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IEEE Standard for Adoption of ISO/IEC 26513:2009 Systems and Software Engineering—Requirements for Testers and Reviewers of User Documentation

IEEE Computer Society

Sponsored by the
Software & Systems Engineering Standards Committee

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IEEE Standard for Adoption of ISO/IEC 26513:2009 Systems and Software Engineering—Requirements for Testers and Reviewers of User Documentation

Sponsor

Software & Systems Engineering Standards Committee
of the
IEEE Computer Society

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Abstract: This standard provides requirements for the test and review of software user documentation as part of the life cycle processes. It defines the documentation process from the viewpoint of the documentation tester and reviewer. It specifies process for use in testing and reviewing of user documentation, and provides the minimum requirements for these activities. It is relevant to roles involved in testing and development of software and user documentation, including project managers, usability experts and information developers, in addition to testers and reviewers. It applies to both printed documentation and on-screen documentation, and is applicable to user documentation for systems including hardware.
Keywords: documentation review, editing, information management, software user documentation, usability testing

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Introduction

This introduction is not part of IEEE Std 26513-2010, IEEE Standard for Adoption of ISO/IEC 26513:2009, Systems and Software Engineering—Requirements for Testers and Reviewers of User Documentation.

Usable documentation not only assists software 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 standard specifies activities for reviewing and testing user documentation, and provides the minimum requirements for these activities. It covers review procedures for user documentation, as well as system testing, usability testing, accessibility testing, and localization and customization testing of user documentation. It is relevant to project managers, editors, usability experts, testers, documentation reviewers, and information developers. It applies to both printed and on-screen user documentation. It applies to both initial development and subsequent releases of the software and user documentation. This standard is independent of the software tools that might be used to produce documentation. Much of its guidance is applicable to user documentation for systems including hardware as well as to software user documentation.

This standard is part of a series including IEEE Std 26514™-2010, IEEE Standard for Adoption of ISO/IEC 26514:2008, Systems and Software Engineering—Requirements for Designers and Developers of User Documentation. Other standards in the 2651N series are forthcoming to address requirements for user documentation management and for acquisition and supply of user documentation. It is based on the processes required in ISO/IEC 15288:2008 (IEEE Std 15288™-2008), *Systems and software engineering — System life cycle processes*, and ISO/IEC 12207:2008 (IEEE Std 12207™-2008), *Systems and software engineering — Software life cycle processes*. This standard describes the activities involved in the Documentation Management and Validation processes of ISO/IEC 12207:2008 (IEEE Std 12207-2008), from the viewpoint of the user documentation tester.

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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.

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.

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

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.

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 processed 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.

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

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

3.33
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.

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.

5.2 Documentation evaluation activities

Documentation evaluation shall include the following four activities: Plan, Do, Check, Act.

- **Plan**: The 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 carried out (test scenarios and scripts), how the results will be measured and recorded, how the results will be analyzed, and the pass/fail criteria for the evaluation.
- **Do:** The organization shall draw up test scenarios and scripts based on the requirements from 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, following the test scripts to ensure tests are systematic and complete.
- **Check:** The organization shall analyze and report the results of the evaluation, recommending next steps.
- **Act:** Based on the evaluation results and recommendations, the organization shall revise the documentation and the product, and determine if further evaluation cycles are needed.

NOTE: Revisions may 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 be deferred until a later project phase, or product release dates might be deferred until acceptable documentation is produced.

The documentation evaluation activities recommended in this International Standard should be carried out under the control of the quality management system being used for the software product. Users of this International Standard are recommended to operate a quality management system, which may be independently assessed for ISO 9000 compliance.

5.3 Selection of an evaluation method

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

- the reasons for carrying out the evaluation;
- the phase in the life cycle at which the evaluation is being carried out;
- the resources available;
- the time available;
- the amount of information available about the documentation;
- the availability of users with the appropriate ranges of experience and skill;
- the availability of experts in documentation design;
- the availability of experts in usability.

Different methods may be used at different phases 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 in each case.

5.4 Documentation review

The documentation review process as further detailed in 6.1 includes:

- editorial reviews of the documentation's structure, format, and style compared to plans, requirements, and established standards;
- content reviews;

- topic coverage;
- technical accuracy (consistency with the product);
- safety (provision of critical information to protect against hazards or defects);
- legal, statutory and regulatory requirements.

5.5 Documentation test

Documentation test requirements shall be specific and measurable. The purpose of the test process is to provide formal evidence that the user documentation:

- enables the users to accomplish their goals;
- meets the requirements and constraints, such as the documentation policy and standard formats and styles set by the producer of the software product;
- is consistent with the software product; that is, the documentation is accurate, sufficient, and useful

NOTE: Consult Clause 11.1 in ISO/IEC 26514:2008. *Systems and software engineering—Requirements for designers and developers of user documentation* for additional information on the completeness of documentation.

- meets usability requirements, that is, information is easy to find, easy to use, and easy to understand;
- meets the needs of the intended acquirer and end users of the software product and documentation.

The documentation test process, as further detailed in 6.2 to 6.6, includes:

- operational testing to ensure that the documentation performs correctly and responsively (for example, on-screen documentation is appropriately linked to the software topic and navigation operation is consistent and as expected; the index in printed documentation has accurate references);
- usability testing of documentation with the product, to determine whether the intended audience can perform their tasks with the aid of the documentation.

5.6 Project requirements affecting documentation evaluation

The user documentation tester or reviewer shall gather or receive information about the testing of the whole project, to understand the requirements that affect the testing of the documentation components. Documentation testers and reviewers need the following information in order to plan the evaluation of the documentation:

- who are the users, and in what contexts will they use the product?
- what formats will the documentation be provided in for the end user?
- are there users with special needs?
- what is the purpose of the software product? What will it do?
- is there a previous version? If so, which features have to be changed and which have to remain the same?
- is the product standalone, or is it part of a suite of products?
- when will the documentation be available to assess and test?
- when will the testing need to be completed?
- will the documentation be available to test at the same time as the software?
- what types of documentation will be produced?

- what is the scope of the evaluation; that is, how much documentation needs to be tested?
- on what platforms will the product run at this release? Are there plans for other platforms later?
- is the product being developed for a specific organization or organizations? If so, are those organizations the exclusive users?
- will localized or customized versions of the product be required?
- Will the documentation be translated into foreign languages? What languages?

Documentation testers need to know the following about the product development schedule:

- when will the alpha, beta, and acceptance testing start and be completed?
- when will the testing need to be completed?
- what is the delivery date for the finished product?
- what are the major dependencies between different activities in the overall project?

5.7 Resource requirements and planning

The documentation evaluator should obtain information on the planned or required tools for:

- reviewing the documentation;
- testing the documentation; including performing usability tests and tests of accessibility.

If the new product is part of a suite of products, consider the use of any tools already specified for testing documentation for that suite.

In planning the evaluation of the documentation, the availability of resources should be considered. The evaluation plan should include the time and effort to include acquisition of resources or services that are not already available in the organization. A working model or prototype of the documentation should be provided where testing is scheduled to take place before software or documentation development is complete. The acquirer or project sponsor should provide people to participate in the usability tests. These people shall have the same characteristics as the defined audience. The purpose of the test shall be explained to them by the acquirer. Where possible, the participants should be drawn from the intended audience.

Resources for evaluating the documentation include facilities, services, tools, and human resources, such as:

- hardware and software for testing prototype or other versions of the documentation and software;
- tools for authoring and managing test cases;
- testing tools;
- provision for the use of a working model or prototype of the documentation;
- laboratory space for usability, translation, and accessibility testing;
- translators and knowledgeable staff where translation or localization is a requirement;
- technical contacts who will review the documentation for technical accuracy;
- authors or other staff who will editorially review drafts of the documentation;
- test staff;
- test subjects/typical users;
- usability staff.

5.7.1 Impact of evaluation on project schedules

During the project implementation phase, the organization shall prepare a preliminary schedule for documentation activities. More detailed schedules for developing each separate document, as part of a master schedule for other parts of the project, shall be produced during the design and development phase. Documentation designers, developers, testers, and the project manager shall agree on the overall schedules for the project. Once the schedules are agreed upon, the team is committed to designing documentation that can be prepared within the required time and cost constraints.

