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Systems and software engineering — Design and development of information for users

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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Systems and software engineering — Design and development of information for users

Ingénierie du logiciel et des systèmes — Conception et développement d'informations pour les utilisateurs

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Foreword

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

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

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

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

ISO/IEC/IEEE 26514 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Systems and software engineering*, in cooperation with the Systems and Software Engineering Standards Committee of the IEEE Computer Society, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

This first edition cancels and replaces ISO/IEC 26514:2008, which has been technically revised.

The main changes are as follows:

— increased emphasis on designing and developing information for users of software;

— use of IEC/IEEE 82079-1 as a normative reference for information for use;

— addition of subclauses regarding application programming interfaces (API) and chatbots.

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

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Introduction

Anyone who uses software designed to help users perform particular tasks or handle particular types of problems needs accurate information about how the software helps the user accomplish a task. The information for users may be the first tangible item that the user sees and therefore influences the user's first impressions of the software product. If the information is supplied in a convenient form and is easy to find and understand, the user can quickly become proficient at using the product. Hence, well-designed information for users not only assists the user and helps to reduce the cost of training and support, but also enhances the reputation of the product, its producer, and its suppliers.

Although software developers aim to design user interfaces that behave so intuitively that little separate explanation is needed, this is rarely possible. Today's software offers increasingly robust functionality, not only within applications, but also across applications that intelligently exchange information with one another. Further, most software designs include underlying rules and calculations, or algorithms that affect the results a user can obtain when using the software. Such underlying programming mechanisms are discernible by users, but only through laborious testing. For these reasons and more, information for users remains an essential component of usable software products.

This document supports the need of software users for consistent, complete, accurate, and usable information. It includes both approaches to standardization: a) process standards, which specify the way in which information products are to be developed; and b) information product standards, which specify the characteristics and functional requirements of the information for users.

This document provides specific requirements for information for users of software products, based on the requirements applicable to all types of products in IEC/IEEE 82079-1. It focuses on the parts of the information management processes most applicable for information designers and information developers.

Information for users is often regarded as something done after the software has been implemented. However, for high-quality information for users of a software product, its development should be regarded as an integral part of the software life cycle process. If done properly, information development is a big enough job to require process planning in its own right.

This document was developed to assist users of ISO/IEC/IEEE 12207 to design and develop information for users as part of the software life cycle processes. It defines the information-development process from the information developer's standpoint.

Other documents (ISO/IEC/IEEE 26511, ISO/IEC/IEEE 26512, ISO/IEC/IEEE 26513, ISO/IEC/IEEE 26515, and ISO/IEC/IEEE 26531) address the information management process from the viewpoints of managers, acquirers and suppliers, reviewers and testers, participants in agile development work, and content managers.

In addition to defining a standard process, this document also covers the information product. This document specifies the structure, content, and format for information for users, and also provides informative guidance for the style of such information.

Earlier standards tended to view the results of the information-development process as a single book or multivolume set: a one-time deliverable. Increasingly, information designers recognize that most information for users is now produced from managed re-use of previously developed information (single-source documentation), adapted for new software versions or presentation in various electronic (e.g. onscreen or spoken) and printed media. While this document does not describe how to set up a content management system (CMS), it is applicable for documentation organizations practicing single-source documentation.

This document is independent of the software tools that may be used to produce information for users, and applies to both printed and onscreen information, as well as information presented by other methods such as animation or video. Much of its guidance is applicable to information for users of systems including hardware as well as software.

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This document is intended for use in all types of organizations, whether or not a dedicated information-development department is present, and can be used as a basis for local standards and procedures. Readers are assumed to have experience or knowledge of software development or information-development processes.

The order of clauses in this document does not imply that the information for users should be developed in this order or presented to the user in this order.

In each clause, the requirements are media independent, as far as possible. Requirements specific to either print or electronic media are identified as such, particularly in Clause 9.

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INTERNATIONAL STANDARD ISO/IEC/IEEE 26514:2022

Systems and software engineering — Design and development of information for users

1 Scope

This document covers the development process for designers and developers of information for users of software. It describes how to establish what information users need, how to determine the way in which that information should be presented, and how to prepare the information and make it available. It is not limited to the design and development stage of the life cycle, but includes information on design throughout the life cycle, such as design strategy and maintaining a design.

