

INTERNATIONAL  
STANDARD

ISO/  
IEC/IEEE  
26514

First edition  
2022-01

---

---

## **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*



Reference number  
ISO/IEC/IEEE 26514:2022(E)

© ISO/IEC 2022  
© IEEE 2022



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2022  
© IEEE 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO or IEEE at the respective address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Institute of Electrical and Electronics Engineers, Inc  
3 Park Avenue, New York  
NY 10016-5997, USA

Email: [stds.ipr@ieee.org](mailto:stds.ipr@ieee.org)  
Website: [www.ieee.org](http://www.ieee.org)

Published in Switzerland

# Contents

Page

<b>Foreword</b>	<b>vi</b>
<b>Introduction</b>	<b>vii</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>2</b>
<b>3 Terms, definitions and abbreviated terms</b>	<b>2</b>
3.1 Terms and definitions	2
3.2 Abbreviated terms	8
<b>4 Conformance</b>	<b>9</b>
<b>5 Information management process</b>	<b>10</b>
5.1 General	10
5.2 Planning the information-development project	11
5.3 Managing the information-development project	11
<b>6 Information architecture and development</b>	<b>12</b>
6.1 Project requirements, objectives, and constraints	12
6.1.1 General	12
6.1.2 Project objectives and goals	12
6.1.3 Requirements on information for users	12
6.1.4 Constraints on information for users	13
6.1.5 Project infrastructure and tools	14
6.1.6 Schedule constraints	14
6.1.7 Users and usability objectives	15
6.2 Audience and task analysis	16
6.2.1 General	16
6.2.2 Audience analysis	16
6.2.3 Task analysis	18
6.3 Development	21
6.3.1 Information gathering	21
6.3.2 Developing information for users	22
6.4 Review	22
6.5 Prototypes and drafts	22
6.6 Content management during development	23
6.7 Translation considerations in design and development	24
6.8 Final assembly and review	24
6.9 Packaging	25
6.10 Release	25
6.11 Updating and maintenance	25
6.12 Version control and change control	25
<b>7 Information quality</b>	<b>26</b>
7.1 General	26
7.2 Correctness	26
7.3 Consistency	26
7.4 Comprehensibility	26
7.5 Conciseness	26
7.6 Minimalism	27
7.7 Accessibility	27
<b>8 Structure of information for users</b>	<b>27</b>
8.1 Overall structure	27
8.2 Modularity	27
8.3 Structuring by function	28
8.4 Information model	28
8.5 Structure of conceptual information	30

8.6	Structure of instructional information .....	30
8.7	Structure of reference information .....	31
8.8	Structure of commands .....	32
8.9	Structure of troubleshooting information .....	32
8.10	Structure of error messages .....	32
8.11	Glossary of terms .....	32
8.12	Structure of printed information for users .....	33
8.13	Structure of online information for users .....	33
8.14	User-generated content .....	33
	8.14.1 General .....	33
	8.14.2 Goals and practices .....	34
8.15	Application programming interfaces (API) .....	35
	8.15.1 General .....	35
	8.15.2 Providing information about an API .....	36
	8.15.3 Structure of the API reference .....	37
8.16	Frequently asked questions (FAQ) .....	38
8.17	Chatbots and voice response systems .....	39
<b>9</b>	<b>Format of information for users .....</b>	<b>40</b>
9.1	General .....	40
9.2	Consistent format .....	40
9.3	Selection of appropriate media and format .....	41
	9.3.1 Comparison of formats and media .....	41
	9.3.2 Use of printed or electronic information for users .....	42
	9.3.3 Relationship of information displays to the application's displays .....	42
9.4	Context-sensitive information .....	43
9.5	Accessible information for users .....	44
	9.5.1 Understandable information for users .....	44
	9.5.2 Information for users in accessible electronic form .....	44
	9.5.3 Text alternatives for non-text information .....	44
	9.5.4 Unnecessary device references .....	44
	9.5.5 Information on accessibility features .....	44
9.6	Layout of screens and pages .....	45
	9.6.1 Display area .....	45
	9.6.2 Non-scrolling areas .....	45
9.7	Legibility .....	45
	9.7.1 General .....	45
	9.7.2 Typefaces and text size .....	46
	9.7.3 Highlighting text .....	46
9.8	Formats for representing user interface elements .....	47
	9.8.1 General .....	47
	9.8.2 Representing control and command input .....	47
	9.8.3 Representing special keyboard keys or mouse clicks .....	47
	9.8.4 Representing interactions on touch screens .....	48
9.9	Use of colour .....	48
9.10	Navigational features .....	48
	9.10.1 General .....	48
	9.10.2 Finding the same information again .....	49
	9.10.3 Formats for active areas .....	49
	9.10.4 Linking information .....	50
	9.10.5 Table of contents .....	50
	9.10.6 Index .....	51
	9.10.7 Search capability .....	51
9.11	Format of danger, warning, and caution indications .....	52
9.12	Format for instructions .....	53
9.13	Formats for user-supplied annotations .....	53
9.14	Formats for illustrations .....	54
	9.14.1 Consistent presentation of illustrations .....	54
	9.14.2 Placement of illustrations .....	54

9.14.3	Illustrations of printed output.....	54
9.14.4	Illustrations of screen displays.....	55
9.15	Formats for icons and other types of visualization.....	56
9.15.1	When to use icons and other types of visualization.....	56
9.15.2	Design of icons and other types of visualization.....	56
9.15.3	Displaying the names of icons.....	57
9.16	Formats for video tutorials and animations.....	57
9.17	Interactive content.....	58
<b>Annex A</b>	<b>(informative) Content of a style guide for information for users.....</b>	<b>59</b>
<b>Annex B</b>	<b>(informative) Style of translated and localized information for users.....</b>	<b>60</b>
<b>Bibliography</b>	<b>.....</b>	<b>63</b>
<b>IEEE Notices and Abstract</b>	<b>.....</b>	<b>65</b>

## 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](http://www.iso.org/directives) or [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs)).

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

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](http://www.iso.org/patents)) or the IEC list of patent declarations received (see <https://patents.iec.ch>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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](http://www.iso.org/iso/foreword.html). In the IEC, see [www.iec.ch/understanding-standards](http://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](http://www.iso.org/members.html) and [www.iec.ch/national-committees](http://www.iec.ch/national-committees).

## 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.

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](#).



# 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.

## 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*