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Information technology — User interface accessibility —

Part 3: Requirements and recommendations on user needs mapping

Technologies de l'information — Accessibilité de l'interface utilisateur —

Partie 3: Exigences et recommandations relatives au mappage des besoins de l'usager

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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 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 or www.iec.ch/members_experts/refdocs).

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).

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. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 35, *User interfaces*.

This first edition of ISO/IEC 29138-3 cancels and replaces ISO/IEC TR 29138-3:2009.

The main changes are as follows:

— The document has been renamed to fit into the revised ISO/IEC 29138 series;

— The document has been revised from being a Technical Report to an International Standard by the addition of requirements and recommendations;

— A second format for the mapping has been added.

A list of all parts in the ISO/IEC 29138 series can be found on the ISO and IEC websites.

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

The user accessibility needs specified in ISO/IEC 29138-1 can be mapped to existing and developing standards to identify for which user accessibility needs the standard provides guidance. Mappings, as specified in this document, can help standards developers to consider the potential for addressing particular needs in their standards. Mappings can be included as informative annexes within standards to help developers to find guidance in addressing particular user accessibility needs within the standard. Compilations of mappings can help developers to identify standards containing guidance addressing particular user accessibility needs.

Some standards cover limited domains, and in such cases, some user accessibility needs do not apply. For example, visual accessibility needs are generally not relevant to standards addressing the ability to exert force. Standardization organizations can selectively use the set of user accessibility needs for their own purposes.

Information technology — User interface accessibility —

Part 3: Requirements and recommendations on user needs mapping

1 Scope

This document provides guidance on the mapping of a set of user accessibility needs with the provisions of a particular standard, technical report, or set of guidelines. It provides both basic guidance that should be used for all user accessibility needs mapping and optional guidance that may be added to the basic guidance.

User accessibility needs mapping is intended to help improve accessibility for all users and, in particular, for users with special needs that can be overlooked. User accessibility needs mapping is not intended to be used to evaluate or certify a given standard or set of guidelines.

2 Normative reference

ISO/IEC 29138-1:2018,[1)] *Information technology — User interface accessibility — Part 1: User accessibility needs*

3 Terms and definitions

For the purposes of this document, the terms and definitions in ISO 29138-1 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/

4 Benefits of user accessibility needs mapping

User accessibility needs mapping benefits standards developers and developers of style guides by:

— alerting them to the range of user accessibility needs,

— helping them to identify the user accessibility needs dealt with by their standards,

— helping them to identify standards materials that address particular user accessibility needs, where mappings exist for these other standards,

— helping them to identify where additional guidance can be added to their standards to deal with further user accessibility needs.

User accessibility needs mapping benefits end users by encouraging their needs to be considered by standards (and similar documents) and the developer's products and services who apply these standards (and similar documents).

1) The electronic version of this document can be downloaded from the ISO/IEC Information Technology Task Force (ITTF) web site: https://standards.iso.org/ittf/PubliclyAvailableStandards/

User accessibility needs mapping to standards can also benefit policy makers and accessibility advocates by helping them to identify standards materials that address specific needs.

User accessibility needs mapping benefits ISO/IEC JTC1 by providing information on the accessibility related provisions of different standards. This information can be used:

— to provide information on the set of existing standards that deal with various accessibility concerns,

— to identify the potential for new standards to deal with additional accessibility concerns.

5 Mapping individual requirements and recommendations

5.1 Mapping user accessibility needs with guidelines in standards

Mapping identifies guidelines in a standard that relate to specific user accessibility needs.

NOTE User accessibility needs categories are not normally mapped.

It is possible that:

— a single guideline maps to a single user accessibility need;

— multiple guidelines map to a single user accessibility need;

— a single guideline maps to multiple user accessibility needs;

— a guideline leads to the identification of a new user accessibility need.

It is important to ensure that mapping is done completely and does not miss any possible mappings.