This document provides requirements for the structure, information content, and format of information for users of software.

This document can be applied to developing the following types of information, although it does not cover all aspects of them:

— information for users of products other than software;

— multimedia systems using animation, video, and sound;

— computer-based training (CBT) packages and specialized course materials intended primarily for use in formal training programs;

— maintenance information describing the internal operation of systems software;

— information for users incorporated into the user interface itself.

This document is applicable to information architects and information developers, including a variety of specialists:

— information architects who plan the structure and format of information products;

— usability specialists and business analysts who identify the tasks that the intended users can perform with the software;

— developers and editors of the written content of information for users;

— graphic designers with expertise in electronic media;

— user interface designers and ergonomics experts working together to design the presentation of the information on the screen.

This document is also a reference for those with other roles and interests in the process of developing information for users:

— managers of the software development process or the information-development process;

— acquirers of information for users prepared by suppliers;

— usability testers, reviewers of information for users, subject-matter experts;

— developers of tools for creating information for users;

— human-factors experts who identify principles for making information for users more accessible and easily used.

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2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC/IEEE 82079-1:2019, *Preparation of information for use (instructions for use) of products – Part 1: Principles and general requirements*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/

— IEC Electropedia: available at https://www.electropedia.org/

— IEEE Standards Dictionary Online: available at https://dictionary.ieee.org

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

3.1.1
accessibility
extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use

Note 1 to entry: Although "accessibility" typically addresses *users* (3.1.54) who have disabilities, the concept is not limited to disability issues.

[SOURCE: ISO/IEC 25064:2013, 4.1, modified — The original note 1 to entry has been removed and replaced by a new one.]

3.1.2
accuracy
quality of information that it is correct and consistent with a *software product* (3.1.47)

3.1.3
action
element of a *step* (3.1.48) that a *user* (3.1.54) performs during a *procedure* (3.1.39)

3.1.4
active area
<*onscreen information for users* (3.1.36)> area that responds to *user* (3.1.54) control or manipulation

EXAMPLE A hot-spot on a graphic, a hyperlink in text, a button in a screen display.

3.1.5
analysis
investigation and collection task of *development* (3.1.18) that aims to specify types of *users* (3.1.54) and needed information

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3.1.6
application programming interface
API
set of *functions* (3.1.23), protocols, parameters, and objects of different formats, used to create *software* (3.1.46) that interfaces with the features or data of an external system or service

EXAMPLE The interface to a suite of service subroutines, a set of dedicated URLs that return data in response, or a suite of *commands* (3.1.11) that can be issued to a physical device such as a robot on an assembly line.

Note 1 to entry: *Information for users* (3.1.29) of an API is of two main types: *reference information* (3.1.43) (which contains information about all elements of the API) and developer guide (which explains how to use the API).

Note 2 to entry: APIs can take several forms. In general terms, an API is a set of clearly defined methods of communication among various components. An API specifies the information and methods that are needed to communicate with another application.

3.1.7
audience
category of *users* (3.1.54) sharing the same or similar characteristics and needs (for example, purpose in using the *information for users* (3.1.29), tasks, education level, abilities, training, and experience) that determine the content, structure, and use of the intended information

Note 1 to entry: There may be different audiences for information for users (for example, management, data entry, maintenance, engineering, business professionals).

[SOURCE: ISO/IEC/IEEE 23026:2015, 4.2, modified — "documentation" has been replaced by "information for users"; in note 1 to entry, "engineering, business professionals" has been added.]

3.1.8
caution
advisory information that states that performing some *action* (3.1.3) can result in minor or moderate injury or lead to consequences that are unwanted or undefined, such as loss of data or an equipment problem

Note 1 to entry: See also *danger* (3.1.16) and *warning* (3.1.56).

3.1.9
change control
actions (3.1.3) taken to identify, document, review, and authorize changes to a product that is being developed

Note 1 to entry: The *procedures* (3.1.39) confirm the validity of changes, that the effects on other items are examined, and that those people concerned with the *development* (3.1.18) are notified of the changes.

3.1.10
computer-aided design
CAD
use of a computer to design a device or a system, display it on a computer monitor or printer, simulate its operation, and provide statistics on its performance

3.1.11
command
expression that can be input to a computer system to initiate an *action* (3.1.3) or affect the execution of a computer program

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.638, modified — The EXAMPLE has been removed.]