When the project schedules are being defined the amount of time needed for the following activities might be significant; adequate allowance should be made for them in the project schedules:

- retrieval of information from technical contacts;
- review of the accuracy of drafts by technical contacts;
- production of draft documentation for product validation, field trials, and usability trials (documentation development schedules for preparing such drafts will affect the timing of these exercises and trials);
- production of draft documentation for system tests, reviews, and usability tests;
- correction of documentation after testing and further revisions of the software and the documentation;
- translation, localization, or customization activities as required.

Once a date for delivering the application has been agreed upon, the documentation test plans should be updated to reflect this delivery date. Changes in the software product and in planned delivery dates resulting from defects discovered during documentation reviews and tests shall be promptly communicated to all concerned. The impact of these changes on the review or test schedule shall be evaluated and communicated to project management. If schedules need to be adjusted during the project, activities, such as system tests, reviews, and usability tests of documentation, should not be removed from the schedule to save time at the expense of quality.

The documentation plan often details the assumptions and dependencies on which the test schedule is based. Examples of test schedule dependencies are: the availability of the product content documentation, availability of test personnel, time required for training personnel, and the status of testing in earlier phases of the development cycle. For first time documentation testing, time should be allocated for learning how to use the required documentation test tools and assistive technologies.

Consideration also needs to be given in the schedule to the timing and requirements for translation if localized versions of the documentation are required. Ideally, the test, development, and documentation development milestones should coincide. But it is acceptable to overlap the schedules for different milestones and, if the schedules allow for it, other test organizations may begin reviewing the documentation prior to the start of a formal documentation test cycle.

6 Documentation evaluation methods and procedures

This clause provides examples of the different methods of documentation evaluation and the procedures and activities relating to them. In most cases a range of evaluation methods will be used. In the sub-clauses below, the following document evaluation methods are explained:

- documentation review (6.1);
- system testing (6.2);
- usability testing (6.3);
- accessibility testing (6.4);
- localization and customization testing (6.5).

6.1 Documentation review

Documentation review should precede documentation usability testing to improve documentation quality, thereby reducing the number of flaws and defects remaining to be identified in testing, and thus the amount of rework and retest at a late stage.

After documentation is released, evaluation continues in the form of feedback from users (through comment forms and messages) and from independent product reviews in magazines and reports. Surveys and interviews might also be useful in gathering users' and customers' opinions and attitudes on released documentation. Problem reports gathered by trainers, sales staff, and customer service also indicate where documentation or products need improvement.

NOTE: Some forms of usability testing are performed early in the documentation design process, before documentation has its formal reviews.

6.1.1 Planning documentation review

The information development lead and the project manager should determine the review participants and procedures. Reviewers may be peers, editors, technical experts, trainers, managers, or customers. Reviewers should be selected based on their expertise, familiarity with the requirements and standards, and ability to provide thorough and usable comments and corrections. It is rare for reviewers to focus on all aspects of documentation at one time. Separate reviews or reviewers should evaluate the documentation for the following:

- organization;
- technical correctness;
- suitability for the intended audience;
- consistency of grammar, style, and format;
- correctness of translation or localization.

The order in which review activities are conducted should also be considered. For example, it is inefficient to hold detailed editorial reviews before the technical content is accurate and consistent.

Checklists can be used to as a record and reminder of the features of the documentation to cover in the documentation review. Annex A and B in this standard provide informative checklists that can be used to help plan the review of the documentation. The checklists included in these annexes are informational only, and provide examples of checklists used by some organizations. Different types of documentation, such as printed and on screen documentation might require different checklists to be developed.

6.1.1.1 Requirements for documentation review

Prototypes may be used to validate documentation designs for each type of document. Although prototypes or samples of documentation might be developed as part of the documentation design process, the full review process should begin after the design of the documentation is finished.

6.1.1.2 Objectives for documentation review

The objective of documentation review is to ensure that the documentation conforms to agreed plans, requirements, and established standards; and to ensure that the information is technically accurate and complete for the user of the documentation.

6.1.1.3 Developing a plan for documentation review

A plan shall be produced for documentation review by the information development lead or project manager. The plan shall include the following information:

- schedules, tools, and the resources required for review;
- reviewers and their focus for the review, for example, style or technical accuracy;
- review methods to use;
- criteria and tools;
- parts of the documentation to be tested;

  NOTE 1: Where the documentation is very large, it might be more appropriate to use a sampling technique to select a representative sample for review.

- methods to provide and store review comments;
- methods to resolve review comments.

Different methods of reviewing information are appropriate for checking different features. The following are suitable methods for reviewers to use.

- reviewing printed copies of text and illustrations. Use this method for reviewing:
  - the accuracy of information;
  - the conformance and consistency of style and formatting;
  - the amount of information per section (level of content).

    NOTE 2: This is a convenient way of checking large amounts of information, such as descriptions of concepts, application features, glossaries, or reference material.

- reviewing on the screen independently from the software. Use this method to review:
  - information systems that might operate independently of the software;
  - information consisting of sets of items through which users might navigate to find what they need;
  - indices and searches provided to help users find what they need.

    NOTE 3: This method is essential for reviewing the style and presentation.

When testing online documentation with the software, information developers should include with all drafts distributed to reviewers:

- clear review criteria;
- instructions for how to provide comments and for using review tools;
- an indication of the time to be spent reviewing the material;
- instructions concerning the return of comments to a specified person, by a specified date.

Consider assisting reviewers by highlighting changes made from previous drafts, for example, by vertical lines in the margin, to avoid the need to re-read unchanged text. This technique is appropriate only if all the sections that need to be checked are highlighted, because reviewers will only read the highlighted sections.

NOTE 4: If there are too many changes, highlighting might become counter-productive. One technique is to apply the 25% rule: if more than 25% of the document has changed, remove all highlighting and instruct the reviewer to read the whole document.

The review instructions should indicate how reviewers should supply comments, for example:

- as markup of printed copies;

- in a clearly annotated electronic form, which should have changes highlighted to enable authors to identify them;
- as a separate electronic review document;
- with the reviewer's name identified in the comments (this may be handled automatically by the review tool).

Determine if reviewers are permitted to keep a copy of the draft, based on security or configuration control restrictions.

6.1.2 Documentation review procedures

Reviewers shall review documentation drafts for the following:

- **Technical accuracy.** The approval authority identified in the documentation plan has responsibility for the technical accuracy of all the documentation for the product and for resolving any conflicting comments from technical contacts;

NOTE: Technical accuracy of instructional procedures is better verified by testing the documentation with the software than by reviews. Technical reviews of embedded documentation (such as pop-up help) are best performed in conjunction with software product testing.

- **Safety and security.** An expert should review the documentation to ensure that it contains warnings, cautions, and appropriate avoidance and recovery instructions for risks associated with use of the product, where appropriate. The reviewers should verify that warnings and cautions are appropriately placed and worded to be noticeable and understandable by the intended users;
- **Ease of understanding.** If possible, someone who is not familiar with the product should carry out the checks for ease of understanding. The person checking drafts should be alert to potential misreadings and misunderstandings, and should record them;
- **Conformance and consistency.** Developers or editors should verify that the documents conform to all the requirements of selected standards and organizational policies and style guides, follow the documentation and design plans, and are consistent with each other in appearance and terminology. The reviewers should check for consistency and accuracy in references or links to other parts of the document or document set;
- **Completeness.** The documentation section or topic should include or refer to all the information that users need. If possible, someone who is not familiar with the product should carry out the checks. Review the total set of documentation, printed and on-screen, including the items that will be integrated with the software. The documentation should be reviewed together, or be reviewed by the same people, so that it may be checked for consistency and completeness;
- **Editorial consistency and correctness.** An editor should check near-final drafts for spelling, grammar, punctuation, editorial standards, and typography;
- **Legal accuracy.** Check near-final drafts to ensure that the correct legal notices have been included and trademarks have been handled correctly. If possible, an Intellectual Property Law (IPL) attorney should perform this check;
- **Navigation and display.** Where appropriate, verify that all hyperlinks and page references point to the correct location in the documentation. Checks should also be made to verify that all images or icons display properly and are correctly mapped to the application they represent;
- **Translation and localization.** Where appropriate, verify that translations and localizations are correct and complete.

