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Part 5: Accessible user interfaces for accessibility settings on information devices

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

Partie 5: Interfaces utilisateur accessibles pour le paramétrage de l'accessibilité d'appareils informatiques

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Requirements and recommendations **7**
4.1 Accessibility setting mode 7
4.1.1 Contents and interface of the accessibility setting mode 7
4.1.2 Accessibility setting mode before login 11
4.2 Items of accessibility setting 13
4.2.1 Input 13
4.2.2 Output 20
4.3 Shortcuts to access the accessibility features 22
4.3.1 General 22
4.3.2 Shortcuts to access accessibility settings 23
4.3.3 Shortcuts to activate accessibility features or preset usage modes 23
4.4 Saving accessibility parameters 23
Annex A (informative) **Examples of shortcut keys and voice commands** **24**
Bibliography **29**

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Foreword

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Introduction

People with disabilities (e.g. visual, hearing, physical) can experience difficulties in accessing information and communications technology (ICT) devices. Accessible user interfaces, as described in this document, can help them to operate devices.

To effectively operate accessible user interfaces, users need to be able to adjust accessibility settings first. If this is not possible, some people will not be able to access these devices without help from another party.

This document makes information technologies more accessible by ensuring that people with disabilities can adjust accessibility settings by themselves.

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Information technology — User interface component accessibility —

Part 5: Accessible user interfaces for accessibility settings on information devices

1 Scope

This document specifies requirements and recommendations for making accessibility settings accessible and usable. It provides guidance on specific accessibility settings, saving settings and modifying settings. It specifies how to access and operate the accessibility setting mode, and how to directly activate specific accessibility features.

This document applies to all operating system user interfaces on all types of information and communications technologies (ICTs) from the point where the operating system is fully functional and waiting for the user to interact with it.

This document does not apply to:

— storing and retrieving information from a stored user profile, including personally identifiable information;

— accessibility of the closed functionality that does not support access by assistive technology;

— accessibility of boot mode.

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 9241-171:2008, *Ergonomics of human-system interaction — Part 171: Guidance on software accessibility*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/

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3.1
accessibility feature
feature that is specifically designed to increase the usability of products for persons with disabilities

[SOURCE: ISO 9241-171:2008, 3.3, modified — "persons with disabilities" was replaced by "those experiencing disabilities".]

3.2
accessibility setting
setting to make the user interface more accessible for people with disabilities

EXAMPLE A setting is provided to turn large text or screen magnification ON for people with low vision.

Note 1 to entry: There are three types of accessibility settings:

— The settings for the operating system.

— The settings for the application by the operating system.

— The settings inside of the application.

3.3
accessibility setting mode
user interface where the user adjusts *accessibility settings* (3.2)

Note 1 to entry: A user can access almost all the accessibility settings and adjustments for the *accessibility features* (3.1) through this mode.

3.4
auditory feedback
feature that allows users to determine, by sound indication, relevant activities on the device (e.g. key input)

Note 1 to entry: Auditory feedback includes a beep sound with, e.g. key input, alarm sound, speech output. Audio feedback can be personalised by the user.

3.5
BounceKeys™
feature that only accepts a single keystroke at a time from a key

Note 1 to entry: BounceKeys™ is designed for users with a tremor or lack of dexterity that causes them to inadvertently strike a key extra times when pressing or releasing the key. Once a key is released it will not accept another stroke of the same key until a (user-settable) period of time has passed. BounceKeys™ has no effect on how quickly a person can type a different key.

Note 2 to entry: See ISO 9241-171:2008, E.3.4 (modified).

3.6
FilterKeys™
BounceKeys™ (3.5) and *SlowKeys™* (3.20) features combined

Note 1 to entry: The term FilterKeys™ is sometimes used for the BounceKeys™ and SlowKeys™ features packaged together. Some implementations make these two features mutually exclusive. However, they can also both be active at the same time (although SlowKeys™ will dominate).

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Note 2 to entry: See ISO 9241-171:2008, E.3.5.