Mapping can be performed by:

a) dealing with each specific user accessibility need, one need at a time, in the order that user accessibility needs occur in the list of user accessibility needs;

b) dealing with each specific requirement and recommendation in the standard being mapped;

c) a combination of these two approaches, as long as care is taken to ensure that all requirements and recommendations are mapped.

5.2 Persons performing user accessibility needs mapping

While user accessibility needs mapping can be performed by anyone, it is preferable that it be performed by someone with considerable expertise in the standard being mapped.

5.3 Set of user accessibility needs

This document makes use of the set of user accessibility needs in ISO/IEC 29138-1.

It is intended that the approach described in this document will also work with future versions of ISO/IEC 29138-1.

If persons performing user accessibility needs mapping identify additional potential user accessibility needs, they can add those needs to their mapping and are asked to provide a copy of their completed mapping to their national standards body for submission to the Secretariat of ISO/IEC JTC1/SC35 so that the additional potential user accessibility needs can be considered for addition to future versions of ISO/IEC 29138-1.

5.4 Recording and reporting a user accessibility needs mapping

User accessibility needs mapping should be recorded in a suitable format.

— Annex A provides a template for recording and reporting a user accessibility needs mapping in a tabular format.

— Annex B provides a format for mapping information and a list of the user accessibility needs from ISO/IEC 29138-1:2018 that can be combined to produce a more traditionally formatted report.

— Other formats, including those making use of a database to store mapping results, are also possible, as long as they contain at least the required information items.

5.5 Reporting results to standards developers

Persons developing a user accessibility needs mapping for a standard should provide a copy of this mapping to the committee responsible for developing the standard. This can be done in order to:

— receive their agreement that the mapping is accurate;

— receive input from them as to any copyright issues with information that can be presented as "guidance in standard";

— Provide them with information that they can use during their standards development activities;

— Provide them with information to use in an informative annex to cross reference their guidance with the user accessibility needs in ISO/IEC 29138-1.

5.6 Cross-referencing user accessibility needs mappings

A user accessibility needs mapping cross-reference is a special case of a user accessibility needs mapping that is sorted based on locations that the user accessibility needs maps to within a standard rather than sorted based on the user accessibility need IDs.

User accessibility needs mapping provides a good picture of which user accessibility needs the standard addresses. However, it can be useful to cross check the mapping and to be able to point users of the standard from guidelines to the specific user accessibility needs that they support.

Many standards can include a number of guidelines that are not necessarily accessibility-related. However, a cross-reference can be used to help identify whether individual guidelines that are not already mapped, have any relation to accessibility. It can also be useful to identify user accessibility needs that can be referred to in some manner from the clauses and sub-clauses within the standard.

Checking a cross-reference involves going through a standard one guideline at a time and seeing whether or not that guideline appears in the cross-reference.

6 Information items in user accessibility needs mapping

6.1 Required and optional information items

User accessibility needs mappings shall include at least:

a) The "User Accessibility Need ID, from ISO/IEC 29138-1;

b) The name of the "User Accessibility Need", from ISO/IEC 29138-1;

c) Identification of location(s) of guidance in the standard that "Maps to" the user accessibility need;

d) The "Mapping level" that described how each item of guidance that maps to the User Accessibility Need

User accessibility needs mappings may also contain:

e) The text of the "Guidance in the standard" being mapped to the User Accessibility Need or a summary of the guidance;

f) "Comments" that explain the mapping or lack of mapping;

g) An identification of the "Standard" being mapped (where it is intended to combine mappings of multiple standards);

h) Any other information desired to be added to the mapping by the person or organization responsible for the mapping.

Each of these items are discussed in detail in 6.2 to 6.8.

6.2 "User Accessibility Need id"

Each of the user accessibility needs in ISO/IEC 29138-1 is provided with an identifier that is composed of a number that identifies both the accessibility goal and the location of the individual need within the accessibility goal.

This identifier provides quick access to find more information about the need within ISO/IEC 29138-1 to persons using the mapping. It also allows for the combination of sets of user accessibility needs mappings of multiple standards.