Topics, sections, and partial documents may be reviewed. For a long document, the author may send a new chapter to a software developer for review before the whole document is finished. Before production or release of the documentation to users or acquirers, the documentation should be reviewed in its entirety.

6.1.3 Managing the results of documentation review

Reviewers might offer divergent opinions and comments. The organization should determine who on the project team may see and apply other reviewers' comments. Review and acceptance procedures shall specify who is the final authority for accepting and implementing changes.

Reviewers' comments shall be retained under configuration control at least until the next cycle of reviews has been completed. Many reviewers expect to see copies of their previous comments while reviewing subsequent drafts.

6.1.4 Problem resolution and the documentation review cycle

Revised drafts should be reviewed for editorial accuracy (making sure that the comments made on the first draft have been incorporated correctly and do not introduce inconsistencies) and for technical accuracy, particularly if the software design has changed since the first draft. The developer should check with those responsible for product configuration management to identify any changes to the software application as a result of software reviews and tests, which should be reflected in the documentation.

The final draft should be prepared when no further changes in content are allowed, and should be reviewed only for format and typographical defects before final approval by the appropriate authority.

Where comments conflict, the product authority should make the final decision.

6.2 System test of documentation

System test of documentation validates and verifies documentation in conjunction with the software that it supports. System test of documentation involves using the documentation in conjunction with the software, to determine whether the user is able to perform a selected task with the software, using the documentation provided. The system tests determine whether the documentation is technically accurate (verify), but does not make a judgment on whether the documentation was usable (validate). However, system testing of documentation might highlight usability issues.

System test of documentation may be considered to be part of the supporting processes in the life cycle, and is a part of the verification process or system qualification testing. These lifecycle processes are defined in ISO/IEC 12207:2008, *Systems and software engineering — Software life cycle processes*, and ISO/IEC 15288:2008, *Systems and software engineering — System life cycle processes*.

Verification or system test of documentation is a process for determining whether the software products and documentation fulfil the design and other requirements or conditions imposed on them. This process may include analysis, review and test. For documentation, verification or system test includes testing that the specified design requirements are met by the software and documentation. The process provides the information required to effect the remedial actions that correct nonconformances in the documentation.

This process may be performed with varying degrees of independence. The degree of independence may range from a different person in the same organization to a person in a different organization.

System test of documentation applies to the following types of documentation:

- traditional paper based, for example, printed manuals;
- online information;
- integrated user assistance, for example, wizard help, context-sensitive help;
- training and education material.

System test of documentation includes the following activities:

- planning the tests;

- designing the tests;
- performing the tests;
- assessing and reporting the test results;
- resolving any nonconformances.

The development team should perform testing at every stage in documentation development when the software is available, from unit testing to acceptance testing, before the product is released to the customer.

System test of documentation shall be carried out by a tester who is not the same person who developed the specific software or documentation component under test.

System test of documentation should include both embedded and separate documentation. System test of documentation should verify that:

- the access methods and navigation features for context-sensitive documentation and wizards perform properly;
- the links and cross-references for related information work correctly;
- the correct information (such as an error message) is displayed in each given situation;
- the instructions in the documentation have the desired effect when carried out;
- all the examples in the documentation and tutorials have been thoroughly verified on the system;
- the documentation headings, search, and index entries quickly led users to the needed information for performing their tasks.

6.2.1 Planning system test of documentation

A determination shall be made by the project team, lead by the project manager, whether the project requires a system test effort and the degree of organizational independence of any needed effort. The project requirements shall be analyzed for criticality. Criticality should be measured in terms of:

- the potential of an undetected defect in a system or software function for causing death or personal injury, mission failure, or financial or catastrophic equipment loss or damage;
- the maturity of, and risks associated with, the software technology to be used.

Although defects or missing information within documentation itself is unlikely to cause critical problems, the defects or missing information might result in the incorrect use of the software and systems, and could have critical consequences, such as loss of data, damage to equipment, or injury.

If the project requires a documentation system test, a system documentation test plan shall be established by the tester, or test lead, to verify the documentation with the software product.

If the project requires an independent system test effort, a qualified organization responsible for performing the test shall be selected. This organization shall be assured of its independence and have the authority to perform the test activities.

Documentation products requiring verification shall be established, and the associated verification activities including associated methods, techniques, and tools for performing the tasks, shall be selected by the project team or tester. The strategy for verifying the documentation throughout the life cycle shall be established by the project manager.

NOTE: This strategy applies to the system and to its descriptions, for example, requirements, designs, and definitions. It includes the context and purpose for each instance of verification action, for example, verifying the design, ability to build the design correctly, ability to reproduce the system, ability to correct a fault arising, and ability to predict failures.

Verification demonstrates, through an assessment of the product, that the system is built correctly, that is, conforms to the specified design of the product. The nature and scope of the verification action, for example, review, inspection, audit, comparison, static test, dynamic test or demonstration (or a combination of these) depend on whether a model, prototype, or actual product is being verified, and on the perceived risks, for example, safety or commercial criticality.

6.2.1.1 Objectives for system test of documentation

The objectives for the system test of documentation are as follows:

- confirm that the integrated documentation meets its defined requirements;
- report data providing information for corrective action;
- provide objective evidence that the documentation satisfies the system requirements and design.

As a result of successful implementation of the system test of documentation:

- criteria for the integrated system are developed that demonstrate compliance with system requirements;
- the integrated system is verified using the defined criteria;
- test results are recorded.

6.2.1.2 Requirements for system test of documentation

System test of documentation may be carried out through the life cycle of the documentation. Drafts of the documentation and prototypes of the software may be used for system test of documentation.

Information required for system test of the documentation should include the answers to the following questions:

- when will the documentation and software be available to test?
- will related parts of the documentation and software be ready at the same time?
- in what different formats will the documentation be provided for testing?
- what types of documentation will be produced and how much?
- on what platforms will the documentation and software be tested?
- what tools are available for testing the documentation?
- how are the test results to be recorded?
- what is the process for resolving problems found during testing?
- who are the documentation and software contacts?

6.2.1.3 Metrics and measures for system test of documentation

Criteria should be developed for the integrated software and documentation to demonstrate compliance with the requirements by the tester or test lead. An appropriate set of measures and metrics, driven by the requirements, needs are identified and developed by the tester or test lead.

Suitable measures and metrics for system test of documentation include the following:

- test coverage;
- defect numbers;
- defect severity;

- defects fixed.

6.2.1.4 Creating the system documentation test plan

A system documentation test plan shall be developed and documented by the tester or test lead. The system documentation test plan shall specify the documentation and software products subject to test, the required tasks for each documentation and software product, and related resources, responsibilities, and schedule. The system documentation test plan shall specify procedures for reporting the results of the testing to the acquirer and other involved organizations.

Problems and nonconformances detected by the documentation system test effort shall be entered into a Problem Resolution Process (see 6.6). All problems and nonconformances shall be resolved by the project team. Results of the test activities shall be made available to the acquirer and other involved organizations.

The system documentation test plan complements a product system test plan, and illustrates what needs to be done to validate the end-user support materials that will be produced with the code. The system documentation test plan describes the strategy, procedures, requirements, schedules, tools, quality goals, measurements, and testing tasks for the user documentation. Ownership and authorship of the system documentation test plan will vary on a project basis, depending on, for example, organizational structure. Ideally, the system documentation test plan is owned by someone who has the authority to assign dedicated resources to the testing of the documentation, for example, a test manager or a project/release manager, or the information development manager. The author of the system documentation test plan should work in conjunction with the documentation development team and the software project test team.

6.2.1.5 Documentation system test plan elements

The following elements of user documentation should be included in the system documentation test depending on the project under test:

- tables of contents;
- indices and search mechanisms;
- installation and uninstall instructions;
- setup/configuration instructions;
- normal function instructions;
- links and references;
- wizards;
- error messages;
- context-sensitive help;
- tool tips and information pop-ups;
- online help and information centers;
- tutorials.

The system documentation test plan should include information on test case development, such as describing testing methods and tools to be used to verify each documentation format. Include information about use cases and end-user scenarios that might serve as a basis for test cases. Information should also be included on the quality goals, measures, and testing records that shall be kept.

The system documentation test plan should describe the tests in sufficient detail so that the tests could be repeated by another tester or organization.