3.7
gaze control
interaction through eye gaze or blink

3.8
home function
reserved operation of the user interface that moves all open applications to the background and returns visible and programmable focus to the home screen

Note 1 to entry: For some devices, the home function can be activated using the home button.

Note 2 to entry: The home function can be accessed within an application via a labelled button, such as a back button.

Note 3 to entry: The home function can be accessed by voice.

Note 4 to entry: The home function may be assigned to key combinations or gestures.

3.9
login mode
user interface for authentication to access the operating system

Note 1 to entry: The login mode includes, e.g. password input form, biometrics authentication, voice authentication. Login mode begins after *boot mode* (3.10).

3.10
boot mode
initialized mode of program operations when a computer is turned on

Note 1 to entry: The boot mode ends when the operating system of the device is loaded and is followed by *login mode* (3.9).

[SOURCE: ISO/IEC IEEE 24765:2017, 3.402, modified — "device" was replaced by "computer".]

3.11
MouseKeys™
feature that allows the user to control the mouse cursor and operate the mouse buttons via the keyboard (e.g. the numeric keypad)

Note 1 to entry: MouseKeys™ is designed for users who are physically unable to use a mouse.

Note 2 to entry: See ISO 9241-171:2008, E.3.6.

3.12
on-screen keyboard
virtual keyboard displayed on any type of screen

Note 1 to entry: On-screen keyboards are one specific type of virtual keyboard, probably the most common, that use a screen to display a visual keyboard.

Note 2 to entry: This type of virtual keyboard can be used on personal computer screens, on feature phones and tablets, mobile phones and tablets, TVs, kiosks, whiteboards.

[SOURCE: ISO/IEC 22121-2, 3.1[2)]]

2) Under preparation. Stage at the time of publication: ISO/IEC DIS 22121-2.

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3.13
operating system-specific key for invoking commands
special key to access capability to control the operating system (OS) function

Note 1 to entry: The name of the operating system-specific key for invoking commands differs depending on the OS. Some common names for this function include: “Logo key” and “Command key.”

Note 2 to entry: Some devices have the same functionality by non-key user interfaces, including gesture.

3.14
pointing device
equipment to point to the location on the screen directly (e.g. finger, pen) or indirectly (e.g. mouse)

EXAMPLE Mouse, track ball, touch pen, touch pad, touch panel, stylus, touch screen, routing keys, eye control.

3.15
RepeatKeys™
feature to control auto-repeat which evokes the same effect of repetitional key push by one push, repeat onset and repeat rate of keys

Note 1 to entry: RepeatKeys™ is designed to allow use of devices by people who cannot move quickly enough when pressing keys to keep them from auto-repeating. The feature to adjust repeat onset, repeat rate and to turn auto-repeat off are usually included as part of most keyboard *system settings* (3.24). If these features are not included, RepeatKeys™ provides them. RepeatKeys™ also ensures that the repeat delay and repeat interval can be personalized (if the standard maximum value for either of the regular key repeat settings is not long enough).

Note 2 to entry: See ISO 9241-171:2008, E.3.7.

3.16
screen magnifier
assistive technology that allows users to operate a software system with an enlarged presentation of screen content

Note 1 to entry: Users control the screen magnifier separately from the system by keyboard, *pointing device* (3.14), or gesture.

Note 2 to entry: Screen magnifiers can enlarge content up to 500 % or more. They provide additional visual features such as inverse video, colour replacement, and monitoring for system notifications and events.

Note 3 to entry: Some screen magnifiers also support text-to-speech.

3.17
screen reader
assistive technology that controls the system and provides information and feedback without the need for a visual display

Note 1 to entry: Screen readers display information through text-to-speech and/or dynamic braille output. Control is provided through either keyboard or gestures, or both.

Note 2 to entry: Screen readers rely on a data stream from the system that includes information from applications such as the name, role, status, and value of a user-interface element. This information stream is referred to as the "accessibility tree".

Note 3 to entry: Screen readers provide system feedback through auditory cues based on the user’s preferences, e.g. feedback to changes between focus and browse modes, keypresses, gesture operations.

