

# ISO/IEC 29138-1:2018 (E)

## Information technology — User interface accessibility — Part 1: User accessibility needs

---

### Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Accessibility goals
5	User accessibility needs and related information
5.1	General
5.1.1	Needs
5.1.2	Some users need
5.2	The organization of this set of user accessibility needs
5.2.1	Organization based on accessibility goals
5.2.2	Heuristics for the organization of this set of user accessibility needs
5.3	Detailed information on needs
5.3.1	The statement of the need
5.3.2	Need identifier
5.3.3	Description of the need
5.3.4	Instances of the need
5.3.5	Examples of the need
5.3.6	Examples of an instance
5.3.7	Short versions of the needs and their instances
5.4	Applying the needs
5.4.1	Users and uses of the set of needs
5.4.2	General activities involving user needs
5.4.3	Identifying system and context specific user needs
5.4.4	Developing system requirements
5.4.5	Evaluating systems
6	Details of the user accessibility needs
6.1	Details of the needs related to suitability for the widest range of users
6.1.1	To recognize that they are included as a system user within diverse contexts
6.1.2	To have accessible support for using the system
6.1.3	To have the system accessible to an individual with combinations of needs
6.2	Details of the needs related to conformity with user expectations
6.2.1	To not be surprised by the results of interactions with the system
6.2.2	To apply personal knowledge and experience to interact successfully with the system
6.2.3	To receive instruction or training directed at preparing users for new knowledge needed to interact successfully with the system
6.2.4	To obtain immediate and easily accessible help or further instructions, where such help can be provided by the system
6.3	Details of the needs related to support for individualization
6.3.1	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)
6.3.2	To choose between the available input/output modalities and their configuration without requiring restart of the system
6.3.3	To have simultaneous use of alternate interaction modalities

- 6.3.4 To be provided with information on available options for interacting with a system on which to base a choice of interaction methods
- 6.3.5 To be provided an accessible means to choose individualization features
- 6.3.6 To have individualization features maintained for future uses of the system, until changed by the user
- 6.3.7 To have the system use complete standardized sets of needs or preferences from specific standards
- 6.3.8 To take or give up control of functions that could be performed by either the user or the system
- 6.3.9 To have the option to use the system with a minimum of setup or configuration
- 6.4 Details of the needs related to approachability
  - 6.4.1 To have the system free from any physical barriers
  - 6.4.2 To have the system free from any psychological barriers
  - 6.4.3 To have the system maintain the user's attention
  - 6.4.4 To have interaction options clearly presented
  - 6.4.5 To have appropriate levels of privacy and security
  - 6.4.6 To avoid patterns that cause psychological or physical discomfort or disturbance
  - 6.4.7 To use the system remotely as well as directly
  - 6.4.8 To have the system free from environmental barriers
- 6.5 Details of the needs related to perceivability
  - 6.5.1 To use a specific sensory modality (or a set of specific modalities) to perceive information
    - 6.5.2 To have information presented visually
    - 6.5.3 To have visual information available in other modalities
    - 6.5.4 To have information presented in auditory form
    - 6.5.5 To have audio information available in other modalities
    - 6.5.6 To have information in tactile form
    - 6.5.7 To have tactile information available in other modalities
    - 6.5.8 To experience information via multiple simultaneous modalities
    - 6.5.9 To have presentation attributes of a modality that match an individual's needs
    - 6.5.10 To have presentation attributes specific to the visual modality that match an individual's needs
      - 6.5.11 To have manageable textual material
      - 6.5.12 To have sign language perceivable
      - 6.5.13 To have 3-dimensional visual information presented using only two dimensions
      - 6.5.14 To have presentation attributes specific to the auditory modality that match an individual's needs
    - 6.5.15 To select/deselect different audio streams
    - 6.5.16 To have presentation attributes specific to the tactile modality that match an individual's needs
      - 6.5.17 To have visual or tactile feedback occur at the same location as the control
      - 6.5.18 To distinguish among the different components of information that are being presented
      - 6.5.19 To distinguish between different components without them interfering with one another
      - 6.5.20 To prevent actions which would decrease information perceivability
      - 6.5.21 To locate and identify all actionable components without activating them
      - 6.5.22 To be able to distinguish between actionable and non- actionable components in any modality
      - 6.5.23 To have sufficient landmarks and cues to quickly navigate to the necessary locations, functionalities or controls to carry out a task
      - 6.5.24 To have distinct recognisable signals for different alerts or other messages that use signals
      - 6.5.25 To perceive information regardless of environmental or other conditions that might interfere
      - 6.5.26 To perceive foreground information in the presence of background information
      - 6.5.27 To avoid distractions that prevent focusing on a task
      - 6.5.28 To have accessibility features not interfere with perception of standard information
      - 6.5.29 To have only the content necessary for the current task presented
    - 6.5.30 To have haptic input and output from devices not interfere with the perception of information
      - 6.5.31 To not have one's senses overloaded
    - 6.5.32 To have attention drawn to critically important information in the appropriate modality, form, and language
- 6.6 Details of the needs related to understandability
  - 6.6.1 To obtain information on the system and its components and functionalities