6.2.1.6 Documentation system test plan entry/exit criteria

The system documentation test plan should include entry criteria and exit criteria to ensure the successful completion of the documentation testing activities included in the system documentation test plan. If there are multiple test phases within a product's schedule, entry criteria and exit criteria should be specified for each phase. The following criteria are provided as guidelines for use in testing documentation in any phase.

6.2.1.6.1 Examples of entry criteria

General entry criteria:

- system documentation test plan is reviewed and approved;
- necessary test resources (hardware, software, and testers) are available;
- unit testing for new or modified function in the software is completed prior to the start of documentation testing;
- sufficient functionality is implemented and included in the software to enable testing for each code unit entering documentation test;
- all documentation verification test cases are defined, written, debugged, reviewed, and approved.

Unit test entry criteria:

- working versions of the software product are available for committed features;
- draft documentation for committed features is completed.

Function test entry criteria:

- draft documentation for committed features is completed, technically reviewed, and tested against working software.

System test entry criteria:

- documentation materials are complete and available for testing.

6.2.1.6.2 Examples of exit criteria

General exit criteria:

- all of the defined documentation test cases have been attempted;
- all high-severity documentation defects have been resolved (for example, those documentation defects that contain inaccurate or missing information);
- software product testing (functional verification testing, system verification testing, and so on) is complete.

Function test exit criteria:

- technical content is approved.

System test exit criteria:

- all high severity documentation defects have been resolved (for example, those documentation defects that contain inaccurate or missing information);
- all documentation system test cases have been run.

6.2.1.7 Documentation system test plan approvals

The system documentation test plan should be approved by the test manager, development manager and information development manager. Reviewers for the system documentation test plan should include:

- Test Lead;
- Development Lead;
- Information Architect;
- Information Development Lead;
- Usability Lead.

6.2.2 Performing and assessing results of system test of documentation

The documentation shall be tested by the testers according to the methods and requirements in the system test plan.

In order to perform and assess the results of system test of documentation, systems, software, and documentation for test must be available, and associated facilities, equipment, and tests prepared to perform the testing.

Testers shall perform testing to demonstrate compliance to the specified design requirements and using the defined criteria.

Testers shall analyze, record, and report test discrepancy and corrective action information.

6.2.3 Problem resolution and the system test of documentation life cycle

When the results of the system test cases have been analyzed, any problems or discrepancies found must be reported and stored according to the problem resolution standards of the organization. Sufficient details should be provided to the documentation developer so that they might make the necessary corrections. Where there is a conflict between the documentation and the software, a decision might need to be made as to whether the software or the documentation is incorrect, and which, therefore, needs to be corrected.

A retest and regression strategy should be applied for testing updates to the documentation as a result of problem resolution. Both retesting and regression testing shall be performed when a change is made to existing system elements. See 6.6 for more information about the problem resolution process.

6.3 Usability testing of documentation

Usability testing shall be carried out using real or representative users. Documentation usability testing is related to user acceptance and validation testing activities to determine whether the prototype design or the draft documentation being tested meets the users' needs. Documentation usability testing may be carried out at earlier stages of the life cycle, or when the software is ready for a release. At a minimum, there shall be one usability test, using a single subject, of the documentation using the release version of the software.

Documentation usability testing should be viewed as a complement to inspection and review. Documentation usability testing may be used to measure usability as defined by 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*. Testing during the development cycle should use a prototype that allows as complete a simulation as possible of the final version. At a minimum, there should be one usability test, using a single subject, of the documentation using the release version of the software.

Usability tests are the most acceptable method of checking that the information provided in the documentation meets users' needs, and that users can find it, understand it, and apply it. This method is useful for evaluating systems that are partially developed, while there is still time to change the documentation, as well as for near-

final software and documentation. As an intermediate level of assurance of usability, a usability specialist may review documentation to assess whether the documentation will meet its specified qualitative usability goals. This assessment may be subjective or may use analytical methods appropriate to the particular goals.

Empirical evaluation is carried out by experts observing users (actual users or others who represent the intended audience) using the documentation to perform selected tasks. A range of different recording techniques may be used, such as an observer taking notes during the test, video recording the users, or asking the users to explain what they are doing and why. The assessment of the documentation may be made by interview, questionnaire, or in a group discussion.

Documentation testers should be aware of usability requirements from the beginning of the project. Usability cannot be added at the end of documentation development; it should be built into the structure, content, and format of the documentation and associated user assistance. Therefore, the usability requirements, and the method of testing them, shall be specified in the analysis phase where other user needs are being determined.

Other opportunities for structured and unstructured observation of documentation users may be arranged if there are validation tests or field trials before general release of the product. In both validation exercises and field trials, identify problems with the software and its documentation together, and seek solutions to any problems by considering the software and its documentation together.

If validation and field trials highlight major problems with the product, the whole product is likely to require another design stage to resolve the problems. The documentation, therefore, would go through another design stage as part of this process.

If the documentation will be integrated with documentation from other products, then integration testing should be used for testing documentation as part of a given scenario or solution. Use cases or scenarios may be used to validate against the appropriate documentation, ensuring that it is correct when integrated with the documentation from other products.

6.3.1 Objectives for usability testing of documentation

The purpose of usability testing of user documentation is to provide objective evidence that the documentation is sufficient to allow users to perform required functions using the system. Where variances are identified, these are recorded and guide corrective actions.

As a result of the successful implementation of the documentation usability testing process:

- requirements for documentation usability testing are established;
- criteria for documentation usability testing are identified;
- a test strategy is developed;
- evidence is provided that the software and documentation is fit for its purpose, meets the user's needs and are suitable for their intended use;
- usability test data is collected, and data capable of providing information for corrective action is reported;
- results of the documentation usability test activities are made available to the other interested parties.

6.3.2 Measures and metrics for documentation usability testing

The usability of the documentation is an integral part of the usability of the software product. When the usability targets are set and measured for the product, the documentation shall be treated as an integral part of the product. Measures of the usability of the documentation, independent of the usability of the software, shall include the following:

- the time taken to learn how to do a specified task using the instructions in the documentation;
- the ability of the users to accomplish the task in hand using the documentation.

Common metrics used for usability testing from Common Industry Format for Usability Test Reports (ISO/IEC 25062), are:

- effectiveness;
- efficiency;
- satisfaction.

The usability targets for the computer system and the documentation affect the usability test methods to be used. A combination of qualitative and quantitative tests may be selected:

- if the assured level of usability for the whole system and the documentation is high, use quantitative tests;
- if usability of either the documentation or the software and its documentation is less critical or if resources are limited, consider qualitative methods.

Once an analysis of usability requirements has been made, the usability specialists or the test team should translate those requirements into usability goals for the documentation. The goals are the qualitative or quantitative targets, which are measured in usability tests.

6.3.3 Planning usability tests

A usability test plan shall be developed and documented by either the usability specialists on the project or the test lead. The plan shall include, but is not limited to, the following:

- the documentation and software products to test;
- the usability methods to be used;
- resources, responsibilities, and schedule for the documentation usability testing;
- platforms and environments to be tested;
- procedures for creating reports and forwarding on to the acquirer and other parties;
- process for resolving problems.

Planning for usability tests includes the following:

- identify the tasks to be tested and acceptance criteria;
- provision of the resources, including facilities;
- schedules for the tests;
- methods for performing the tests;
- methods for recording the results of the tests;
- methods for determining whether the objectives have been met;
- methods and plans for incorporating the results of the tests into the future design and development activities for the project.

When specifying the terms of the testing, the usability standard to be applied should be identified. This includes specifying the measurement technique and recording process. Where appropriate, the usability test plan should specify a test environment that fully replicates the end user's operating environment. Testing in a usability laboratory should be considered. The acquirer or stakeholder may be responsible for the provision of the test environment.

The highest level of assurance involves a numerical-based scale of performance of the system from managed usability tests. In the trials, users are observed by a usability specialist as they work with the documentation,

performing tasks designed to test the documentation against the defined usability goals stated in terms of user effectiveness and efficiency. A questionnaire is used to assess the level of user satisfaction. The tests are performed in a specified context of measurement, which is related to the context of the use of the product. The resulting performance levels are compared with the required levels. These measures of assurance can provide a thorough assessment of the usability of the documentation.

