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Ergonomics of human-system interaction - Part 171: Software accessibility (ISO 9241-171:2025)

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This standard includes the English version of the European Standard.

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English Version

Ergonomics of human-system interaction - Part 171: Software accessibility (ISO 9241-171:2025)

Ergonomie de l'interaction homme-système - Partie 171: L'accessibilité aux logiciels (ISO 9241-171:2025)

Ergonomie der Mensch-System-Interaktion - Teil 171: Leitlinien für die Barrierefreiheit von Software (ISO 9241-171:2025)

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European foreword

This document (EN ISO 9241-171:2025) has been prepared by Technical Committee ISO/TC 159 "Ergonomics" in collaboration with Technical Committee CEN/TC 122 “Ergonomics” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2026, and conflicting national standards shall be withdrawn at the latest by June 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 9241-171:2025 has been approved by CEN as EN ISO 9241-171:2025 without any modification.

International Standard

ISO 9241-171

Ergonomics of human-system interaction —

Part 171: Software accessibility

Ergonomie de l'interaction homme-système —

Partie 171: L'accessibilité aux logiciels

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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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.

This document was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 122, *Ergonomics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 9241-171:2008), which has been technically revised.

The main changes are as follows:

— alignment to the user accessibility needs in ISO/IEC 29138-1 in Clauses 7 to 17;

— addition of references to accessibility-related standards in Clauses 7 to 17;

— addition of annexes for mapping this document to other documents containing accessibility-related guidance in Annexes A to C.

A list of all parts in the ISO 9241 series can be found on the ISO website.

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.

Introduction

Accessibility is an important consideration in the design of products, systems, environments and facilities because it affects the range of people who are able to use them and use them easily. The more accessible a design, the wider the range of people who will find it usable.

The purpose of this document is to provide guidance on the design of the software of interactive systems so that those systems achieve as high a level of accessibility as possible. Designing human-system interactions to increase accessibility promotes increased effectiveness, efficiency and satisfaction for people having a wide variety of capabilities and preferences. Accessibility is therefore strongly related to the concept of usability (see ISO 9241-11).

The most important approaches to increasing the accessibility of a human-system interface are:

— meeting accessibility goals and user accessibility needs (see ISO/IEC 29138-1);

— adopting a human-centred approach to design (see ISO 9241-210);

— following a context-based design process;

— providing the capacity for individualization;

— offering individualized user instruction and training.

Accessibility goals and features must be incorporated into the design as early as possible, when it is relatively inexpensive compared to the cost of modifying products to make them accessible once they have been designed. As well as providing guidance for achieving that, this document addresses the increasing need to consider social and legislative demands for ensuring accessibility by the removal of barriers that prevent people from participating in life activities such as the use of environments, services, products and information.

This document is applicable to software that forms part of interactive systems used in the home, in leisure activities, in public situations and at work. Requirements and recommendations are provided for system design, appearance and behaviour, as well as specific accessibility issues, thereby complementing a wide range of International Standards (referenced in this document), as well as reflecting the goals outlined in ISO/IEC Guide 71.

Accessibility is an issue that affects many groups of people and many different environments. The intended users of interactive systems are consumers or professionals: people in the home, people at school, engineers, clerks, salespersons, web designers, etc. The individuals in such target groups vary significantly in terms of physical, sensory and cognitive abilities and each group will include people with different abilities. People with disabilities do not form a specific group that can be separated out and then disregarded. The differences in capabilities can arise from a variety of factors that serve to limit the capability to engage in the activities of daily living and are a “universal human experience”. Therefore, accessibility addresses a widely defined group of users including:

— people with physical, sensory and cognitive impairments present at birth or acquired during life;

— elderly people who can benefit from new products and services but who experience reduced physical, sensory and cognitive capacities;

— people with temporary disabilities, such as a person with a broken arm or someone who has forgotten his or her glasses;

— people who experience difficulties in particular situations or environments, such as a person who works in a noisy environment or has both hands occupied by other activities.

This document recognizes that some users of software will need assistive technologies in order to use a system. In the concept of designing software to be accessible, this includes the capability of a system to provide connections to, and enable successful integration with, assistive technologies, in order to increase the number of people who will be able to use the interactive system. Guidance is provided on designing

software that integrates with common assistive technologies as effectively as possible. Accessibility can be provided by a combination of both software and hardware controlled by software. This does not mean that every product will be usable by every consumer. There will always be a minority of people who will need adaptations or specialized products. This document emphasizes the goals of maximizing the number of users and striving to increase the level of accessibility that these users experience.

This document serves the following types of users:

— designers of user interface development tools and style guides to be used by interface designers;

— user interface designers, who will apply the guidance during the development process;

— developers, who will apply the guidance during the design and implementation of system functionality;

— those responsible for implementing solutions to meet end-user needs;

— buyers, who will reference this document during product procurement;

— evaluators, who are responsible for ensuring that products are in accordance with this document.

The ultimate beneficiary of this document will be the end-user of the software. Although it is unlikely that end-users will read this document, its application by designers, developers, buyers and evaluators will provide user interfaces that are more accessible. This document concerns the development of software for user interfaces. However, those involved in designing the hardware aspects of user interfaces can also find it useful when considering the interactions between software and hardware aspects.

International Standard **ISO 9241-171:2025(en)**

Ergonomics of human-system interaction —

Part 171:
Software accessibility

1 Scope

This document specifies requirements and gives guidelines for designing accessible software for people with the widest range of physical, sensory and cognitive abilities, including those who are temporarily or situationally disabled, and the elderly. It addresses software considerations for accessibility that complement general design for usability as addressed by parts of the ISO 9241 series, especially ISO 9241-11 and ISO 9241-210.

This document is applicable to the accessibility of interactive systems. It addresses a wide range of software (e.g. home, mobile, office, web, learning support and library systems). It promotes the increased usability of systems for a wider range of users in the widest range of contexts of use.

This document does not apply to the behaviour of, or requirements for, assistive technologies (including assistive software), but it does address the use of assistive technologies as an integrated component of interactive systems.

It is intended for use by those responsible for the specification, design, development, evaluation and procurement of software platforms and software applications.

2 Normative references

There are no normative references in this document.