This also supports sorting a combined group of user accessibility needs mappings.

When conducting a user accessibility needs mapping, a new user accessibility need can be identified. When such a new user accessibility need is identified:

a) the identifier "99" can be used to indicate that this is a guideline that does not map to currently identified user accessibility need;

b) a comment (see 6.7) can be used to recommend the location in the list of user accessibility needs where this new need for adding this new user accessibility need;

c) the person or organization identifying this possible new user accessibility need is requested to communicate this information along with the guideline that led to this identification to their national standards body for submission to the Secretariat of JTC1/SC35.

6.3 "User Accessibility Need"

In order to see what is being mapped, it is important to have the name of the user accessibility need along with its identifier. This information is important to any users of the user accessibility needs mapping.

NOTE Since ISO/IEC 29138-1 is freely available, these names can appear in any versions of the mapping, including as an informative annex to the standard. This can be especially useful to users or potential users of the standard.

6.4 Location in the standard that "maps to" the user accessibility need

It is important to provide a clear identifier of each item of guidance that is being mapped to each user accessibility need.

a) Where there is only a single requirement or recommendation in a clause / sub-clause of a standard, the clause / sub-clause number identifier is sufficient.

b) Where multiple requirements and/or recommendations exist in a clause / sub-clause of a standard, the clause / sub-clause number should be supplemented by sufficient information to uniquely identify the requirement or recommendation being mapped. This can take the form of a list item

identifier or a paragraph and sentence number or other identifier that would be suitable for use in identifying the specific location of the requirement or recommendation in the standard.

6.5 "Mapping Level"

It is recognized that there can be differences in the level of generalization or specificity of guidance and the user accessibility needs to which they map.

It is important to know how well the guidance maps onto the user accessibility need. The following keywords should be used to identify different levels of mapping:

a) "= need" denotes a direct mapping, where the guidance is approximately at the same level as the stated user accessibility need.

b) "< need" denotes a related mapping, where the guidance is more detailed than the stated user accessibility need and/or that it can only meet part of the need.

c) "> need" denotes a related mapping, where the guidance is more general than the stated user accessibility need and/or that users of the guidance does not necessarily recognize the particulars of the need from the guidance and/or where the guidance maps to more than one user accessibility need.

NOTE It can be helpful to also record information on any other user accessibility needs that are also met by the guidance (e.g. either in the mapping level or the comments).

d) "NONE" denotes a lack of any mapping. It can be added, after attempting to find mappings, to indicate that no mapping has been found.

e) "N/A" can be used instead of "NONE" to denote that the specific user accessibility need is explicitly outside the scope of the standard. This symbol is for very limited use and is most appropriate for use in situations where this exclusion is supported by the wording of the scope of the standard and where this designation is then explained or summarized in the comments.

6.6 "Guidance in the standard"

Guidance in the standard is optional because:

— Mappings placed in an informative annex only need to be able to refer to the location of the guidance and do not need to repeat the guidance;

— Mappings provided freely to the general public need to protect the copyright of the standard.

Recording the guidance in the standard in the mapping is especially useful while developing or revising a mapping.

Guidance in the standard can record:

a) the actual wording of the guidance in the standard;

b) the title of a clause / sub-clause containing a single requirement or recommendation;

c) a shortened summary of the requirement or recommendation;

d) some combination of the above, if appropriate.

6.7 "Comments"

This item recognizes that additional comments can be helpful in some mappings.

6.8 "Standard" being mapped

This item is primarily of use when the mappings of multiple standards are intended to be combined.

Annex A
(informative)

Sample user accessibility needs mapping template based on ISO/IEC 29138-1:2018

Table A.1 provides a sample template for mapping the user accessibility needs from ISO/IEC 29138-1:2018 to the requirements and recommendations in a standard.

NOTE 1 Annex B contains a listing of the same user accessibility needs that are contained in this table.