6.3.3.1 Creating the documentation usability test plan

The documentation usability test plan shall set out the level of documentation usability testing required.

The terms of the documentation usability testing shall be fully described in the documentation plan, including:

- points in the development cycle where testing will take place;
- objectives of the test;
- measures to be used (for example, task response times);
- test environment;
- number and type of users to participate;
- process for the recording and reporting of test results and defects;
- process for ensuring that defects are resolved using a problem resolution process;
- process for communicating test results to all relevant documentation development staff, and to acquirer;
- responsibilities of documentation development staff representatives present during testing;
- process for determining the need for further testing.

To perform documentation usability testing, the documentation shall be tested with the software it supports. Documentation usability testers shall have access to the software to perform specified tasks. The testing should take place as soon as the software and documentation are available. In scheduling the testing, consideration should be given to the scheduled availability of stand-alone parts of the software, and the type of function they will provide.

The objective of the documentation usability test plan is to identify the deliverable documents, specify the quality and usability standards they shall meet, specify testing requirements, and define the project tasks, activities, schedules, resources, and cost. Documentation testers provide sizings and requirements to project managers for realistic configuration management, schedules, and cost estimates.

Methods for documentation usability testing include:

- **Usability analyst observation.** A representative user or customer is observed performing tasks using the software and documentation by usability specialists. The usability specialist records the actions the user took, problems the user encountered, and comments the user made during the test. The usability specialist might also record other information, such as time-on-task and number of clicks to reach a target topic ;
- **Video analysis.** A representative user or customer is filmed performing tasks using the software and documentation. The screen of the user may also be filmed or captured. These videos can be played back later to record the user actions and problems, or to show the developers how the user interacts with the software and documentation. Video analysis is usually combined with usability analyst observation;
- **Business area observation.** Representative users or customers are observed performing tasks using the software and documentation by usability specialists in their actual business environment. The usability specialist records the actions the user took, problems the user encountered, and comments the user made during the test;

- **User and customer debrief by usability analysts.** Representative users or customers are questioned on their experiences and satisfaction by usability specialists, after performing tasks using the software and documentation. The usability specialist records the responses of the users or customers;
- **User and customer questionnaire analysis.** Representative users or customers complete questionnaires on their experiences and satisfaction after performing tasks using the software and documentation. The responses in the questionnaires are recorded, and reported to the development teams. User and customer questionnaire analysis is useful for remote studies, but is also often used to get user feedback as part of a usability analyst observation.

6.3.4 Performing usability test of documentation

The test planner is responsible for performing the usability testing program and shall ensure that the systems for testing and associated facilities are available and ready in order to perform usability testing. The test planner may also be the test lead, the tester, or the usability expert.

The usability tests shall be performed according to the usability test plans to demonstrate that the documentation is fit for its purpose and meets the users' needs.

NOTE: Usability testing is performed in a manner consistent with organizational constraints, such that uncertainty in the replication of test actions, conditions, and outcomes is minimized. Test actions and results should be objectively recorded and approved. Usability tests may also be performed to confirm that the system not only meets all operational, functional, and usability, but also conforms to the often less formally expressed, but sometimes overriding, attitudes, experience, and subjective tests that make up customer satisfaction.

The project team shall make available the usability test data on the system according to legal, regulatory, or product sector requirements.

6.3.4.1 Usability test reports

The tester or usability specialist shall analyze, record, and report usability test data according to criteria defined in the usability test plan.

A standard format for usability test reports is provided by ISO/IEC 25062 *Common Industry Format for Usability Test Reports*. Each usability test should be documented in a test report. The usability test report should include the following information:

- details of the product and version under test;
- details of the running of the test;
- relevant contact details;
- a section providing a high-level overview of the test;

  NOTE: The intent of this section is to provide information for procurement decision-maker in customer organizations.

- a description of the product and the test objectives;
- methods used, including sufficient test steps that allow an independent tester to replicate the procedure used in testing;
- descriptions of participants;
- context of product use in the test;
- tasks;
- test facilities and equipment used;
- usability metrics;

- results including data collection, data analysis, data scoring, data reduction, and statistical analysis;
- performance results;
- satisfaction results;
- customer questionnaires, participant general instructions, and participant task instructions;
- recommendations.

6.3.5 Problem resolution for documentation usability tests

Usability tests can highlight problems ranging from the design of the documentation or software to general defects. Any issues that are identified during documentation usability testing shall be recorded and stored in a system. A process should be defined by the project lead or management team for resolving any recorded issues using the problem resolution processes in place in the organization. See 6.6 for more information about the problem resolution process.

6.4 Accessibility testing of documentation

Accessibility means enabling IT hardware, software and services to be used by more people, either directly or in combination with assistive technology products. Accessibility requirements extend usability requirements to ensure that the documentation is provided in a suitable format for the users of the software product. Documentation should be tested to demonstrate that it is accessible to the same users that are able to use the software product that the documentation supports.

NOTE: The US Government has published specific requirements that include software accessibility, known as Section 508 of the Rehabilitation Act. Details of Section 508 are at the URL listed in the Bibliography.

Accessibility testing might need to be performed on the following types of documentation:

- printed manuals and other documentation;
- on-screen documentation.

Accessibility testing of documentation should be included as part of the product test cycle to ensure people with disabilities can use the documentation. Accessibility testing of the documentation should be performed by the documentation tester or by a specialized accessibility tester. After the documentation has been created, the product should be checked to ensure that it complies with accessibility requirements. Several techniques are available to verify that documentation is accessible to people with disabilities.

6.4.1 Planning accessibility tests

If documentation accessibility testing is performed, a documentation accessibility test plan shall be produced by the test lead, usability specialist, or accessibility specialist to verify the following:

- documentation can be accessed without the use of a mouse;
- all documentation can be read in logical reading order using a screen reader, including the table of contents, images, data tables, and pages with multiple columns;

  EXAMPLE: If the document contains multiple columns of text, the first column is read before reading the second column.

- all links are identified by the screen reader;
- images have alternate text or text descriptions are provided in the surrounding text that map to the content of the image;
- links and buttons are keyboard accessible.

6.4.2 Performing accessibility tests

The following techniques shall be used by the tester to test the accessibility of documentation:

- test using the keyboard only;
- test using a screen reader for Windows Help, PDF, or Java documentation;
- test using a screen reader and a Web checking tool for HTML documentation;
- test using a screen magnifier;
- test using accessibility test tools to determine whether there is an accessibility problem with the application or with the screen reader;

If possible, include people with disabilities in the beta and usability tests of the product.

6.5 Localization and customization testing

Internationalization and national cultural requirements have a significant impact on the design of documentation, including schedules, costs, presentation formats, writing style, and usability testing. The designer should determine whether the application will be used by an international audience and in which countries. The answers to these questions determine the localization requirements.

For products to be made available in other countries using the same language as the source country, consider whether special localized versions of the documentation should be prepared for those countries, using appropriate local language, dialects, or conventions. Consider cultural issues, which need to be taken into account, both in the main product and in the documentation, especially in examples. A national of the target country should check all the user documentation to ensure it is suitable for use in that country. Ensure that localized versions of the documentation are easy to retrieve for those users who want to use them.

Testers of a localized version shall be familiar with the language and cultural conventions for the localization under test.

6.5.1 Planning for localization and customization testing

The following factors should be specified in planning testing for translated, localized, or customized versions:

- how the localized and customized versions will be tested;
- who is responsible for testing of the localized or customized versions;
- what system resources are needed to test the localized versions;
- when will the localized versions be available;
- which aspects of the documentation, such as search facilities and embedded help should be different.

6.5.2 Performing localization and customization testing

Testing of localized documentation includes:

- testing of printed documentation;
- testing of online documentation;
- testing of integrated product information.

The types of problems that can be identified during localization testing include:

- translation problems;

- truncation or issues with translated text display;
- translation of images and diagrams.

6.6 Problem resolution process

The problem resolution process is a process for analyzing and resolving the problems (including nonconformances), regardless of their nature or source, that are identified during the test or review activities. The objective is to provide a timely, responsible, and documented means to ensure that all identified problems are analyzed and resolved, and trends are recognized. More information about the problem resolution process can be found in ISO/IEC 12207:2008, *Systems and software engineering — Software life cycle processes* and ISO/IEC 20000:2005 *IT Service Management System*.