3.1.12
conceptual information
explanations and descriptions which enable the *audience* (3.1.7) to understand the product's operating principles in order to perform required tasks

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3.1.13
configuration management
CM
technical and organizational activities, comprising configuration identification, control, status accounting and auditing

[SOURCE: IEEE 828-2012]

3.1.14
context-sensitive help
type of *onscreen information for users* (3.1.36) in which the material that is displayed depends upon the current status of the *software* (3.1.46) and the progress of the *user's* (3.1.54) task

3.1.15
customize
adapt a *software* (3.1.46) or information product to the needs of a particular *audience* (3.1.7)

3.1.16
danger
hazardous situation, which if not avoided, can result in death or serious injury

Note 1 to entry: See also *caution* (3.1.8) and *warning* (3.1.56).

[SOURCE: ISO/IEC/IEEE 26513:2017, 3.8]

3.1.17
design
stage of information *development* (3.1.18) that is concerned with determining what *information for users* (3.1.29) is to be provided in a product and what is the nature of that information

3.1.18
development
activity of preparing *information for users* (3.1.29) after it has been designed

3.1.19
document
uniquely identified unit of information for human use

[SOURCE: ISO/IEC/IEEE 15289:2019, 3.1.10, modified — The EXAMPLE and note 1 to entry have been removed.]

3.1.20
document set
documentation (3.1.21) that has been segmented into separately identified volumes or products for ease of distribution or use

[SOURCE: ISO/IEC/IEEE 26513:2017, 3.11, modified — "collection of" has been removed.]

3.1.21
documentation
collection of documents related to a given subject

[SOURCE: IEC/IEEE 82079-1:2019, 3.11]

3.1.22
embedded information for users
information for users (3.1.29) that is accessed as an integral part of *software* (3.1.46)

EXAMPLE Pop-up help and help text on a screen.

Note 1 to entry: See also *onscreen information for users* (3.1.36) and *printed information for users* (3.1.38).

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3.1.23
function
defined objective or characteristic *action* (3.1.3) of a system or component

3.1.24
icon
graphic displayed on the screen that represents a *function* (3.1.23)

[SOURCE: ISO/IEC 11581-1:2000, 4.7, modified — "of a visual display" and "of the computer system" have been removed.]

3.1.25
illustration
graphic element set apart from the main body of text and normally cited within the main text

Note 1 to entry: The term "illustration" is used as the generic term for tables, figures, exhibits, screen captures, flow charts, diagrams, drawings, *icons* (3.1.24), and other types of graphics.

3.1.26
information architect
person who develops the structure of an information space and the semantics for accessing information on tasks, system *functions* (3.1.23) and features, and other information

[SOURCE: ISO/IEC/IEEE 26513:2017, 3.20, modified — "required task objects, system objects" has been replaced by "information on tasks, system functions and features".]

3.1.27
information architecture
structure of an information space and the semantics for accessing information on tasks, system *functions* (3.1.23) and features, and other information

3.1.28
information developer
person who prepares content for *information for users* (3.1.29)

[SOURCE: ISO/IEC/IEEE 26515:2018, 3.8]

3.1.29
information for users
information provided by the supplier that provides the target audience with concepts, *procedures* (3.1.39) and reference material for the safe, effective, and efficient use of a supported product during its life cycle

EXAMPLE Printed manuals, onscreen information, and stand-alone online help are examples of information for users.

Note 1 to entry: Throughout this document, the term "information for users" refers to information for *users* (3.1.54) of *software* (3.1.46).

Note 2 to entry: It can be provided separately or embedded in the product or both.

Note 3 to entry: The term "information for users" in this document is intended as a synonym for "information for use" as used in IEC/IEEE 82079-1 and is defined as such, although it is recognised that the respective ideas, while similar, are not identical.

[SOURCE: IEC/IEEE 82079-1:2019, 3.17, modified — The preferred term has been changed from "information for use" to "information for users"; the admitted term "instructions for use" has been removed; the original EXAMPLE and notes to entry have been removed and replaced by new ones.]

3.1.30
instructional information
information that explains how to use a product, system, or service to perform tasks

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3.1.31
internationalization
process (3.1.40) of developing information so that it is suitable for an international *audience* (3.1.7)

Note 1 to entry: See also *localization* (3.1.32).

