INTERNATIONAL STANDARD

ISO 21801-2

First edition
2022-10

Cognitive accessibility —

Part 2: **Reporting**

Accessibilité cognitive —

Partie 2: Consignation dans un rapport

Reference number
ISO 21801-2:2022(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 293, *Assistive products and accessibility,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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.

Introduction

The intended user of this document is anyone who wants to report the cognitive accessibility of a specific system. Typically, that might be a product owner, manufacturer, designer, or salesperson. Third-party representatives can also use this document for reporting. This document can be used alongside existing standards and accompanying test methods for their systems. This document is intended to increase access to a variety of systems.

Cognitive accessibility —

Part 2: Reporting

1 Scope

This document specifies requirements for reporting the cognitive accessibility of systems, including assistive products, assistive technologies, consumer technologies, and household appliances, according to the recommendations given in ISO 21801-1:2020.

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.

ISO 21801-1, *Cognitive accessibility — Part 1: General guidelines*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21801-1 and the following apply.

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

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

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

3.1
environment
aggregate of surrounding things, conditions, context of, or influences upon an entity of interest

4 Reporting requirements

4.1 General

The report shall be structured in the following sections:

— The name of the system.

— A description of the context of use for the system.

— Details of the system's conformance to each recommendation.

Clauses 5, 6 and 7 specify further details of the applicability of the recommendations given in ISO 21801-1:2020

NOTE An example of reporting template is presented in Annex A.

4.2 Context of use

It is expected that the system will serve people from a population with the widest possible range of user needs, characteristics, and capabilities, including persons with cognitive impairment. As cognitive impairments vary immensely, it is very important to know the intended users of the system.

While a full context of use report is not needed within a report of cognitive accessibility, it is important to identify components of the context(s) for which the cognitive accessibility report applies.

The context of use section of the report shall identify:

— the goals and tasks for which the cognitive accessibility of the system is being reported, and

— the environments for which the cognitive accessibility of the system is being reported.

The context of use section of the report should identify any other sources of relevant accessibility information known about the system.

4.3 Conformance

A report on the cognitive accessibility of a system conforms to this document if it

a) identifies the system to which it applies,

b) identifies the context(s) in which it applies to (see 4.2),

c) reports on the applicability of each of the recommendations contained in ISO 21801-1:2020 Clauses 5, 6, and 7 (see 4.4),

d) reports methods used to confirm that each applicable recommendation is met by the system (see 4.5 and 4.6).

4.4 Structure of the report for each recommendation

The report shall either accept the applicability of a specific recommendation or justify why it is not applicable. In addition, a report may identify remaining challenges that need to be overcome. To support the understanding of whether or not a specific subclause is applicable, this document provides the following:

— A statement describing a type of system to which the recommendation is most likely to be applicable.

— A statement describing a type of system to which the recommendation is less likely to be applicable.

— Examples of systems to which the recommendation is or is not applicable.

A report on applicability should be consistent with ISO 21801-1.

It is important to be explicit in justifying a claim of being not applicable. It is equally important to be explicit in justifying why an applicable recommendation is not applied.

The working procedure is to

a) determine whether the recommendation is applicable or not applicable for the system that is being reported,

b) describe one of the following scenarios:

   1) If applicable:

      — Describe how the system meets the recommendation or justify why the system does not meet the recommendation.

— Optionally, describe any remaining user needs or goals related to the recommendation, but not met.

2) If not applicable:

— Justify why the recommendation is not applicable.

c) describe the method or methods used to evaluate whether the recommendation is met.

4.5 Choosing and implementing methods and approaches for conformance evaluation

Both qualitative and quantitative approaches may be used to evaluate conformance. The nature of measuring cognitive accessibility is rarely binary; that is, the result is not usually a clear "yes" or "no," but rather "more" or "less."

EXAMPLE Subclause 5.2.8 asks whether a system handles people's differences in coping abilities adequately. There is no precise measure to assess whether a system handles people's differences in coping abilities adequately. A combination of methods can demonstrate that a system addresses the problem and that a solution is presented to the user in a reasonable way to support their coping abilities.

NOTE 1 A combination of methods and approaches for evaluating whether recommendations in ISO 21801-1 are met can be used, depending on the intended context of use and the target population. Methods can also be selected according to the traditions and cultures of the specific domain in which the evaluated system is situated.

NOTE 2 This document does not prescribe specific conformance evaluation methods or approaches. It accepts methods and approaches including self-reporting, third-party evaluations, user tests, data collection on user behaviour and system performance, and automated testing.

NOTE 3 Annex B presents a number of potential methods to use when evaluating whether a system meets the recommendations of ISO 21801-1.