Table A.1 can be used by:

1) deleting any optional columns that are not wanted and reformatting the table to take optimal use of the available space;

2) changing any optional cells that are intended to be filled-in from light grey to a clear background;

3) (if desired by the user) adding additional columns for further information;

4) filling-in all cells that do not have a grey background;

5) filling-in "---_ where there is no guidance in a standard that maps to a user accessibility need, to indicate this;

6) having multiple entries in the appropriate cells, where multiple guidelines in a standard map to a single user accessibility need;

7) not filling-in all cells that have a dark grey background.

NOTE 2 Lines with dark grey background are inserted in this table to provide structural information about the set of user accessibility needs for information only.

NOTE 3 Cells with light grey backgrounds indicate optional cells, that do not need to be filled-in or even included within a user accessibility needs mapping.

NOTE 4 Mapping is intended to be done at the most detailed level of user accessibility needs from ISO/IEC 29138-1:2018.

NOTE 5 If a more detailed mapping is desired this can be accomplished by identifying the instances of user accessibility needs that are involved in the mapping in the comments section.

NOTE 6 This template places all required columns to the left of all optional columns. The columns in the template being used may be reordered to suit the needs of the user.

Table A.1 — Table for mapping user accessibility needs to a standard

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
	Accessibility Goal 1: Suitability for the widest range of users					
1-1	to recognize that they are included as a system user within diverse contexts					
1-2	to have accessible support for using the system					
1-3	to have the system accessible to an individual with combinations of needs					
	Accessibility Goal 2: Conformity with user expectations					
2-1	to not be surprised by the results of interactions with the system					
2-2	to apply personal knowledge and experience to interact successfully with the system					
2-3	to receive instruction or training directed at preparing users for new knowledge needed to interact successfully with the system					
2-4	to obtain immediate and easily accessible help or further instructions, where such help can be provided by the system					
	Accessibility Goal 3: Support for individualization					
3-1	to be provided with (and to choose) the way of interacting with a system that best works for them (including activating and deactivating built-in accessibility features					
3-2	to choose between the available input/output modalities and their configuration without requiring restart of the system					
3-3	to have simultaneous use of alternate interaction modalities					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
3-4	to be provided with information on available options for interacting with a system on which to base a choice of interaction methods					
3-5	to be provided an accessible means to choose individualization features					
3-6	to have individualization features maintained for future uses of the system, until changed by the user					
3-7	to have the system use complete standardized sets of needs or preferences from specific standards					
3-8	to take or give up control of functions that could be performed by either the user or the system					
3-9	to have the option to use the system with a minimum of setup or configuration					
	Accessibility Goal 4: Approachability					
4-1	to have the system free from any physical barriers					
4-2	to have the system free from any psychological barriers					
4-3	to have the system maintain the user's attention					
4-4	to have interaction options clearly presented					
4-5	to have appropriate levels of privacy and security					
4-6	to avoid patterns that cause psychological or physical discomfort or disturbance					
4-7	to use the system remotely as well as directly					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
4-8	to have the system free from environmental barriers					
	Accessibility Goal 5: Perceivability					
5-1	to use a specific sensory modality (or a set of specific modalities) to perceive information					
5-1-1	to have information presented visually					
5-1-2	to have visual information available in other modalities					
5-1-3	to have information presented in auditory form					
5-1-4	to have audio information available in other modalities					
5-1-5	to have information in tactile form					
5-1-6	to have tactile information available in other modalities					
5-1-7	to experience information via multiple simultaneous modalities					
5-2	to have presentation attributes of a modality that match an individual's needs					
5-2-1	to have presentation attributes specific to the visual modality that match an individual's needs					
5-2-2	to have manageable textual material					
5-2-3	to have sign language perceivable					
5-2-4	to have 3-dimensional visual information presented using only two dimensions					
5-2-5	to have presentation attributes specific to the auditory modality that match an individual's needs					
5-2-6	to select/deselect different audio streams					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
5-2-7	to have presentation attributes specific to the tactile modality that match an individual's needs					
5-2-8	to have visual or tactile feedback occur at the same location as the control					
5-3	to distinguish among the different components of information that are being presented					
5-3-1	to distinguish between different components without them interfering with one another					
5-3-2	to prevent actions which would decrease information perceivability					
5-3-3	to locate and identify all actionable components without activating them					
5-3-4	to have actionable components look, sound or feel distinctive from non-actionable components					
5-3-5	to have sufficient landmarks and cues to navigate to the necessary locations, functionalities or controls to carry out a task					
5-3-6	to have distinct recognisable signals for different alerts or other messages that use signals					
5-4	to perceive information regardless of environmental or other conditions that might interfere					
5-4-1	to perceive foreground information in the presence of background information					
5-4-2	to avoid distractions that prevent focusing on a task					