3.1.32
localization
creation of a national or specific regional version of a product and its *information for users* (3.1.29)

Note 1 to entry: Localization may be carried out separately from the translation *process* (3.1.40).

Note 2 to entry: See also *internationalization* (3.1.31).

3.1.33
menu
list displayed on a screen showing available *functions* (3.1.23) from which the *user* (3.1.54) can select an *action* (3.1.3) to be initiated

3.1.34
minimalism
principle that *information for users* (3.1.29) includes critical information and the least amount of other information needed to be complete

[SOURCE: IEC/IEEE 82079-1:2019, 3.25, modified — "information for use" has been replaced by "information for users".]

3.1.35
navigation
act of accessing *information for users* (3.1.29) and viewing different *topics* (3.1.51)

3.1.36
onscreen information for users
information for users (3.1.29) that is intended to be read on the screen by the *user* (3.1.54) while using the *software* (3.1.46)

EXAMPLE Pop-up help and help text on a screen.

Note 1 to entry: See also *embedded information for users* (3.1.22) and *printed information for users* (3.1.38).

3.1.37
picture
illustration (3.1.25) that shows the actual appearance of physical objects

EXAMPLE Photographs and drawings.

3.1.38
printed information for users
information for users (3.1.29) that is either provided in printed form, or provided in electronic form for the customer or *user* (3.1.54) to print

Note 1 to entry: See also *embedded information for users* (3.1.22) and *onscreen information for users* (3.1.36).

3.1.39
procedure
ordered series of *steps* (3.1.48) that specify how to perform a task

3.1.40
process
set of interrelated or interacting activities which transforms inputs into outputs

[SOURCE: ISO/IEC/IEEE 12207:2017, 3.1.33]

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3.1.41
project
endeavour with defined start and finish criteria undertaken to create a product or service in accordance with specified resources and requirements

[SOURCE: ISO/IEC/IEEE 12207:2017, 3.1.37, modified — Note 1 to entry has been removed.]

3.1.42
project manager
person with overall responsibility for the management and running of a *project* (3.1.41)

3.1.43
reference information
information that is intended to provide quick access to specific details for *users* (3.1.54) who are generally familiar with the product's *functions* (3.1.23)

3.1.44
secondary window
window (3.1.57) that contains information that depends on information in another window (the primary window)

Note 1 to entry: The information in the secondary window supplements the information in the primary window.

3.1.45
signpost
text, symbol, or small graphic that helps the *user* (3.1.54) identify where particular types of information are located or where the information in the current display fits into the *information for users* (3.1.29) as a whole

Note 1 to entry: Information of different types may be indicated by symbols or graphics of different types.

3.1.46
software
all or part of the programs which *process* (3.1.40) or support the processing of digital information

Note 1 to entry: For the purposes of this document, the term "software" does not include *onscreen information for users* (3.1.36).

[SOURCE: ISO/IEC 19770-1:2017, 3.49, modified — The original notes 1 and 2 to entry have been replaced by a new note 1 to entry.]

3.1.47
software product
set of computer programs, *procedures* (3.1.39), and possibly associated *information for users* (3.1.29) and data

[SOURCE: ISO/IEC/IEEE 12207:2017, 3.1.54, modified — Note 1 to entry has been removed.]

3.1.48
step
element (numbered list item) in a *procedure* (3.1.39) that tells a *user* (3.1.54) to perform an *action* (3.1.3) (or actions)

Note 1 to entry: Responses by the *software* (3.1.46) are not considered to be steps.

3.1.49
style
set of language-specific editorial conventions covering grammar, terminology, punctuation, capitalization, and word choice

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3.1.50
subject-matter expert
SME
person responsible for providing technical information or for checking the technical *accuracy* (3.1.2) of drafts of *information for users* (3.1.29)

3.1.51
topic
coherent part of an information product with a heading that deals with a single subject

EXAMPLE Instructions on how to print the current *document* (3.1.19).

Note 1 to entry: In *printed information for users* (3.1.38), a topic is equivalent to a section (heading; subheading) and its content. In *onscreen information for users* (3.1.36), a topic consists of a title (heading) and information about a subject (typically, a task or a concept or *reference information* (3.1.43)).

