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Systems and software engineering — Requirements for testers and reviewers of information for users

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



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Redline Processing Notes:

1. ~~Red Text~~ - Red strikethrough text denotes deletions.
2. Blue Text - Blue underlined text denotes modifications and additions.

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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.

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

The main task of ISO/IEC JTC 1 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.

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

This second edition of ISO/IEC/IEEE 26513 cancels and replaces ISO/IEC 26513:2009 which has been technically revised. The main changes compared to the previous edition are as follows:

- additions to the Terms and Definitions;
- updates to the Documentation Review and System Test of Documentation sections;
- expanded sections for Accessibility Testing and Translation and Localization Review and Testing;
- replacement of the editorial checklists in Annex A with User-centered Test and Review Guidelines;
- editorial changes; and
- additions to the bibliography.

Introduction

Well-designed documentation not only assists users and helps to reduce the cost of training and support, but also enhances the reputation of the product, its producer, and its suppliers. Verification, validation testing, and expert review of content during development provides feedback to information developers regarding the accuracy and usability of their work. This document addresses the evaluation and testing of information provided for users to perform tasks, make decisions in context, and gain understanding. It applies to both initial development and subsequent releases of the software and user documentation.

This document is independent of the software tools that may be used to produce documentation and applies to printed and electronic documentation, embedded content in the software, and online documentation. Much of its guidance is applicable to user documentation for systems including software user documentation as well as the software used to control machinery or hardware devices.

This document was developed to assist those who test and review software user documentation as part of the software lifecycle process. This document defines the information management and validation processes of ISO/IEC/IEEE 12207:2017 from the information assessors' and testers' standpoints. This document can be used as a conformance or a guidance document for products, projects, and organizations claiming conformance to ISO/IEC/IEEE 15288:2015 or ISO/IEC/IEEE 12207:2017. Readers are assumed to have experience with or general knowledge of reviewing and testing processes.

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

1 Scope

This ~~International Standard~~ document 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~~ and specifies processes for use in testing and reviewing of user documentation (Clause ~~5~~ 6). It is not limited to the test and review ~~phase~~ stage of the lifecycle, but includes activities throughout the information management and documentation management ~~processes~~ process.

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

This document deals with the evaluation of end-user content only, and not with the evaluation of the software it supports.

NOTE 1 ~~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 and 29000 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.~~

- ISO/IEC TR 25060;
- ISO/IEC 25062;
- ISO/IEC 25063:2014;
- ISO/IEC 25064:2013; and

— [ISO/IEC/IEEE 29119-3:2013.](#)

~~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~~ [document](#) provides the minimum requirements for ~~the~~ testing and reviewing ~~of~~ user documentation (Clause ~~6~~ [7](#)), including both printed and ~~on-screen~~ [online](#) documents used in ~~the~~ work ~~environment~~ [and other environments](#) by the users of [software which includes application software, systems software, apps on mobile devices, and software that controls machinery or hardware devices](#). It applies to printed user manuals, online help, [user assistance](#), tutorials, [websites](#), and user reference documentation.

This ~~International Standard~~ [document](#) can [also](#) 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)~~ [tutorial](#) 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; [and](#)
- maintenance documentation describing the internal operation of systems software.

This ~~International Standard~~ [document](#) is applicable to testers, reviewers, and other related roles, including a variety of specialists:

- usability testers, documentation reviewers, and subject-matter experts;
- information ~~designers~~ [developers](#) and architects who plan the structure and format of products in a documentation set;

- usability ~~specialists~~ [analysts](#) and business analysts who identify the tasks the intended users ~~will~~ perform with the software.;
- [editors](#);
- [test participants](#);
- [installers, computer operators, or system administrators; and](#)
- [customer support groups such as training, help desks, repair, and return.](#)

The ~~International Standard~~ [document](#) can also be consulted by those with other roles and interests in the ~~documentation~~ [information management](#) process. Managers of the software development process or the ~~documentation~~ [information management](#) 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 supporting](#) the [review and](#) 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~~ [online](#) 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~~ [identify additional operational concerns or misunderstandings of end users.](#)

[NOTE 2 Testing of documentation can highlight problems with the software being documented. Resolving problems with the software is not in the scope of this document.](#)

There are other roles that need to understand the test processes for the documentation; for example ~~authors~~, information developers should understand the test ~~processed~~ 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.

