

3.37**step**

one element of a procedure. A step contains one or more actions

3.38**style**

set of language-specific editorial conventions covering grammar, terminology, punctuation, capitalization, and word choice of documentation

3.39**system test of user documentation**

testing performed with both the software and the documentation to evaluate that the documentation is fit for purpose and supports the users sufficiently in their use of the software

3.40**technical contact**

person responsible for providing an author with technical information about a product or for checking the technical accuracy of drafts of user documentation

3.41**topic**

small part of a document that deals with a single subject

NOTE 1: In printed documentation, a topic is equivalent to a section (heading; subheading) and its content. In onscreen documentation, a topic consists of a title (heading) and information about a subject (typically, a task or a concept or reference information).

NOTE 2: For on-screen documentation, the system may present a topic without user intervention.

EXAMPLE: Instructions on how to print the current document and displayed separately as part of the on-screen documentation.

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3.42**tutorial**

Instructional procedure in which the user performs software functions using sample data supplied with the software or documentation

3.43**use case**

sequence of tasks that a system can perform, interacting with users of the system and providing a measurable result of value for the user

3.44**user**

person who employs software to perform a task

3.45**validation**

confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled

3.46**verification**

confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

3.47**warning**

advisory in software user documentation that performing some action might lead to serious or dangerous consequences

NOTE: See also **caution** and **note**.

4 User documentation process within the systems/software life cycle

This clause covers the processes involved in testing and reviewing user documentation.

Testers and reviewers of software user documentation work within the life cycle processes of the software product, which are defined in ISO/IEC 12207:2008, *Software life cycle processes*. The applicable processes are the Software Implementation process of Software Qualification Testing, and the Software Support Processes of Documentation Management and Validation. ISO/IEC 12207 also describes the activities of the documentation management process:

- process implementation;
- development and review;
- production;
- maintenance.

Within the Documentation Management process described in ISO/IEC 12207:2008, review of the documentation and approval of adequacy by authorized personnel prior to issue is described as part of the design and development process. This includes review for format, technical content, and presentation style against documentation standards. Within the Software Validation process and activities described in ISO/IEC 12207:2008, the relevant activities are tested so that representative users can successfully achieve their intended task, and that the product satisfies its intended use.

Therefore, testing and reviewing of the user documentation should be part of the same processes as the product life cycle, and ideally performed in conjunction with the development of the software, so that the software and the user documentation are tested, distributed, and maintained together. The testing of all the documentation, including on-screen documentation and printed documentation, should be a part of the development of the product as a whole, not a separate exercise. Although accurate user documentation cannot be completed until the software product has been fully developed, the user documentation and the product both benefit from concurrent development and testing.

Ideally, documentation testing is carried out in conjunction with the development of the software. Aspects of the Measurement life cycle process from ISO/IEC 12207:2008 are also relevant to this International Standard.

The test process applies to software and documentation developed under both the classic documentation development process (development of a new product with new user manual), and also more complex circumstances, such as:

- a previously documented software product is being upgraded, offered in a new version or on different operating system platforms, or customized as part of system integration requiring the revision of previous documentation;
- previous documentation must be converted to a different format or different media, or in different languages or versions, such as tutorials, online help, or advanced reference guides;
- previous documentation must be adapted or used as models for different products acquired or supplied by an organization;
- previous documentation must be modified to adhere to new regulations, business process guidelines, or compliance requirements.

Testing and reviewing software user documentation is greatly assisted by the presence of other documentation produced during the software life cycle, such as a Documentation Plan, System Design Document, System Test Plan, Release Records, and Problem Reports. Other documentation specific to the

documentation process may be produced, such as style guides and organizational procedures for content management and documentation reviews.

NOTE: ISO/IEC 15289:2006 *Systems and Software Engineering — Content of systems and software life cycle process information products (Documentation)* provides recommendations for the required documents throughout the systems/software life cycle.

This International Standard is also related to the following standards: ISO/IEC 25000:2005 *Software Engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Guide to SQuaRE* and ISO/IEC 14598, *Information technology — Software product evaluation* Parts 1-6, 1998-2001. These standards describe the quality metrics characteristics of software and the evaluation process for ensuring quality in a software product. The same processes may be used to ensure that the documentation meets the required quality through the use of evaluation metrics.

For the sake of simplicity, this standard describes the life cycle as if there were a clear starting point for developing documentation, and a clear end point. However, there is not a single sequence of activities that might be followed in all cases for all products and all types of information. For example, implementation and review activities are very closely inter-linked, as are testing and maintenance, and the way they link together varies between projects.

5 Documentation evaluation process requirements, objectives, and constraints

5.1 General

The purpose of documentation evaluation is to ensure that documentation is acceptable for use. This clause describes the processes of documentation evaluation in two forms: testing and reviewing. Documentation evaluations are performed throughout the document's development, production, and maintenance.

Documentation evaluation shall be based on the required functions and qualities. Ultimate acceptance comes from the end-users, but the managers, developers, testers, and maintainers must accept the quality before the documentation can be released to the user. Evaluation of documentation quality depends on the recognition of various perspectives for acceptability:

- **manager's view.** Managers might be more concerned with overall quality than with specific quality characteristics. They might assign different weights to certain characteristics to reflect the business needs of the organization, comparing the documentation to what is commercially available in the market and what is less costly to produce. Managers should be aware that the quality of documentation might appreciably affect costs for customer support and future sales.
- **developer's view.** Developers might be concerned with how the product operates in its innovative or advanced functions, more than with how the product supports the users' tasks.
- **tester's view.** Testers might be concerned with how the product operates in its innovative or advanced functions in the same way as other developers, but should have a better understanding of how the product supports the users' tasks, and whether the documentation matches the product and helps the user to accomplish tasks.
- **maintainer's view.** Those who will have to maintain the documentation systems will have special requirements for quality in addition to those of other developers. They will be concerned with, for example, the simplicity and clarity of the documentation structures, the ease with which new versions of the documentation might be created, and portability to new technology for content management and production.
- **user's view.** Users are likely to measure quality in terms, such as inclusion of needed information, reliability, and ease of finding information and applying it to accomplish needed tasks.