Note 2 to entry: For onscreen information for users, the system sometimes presents a topic without *user* (3.1.54) intervention.

[SOURCE: IEC/IEEE 82079-1:2019, 3.43, modified — The EXAMPLE has been added; the original note 1 to entry has been replaced by notes 1 and 2 to entry.]

3.1.52
tutorial
instructional information (3.1.30) in which the *user* (3.1.54) exercises *software* (3.1.46) *functions* (3.1.23) using sample data that is supplied with the software or *information for users* (3.1.29)

3.1.53
usability
extent to which a system, product or service can be used by specified *users* (3.1.54) to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use

[SOURCE: ISO 9241-11:2018, 3.1.1, modified — Notes 1 and 2 to entry have been removed.]

3.1.54
user
person who performs one or more tasks with *software* (3.1.46) or member of a specific *audience* (3.1.7)

Note 1 to entry: Users can be, for instance, end users, administrators, computer operators, installers.

3.1.55
user interface
ensemble of *software* (3.1.46) and hardware that allows a *user* (3.1.54) to interact with a computer system

3.1.56
warning
advisory information in *information for users* (3.1.29) that states that performing some *action* (3.1.3) can lead to a potentially hazardous situation which, if not avoided, can result in death or serious injury

Note 1 to entry: See also *danger* (3.1.16) and *caution* (3.1.8).

3.1.57
window
area with visible boundaries that presents a view of a *software* (3.1.46) object or through which a *user* (3.1.54) conducts a dialog with a computer system

3.2 Abbreviated terms

CMS content management system

DITA Darwin Information Typing Architecture

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FAQ	frequently asked question
GUI	graphical user interface
HTTPS	hypertext transfer protocol secure
JSON	JavaScript Object Notation
PDF	portable document format
SVG	scalable vector graphics
URL	uniform resource locator

4 Conformance

In this document, the word "shall" indicates requirements strictly to be followed in order to conform to this document and from which no deviation is permitted (“shall” equals “is required to”). The word "should" indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred, but not necessarily required (“should” equals “is recommended that”). The word "may" is used to indicate a course of action permissible within the limits of the standard (“may” equals “is permitted to”). The word "can" is used for statements of possibility and capability, whether material, physical, or causal (“can” equals “is able to”).

An organization may claim conformance to the requirements in this document for its information design and development processes, or for its information for users (products), or for both. Full conformance to processes is achieved by demonstrating that all of the requirements in Clauses 5 and 6 have been achieved. Full conformance of information products is achieved by demonstrating that all of the requirements of Clauses 7, 8, and 9 have been achieved.

This document is meant to be tailored so that only necessary and cost-effective requirements are applied to information for users. Tailoring may take the form of specifying approaches to conform to its requirements, or altering its recommendations and approaches to reflect the particular software and information product more explicitly.

NOTE The tailoring process is described in ISO/IEC/IEEE 12207:2017, Annex A.

This document may be included or referenced in contracts or similar agreements when the parties (called the acquirer and the supplier) agree that the supplier is required to deliver information for users in accordance with this document. It may also be adopted as an in-house standard by a project or organization that decides to produce information for users in accordance with this document. Tailoring decisions made by an acquirer should be specified in the agreement with the supplier.

When conformance to processes is claimed for a multi-supplier program, it may be the case that no individual organization may claim conformance because no single contract calls for all the required activities. Nevertheless, the program, as a whole, may claim conformance if each of the required activities is produced by an identified party. The program plans should record the tailoring of the required tasks, and their assignment to the various parties.

When conformance is claimed for information products, the organization or project should specify whether conformance applies to a single suite of information for users, a document set, or all information for users produced through the organization's information management and content management processes.

The fulfilment of specified requirements in this document does not release suppliers from their obligations to assess the legal framework for product compliance within each separate distribution area.

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5 Information management process

5.1 General

This document covers the activities of information design and development as applicable for information for users of software.

NOTE 1 General requirements regarding the information management process are covered in IEC/IEEE 82079-1:2019, Clause 6.

In this context, design includes planning for design and development. Development should be performed concurrently with evaluation and test (validation and verification) of the information products. Design and development may be performed iteratively, particularly for information about software products that are being frequently updated or delivered in new areas.