It is important that evaluation be carried out by a multi-disciplinary team of both evaluators and testers who understand the criteria and spirit of ISO 21801-1 to ensure valid, comprehensive, and reliable findings. It is often important that more than one test method be used.

Documentation throughout the development process of a system on how specific recommendations in ISO 21801-1 are being met may be used when doing the conformance evaluation following this document. Using this approach, the recommendations in ISO 21801-1 would be addressed during the development process, with the results included in the final design of the system. This would allow for documenting the reasoning behind the final design and how the features address the recommendations in specific clauses of ISO 21801-1.

There might be previous research on cognitive accessibility connected to a specific domain or a specific type of system that resulted in a set of recommendations, heuristics, or recommendations. Such recommendations, often presented as checklists, may be used in the evaluation process.

NOTE 4 Meeting a domain-specific checklist – even one that is designed to address accessibility – might not be sufficient to address all the recommendations in ISO 21801-1. Many checklists designed to address accessibility focus on accessibility for people with sensory impairment rather than cognitive impairment. Even domain-specific checklists for cognitive accessibility might address only some of the recommendations in ISO 21801-1.

Quantitative data may be collected and used during the development or evaluation processes to determine whether a guideline in ISO 21801-1 is being met. Data about the system may be collected directly from the system or by using various third-party data collection tools. Quantitative data may also be gathered during some types of user testing.

NOTE 5 There are several potential methods to collect quantitative data during user testing. Commonly used methods include eye gazing analysis and performance statistics.

4.6 Participation of people with diverse cognitive abilities

People with diverse cognitive abilities should be invited to participate in the design and development process, in iterative testing during development, and in evaluation of the fully developed system. Data collected from cooperation with people with diverse cognitive abilities typically result in a set of qualitative data. This data can be used to draw a conclusion about whether a recommendation in ISO 21801-1 is being met.

In all test methods where there is participation of people with diverse cognitive abilities, the focus of the evaluation should remain on the accessibility of the system, not the people involved. In all test methods where there is participation, people with diverse cognitive abilities should be included. Efforts should be made to scaffold the methods of participation to allow for participation of people with diverse cognitive abilities.

Evaluations should be performed in a realistic context, including when done in a test lab.

NOTE There are several potential methods for interaction with users. Commonly used methods are user observations, cognitive/barrier walkthroughs, self-reporting protocols, focus groups, and interviews.

5 Reporting on motivation and focus

5.1 General

The report shall consider how people differ in their means of motivation and focus to learn or perform a task.

NOTE For further information, see ISO 21801–1.

5.2 Means of motivation

5.2.1 Provide options for recruiting interest

a) ISO 21801-1:2020, 5.2.1 is particularly applicable to:

— Systems that users are likely to use if they realize the system's potential.

EXAMPLE 1 A computer game presents some "easy wins" for first time users and gives glimpses of what is to come if the user proceeds to higher levels.

EXAMPLE 2 A company provides a video and booklet as different ways to demonstrate the benefits of password management software.

— Systems requiring consistent use supporting important long-term goals, but that can be unpleasant, painful, or boring to use.

EXAMPLE 3 A pedometer app incorporates gamification and reward badges to encourage a user to walk a certain number of steps each day.

b) ISO 21801-1:2020, 5.2.1 is less applicable to:

— A system that provides an obvious incentive for use, or simple means of obtaining a desirable output.

EXAMPLE 4 A microwave oven captures the user's attention when the user has the need to prepare food. The interest is recruited before the use of the microwave oven, making it less important to implement means for recruiting interest in the artefact.

5.2.2 Optimize individual options

a) ISO 21801-1:2020, 5.2.2 is particularly applicable to:

— Systems with more than one option for performing the same task.

EXAMPLE 1 An Automated Teller Machine (ATM) with language selection.

— Systems with user profiles or adaptable interfaces.

EXAMPLE 2 A streaming service account.

— Systems with multiple users with different needs who change settings back and forth.

EXAMPLE 3 A system to assist with performing a job.

EXAMPLE 4 Using public transportation.

b) ISO 21801-1:2020, 5.2.2 is less applicable to:

— Systems with only one or limited options.

EXAMPLE 5 An on/off switch.

— Systems without user profiles.

EXAMPLE 6 A water boiler.

5.2.3 Support autonomous use

a) ISO 21801-1:2020, 5.2.3 is particularly applicable to:

— Systems where the outcome of the usage can be very important for the user and where the existence of support from others cannot be taken for granted.

EXAMPLE 1 A trip planner that helps planning trips on public transportation or buying a ticket for public transportation.

— Systems where a failure in using the system independently might cause stigma or decrease self-confidence.

EXAMPLE 2 An online application form requiring correct spelling and format when users edit information.