The order of clauses in this ~~International Standard~~ document does not imply that ~~the~~ software user documentation ~~should~~ is meant to be reviewed, assessed, edited, or tested in this order.

In each clause, the requirements are media-independent, as far as possible. The informative ~~checklists~~ guidelines found in ~~Annexes~~ Annex A, User-Centered Test and B-may Review Guidelines, can be used at each ~~phase~~ stage of the ~~documentation~~ information management process to verify that the ~~appropriate~~ correct steps have been carried out; and that the finished product has acceptable quality.

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

2 **Normative references**

There are no normative references in this document.

3 **Terms and definitions**

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

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

— IEC Electropedia: available at <http://www.electropedia.org>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

— IEEE Standards Dictionary Online: available at <http://dictionary.ieee.org>

~~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.~~

NOTE ISO/IEC/IEEE 24765, Software and Systems Engineering Vocabulary ~~may~~ can 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

A/B testing

technique to determine the effectiveness of minor changes in a product or design where "A" represents the original version and "B" represents the modified version

Note 1 to entry: This notation is typically used in usability testing. In this instance, A/B does not refer to alpha and beta testing.

3.2

accessibility

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

Note 1 to entry: Although "accessibility" typically addresses users who have disabilities, the concept is not limited to disability issues.

3.3

assistive technology

hardware or software that is added to or incorporated within a system that increases accessibility for an individual

EXAMPLE Braille displays, screen readers, screen magnification software, and eye tracking devices are assistive technologies.

[SOURCE: ISO/IEC/IEEE 24765:2010]

3.4

audience

category of users sharing the same or similar characteristics⁷ 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 1 to entry: See also **persona (3.29)**.

Note 2 to entry: There ~~might~~ may be a number of ~~different~~ audiences for a software product's documentation (for example, management, data entry, maintenance, engineering, business professionals).

3.3

~~author~~

~~person designing or developing user documentation~~

3.5

caution

hazardous situation which, if not avoided, can result in minor or moderate injury

~~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 1 to entry: See also **danger (3.8)** and **warning ~~and note~~ (3.50)**.

[SOURCE: ISO/DIS 3864-2:2015, definition 3.1, Modified, ""signal word" removed from definition.]

3.6

complete

<documentation> all critical information and any necessary, relevant information for the intended audience

[SOURCE: ISO/IEC/IEEE 15289:2017]

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~~

3.7

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

3.8

danger

hazardous situation, which if not avoided, can result in death or serious injury

Note 1 to entry: See also **caution** (3.5) and **warning** (3.50).

[SOURCE: ISO/DIS 3864-2:2015, definition 3.3, Modified, "signal word used to indicate" removed from definition.]

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~~

3.9

document (noun)

uniquely identified unit of information for human use

EXAMPLE Report, specification, manual, or book in printed or electronic form.

Note 1 to entry: A document can be a single information item or part of a larger information item.

[SOURCE: ISO/IEC/IEEE 15289:2017]

~~an item of documentation~~

3.10

documentation

information that explains how to use ~~a software product~~, devices, applications, or services

Note 1 to entry: Throughout this document, the term documentation refers to software user documentation. "Software" includes application software, systems software, and software that controls machinery or hardware devices. Documentation may include a wide variety of products such as user guides, reference manuals, tutorials, wikis, input forms, error messages, user interfaces, and online help.

3.11

document set

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

3.12

effectiveness

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

[SOURCE: ISO/IEC 25062:2006, definition 4.2]

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

3.13

efficiency

resources expended in relation to the accuracy and completeness with which users achieve goals

Note 1 to entry: Efficiency in the context of usability is related to productivity rather than to its meaning in the context of software efficiency.

[SOURCE: ISO/IEC 25062:2006, definition 4.3]

~~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).~~

3.14

embedded documentation

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

EXAMPLE: ~~On-screen help~~ [Tool tips or other text displayed or](#) provided with the software.