Designers and developers of information for users work within the life cycle processes of the software product, which are defined in ISO/IEC/IEEE 12207:2017 and include the management of information for users within the information management process (ISO/IEC/IEEE 12207:2017, 6.3.6). The applicable requirements are the following: "Define the content, formats, and structure of information items" (ISO/IEC/IEEE 12207:2017, 6.3.6.3.a.4) and "Obtain, develop, or transform the identified items of information" (ISO/IEC/IEEE 12207:2017, 6.3.6.3.b.1).

Thus, development of the information for users should be part of the same processes as the software product life cycle and ideally performed in conjunction with development of the software, so that the software and the information for users may be tested, distributed, and maintained together. The development of the information for users, including online and print information, should be a part of the development of the software product as a whole, not a separate activity. Although accurate information for users is not completed until the software has been fully developed, the information for users and the software product both benefit from concurrent development.

The classic development process of information for users applies to the life cycle of a single new software product. However, it is likely that software and information for users are designed and developed under more complex circumstances, such as the following:

— changes to software, systems, services, and other projects requiring the revision of existing content and the addition of new content;

— information-development projects independent of the development of new software, systems, and services requiring new and revised content;

— existing information for users to be converted to different formats or media, or provided in different languages;

— previous information for users adapted or used as models for different software products acquired or supplied by an organization.

Designing and developing information for users is greatly assisted by the presence of other information produced during the software life cycle, such as an information-development plan, a system design document, a system test plan, release records, and problem reports. Other information specific to the process of planning and development of information for users may be produced, such as organizational procedures for content management and for reviews of information for users.

Users of this document should adopt a style manual for use within their own organizations or adopt an industry-recognized style guide. Annex A provides guidance for the content of a style guide.

NOTE 2 ISO/IEC/IEEE 15289 provides recommended contents for the required documents throughout the systems/software life cycle.

NOTE 3 ISO/IEC/IEEE 26511 provides detailed information on information-development plans and the process of managing information-development projects.

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5.2 Planning the information-development project

The development of an information-development project plan includes the following as defined in ISO/IEC/IEEE 26511:2018, 7.2.

a) Identify project goals.

b) Analyse project scope.

c) Take into account the target audiences.

d) Describe the topics to be developed.

e) Specify an information reuse strategy.

f) Describe accessibility requirements.

g) Describe usability requirements.

h) Describe translation and localization requirements.

i) Describe project deliverables.

j) Identify project tools requirements.

k) Identify quality, review, and testing requirements.

l) Determine the information-development project schedule.

m) Estimate the time and costs required to complete the project.

n) Analyse and mitigate risks.

o) Identify information-development project team members.

The information-development plan should be an integral part of the software development plan.

The information architect can, by way of assistance to the manager, estimate how much information is required, so that the estimate can be used in making choices about delivery methods and delivery media.

5.3 Managing the information-development project

Throughout the information-development project, the information project manager is responsible for the following activities so that the project quality and schedule are maintained:

a) Manage the project team.

b) Track project deliverables and schedule.

c) Manage project changes.

d) Maintain quality and the project vision.

e) Communicate with the software project team and management.

NOTE For more information about communication in an agile team and the information developer as part of the software development team, see ISO/IEC/IEEE 26515.

f) Manage reviews and tests.

g) Manage the translation process.

h) Manage final production and delivery.

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6 Information architecture and development

6.1 Project requirements, objectives, and constraints

6.1.1 General

The job of managing the project requirements, objectives, and constraints is the province of the manager of the information-development project and it is described in ISO/IEC/IEEE 26511. However, in order to understand the requirements that affect the design for the components of the information for users, the information developer shall gather or receive information about the wider context of the whole project, as set out below:

a) the primary or intended purpose of the software product;

b) the primary or intended requirements and objectives for the software product (6.1.2);

c) the primary or intended requirements and constraints for the information for users, such as the policy, standard formats and styles for information for users set by the producer of the software product (6.1.3);

d) the intended acquirers or users of the software product and the information for users (6.2.2);

e) the protection of information that is required to be protected from being accessed by unauthorised parties;

f) the intended usability requirements.

If the stated requirements limit the design options so that users cannot be given a suitable set of information for users, the information developer should:

— question the requirements, explaining the reasons for the discrepancy;

— suggest alternative solutions.