5-4-3	to have accessibility features not interfere with perception of standard information					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
5-4-4	to have only the content necessary for the current task presented					
5-4-5	to have haptic input and output from devices not interfere with the perception of information					
5-5	to not have one's senses overloaded					
5-6	to have attention drawn to critically important information in the appropriate modality, form, and language					
	Accessibility Goal 6: Understandability					
6-1	to obtain information on the system and its components and functionalities					
6-1-1	to get an overview and to orient themselves to the system and its functions/components (independent of actual use)					
6-1-2	to obtain and use unique names for every user interface component					
6-1-3	to receive training that supports an individual's cognitive needs					
6-1-4	to receive help that supports an individual's cognitive needs					
6-1-5	to receive recommendations that aid a user's understanding					
6-2	to understand information presented by the system					
6-2-1	to have presented information as easy to understand as possible					
6-2-2	to have individual linguistic requirements supported by the system					
6-2-3	to have individual cultural requirements supported by the system					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
6-2-4	to have text alternatives be provided for all non-textual information					
6-2-5	to have information provided pictorially as well as via text					
6-2-6	to customize abstract symbols with alternative representations					
6-2-7	to have language presented in a particular modality and format					
6-3	to have information that supports an individual's cognitive needs					
6-3-1	to have information presented in a manner that supports an individual's styles of reasoning					
6-3-2	to avoid unnecessary high cognitive demands					
6-3-3	to have navigation that supports an individual's thinking style					
6-3-4	to have assistance with remembering and recalling information					
6-5	to have cues to support the individual in completing tasks					
6-6	to have feedback showing the results of actions					
6-7	to have sufficient time to interact with the system					
6-7-1	to have sufficient time to understand displayed or presented information					
6-7-2	to have information necessary to plan actions available in advance					
6-7-3	to plan a series of actions in advance					
6-8	to access support when needed					
	Accessibility Goal 7: Controllability					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
7-1	to use a specific sensory modality (or a set of specific sensory modalities) for inputs to the system					
7-1-1	to have alternate modalities of input to the system					
7-1-2	to use the tactile modality as a source of inputs to the system					
7-1-3	to use sound as a source of inputs					
7-1-4	to use visual recognition as a source of inputs					
7-2	to control attributes of an input or interaction modality to match an individual's needs					
7-2-1	to have acceptable input or interaction attributes specific to the tactile modality					
7-2-2	to have acceptable input or interaction attributes specific to the auditory modality					
7-2-3	to have acceptable input or interaction attributes specific to the visual modality					
7-2-4	to position system components and devices in suitable locations for their use					
7-3	to use a specific interaction method to provide inputs to the system					
7-4	to perform the task using specific types of action					
7-4-1	to have a means of shifting the input focus from one interface component to another interface component					
7-4-2	to perform the task using various parts of the body					
7-4-3	to have a method to fully operate the system that does not require simultaneous actions					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
7-4-4	to interact with the system at one's own pace					
7-4-5	to have a method to fully operate the system that does not require direct body contact					
7-5	to perform supporting and maintenance tasks related to the use of the system that other users are expected to undertake					
7-6	to control the environment (to the extent possible) to prevent interference with performing the task					
7-7	to access the controls that allow them to turn on and adjust the built-in accessibility features					
7-8	to have a suitable level of autonomy					
	Accessibility Goal 8: Usability					
8-1	to be provided a means to successfully accomplish tasks					
8-2	to avoid making mistakes in completing tasks					
8-3	to complete tasks in an efficient manner relative to one's own abilities					
8-4	to perform tasks with a minimum of physical exertion					
8-5	to perform tasks with a minimum of cognitive exertion					
8-6	to operate the system without becoming fatigued					
8-7	to complete tasks within the available time					
8-8	to be satisfied with the outcome of interacting with the system					
8-9	to have comparable satisfaction that the system is worth using to that of other users					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
	Accessibility Goal 9: Error tolerance					
9-1	to have confidence that using the system will be free from negative consequences or unacceptable risks					
9-2	to explore a system without unintentionally activating components or their functionality					
9-3	to accomplish tasks in spite of the occurrence of errors					
9-4	to detect when errors have been made					
9-5	to recover from errors made from interacting with the system (whenever possible)					
9-6	to reset a system to an earlier or original condition as a means of responding to errors					
9-7	to avoid errors by having negative consequences be obvious, easy to avoid, and difficult to trigger					
	Accessibility Goal 10: Equitable use					
10-1	to use a system in a manner that is as similar as possible to other users					
10-2	to use a system in a manner that is equivalent to that of other users, even if the manner of use is different					
10-3	to have available alternate ways of interacting with a system that match a user's needs					
	Accessibility Goal 11: Compatibility with other systems					
11-1	to use their own assistive products or assistive technology to interact with all the functionalities of the system					
11-2	to have the interaction between the system and assistive technology be without interference					