3.15

evaluation

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

3.16

function

part of ~~an~~ [a software](#) application that provides ~~facilities~~ [features](#) for users to carry out their tasks

[3.17](#)

[hazard](#)

[source of potential harm](#)

[\[SOURCE: ISO/DIS 3864-2:2015, definition 3.6, Modified, Note 1 to entry removed.\]](#)

[3.18](#)

[heuristic evaluation](#)

[assessment by one or more experts who judge conformance to a recognized set of principles](#)

3.19

illustration

~~graphie~~ [graphical](#) element set apart from the main body of text and normally cited within the main text

Note [1 to entry](#): In this ~~International Standard~~ [document](#), the term *illustration* is used as the generic term for tables, figures, exhibits, screen captures, flow charts, diagrams, drawings, icons, and other ~~graphie~~ [graphical](#) elements.

3.20

information architect

[person who develops the structure of an information space and the semantics for accessing required task objects, system objects, and other information](#)

3.21

information development

[process of development concerned with determining what content and visuals shall be provided in product documentation and what the nature of the information shall be](#)

3.22

information developer

[person who prepares the content and visuals for product documentation](#)

3.23

information development lead

[person who leads the activities of preparing documentation](#)

3.20

internationalization

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

3.24

link

reference from some part of one document to some other part of another document or another part of the same document

Note 1 to entry: Synonym: [hyperlink](#)

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

3.25

localization

creation of a national or specific regional version of a product or its documentation

Note 1 to entry: Documentation can be localized even if the product has not been localized.

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

3.26

mobile device

portable computing device, typically having a wireless internet connection and a display screen with touch, pen, or keyboard input, and possibly auditory input and output features

Note 1 to entry: Mobile devices have to fulfil special usability requirements due to their size and available features for input and output.

3.27

navigation

process of accessing ~~on-screen documentation~~ [information](#) 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**.~~

3.28

[online help](#) ~~on-screen documentation~~

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

Note 1 to entry: [Online help can be displayed in a variety of forms \(contextual help, screen tips, and examples\).](#)

[3.29](#)

[persona](#)

[model of a user with defined characteristics, based on research](#)

3.30

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~~

3.31

procedure

ordered series of steps that a user follows to ~~do~~ [perform](#) one or more tasks

~~3.30~~

~~product~~

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

NOTE: ~~See also software.~~

~~3.31~~

~~product authority~~

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

~~3.32~~

~~project~~

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

3.32

project manager

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

3.33

satisfaction

freedom from discomfort and positive attitudes towards the use of the product

[SOURCE: ISO/IEC 25062:2006, definition 4.4]

~~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.~~

3.34

software

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

Note 1 to entry: For the purposes of this ~~International Standard~~ document, the term software does not include ~~on-screen documentation~~ information developed for users.

3.35

software user documentation

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

3.36

step

~~one~~ element of a procedure. ~~A step contains~~ containing one or more actions that enables a user to perform a task

3.37

style

set of language-specific editorial conventions covering grammar, terminology, punctuation, capitalization, ~~and~~ usage, word choice~~—of~~, structured authoring elements, and images in documentation

3.38

tailoring

process by which individual requirements in specifications, standards, and related documents are evaluated and made applicable to a specific project by selection, and in some exceptional cases, modification of existing or addition of new requirements

[SOURCE: ISO 27025:2010, definition 3.1.3]

3.39

test lead

person who leads entire testing process

3.40

test participant

person who provides feedback and allows data collection to test that the information in the software documentation is sufficient to accomplish tasks correctly and form a conceptual understanding of the system

3.41

test protocol

list of the steps to be followed in the test

3.42

testing

activity in which a system or component is executed under specified conditions, the results are observed or recorded, and an evaluation is made of some aspect of the system or component

~~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~~

3.43

topic

~~small part~~ unit of ~~a document~~ information 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.~~

3.44

usability

extent to which a system, product, or service can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use

[SOURCE: ISO 9241-210:2010, Modified, Note 1 to entry removed.]

3.45

usability analyst

person who observes users performing tasks using the software and documentation and records the actions the user took, problems the user encountered, and comments the user made during the test; and interprets these records to evaluate the results of the testing

~~3.42~~

~~tutorial~~

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

3.46

use case

description of the behavioral requirements of a system and its interaction with a user

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

3.47

user

person who employs software to learn or to perform a task

3.48

validation

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

Note 1 to entry: A system is able to accomplish its intended use, goals, and objectives (i.e., meet stakeholder requirements) in the intended operational environment.

[SOURCE: ISO 9000:2015, Modified, Note 1 to entry has been modified, Notes 2 and 3 to entry have been removed.]

