



NSAI
Standards

Irish Standard
I.S. EN ISO 21801-1:2021

Cognitive accessibility - Part 1: General guidelines (ISO 21801-1:2020)

I.S. EN ISO 21801-1:2021

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN ISO 21801-1:2021

Published:

2021-04-14

*This document was published
under the authority of the NSAI
and comes into effect on:*

2021-05-06

ICS number:

11.180.01

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN ISO 21801-1:2021 is the adopted Irish version of the European Document EN ISO 21801-1:2021, Cognitive accessibility - Part 1: General guidelines (ISO 21801-1:2020)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 21801-1

April 2021

ICS 11.180.01

English Version

**Cognitive accessibility - Part 1: General guidelines (ISO
21801-1:2020)**

Accessibilité cognitive - Partie 1: Lignes directrices
générales (ISO 21801-1:2020)

Kognitive Zugänglichkeit - Teil 1: Allgemeiner
Leitfaden (ISO 21801 1:2020)

This European Standard was approved by CEN on 5 April 2021.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 21801-1:2021 (E)

Contents	Page
European foreword.....	3

European foreword

The text of ISO 21801-1:2020 has been prepared by Technical Committee ISO/TC 173 "Assistive products" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 21801-1:2021 by Technical Committee CEN/TC 293 "Assistive products and accessibility" the secretariat of which is held by SIS.

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 October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 21801-1:2020 has been approved by CEN as EN ISO 21801-1:2021 without any modification.

This page is intentionally left blank

INTERNATIONAL STANDARD

**ISO
21801-1**

First edition
2020-01

Cognitive accessibility — Part 1: General guidelines

Accessibilité cognitive —

Partie 1: Lignes directrices générales



Reference number
ISO 21801-1:2020(E)

© ISO 2020

ISO 21801-1:2020(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

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 at the 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
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Implementing the recommendations	2
5 Motivation and focus	3
5.1 General.....	3
5.2 Means of motivation.....	3
5.2.1 Recruiting interest.....	3
5.2.2 Individual options.....	3
5.2.3 Autonomous use.....	3
5.2.4 Usefulness and relevance.....	4
5.2.5 Level of abstraction.....	4
5.2.6 Focus on the desired outcome.....	4
5.2.7 Challenge by varying demands and resources.....	4
5.2.8 Self-regulation, self-assessment and coping.....	4
5.2.9 Unintentional triggers of inappropriate reactions.....	5
5.2.10 Differences in coping abilities.....	5
5.2.11 Self-determination and confidence.....	5
5.2.12 Threats and trust.....	5
5.2.13 Accessibility and safety.....	5
5.3 Focus, attention and feedback.....	5
5.3.1 Object in focus.....	5
5.3.2 Shifts in focus.....	6
5.3.3 Inadvertent changes of focus or division of attention.....	6
5.3.4 Feedback.....	6
6 Representation and understanding	7
6.1 General.....	7
6.2 Multiple means of representation and understanding.....	7
6.2.1 Simplify the language — Dealing with words.....	7
6.2.2 Simplify the language — Dealing with symbols.....	7
6.2.3 Simplify the message structure.....	8
6.2.4 Understanding across language barriers.....	8
6.2.5 Translation processes.....	8
6.2.6 Options for finding information.....	8
6.2.7 Equal opportunities for comprehension.....	8
6.3 Spatial orientation and understanding of values and sizes.....	9
6.3.1 Entities and sizes.....	9
6.3.2 Scales and relative values.....	10
6.3.3 Position in space.....	10
6.4 Simple, understandable and logical design.....	10
6.4.1 Logical and consistent design.....	10
6.4.2 Background knowledge.....	10
6.4.3 Transfer and generalization.....	10
6.4.4 Understanding underlying concepts and ideas.....	10
6.4.5 Complexity.....	11
7 Action	11
7.1 General.....	11
7.2 Means of expression.....	11
7.2.1 Customizable media for information, expression and communication.....	11
7.3 Organization, planning and time management.....	12

ISO 21801-1:2020(E)