Table A.1 *(continued)*

User Need id	User accessibility need (from ISO/IEC 29138-1:2018)	Maps to (in the standard)	Mapping level	Guidance in the standard (optional)	Comments (optional)	Standard (being mapped)
11-3	to have specific accessibility functions available at all times, without disruption					

Annex B
(informative)

Sample user accessibility needs mapping report formats based on ISO/IEC 29138-1:2018

B.1 Example formats for mapping information

The following example formats can be used for mapping information for each individual user accessibility need. These report formats can be used by:

1) deleting any optional items in the format for mapping information and changing those that are retained into black print;

2) (if desired by the user) adding additional headings for further information;

3) copying the format for mapping information each of the user accessibility needs;

4) filling-in all information for all of the items in mapping information the resulting report

5) filling-in "---_ where there is no guidance in a standard that maps to a user accessibility need, to indicate this;

6) having multiple entries in the appropriate parts of the mapping format for a given user accessibility need, where multiple guidelines in a standard map to a single user accessibility need and deleting the instructions about repeating that are in italics;

NOTE 1 Mapping is intended to be done at the most detailed level of user accessibility needs from ISO/IEC 29138-1:2018.

NOTE 2 If a more detailed mapping is desired, this can be accomplished by identifying the instances that are mapped to in the comments section.

Format 1:

User accessibility need:

User Need id: (insert need id here)

User Accessibility Need: (insert need name here)

Mapping(s) to locations in the (standard): *(one or more sets of the following)*

Maps to: (insert location that it maps to here)

Guidance in the Standard: (optionally insert guidance from the standard)

Mapping level: (insert mapping level here)

Comments: (optionally insert guidance)

Standard: (if mapping involves multiple standards, insert identity of standard here)

Format 2:

User Need id: (insert here) **User Accessibility Need:** (insert here)

(one or more sets of the following)

Maps to: (insert here) **Guidance in the Standard:** (optionally insert here)

Mapping level: (insert here)

Comments: (optionally insert here)

Standard: (if mapping report involves multiple standards, insert here)

B.2 List of the user accessibility needs from ISO/IEC 29138-1:2018

NOTE Annex A contains the same user accessibility needs formatted in a table (Table A.1).