When problems (including nonconformances) have been detected in a documentation or software product, a problem report shall be prepared by the tester to describe each problem detected.

The problem report shall be used as part of a process to resolve the problem and its cause. Use of an ISO 9001 compliant quality management system includes processes to handle nonconforming product requirements.

If problems are detected during the review or testing of the documentation or software product, a process should be in place to re-review or retest the area where the problem was found to ensure that the problem has been resolved, and that no further defects have been introduced.

Annex A
(informative)

Checklists for user documentation

NOTE: The checklists provided in A.1 and A.2 may be reproduced and distributed in electronic or hard copy format for the strict purpose of evaluating documentation in accordance with this International Standard under the conditions that they are not modified and that there is no charge associated. Copyright remains with ISO.

The following checklists are excerpts from the checklists that are used to judge manuals and online help in international competitions of the Society for Technical Communication.

A.1 Checklist for printed manuals

1. Guidelines The following guidelines apply to all manuals, including:

- Software Guides
- Hardware/Software Combination Guides
- Computer Hardware Guides
- Non-computer Equipment Guides

Choose one of the following ratings for each criterion:

SD = Strongly Disagree D = Disagree N/A = Not Applicable
SA = Strongly Agree A = Agree

Content and Organization

Criteria	SD	D	A	SA	NA
Writing tone and style suit the purpose and audience					
Vocabulary and reading level are appropriate for the audience					
Organization and conventions are either inherently understandable or are explained					
Overall strategy for organizing the information suits the subject matter					
Similar kinds of information are presented consistently					
Writing is crisp and clean, with logical development of the subject matter at the right level of detail for user and task					
Writing is free of gender or ethnic bias					
Technical complexity is handled effectively					
Graphic elements are positioned near the text they support					
Notes, cautions, and warnings are clearly identified, positioned appropriately, and follow conventions for their meaning					
Terminology is defined in an effective place					
Quick-start procedures, tutorials, glossaries, appendixes, or reference sections are included when they would be helpful and appropriate					
Easy-to-find customer support information is included, as appropriate					

Copy Editing

Criteria	SD	D	A	SA	NA
Spelling, punctuation, grammar, and capitalization are correct and consistent					
Writing tone and style are consistent					
Treatment of wording in headings is consistent					
Copy is free of obvious technical defects					
Terminology is used consistently					
Treatment of all elements (lists, examples, tables, and so on) is consistent					
References to information within and outside of the manual are correct and consistent					
Labelling, captions, and callouts for tables, illustrations, photos, and other support material are consistent					
Acronyms and abbreviations are spelled out and defined at first occurrence					
Table of contents is comprehensive, useful, accurate, and well-edited					
Index is comprehensive, cross-referenced within, accurate, and well-edited, with effective use of synonyms; it also considers the reader's viewpoint of how to access information					

Visual Design

Criteria	SD	D	A	SA	NA
Overall design, including the cover, is unified and appropriate for the purpose					
Layout of page elements contributes to readability and usability					
Typography is used as an effective design element					
Typography is easy to read					
Headers and footers are visually effective in helping readers find information					
Other navigation devices are used, as appropriate					
Graphics maintain the internal consistency of the publication					
Icons and symbols (if used) are explained and used effectively					
Graphics are suitable for the audience in tone, style, and content					
Graphics support the content effectively					
Graphics are consistently well-designed and legible, and are constructed neatly					
Tables, charts, and diagrams are treated as graphic elements					
Captions and callouts are effective for illustrations, tables, photos, and other graphics					
Colour (if used) adds to the appeal and usability of the publication and unifies its design effectively					
Size and binding are appropriate for purpose and audience					
Production materials are of appropriate durability and quality					
Print quality supports the readability and usability of the publication					

Overall

Criteria	SD	D	A	SA	NA
Fulfils the purpose for the intended audience					
Integrates all elements into a readable and usable publication					
Shows evidence of creativity or originality					
Projects a professional image of the publication’s sponsor					

A.2 Checklist for online help

These checklists are useful for other types of online documentation, such as policies, procedures and work instructions.

Scale

5 Exemplifies the highest quality with few or no weaknesses

4 Strengths outweigh the weaknesses

3 Strengths and weaknesses balance

2 Weaknesses outweigh the strengths

1 Weak areas greatly affect the effectiveness

Does the entry fulfil its purpose? (mark the overall section rating with an **X** below the number)	**1**	**2**	**3**	**4**	**5**
Evaluation Factors			**Yes**	**No**	**N/A**
Audience Definition					
Is there a clearly defined audience to which the help is addressed?					
Does the entry effectively meet the needs of the intended audience?					
Goals or Purpose					
Are the goals or purpose of the entry stated clearly?					
Does the entry answer questions or provide appropriate assistance where needed?					
Are there multiple and effective methods for accessing help?					
Is the level of context sensitivity appropriate and does it lead to useful information?					
Given the goals as articulated in the help entry, did the documentation developer(s) make appropriate choices for:					
• Help design					
• Context sensitivity					
• Language					
• Linking					
• Interactivity					
Do the contents of the help adequately address the stated goals?					
Does the help system provide clear and sufficient instructions for how to complete tasks?					

Is the content of high quality and is it communicated effectively? (mark the overall section rating with an **X** below the number)	**1**	**2**	**3**	**4**	**5**
Evaluation Factors			**Yes**	**No**	**N/A**
Writing					
Is the help system well written?					
Is the writing style appropriate for the audience and the topics being covered?					
Is the language consistent throughout the help system?					
Is the language appropriate to the subject?					
Are procedures (if used) presented in clear sequential steps?					
Content Design					
Do the titles and headings clearly identify the information that follows?					
Are lists, tables, and graphics used effectively?					
Does the entry provide signposts to orient the user?					
Overall Quality					
Do all of the navigational elements, such as hyperlinks, resolve correctly and behave in the expected manner without error?					
Is the help navigation (hyperlinks) defect free?					
Is the content consistent and appropriate for the audience?					
Is the interface consistent, easy to use, and reliable?					

Is the content well integrated and organized? (mark the overall section rating with an **X** below the number)	**1**	**2**	**3**	**4**	**5**
Evaluation Factors			**Yes**	**No**	**N/A**
Organization/integration					
Is the help system well organized and is the organization appropriate for the audience?					
Is the organization obvious?					
Is the information organized into appropriate topics?					
Is the information organized into appropriate subtopics?					
Can you easily navigate between topics?					
Are there direct links or text references to relevant external documents, topics, or subtopics?					
Table of Contents (or navigational equivalent)					
Are the contents clearly identified in a table or navigational equivalent?					
Is the table of contents or navigational equivalent complete and comprehensive?					
Does the table of contents or other navigational equivalent provide an easy way to access the contents or move through branches of information?					
Index					
Are the index entries well chosen?					
Does the Index use cross-references and alternate words (synonyms) for topics?					
Can you browse the Index easily using an incremental search field, alphabet navigation buttons, or other facility?					
Search					
Does the help system have an effective search mechanism?					
If there is a full text search capability, is it easy to use? Does it support wildcards, case sensitivity, and word variation?					
Can you specify a search area?					
Navigation					
Is it easy to find specific information, to navigate through information, and to return to where you started?					
Are navigational aids present and are they used consistently throughout the entry?					
Context Sensitivity					
Does the entry employ context-sensitive help effectively?					
Usability					
Is the interface intuitive, easily interpreted, and consistent?					
Is information provided to assist the user, such as help, help-on-help, action cues, etc?					

Are the communication media used effectively and appropriately? (mark the overall section rating with an **X** below the number)	**1**	**2**	**3**	**4**	**5**
Evaluation Factors			**Yes**	**No**	**N/A**
Platform Conventions/Features					
Does the entry appropriately use the standard conventions and features of the platform? For example, if the entry is a Windows Help file, does it effectively use the standard WinHelp features appropriately, such as the Contents file, indexing features, design options, etc?					
Speed					
Is the entry reasonably responsive?					
Is the entry designed to optimize performance?					
Interactivity					
Does the entry offer choices and can the user control the pace?					
Can the user omit or repeat parts?					
Can the user exit easily?					
Screen Design and Accessibility					
Is the design appealing and inviting?					
Are the screens easy to read?					
Is the type size easy to read? Can the type size be changed if required?					
Does the design minimize the need to scroll where possible?					
Does the help system provide appropriate accessibility features, such as tool tips, for users who require them?					
Graphics					
Are graphics used effectively to communicate concepts?					
Are the graphics attractive and of high quality?					
Media					
Are media elements (such as sound, video, animation, and interactive elements) easy to use?					
Are media elements (such as sound, video, animation, etc.) of high quality?					
Are media elements used appropriately? Do they enhance the communication objective of the entry?					
Do the media elements balance with each other and the content?					