7.3.1	Goal-setting	12
7.3.2	Decision-making	12
7.3.3	Strategic activities	12
7.3.4	Options for strategic activities	13
7.3.5	Time constraints	13
7.3.6	Time awareness	13
7.3.7	Options for orientation to time	13
7.3.8	Communication of time and time management	13
7.3.9	Adapting time demands	14
7.4	Flexibility and equal opportunities	14
7.4.1	Equality	14
7.4.2	Access to systems and interoperability	14
7.4.3	Alternative and multiple means of user interaction	15
7.4.4	Alternatives and decisions	15
7.4.5	Default configuration and adjustable parameters	15
7.4.6	Individualized access and reuse of user profiles	15
7.4.7	Access to the intended outcome of the system	16
7.5	Support for completion of tasks	16
7.5.1	Sustained attention and concentration	16
7.5.2	Avoiding mistakes	16
7.5.3	Mistakes and errors	17
7.5.4	Correction of mistakes and errors	17
7.5.5	Support functions	17
7.5.6	Content-integrated contextual help	17
Annex A (informative) Checklist for following the recommendations of this document		18
Bibliography		22

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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO 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).

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.

This document was prepared by Technical Committee ISO/TC 173, *Assistive products*.

A list of all parts in the ISO 21801 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.

ISO 21801-1:2020(E)

Introduction

Cognitive impairment can affect anyone. It can be temporary or permanent. Cognitive impairment might affect a person's ability to

- perceive information including visual, auditory and haptic (e.g. reduced visual perception which can cause problems recognizing words, pictures or other visual input),
- sustain, direct and divide attention (e.g. reduced ability to filter unwanted stimuli, such as light or sound, or difficulties multi-tasking),
- register and store information and retrieve it as needed, including: store and maintain new episodes, knowledge and skills, and retrieve and maintain former episodes, knowledge and skills,
- communicate, including understand and express oneself both verbally and non-verbally,
- orientate oneself, and navigate spatially and topographically,
- execute activities, including solve problems; organize; plan; hold on to a plan or strategy and change strategy when appropriate; initiate, carry out, and terminate activities appropriately,
- think and reason in an abstract manner (e.g. understand generalizations and associations and causal connections), or
- understand and manage numbers and time (e.g. calculate or comprehend concepts of money, size, or lapses of time).

Activity limitations and participation restrictions for people with cognitive impairment can be reduced significantly through the design of systems and the built environment. The adoption of Universal Design (UD) approaches in standards and policies is key to facilitate access to mainstream systems. Strategies and principles consistent with the UD approach strive to promote features in systems and the built environment that are functional and comfortable for everyone.

Mainstream systems are often considered to be more affordable and socially acceptable than assistive products. Unlimited access to mainstream technologies and systems, including information technologies, contributes to the inclusion of people with the widest range of cognitive needs, in the widest range of life situations. Knowledge about the widest range of cognitive needs and how activities and environmental factors can be modified to increase participation is extensive but not easy to comprehend and transfer to the design and delivery of systems. Designers and manufacturers of mainstream systems who are aware of those needs can significantly contribute to accessible and usable systems.

Although named cognitive 'accessibility', this document also adopts the concept of 'usability' to ensure that design principles are based on the unique experiences of users rather than on assumptions of human abilities.

This document is structured around three concepts, each presenting a set of guidelines:

- Motivation and focus;
- Representation and understanding;
- Action.

This document is a general guideline on cognitive accessibility for all systems. In a specific domain or in a specific context there, can be more detailed standards and guidelines addressing cognitive accessibility, see References [5] and [6].

It is important to engage people with cognitive impairments and their significant others, in the development of mainstream and assistive products for people with cognitive impairments.

Cognitive accessibility —

Part 1: General guidelines

1 Scope

This document presents guidelines for the design and development of cognitively accessible systems, including products and services and built environments.

This document is relevant to mainstream systems as well as those designed specifically for people with disability.

Within the broad field of accessibility, this document is limited to guidance related to cognitive accessibility.

NOTE 1 It acknowledges, however, that diverse sensory perceptions can impact cognitive accessibility.

NOTE 2 While the following guidance in this document can benefit all users, it is included here because failure to follow it could lead to barriers that would prevent some potential users from being able to use the system at all.

This document is relevant to all types of systems. However, some particular recommendations can only be followed for some types of systems:

- Some of the guidance is relevant to a fixed system (e.g. a non-computerized consumer product or a user manual);
- Some of the guidance applies to systems containing some level of computer-based processing (e.g. a microwave oven or an ICT-system);
- Some of the guidance applies to systems that use advanced computer processing that supports individualization (e.g. an application in a smart phone);
- Some guidance applies to combinations of the above.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-