1 Suitability for the widest range of users needs

1-1 to recognize that they are included as a system user within diverse contexts

1-2 to have accessible support for using the system

1-3 to have the system accessible to an individual with combinations of needs

2 Conformity with user expectations needs

2-1 to not be surprised by the results of interactions with the system

2-2 to apply personal knowledge and experience to interact successfully with the system

2-3 to receive instruction or training directed at preparing users for new knowledge needed to interact successfully with the system

2-4 to obtain immediate and easily accessible help or further instructions, where such help can be provided by the system

3 Support for individualization needs

3-1 to be provided with (and to choose) the way of interacting with a system that best works for them (including activating and deactivating built-in accessibility features)

3-2 to choose between the available input/output modalities and their configuration without requiring restart of the system

3-3 to have simultaneous use of alternate interaction modalities

3-4 to be provided with information on available options for interacting with a system on which to base a choice of interaction methods

3-5 to be provided an accessible means to choose individualization features

3-6 to have individualization features maintained for future uses of the system, until changed by the user

3-7 to have the system use complete standardized sets of needs or preferences from specific standards

3-8 to take or give up control of functions that could be performed by either the user or the system

3-9 to have the option to use the system with a minimum of setup or configuration

4 Approachability needs

4-1 to have the system free from any physical barriers

4-2 to have the system free from any psychological barriers

4-3 to have the system maintain the user's attention

4-4 to have interaction options clearly presented

4-5 to have appropriate levels of privacy and security

4-6 to avoid patterns that cause psychological or physical discomfort or disturbance

4-7 to use the system remotely as well as directly

4-8 to have the system free from environmental barriers

5 Perceivability needs

5-1 to use a specific sensory modality (or a set of specific modalities) to perceive information

5-1-1 to have information presented visually

5-1-2 to have visual information available in other modalities

5-1-3 to have information presented in auditory form

5-1-4 to have audio information available in other modalities

5-1-5 to have information in tactile form

5-1-6 to have tactile information available in other modalities

5-1-7 to experience information via multiple simultaneous modalities

5-2 to have presentation attributes of a modality that match an individual's needs

5-2-1 to have presentation attributes specific to the visual modality that match an individual's needs

5-2-2 to have manageable textual material

5-2-3 to have sign language perceivable

5-2-4 to have 3-dimensional visual information presented using only two dimensions

5-2-5 to have presentation attributes specific to the auditory modality that match an individual's needs

5-2-6 to select/deselect different audio streams

5-2-7 to have presentation attributes specific to the tactile modality that match an individual's needs

5-2-8 to have visual or tactile feedback occur at the same location as the control

5-3 to distinguish among the different components of information that are being presented

5-3-1 to distinguish between different components without them interfering with one another

5-3-2 to prevent actions which would decrease information perceivability

5-3-3 to locate and identify all actionable components without activating them

5-3-4 to have actionable components look, sound or feel distinctive from non-actionable components

5-3-5 to have sufficient landmarks and cues to navigate to the necessary locations, functionalities or controls to carry out a task

5-3-6 to have distinct recognisable signals for different alerts or other messages that use signals

5-4 to perceive information regardless of environmental or other conditions that might interfere

5-4-1 to perceive foreground information in the presence of background information

5-4-2 to avoid distractions that prevent focusing on a task

5-4-3 to have accessibility features not interfere with perception of standard information

5-4-4 to have only the content necessary for the current task presented

5-4-5 to have haptic input and output from devices not interfere with the perception of information

5-5 to not have one's senses overloaded

5-6 to have attention drawn to critically important information in the appropriate modality, form, and language

6 Understandability needs

6-1 to obtain information on the system and its components and functionalities

6-1-1 to get an overview and to orient themselves to the system and its functions/components (independent of actual use)