The organization should keep a record of the source of each requirement, so that it may be tracked back to its origins and its validity may be reaffirmed.

6.1.2 Project objectives and goals

The information developer should expect that the software product or information for users will have to be updated at some stage, which can affect information design.

The information developer should be aware of plans for making modified versions of the software product available to users because modifications can affect the information design. Plans for software modifications should account for different levels of changes, including temporary fixes, interim versions, major upgrades or new releases. Plans should consider the scheduled and emergency change time frames and available methods for updating the information for users.

6.1.3 Requirements on information for users

The following information should be considered in constructing the information-development plan:

a) whether the organization has formal content management or information management policy and procedures;

b) what metadata is required for each piece of information for users to support content management, indexing, and searchability;

c) whether there are organizational standard formats, templates, styles, or systems; whether they are consistent with the requirements and recommendations in this document, and if they do not exist, whether they should be established consistent with this document;

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d) international standards publications, such as those of ISO, IEC, and IEEE;

e) national standards;

f) industry standards for the system on which the product runs;

g) industry standards for the systems on which the onscreen information is viewed;

h) accessibility standards and requirements;

i) company, product, or operating system standards and conventions;

j) restrictions on copying or modifying the software and its information for users;

k) constraints on required content;

l) whether there is a need to provide background or conceptual information, such as the working procedures of the users' organizations or information about the software product itself, and if so, whether that information is readily available;

m) whether there are resources for supplying the information developer with technical information about the product, such as subject matter experts, written specifications, and the product itself (possibly development or prototype versions).

n) legal and other requirements, such as those relating to handling of private data.

6.1.4 Constraints on information for users

Information developers should be aware of legal and regulatory requirements. They should consider the following constraints and take legal advice if necessary:

a) requirements set by national legislation;

b) copyright status of the information itself;

c) copyright issues for content sourced from elsewhere;

d) acknowledgments;

e) trademarks;

f) any requirement that source code and information for users are to be kept in the custody of a third party until specified contractual conditions have been fulfilled (that is, escrow);

g) licensing;

h) any presentation requirements that apply (such as use of special logotypes on the packaging and in the information for users to identify proprietary platform-compatible information products);

i) intellectual property rights;

j) warranties and guarantees;

k) whether there is a previous version and, if so, which features have to be changed and which have to remain the same;

l) whether the product is stand-alone or part of a suite of products;

m) when the product can be available to the information developers (the product schedule can help determine the types and amount of information for users);

n) whether there are plans for future versions;

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o) which platforms the product can run on at this release, and whether there plans for other platforms later;

p) whether the product is being developed for a specific organization or organizations, and if so, whether those organizations are the exclusive users;

q) whether translated, localized, or customized versions of the product are required;

r) data security.

NOTE One possible way for an organization to deal with clauses that cite "the information-development plan" is to specify that they are interpreted in the project plans for any particular information-development project.

6.1.5 Project infrastructure and tools

Project constraints may include infrastructure systems and tools, schedules, cost, and staffing. If a new software product is part of a suite of software products, tools already specified for developing, maintaining, delivering, and viewing information for users for that suite should be considered. If the customer or organization for which the software product is being developed has existing systems with which they want the new software product to be consistent, the information developer should consider whether these existing systems dictate the use of particular information delivery and viewing mechanisms.

Constraints for the information for users should not be allowed to restrict the software product from handling the problems that it should solve, and the range of hardware and operating systems for which it is being developed. The information architect should obtain information on the capabilities and limitations of the planned or required tools for:

a) using the software, so that information developers can find out how it operates and how users can use it;

b) writing and editing the text;

c) writing onscreen information and compiling help files;

d) drawing the illustrations;

e) reviewing the information for users;

f) testing the information for users;

g) conducting user tests, including tests of accessibility;

h) producing content for different media (audio, video, augmented and virtual reality, and others).

The information developers should be involved in designing, updating, and improving the formats and models for published output.

6.1.6 Schedule constraints

Information developers should, in addition to knowing their own schedules, also know something of the software product development schedule:

a) milestone dates;

b) whether there are work processes that need to be defined to change the way business is currently being done;

c) whether the software product is required to be submitted for certification and accreditation;

d) the major dependencies between different activities in the overall project.

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