3.49

verification

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

Note 1 to entry: Verification is a set of activities that compares a system or system element against the required characteristics. This includes, but is not limited to, specified requirements, design description, and the system itself.

[SOURCE: ISO 9000:2015, Modified, Note 1 to entry has been modified, Notes 2 and 3 to entry have been removed.]

3.50

warning

hazardous situation, which if not avoided, can result in death or serious injury

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

Note [1 to entry](#): See also **caution** [\(3.5\)](#) and **note danger** [\(3.8\)](#).

[\[SOURCE: ISO/DIS 3864-2:2015, definition 3.18, Modified, "signal word" removed from definition.\]](#)

4 Conformance

4.1 Definition of conformance

This ~~International Standard~~ [document](#) may be used as a conformance or a guidance document for projects and organizations claiming conformance to:

- [ISO/IEC 26514:2008, Systems and software engineering — Requirements for designers and developers of user documentation](#);
- ISO/IEC/[IEEE](#) 15288:~~2008~~[2015](#), *Systems and software engineering — System lifecycle processes*;
- ISO/IEC/[IEEE](#) 12207:~~2008~~[2017](#), *Systems and software engineering — Software lifecycle processes* ~~or both~~.

When the selected software lifecycle processes are tailored, the organization or project may claim conformance to this ~~International Standard~~ [document](#) for its ~~documentation~~ [information testing](#) process.

Throughout this ~~International Standard~~ [document](#), "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~~ [document](#). When using this ~~International Standard~~ [document](#) 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/~~IEEE~~ 12207:~~2008~~[2017](#) 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.~~

4.2 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.~~

- When conformance is claimed for a project, the project plans or the contract shall document the tailoring of the ~~documentation requirements~~ [assessment and test \(validation\) process](#);

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

- 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~~ [is](#) 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~~ [document](#) that reference "the contract."

- This ~~International Standard~~ [document](#) 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~~ [document](#). This ~~International Standard~~ [document](#) 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~~ [the document](#).

5 [Review and assessment processes of user documentation](#) ~~process~~ within the ~~systems/~~software lifecycle

[5.1 Process overview](#)

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

Testers and reviewers of software user documentation work within the lifecycle processes of the software product, which are defined in ISO/IEC [IEEE 12207:2008, Software life cycle processes](#) [2017](#).

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~~ [following](#):

- ~~process~~ implementation;
- [validation](#);
- [verification](#); and
- ◆ ~~development and review~~;
- ◆ ~~production~~;
- maintenance.

5.2 Review and assessment activities

The typical lifecycle of documentation and its testing and review includes the following activities:

- user needs assessment;
- task analysis;
- user documentation requirements definition;
- document (information) design;
- draft or prototype;
- revision;
- early testing (prototype, information architecture, issue identification);
- beta review (accuracy, editing);
- evaluative testing (efficiency, effectiveness, satisfaction, accessibility);
- final release; and
- evaluative testing, optional (performance, learnability, A/B testing).

~~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~~

In addition to leading the activities of preparing documentation, the information development lead identifies reviewers during the design and development process. This includes stages. Review activities include review for of structure, format, and technical content, and presentation style against established guidelines and documentation standards. Within the Software Validation process and activities described in ISO/IEC/IEEE 12207:2008 2017, the relevant activities functions are tested-performed so that representative users can successfully achieve complete their intended task, tasks and that the product satisfies its intended use.

~~Therefore,~~ Testing and reviewing ~~of the user documentation~~ [user information, which includes the user interface, the navigation, and the information architecture](#), should be part of the same processes as the product lifecycle, and ~~ideally~~ [should be](#) 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, [and](#) 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~~ [validation and verification processes apply](#) to software and documentation developed under both the classic documentation development process (development of a new product with [a new user manual](#)), and also more complex circumstances, such as [previous documentation that should be](#):

- [converted to a different format or different media, such as mobile device interfaces;](#)
- ~~previous documentation must be~~ converted ~~to a~~ [into](#) different ~~format or different media, or in different languages or versions,~~ [information products](#) 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;
- [converted into different languages or variants including localization and tailoring.](#)

In addition, the test process should also be applied in the following circumstances:

- a previously documented software product is being upgraded, offered in a new version or on different operating system platforms, or ~~customized~~ tailored as part of system integration requiring the revision of previous documentation;
- documentation developed along with software product development methods such as Agile or eXtreme that require multiple iterations before release;
- software or documentation delivered on multiple platforms with tailoring for these environments; and
- documentation migrated from unstructured content to structured content.