Annex B
(informative)

Test and review checklist

NOTE: The checklists provided in B.1 to B.8 may be reproduced and distributed in electronic or hard copy format for the strict purpose of evaluating documentation in accordance with this International Standard under the conditions that they are not modified and that there is no charge associated. Copyright remains with ISO.

Checklists should be drawn up for reviews and test of the documentation. The checklists given here may be useful as a starting point.

B.1 Content checklist

This checklist should be applied to the complete documentation set, both embedded and separate, taken as a whole.	Notes:
General information	
Is it clear what version of the software the documentation applies to?	
Is the name of the manufacturer clear?	
Is the information that users need when asking for support included?	
Is there a copyright statement?	
Overview of the application	
Is there an overview of the application?	
Does it explain what the application is for?	
Does it explain what application functions are available?	
Does it explain the structure of the application?	
Overview of the documentation	
Is there an overview of the documentation?	
Does it explain what documentation there is?	
Does it explain how to use the documentation?	
Task descriptions	
Is there a task description for each task that users can perform?	
Are there process descriptions that put the tasks in context?	
Are related tasks listed in the correct sequence in which they need to be performed?	
Fields	
Are all fields explained?	
Are all options explained?	
Is the information about different types of field appropriate?	

User interface elements	
Are all the elements of the application's user interface explained?	
Application functions	
Are all the functions of the application described?	
Messages	
Are messages explained, if necessary?	
Terms	
Are all the terms used either defined in the documentation or already familiar to users (see 9.10)?	
Is the terminology used consistently?	
Concepts	
Are all the important concepts explained?	
Exploitation	
Is there information on how to exploit the advanced features of the application?	
Questions and problems	
Does the documentation answer questions that the users may have?	
Is there any problem-solving information provided, if necessary?	
Does it cover all the problems users may be expected to encounter?	
Does it provide solutions?	
Examples	
Are there sufficient examples?	
Are the examples suitable?	
Are examples presented consistently?	
Are the examples technically correct and demonstrating best practices?	
Captions and callouts	
Are captions and callouts for illustrations, tables, photographs and other graphics effective and consistent?	
Do the captions and callouts map to the content that they relate to?	
User-supplied content	
Can the users annotate the text?	
If so, can the original text be restored?	

B.2 Navigation checklist

B.2.1 On-screen documentation

	Notes:
General	
• Is it easy to find the documentation?	
• Are the access methods consistent?	
• Is it easy to exit from the documentation?	
Finding the right information	
• Do navigation labels, search titles, topic headings and link phrases conform to guidelines?	
• Is context-sensitive access available?	
• If so, is the right information for the context displayed?	
• Are topics easy to find?	
• Is there a table of contents the documentation or each part of the documentation?	
• Does each page linked from the table of contents contain some text (it is not a blank page)?	
• Is there an index facility, is it easy to use?	
• Is the index comprehensive, accurate and well edited?	
• Does it make effective use of synonyms and cross-references?	
• Is it designed from the reader's viewpoint of how to access information?	
• Is the speed of access adequate?	
Structure	
• Is the information structured in a logical way?	
• Is the structure of the information clear or else explained to the users?	
• Is the information structured in the way users need to understand it, rather than the way the program was written?	
• Is the material split into suitable chunks?	
• Is the order of information within each chunk sensible?	
Orientation	
• Is it clear what type of information is displayed?	
• Does each topic have a clear heading?	

• Does the heading accurately reflect the content?	
• Can users get back to a previous topic?	
• Can the users find the best starting point for their needs?	
Links	
• Are different types of link clearly distinguished?	
• Are there an appropriate number of links	
• Are the links appropriate?	
• Are all the links necessary?	
• Are the links sufficient?	
• Do the links go to the correct places?	
• Are the names of the links meaningful	
Browsing	
• Is it possible to browse through the on-screen information in a logical sequence?	
• Can users browse backwards as well as forwards?	
Scrolling	
• Do the text and graphics scroll at an adequate speed?	
• Do titles and headings remain displayed?	
• Can users see how near the end they are in a scrollable topic?	

B.2.2 Paper-based and printable documentation

	Notes:
General	
• Is it easy to obtain the documentation?	
• Do the users have the documents that they need?	
Finding the right information	
• Is it clear in which documents to find each type of information?	
• Is it easy to find the right information within each document?	
• Is there a table of contents for each document?	
• Is each table of contents comprehensive, useful, accurate and well edited?	
• Does each page referenced in the table of contents contain some text (it is not a blank page)?	
• Is there an index for each document in which users need to find particular information?	
• Is the index comprehensive, accurate and well edited?	
• Does it make effective use of synonyms and cross-references?	
• Is it designed from the reader's viewpoint of how to access information?	
• Are references from the contents list and index easy to follow?	
Structure	
• Is the information structured in a logical way?	
• Is the structure of each document obvious or else explained to the users?	
• Is each document or each part structured into chapters or major sections?	
• Is it easy to find the start of each part and each chapter or section?	
• Are appendices or annexes used appropriately for reference or lengthy information?	
• Is the information structured in the way users need to understand it, rather than in the way the program is written?	
• Is the material split into sections of a suitable length?	
• Is the sequence of information within each section suitable for the expected method of use?	

Orientation	
• Is it clear what type of information is contained in each section?	
• Does each section have a clear heading?	
• Does the heading accurately reflect the content?	
• Can the users find the best starting point for their needs?	
• Is the information categorized logically	
Sequence of information	
• Are subjects presented in a logical sequence in each document?	
• Does the sequence of information in each document or each part correspond to the way users need to use it?	
Numbering	
• For documents divided into volumes, are the volumes clearly labelled?	
• For documents divided into parts, are the parts numbered?	
• Are chapters or sections clearly numbered or labelled in some prominent way?	
• Do the page numbers in each volume or each part make it clear to which volume or part the pages belong?	
• Is the page-numbering scheme suitable for the type of document?	
• Is the page numbering clear?	
• Is the page-numbering scheme consistent with the section-numbering scheme?	
• Is the section numbering clear?	
• Are illustrations that are referred to from the text numbered?	
• Are tables that are referred to from the text numbered?	
• Are preliminary pages numbered in a separate sequence from the rest of the document? (see E.2.3.2.1)	

Cross-references	
• Are there cross-references between separate documents?	
• Are there sufficient cross-references between sections containing related information?	
• Are the cross-references appropriate?	
• Are all the cross-references necessary?	
• Are the cross-references easy to follow?	

B.3 Style Guide checklist

This checklist should be applied to each separate document individually, that is, all the separate documents should be examined.

NOTE: When writing be aware of the differences among national versions of the language you are using. For example, the default setting of the available spelling and grammar checker may be US or UK English.

	Notes:
Vocabulary	
• Are terms and abbreviations defined where necessary?	
• Are terms used consistently?	
• Are definitions provided for the terms?	
• Is the vocabulary suitable for the intended readership?	
• Are most words in the vocabulary short and simple?	
• Are definitions provided for terms?	
• Are the sentences understandable?	
Grammar	
• Is the spelling correct?	
• Is the grammar correct?	
• Are tenses used correctly?	
• Are instructions in the imperative?	
• Is the punctuation correct?	
Language conventions	
• Are most sentences short and simple to understand?	
• Are most verbs active?	
• Is the reader addressed directly (in the second person)?	
• Is the writing concise?	
• Do sentences lead the users from the known to the unknown?	
• Do paragraphs lead the users from the known to the unknown?	
• Is the style appropriate for the intended readership?	
• Is the text easy to understand?	
• Are goals given for the instructions?	