— Systems exposed to a risk of fraud.

EXAMPLE 3 An internet banking application.

b) ISO 21801-1:2020, 5.2.3 is less applicable to:

— Systems where it is expected or socially acceptable to receive support.

EXAMPLE 4 A tax registration system.

5.2.4 Optimize usefulness and relevance

a) ISO 21801-1:2020, 5.2.4 is particularly applicable to:

— Systems that potentially can save a lot of time and energy if the full potential can be utilized by the user.

EXAMPLE 1 A photocopy machine.

— Systems that support accomplishing multi-steps tasks.

EXAMPLE 2 A time management system.

b) ISO 21801-1:2020, 5.2.4 is less applicable to:

— Systems where the usefulness and relevance are clear without any specific measures implemented.

EXAMPLE 3 A self-serve ice cream vending machine.

— Systems not expected to be frequently used.

EXAMPLE 4 A computer-based automobile diagnostic tool used by mechanics.

5.2.5 Provide options for the level of abstraction

a) ISO 21801-1:2020, 5.2.5 is particularly applicable to:

— Systems used by users with a wide range of experiences.

EXAMPLE 1 A map where it is possible to toggle between maps using symbols and maps using real-world pictures.

— Systems that users are not likely to use regularly.

EXAMPLE 2 Scanning for available channels on a TV

— Systems that users are not likely to be highly motivated to want to use.

EXAMPLE 3 A toilet with douche/dry function in a country where this is not a commodity.

b) ISO 21801-1:2020, 5.2.5 is less applicable to:

— Systems where there is only one clear and simple thing to do.

EXAMPLE 4 A standard toilet with no douche/dry function.

5.2.6 Support focus on the desired outcome

a) ISO 21801-1:2020, 5.2.6 is particularly applicable to:

— Systems with more than one intended outcome.

EXAMPLE 1 A shower with multiple functions.

— Systems with multiple steps to accomplish an intended outcome.

EXAMPLE 2 A web shop (online store) which requires choice of size, colour, and quantities.

— Systems that offer multiple choices at any step to accomplish an intended outcome, where some of the choices do not lead to accomplishing the intended outcome.

EXAMPLE 3 A web shop offering complimentary options to make you sign up for newsletter, etc.

b) ISO 21801-1:2020, 5.2.6 is less applicable to:

— Systems with a single intended outcome, that require few steps to accomplish that intended outcome, and that do not offer multiple choices at those steps that do not lead to accomplishing the intended outcome.

EXAMPLE 4 A water boiler.

5.2.7 Optimize challenge by varying demands and resources

a) ISO 21801-1:2020, 5.2.7 is particularly applicable to:

— Systems that are complex, involve multiple steps, or require sustained attention for task completion.

EXAMPLE 1 A system for applying for an online building permit application or to start up a business.

b) ISO 21801-1:2020, 5.2.7 is less applicable to:

— Systems that are practical, simple, involve only few steps, or require only brief attention for task completion.

EXAMPLE 2 A vacuum cleaner with different levels of vacuum power.

— Systems that only requires the user to make one selection between two straightforward options.

EXAMPLE 3 A popcorn-making machine that has only the option of small or large quantity.

5.2.8 Provide options for self-regulation, self-assessment and coping

a) ISO 21801-1:2020, 5.2.8 is particularly applicable to:

— Systems that involve potentially risky decisions.

EXAMPLE 1 A shower that dispenses both hot and cold water and which doesn't have thermostatic scalding protection.

EXAMPLE 2 A web browser displays a warning message when a suspicious URL is clicked, seeking confirmation before proceeding to load the page.

— Systems that display personal or confidential information.

EXAMPLE 3 Financial systems used in a public setting, such as ATMs or online banking terminals

— Systems that have time limits within which the user must initiate the next step

EXAMPLE 4 Financial systems such as ATMs and online banking ask the user if they need more time and then return to the same place in the process rather than simply logging the user out.

b) ISO 21801-1:2020, 5.2.8 is less applicable to:

— Systems that involve low-risk and low-disclosure decisions and actions.

EXAMPLE 5 A free digital newspaper.

5.2.9 Avoid unintentional trigger of inappropriate reactions

a) ISO 21801-1:2020, 5.2.9 is particularly applicable to:

— Systems that include advertising or other material from third parties that does not relate to the primary purpose of the system.

EXAMPLE 1 A web shop with third party advertising.

— Systems where inappropriate reactions will lead to adverse consequences for the user or someone else affected by the user's reaction.

EXAMPLE 2 Accidentally choosing the wrong emoji when responding to a social media post.

b) ISO 21801-1:2020, 5.2.9 is less applicable to:

— Systems where inappropriate reactions do not harm the user, someone else or the environment.