Testing and reviewing software user documentation is greatly assisted by the presence of other documentation produced during the software lifecycle, such as a documentation plan, prototypes, system design document, system test plan, release records, and ~~Problem~~ usability reports. Other documentation specific to the ~~documentation~~ information management process may be produced, such as style guides and ~~organizational procedures~~ business processes for content management and documentation reviews, and accessibility standards.

NOTE 1 ISO/IEC/~~IEEE~~ 15289:~~2006 Systems and Software Engineering—Content of systems and software life cycle process information products (Documentation)~~ 2017 provides recommendations for the required documents throughout the systems/and software lifecycle.

NOTE 2 This ~~International Standard~~ document is also related to the following standards: ISO/IEC 25000:~~2005 Software Engineering—Software product Quality Requirements and Evaluation (SQuaRE)—Guide to SQuaRE~~ 2015 and ISO/IEC 14598, ~~Information technology—Software product evaluation—Parts 1-6, 1998-2001~~. These ~~standards~~ documents describe the quality metrics characteristics of software and the evaluation process for ~~ensuring~~ providing quality in a software product. The same processes ~~may~~ can be used to ~~ensure that~~ help the documentation ~~meets~~ meet the required quality through the use of evaluation metrics (such as effectiveness and satisfaction, learnability, errors, and safety).

NOTE 3 Of particular relevance is ISO/IEC 25066:2015, as usability performance targets are often closely associated with information design and content.

For the sake of simplicity, this ~~standard~~ document describes the lifecycle as if there were a clear starting point for developing documentation, and a clear end point. However, there is ~~not a single~~ no sequence of activities that ~~might~~ can be followed in all cases for all products and all types of information. For example, implementation and review activities are very closely ~~inter-linked~~ related, as are testing and maintenance, and the way they ~~link~~ relate together varies ~~between~~ among projects.

6 Documentation evaluation ~~process requirements~~ strategy

6.1 Requirements, objectives, and constraints

~~5.1—General~~

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

Documentation evaluation shall be based on documentation quality. Quality is the ~~required functions~~ ability of documentation to meet user needs, expectations, and ~~qualities. Ultimate acceptance comes from the end users, but the~~ requirements. Managers, developers, testers, and maintainers ~~must~~ should evaluate the quality of the documentation. Managers shall be responsible for assuring that the quality of user documentation has been evaluated. Evaluations can be performed by developers, testers, maintainers, managers, and other roles. Ultimately, the users should be satisfied with the documentation quality; however, managers, developers, testers, and maintainers shall accept the quality before the documentation ~~can be~~ is released to the ~~user~~ users. The evaluation of documentation quality depends on the recognition of various perspectives for acceptability:

- **Manager's ~~view~~.** Managers ~~might be~~ are more concerned with overall quality than with specific quality characteristics. They ~~might~~ can 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~~ can appreciably affect costs for customer support and future sales.
- **Software developer's ~~view~~.** Developers ~~might be~~ are concerned with ~~how the product operates in its innovative or advanced functions, more than with how~~ conformance of documentation to the product supports the users' tasks software functionality.
- **Product tester's ~~view~~.** Testers ~~might be~~ are 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~~ users to accomplish tasks. For online information, interface design, and navigation, product test can provide valuable assessment of content accuracy. Product testers can stress-test to assess performance under extreme or sensitive conditions.
- **~~maintainer's view.~~ Those Product support staff.** Staff who ~~will have to~~ maintain the ~~documentation—software and~~ systems ~~will~~ after the product release have special requirements for quality in addition to those of other developers. ~~They will~~ Product support staff can be concerned with, ~~for example, the simplicity and clarity of the documentation structures~~ accuracy, the ~~ease with which new~~ availability, and the searchability of different versions of the documentation ~~might be created, and portability to new technology for content management and production.~~
- **Content managers.** Content managers are concerned with how documentation can be controlled for subsequent document releases, different versions, information reuse, metadata associated with content for search and retrieval, and translation and localization.