• Are pre-requisite conditions given at the beginnings of instructions?	
• Is hyphenation used where necessary to avoid misunderstandings?	
• Are facts written the right way round?	
• Does each message explain what types of message it is?	
• Has giving the computer or the application a human personality been avoided?	
• Have clichés been avoided?	
• Are capital letters used appropriately?	
• Is the highlighting of important information (e.g., bold or italicized text) consistent?	
• Do list items have parallel structure?	
Illustrations	
• Are illustrations used in appropriate places?	
• Are the types of illustration suitable for the information?	
• Are illustrations simple and clear?	
• Are illustrations of similar types consistent?	
• Are illustrations complete?	
• Is meaning conveyed using methods other than colour alone?	
• Is the scale of illustrations appropriate?	

B.4 Presentation checklist

B.4.1 On-screen documentation

	Notes:
Windows	
• Does the windowing scheme accommodate the information characteristics the user needs?	
• Are the default sizes and placements of windows suitable?	
• Can users resize and move information windows?	
• Can the default sizes and placements be restored?	
Window layouts	
• Are similar topics displayed in windows with similar layouts?	
• Are window layouts appropriate for the types of information that the windows display?	
• Is there sufficient blank space so that the windows do not seem crowded?	
• Is the title of each window clear?	
• Are the navigation controls in a consistent place?	
• Are topic titles and controls contained in non-scrolling areas?	
Colours	
• Are colours used appropriately?	
• Are colours used consistently?	
• Are only a few colours used?	
• Does the presentation work in monochrome?	
• Can the users change the foreground and background colours?	
• Is the polarity consistent (for example, dark text on light background)?	
• Is the contrast between foreground and background colours suitable?	
Typography	
• Are only a few typefaces used?	
• Are typefaces used consistently?	
• Are the typefaces legible?	

• Are the typefaces used suitable for on-screen use (for example Verdana or Arial)?	
• Are the different levels of heading easy to distinguish?	
• Do the different heading levels represent the hierarchy correctly?	
• Is most of the text in mixed upper and lower case?	
• Are the typefaces available on the users' screens?	
• Are the capital letters at least 3 mm high on the screen?	
• Have underlines that cut through the descenders been avoided?	
• Is the method used for highlighting words and phrases consistent?	
• Is the method used for highlighting words and phrases effective?	
• Is the line spacing at least twice the x-height?	
• Is the line spacing at least one thirtieth of the line length?	
Layout of information	
• Do important messages stand out sufficiently?	
• Are similar elements positioned consistently?	
• Is blank space used to separate elements?	
• Are paragraphs separated clearly?	
• Are lists used where appropriate?	
• Are lists consistent?	
• Are lists presented as numbered lists where the sequence is significant?	
• Are lists presented as bullet lists where the sequence is not significant	
• Are tables used appropriately?	
• Are rules and borders used consistently?	
• Is the presentation simple?	
• Can annotations be distinguished easily?	
Illustrations	
• Is the speed of display of the illustrations adequate?	
• Can illustrations be seen at the same time as text that relates to them?	
• Are the drawn lines thick enough to be seen clearly?	

• Is text in illustrations sufficiently large (capital letters at least 3 mm high)?	
• Can users print the illustrations?	
• Are active areas clear and easy to use?	
• Icons and signposts:	
• Are the icons and signposts self-evident or easy to learn?	
• Are the graphics clear?	
• Do the graphics represent actual objects or actions?	
• Do the graphics use culture-independent images?	
• Are metaphors used consistently?	

B.4.2 Paper-based and printable documentation

	Notes:
Documents	
• Does the presentation of each document make it clear what the document contains?	
• Is the overall size of each document suitable for the place in which the document will be used?	
• Is the orientation of each document suitable for its intended use?	
• Do the majority of the documents have portrait layout?	
Binding	
• Is the binding of each document suitable for the place in which the document will be used?	
• Is the binding of each document suitable for how the document will be used?	
• For documents with a printed spine, is the printing either across the spine or running from top to bottom?	
• For documents in ring binders, is there only one document in each binder?	
• Are cards and charts folded in a suitable way?	
Paper	
• Is the paper suitable for the expected use of the document?	
• Are divider pages made of heavy paper or thin card?	

• Are divider pages durable enough for their intended use?	
• Is opaque paper used in documents printed double-sided?	
• Does the paper used for documents that are not leaflets or brochures have a matt finish?	
• Is the material used for pages suitable for the environments in which the pages are to be used (especially for damp or dirty environments)?	
• Unless there is a special need for another colour, is the paper white?	
Page layouts	
• Are page layouts simple?	
• Are page numbers clear?	
• Is the document reference number included on the pages?	
• Are common elements on pages presented in the same position on each page?	
Section layouts	
• Do major sections start on a new page?	
• Is the heading of each section clear?	
• Are sections clearly distinguished from each other?	
• Are similar subjects displayed using similar section layouts?	
• Are section layouts appropriate for the types of information that the sections contain?	
• Is there sufficient blank space so that pages do not seem crowded?	
Layout of information	
• Are line lengths short enough for the text to be easy to read?	
• Do important messages stand out sufficiently?	
• Are similar elements positioned consistently?	
• Are paragraphs separated clearly?	
• Are lists used where appropriate?	
• Are lists consistent?	
• Are lists, where the sequence is significant, presented as numbered lists?	
• Are lists, where the sequence is not significant, presented as bullet lists?	
• Are tables used appropriately?	
• Are rules and borders used consistently?	

Colours	
• Are colours used appropriately?	
• Are colours used consistently?	
• Are only a few colours used?	
• If colours are used in printable documents, is the presentation clear when printed in monochrome?	
• Is the majority of the text presented as dark characters on a light background?	
• Is the contrast between text and paper colours suitable?	
Typography	
• Are only a few typefaces used?	
• Are typefaces used consistently?	
• Are the typefaces legible?	
• Are the different levels of heading easy to distinguish?	
• Do the different heading levels represent the hierarchy correctly?	
• Is most of the text in mixed upper and lower case?	
• For printable documents, do the typefaces print correctly on all printers available to the users?	
• Is the text size suitable for the environment in which the document will be used?	
• Is the method used for highlighting words and phrases consistent?	
• Is the method used for highlighting words and phrases effective?	
• Is the line spacing sufficient?	
Illustrations	
• Do illustrations occur after the text that refers to them?	
• Can text and illustrations that need to be together be seen at the same time?	
• Are the drawn lines thick enough to be seen clearly?	
• Is the text in illustrations legible?	
• For printable documentation, do the illustrations print correctly, with all drawn lines and text visible?	

B.5 Documentation for translation

Are the sentences in the document simple rather than complex?	Notes:
Are the terms used simple and unambiguous?	
Is the passive voice used only when appropriate?	
Are words used in only one grammatical sense?	
Are full clauses used, with a subject and a complete verb?	
Are noun and adjective strings kept under three words?	
Are the use of idioms, slang, analogies, similes, and metaphors that aren't universal avoided?	
Is the international date format used: day month year (for example, 26 September 2002) or ddmmyyy.	
Is the use Latin abbreviations avoided?	
Is only one term used to refer to the same item?	
Are terms used that do not have different meanings in different countries?	
Is a complete glossary included?	
Are only established terms used in the document?	
Are tables used in place of prose, especially for reference information?	

B.6 Usability of documentation

Can the users find the information that they need in a reasonable amount of time?	Notes:
Is the information the users found relevant, useful and accurate?	
Are the users able to find the information without difficulties or assistance?	
Are the users able to find related information easily?	
Are the users able to complete the task or set of tasks in the test using the product documentation?	
Are the users satisfied with the quality of the information?	

B.7 Accessibility of documentation

Can the documentation be used without a keyboard?	Notes:
Do tests using accessibility testing tools pass without defects?	
Can the documentation be used with the assistance of a screen reader or other assistive technologies?	
Do images have associated alt text or descriptive text?	
Are links and buttons keyboard accessible?	
Can all text be read by a screen reader in logical reading order?	
Are all links identified by a screen reader?	
Are paper based documents provided in an alternative accessible format?	

B.8 Overall

	Notes:
Does the documentation fulfil its objectives for the intended audience?	
Does the documentation integrate all elements into a readable and usable publication?	
Does the documentation project a professional image of the publication's sponsor?	

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