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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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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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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.

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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.

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

1 Scope

This document supports the interest of software users in receiving consistent, complete, accurate, and usable documentation and specifies processes for use in testing and reviewing of user documentation (Clause 6). It is not limited to the test and review stage of the lifecycle, but includes activities throughout the information management and documentation management process.

This document is intended for use in all types of organizations, whether or not a dedicated documentation department is present. In all cases, it 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 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 TR 25060;

— ISO/IEC 25062;

— ISO/IEC 25063:2014;

— ISO/IEC 25064:2013; and

— ISO/IEC/IEEE 29119-3:2013.

This document provides the minimum requirements for testing and reviewing user documentation (Clause 7), including both printed and online documents used in work 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 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;

— 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.

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

— usability testers, documentation reviewers, and subject-matter experts;

— information developers and architects who plan the structure and format of products in a documentation set;

— usability analysts and business analysts who identify the tasks the intended users 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 document can also be consulted by those with other roles and interests in the information management process. Managers of the software development process or the information management process consider the testing of documentation as part of their planning and management activities. Project managers, in particular, have an important role in supporting the review and testing of documentation.

Testing of the documentation is likely to highlight any defects or nonconformances in tools that are used to create or display online documentation. Similarly, usability testing of the documentation is likely to 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, information developers 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.

The order of clauses in this document does not imply that software user documentation 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 guidelines found in *Annex A, User-Centered Test and Review Guidelines*, can be used at each stage of the information management process to verify that the 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.

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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 ISO/IEC/IEEE 24765 Software and Systems Engineering Vocabulary 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
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 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 1 to entry: See also **persona (3.29)**.

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

3.5
caution
hazardous situation which, if not avoided, can result in minor or moderate injury

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

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

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3.6
complete
<documentation> all critical information and any necessary, relevant information for the intended audience

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

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.]

3.9
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]

3.10
documentation
information that explains how to use software, 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
accuracy and completeness with which users achieve specified goals

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

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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]

3.14
embedded documentation
information that is delivered as an integral part of a piece of software

EXAMPLE 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 a software application that provides 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
graphical element set apart from the main body of text and normally cited within the main text

Note 1 to entry: In this document, the term *illustration* is used as the generic term for tables, figures, exhibits, screen captures, flow charts, diagrams, drawings, icons, and other 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

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person who prepares the content and visuals for product documentation

3.23
information development lead
person who leads the activities of preparing documentation

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

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.

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 information and moving between different items of information

3.28
online help
information about the software that is intended to be read on the 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
combination of an operating system and hardware that makes up the operating environment in which a program runs

3.31
procedure
ordered series of steps that a user follows to perform one or more tasks

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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]

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 document, the term software does not include 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
element of a procedure 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, usage, word choice, 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

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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

3.43
topic
unit of information that deals with a single subject

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

3.46
use case
description of the behavioral requirements of a system and its interaction with a 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.]

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3.50
warning
hazardous situation, which if not avoided, can result in death or serious injury

Note 1 to entry: See also **caution (3.5)** and **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 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 15288:2015, *Systems and software engineering — System lifecycle processes*;

— ISO/IEC/IEEE 12207:2017, *Systems and software engineering — Software lifecycle processes*.

When the selected software lifecycle processes are tailored, the organization or project may claim conformance to this document for its information testing process.

Throughout this 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 document. When using this document as a guide, replace the term "shall" with "should".

NOTE ISO/IEC/IEEE 12207:2017 Annex A defines the tailoring process.

4.2 Conformance situations

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

— When conformance is claimed for a project, the project plans or the contract shall document the tailoring of the assessment and test (validation) process;

— 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 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 document that reference "the contract."

— This 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 document. This 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 the document.

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