- Editors. Editors are concerned with documentation conformance to organizational style, formats, language, terminology, and structure.
- Usability analysts. Analysts record the actions of the test participants, the problems the participants encountered, and comments made during and after the test activity. They also interpret records of usability test data (such as user actions, problems, and comments, time-on-task, and successful task completion) to evaluate the results of the testing. Usability analysts can be concerned with whether the documentation meets the end users' needs with satisfaction. Early in the development cycle, usability analysts identify design issues and errors; later, the focus can shift to performance, satisfaction, and learnability measures
- **User's view**. Users are likely to ~~measure~~ assess quality in terms, ~~such as inclusion of needed information, reliability, and ease of finding information and applying it to accomplish needed tasks~~ of ease of use and product satisfaction. When involved in usability testing, users who function as test participants provide both qualitative and quantitative feedback.

6.2 Documentation evaluation activities

Documentation evaluation shall include review as well as testing and shall consist of the following four activities: Plan, Do, Check, Act. Figure 1 shows the iterative cycle of evaluation to support documentation quality.



(New)

Figure 1 — Iterative cycle of documentation evaluation

- **Plan:** The [Information development](#) organization shall identify the requirements for acceptable performance or quality. The organization shall prepare for the evaluation exercise by specifying the schedule, the resources needed, how the evaluation ~~will be~~ [is](#) carried out (test scenarios and scripts), how the results ~~will be~~ [are](#) measured and recorded, how the results ~~will be~~ [are](#) analyzed, and the ~~pass/fail~~ [acceptance](#) criteria for the evaluation. [lifecycle](#).
- **Do:** The [information development](#) organization shall draw up test ~~scenarios and scripts~~ [protocols](#) based on the requirements ~~from~~ [of](#) the planning stage. The organization shall then evaluate the documentation against the requirements, ~~using measures~~, and record the results. Tests may be carried out by members of the project team during development, [by](#) following the test scripts ~~to ensure~~ [so that](#) tests are systematic and complete. [Usability tests require the recruitment of test participants who are representative of the target audience](#).
- **Check:** The [information development](#) organization shall analyze and report the results of the evaluation, recommending next steps. [See: ISO/IEC 25062:2006; and](#)
- **Act:** Based on the evaluation results and recommendations, the [information development](#) organization shall revise the documentation ~~and the product~~, and determine if further evaluation cycles are needed.

NOTE: Revisions ~~may~~ [can](#) entail changes in the project schedule and documentation plan or even changes in the requirements to produce acceptable results. For example, documentation of advanced functions ~~might~~ [can](#) be deferred until a later project ~~phase~~ [stage](#), or product release dates ~~might~~ [can](#) be deferred until acceptable documentation is produced. [Data from review and evaluation activities should be handled in accordance with organizational policies, data handling requirements, and ethical considerations.](#)

The documentation evaluation activities recommended in this ~~International Standard~~ [document](#) should be carried out under the control of the quality management system ~~being used~~ for the software product. Users of this ~~International Standard~~ [document](#) are ~~recommended~~ [advised](#) to ~~operate~~ [adhere to](#) a quality management system, which may be independently assessed for ISO ~~9000~~ [9001:2015](#) compliance.

6.3 Selection of an evaluation method

The evaluation ~~method~~ methods selected ~~depends~~ depend on a variety of factors including:

- the reasons for carrying out the evaluation;
- the ~~phase~~ stage in the lifecycle at which the evaluation is being carried out;
- the time and physical resources available;
- ◆ ~~the time available;~~
- the amount of information available about the ~~documentation~~ product or service;
- the availability of ~~users~~ test participants with the ~~appropriate~~ correct ranges of experience and skill; and
- the availability of experts in ~~documentation design;~~ information development.
- ◆ ~~the availability of experts in usability.~~

Different methods may be used at different ~~phases~~ stages in the development, after the documentation is complete, and when the documentation has been used for a specified period. A combination of methods is likely to be ~~appropriate~~ needed in each case.

6.4 Documentation ~~review~~ evaluation criteria

Planning for documentation evaluation shall establish criteria such as the following:

~~The documentation review process as further detailed in 6.1 includes:~~

- accuracy of content ~~reviews;~~
- ◆ ~~technical accuracy (consistency with the product);~~
- topic coverage;