- 6.6.2 To get an overview and to orient themselves to the system and its functions/ components (independent of actual use)
- 6.6.3 To obtain and use unique names for every user interface component
- 6.6.4 To receive training that supports an individual's cognitive needs
- 6.6.5 To receive help that supports an individual's cognitive needs
- 6.6.6 To receive recommendations that aid a user's understanding
- 6.6.7 To understand information presented by the system
- 6.6.8 To have presented information as easy to understand as possible
- 6.6.9 To have individual linguistic requirements supported by the system
- 6.6.10 To have individual cultural requirements supported by the system
- 6.6.11 To have text alternatives be provided for all non-textual information
- 6.6.12 To have information provided pictorially as well as via text
- 6.6.13 To customize abstract symbols with alternative representations
- 6.6.14 To have language presented in a particular modality and format
- 6.6.15 To have information that supports an individual's cognitive needs
- 6.6.16 To have information presented in a manner that supports an individual's styles of reasoning
- 6.6.17 To avoid unnecessary high cognitive demands
- 6.6.18 To have navigation that supports an individual's thinking style
- 6.6.19 To have assistance with remembering and recalling information
- 6.6.20 To have the steps for completing tasks optimized to match an individual's needs and clearly explained
- 6.6.21 To have cues to support the individual in completing tasks
- 6.6.22 To have feedback showing the results of actions
- 6.6.23 To have sufficient time to interact with the system
- 6.6.24 To have sufficient time to understand displayed or presented information
- 6.6.25 To have information necessary to plan actions available in advance
- 6.6.26 To plan a series of actions in advance
- 6.6.27 To access support when needed
- 6.7 Details of the needs related to controllability
- 6.7.1 To use a specific sensory modality (or a set of specific sensory modalities) for inputs to the system
- 6.7.2 To have alternate modalities of input to the system
- 6.7.3 To use the tactile modality as a source of inputs to the system
- 6.7.4 To use sound as a source of inputs
- 6.7.5 To use visual recognition as a source of inputs
- 6.7.6 To control attributes of an input or interaction modality to match an individual's needs
- 6.7.7 To have acceptable input or interaction attributes specific to the tactile modality
- 6.7.8 To have acceptable input or interaction attributes specific to the auditory modality
- 6.7.9 To have acceptable input or interaction attributes specific to the visual modality
- 6.7.10 To position system components and devices in suitable locations for their use
- 6.7.11 To use a specific interaction method to provide inputs to the system
- 6.7.12 To perform the task using specific types of action
- 6.7.13 To have a means of shifting the input focus from one interface component to another interface component
- 6.7.14 To perform the task using various parts of the body
- 6.7.15 To have a method to fully operate the system that does not require simultaneous actions
- 6.7.16 To interact with the system at one's own pace
- 6.7.17 To have a method to fully operate the system that does not require direct body contact
- 6.7.18 To perform supporting and maintenance tasks related to the use of the system that other users are expected to undertake
- 6.7.19 To control the environment (to the extent possible) to prevent interference with performing the task
- 6.7.20 To access the controls that allow them to turn on and adjust the built-in accessibility features
- 6.7.21 To have a suitable level of autonomy
- 6.8 Details of the needs related to usability
- 6.8.1 To be provided a means to successfully accomplish tasks
- 6.8.2 To avoid making mistakes in completing tasks or in using the outcomes of tasks
- 6.8.3 To complete tasks in an efficient manner relative to one's own abilities
- 6.8.4 To perform tasks with a minimum of physical exertion
- 6.8.5 To perform tasks with a minimum of cognitive exertion
- 6.8.6 To operate the system without becoming fatigued

- 6.8.7 To complete tasks within the available time
- 6.8.8 To be satisfied with the outcome of interacting with the system
- 6.8.9 To have comparable satisfaction that the system is worth using to that of other users
- 6.9 Details of the needs related to error tolerance
- 6.9.1 To have confidence that using the system will be free from negative consequences or unacceptable risks
- 6.9.2 to explore a system without unintentionally activating components or their functionality
- 6.9.3 To accomplish tasks in spite of the occurrence of errors
- 6.9.4 To detect when errors have been made
- 6.9.5 To recover from errors made from interacting with the system (whenever possible)
- 6.9.6 To reset a system to an earlier or original condition as a means of responding to errors
- 6.9.7 To avoid errors by having negative consequences be obvious, easy to avoid, and difficult to trigger
- 6.10 Details of the needs related to equitable use
- 6.10.1 To use a system in a manner that is as similar as possible to other users
- 6.10.2 To use a system in a manner that is equivalent to that of other users, even if the manner of use is different
- 6.10.3 To have available alternate ways of interacting with a system that match a user's needs
- 6.11 Details of the needs related to compatibility with other systems
- 6.11.1 to use their own assistive products or assistive technology to interact with all the functionalities of the system
- 6.11.2 To have the interaction between the system and assistive technology be without interference
- 6.11.3 To have specific accessibility functions available at all times, without disruption

**Annex A (informative) List of user accessibility needs**

**Annex B (informative) List of user needs and instances**

**Annex C (informative) Mapping of ISO/IEC TR 29138-1:2009 to this set of user needs**

**Annex D (informative) Applying needs to specific purposes**

- D.1 Applying needs to the development of ICT products and services
- D.2 Applying needs to acquiring ICT products and services
- D.3 Applying needs to making organizations accessible
- D.4 Applying needs to advocacy
- D.5 Applying needs to research
- D.6 Applying needs to standards development

**Page count: 90**