6-1-2 to obtain and use unique names for every user interface component

6-1-3 to receive training that supports an individual's cognitive needs

6-1-4 to receive help that supports an individual's cognitive needs

6-1-5 to receive recommendations that aid a user's understanding

6-2 to understand information presented by the system

6-2-1 to have presented information as easy to understand as possible

6-2-2 to have individual linguistic requirements supported by the system

6-2-3 to have individual cultural requirements supported by the system

6-2-4 to have text alternatives be provided for all non-textual information

6-2-5 to have information provided pictorially as well as via text

6-2-6 to customize abstract symbols with alternative representations

6-2-7 to have language presented in a particular modality and format

6-3 to have information that supports an individual's cognitive needs

6-3-1 to have information presented in a manner that supports an individual's styles of reasoning

6-3-2 to avoid unnecessary high cognitive demands

6-3-3 to have navigation that supports an individual's thinking style

6-3-4 to have assistance with remembering and recalling information

6-4 to have the steps for completing tasks optimized to match an individual's needs and clearly explained

6-5 to have cues to support the individual in completing tasks

6-6 to have feedback showing the results of actions

6-7 to have sufficient time to interact with the system

6-7-1 to have sufficient time to understand displayed or presented information

6-7-2 to have information necessary to plan actions available in advance

6-7-3 to plan a series of actions in advance

6-8 to access support when needed

7 Controllability needs

7-1 to use a specific sensory modality (or a set of specific sensory modalities) for inputs to the system

7-1-1 to have alternate modalities of input to the system

7-1-2 to use the tactile modality as a source of inputs to the system

7-1-3 to use sound as a source of inputs

7-1-4 to use visual recognition as a source of inputs

7-2 to control attributes of an input or interaction modality to match an individual's needs

7-2-1 to have acceptable input or interaction attributes specific to the tactile modality

7-2-2 to have acceptable input or interaction attributes specific to the auditory modality

7-2-3 to have acceptable input or interaction attributes specific to the visual modality

7-2-4 to position system components and devices in suitable locations for their use

7-3 to use a specific interaction method to provide inputs to the system

7-4 to perform the task using specific types of action

7-4-1 to have a means of shifting the input focus from one interface component to another interface component

7-4-2 to perform the task using various parts of the body

7-4-3 to have a method to fully operate the system that does not require simultaneous actions

7-4-4 to interact with the system at one's own pace

7-4-5 to have a method to fully operate the system that does not require direct body contact

7-5 to perform supporting and maintenance tasks related to the use of the system that other users are expected to undertake

7-6 to control the environment (to the extent possible) to prevent interference with performing the task

7-7 to access the controls that allow them to turn on and adjust the built-in accessibility features

7-8 to have a suitable level of autonomy

8 Usability needs

8-1 to be provided a means to successfully accomplish tasks

8-2 to avoid making mistakes in completing tasks

8-3 to complete tasks in an efficient manner relative to one's own abilities

8-4 to perform tasks with a minimum of physical exertion

8-5 to perform tasks with a minimum of cognitive exertion

8-6 to operate the system without becoming fatigued

8-7 to complete tasks within the available time

8-8 to be satisfied with the outcome of interacting with the system

8-9 to have comparable satisfaction that the system is worth using to that of other users

9 Error tolerance needs

9-1 to have confidence that using the system will be free from negative consequences or unacceptable risks

9-2 to explore a system without unintentionally activating components or their functionality

9-3 to accomplish tasks in spite of the occurrence of errors

9-4 to detect when errors have been made

9-5 to recover from errors made from interacting with the system (whenever possible)

9-6 to reset a system to an earlier or original condition as a means of responding to errors

9-7 to avoid errors by having negative consequences be obvious, easy to avoid, and difficult to trigger

10 Equitable use needs

10-1 to use a system in a manner that is as similar as possible to other users

10-2 to use a system in a manner that is equivalent to that of other users, even if the manner of use is different

10-3 to have available alternate ways of interacting with a system that match a user's needs

11 Compatibility with other systems needs

11-1 to use their own assistive products or assistive technology to interact with all the functionalities of the system

11-2 to have the interaction between the system and assistive technology be without interference

11-3 to have specific accessibility functions available at all times, without disruption

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