3.18
shortcut
operation that invokes an action without displaying intermediate information (e.g. menus) or requiring pointer movement or any other user activity

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3.19
ShowSounds™
user-configurable system flag that is readable by application software and is intended to inform ShowSounds™-aware applications that all information conveyed audibly should also be conveyed visually

Note 1 to entry: ShowSounds™ is a feature for users who cannot clearly hear speech or cannot distinguish between sounds from a device (due to hearing loss, noisy environment, or an environment where sound is not allowed, such as a library or classroom). For example, a message or icon can be displayed when a sound is used to indicate that new mail has arrived.

Note 2 to entry: See ISO 9241-171:2008, E.3.10.

3.20
SlowKeys™
feature to ignore all keys that are bumped or pressed briefly

Note 1 to entry: SlowKeys™ is designed for users who have extra, uncontrolled movements that cause them to strike surrounding keys unintentionally when typing. Keystrokes are accepted only if keys are held down for a user-specified period of time.

Note 2 to entry: See ISO 9241-171:2008, E.3.3 (1).

3.21
SoundSentry™
feature providing a visual signal to indicate when the device is generating a sound

EXAMPLE Screen flash, caption bar flash.

Note 1 to entry: SoundSentry™ is a feature for individuals who cannot hear system sounds (due to hearing loss, a noisy environment, or an environment where sound is not allowed, such as a library or classroom). SoundSentry™ works by monitoring the system sound hardware and providing a user-selectable indication whenever sound activity is detected. This feature cannot usually discriminate between different sounds, identify the sources of sounds, or provide a useful alternative for speech output or information encoded in sounds. Applications can support the *ShowSounds™* (3.19) feature to provide the user with a useful alternative to information conveyed using sound. SoundSentry™ is a system-level fallback for applications that do not support ShowSounds™.

Note 2 to entry: See ISO 9241-171:2008, E.3.9.

3.22
StickyKeys™
feature that allows users to press key combinations (e.g. Ctrl+Alt+Delete) sequentially rather than having to hold them all down together

Note 1 to entry: StickyKeys™ is designed for people who cannot use both hands, or who use a dowel or stick to type. StickyKeys™ works with those keys defined as “modifier” keys, such as the Shift, Alt and Ctrl keys. Usually the StickyKeys™ status is shown on-screen at the user's option.

Note 2 to entry: See ISO 9241-171:2008, E.3.2 (1).

3.23
switch control
feature that allows users to use switches to select, tap, or drag items, type, and freehand draw

Note 1 to entry: Item scanning, point scanning, and manual selection (head tracking) are possible strategies.

Note 2 to entry: The switch control method supports users who are not able to operate more than one single switch.

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3.24
system settings
user interface where the user adjusts operating system settings

Note 1 to entry: The name of the system settings differs depending on the operating system. Some common names for this feature include: “control panel” and “system preferences.”

3.25
tactile feedback
feature that allows users to determine, by touch, the indication of relevant activities on the device (e.g. key input)

EXAMPLE Vibration, movement, temperature.

3.26
time out
feature that turns the *accessibility features* (3.1) off automatically after an adjustable time when no keyboard or mouse activity occurs

Note 1 to entry: Time out (accessibility features) is intended to be used on public or shared devices, e.g. in libraries, bookstores, where a user can leave the device with an access feature turned on, thus potentially confusing the next user or leading people to think the device was broken.

Note 2 to entry: See ISO 9241-171:2008, E.3.11 (1).

3.27
ToggleKeys™
feature alerting the user when the state of a locking key has changed

Note 1 to entry: ToggleKeys™ is a feature for users who cannot see the visual keyboard status indicators for locking (toggle) keys, e.g. CapsLock, ScrollLock, NumLock. ToggleKeys™ provides an auditory signal, such as a high beep, to alert the user that a toggle key such as the CapsLock has been locked, and a separate signal, such as a low beep, to alert the user that a toggle key has been unlocked.

Note 2 to entry: See ISO 9241-171:2008, E.3.8 (1).

3.28
visual emphasis
feature that allows users to change the visual aspects to improve visibility

EXAMPLE Setting of character size, screen magnification, contrast, luminance, colour balance, colour tone inverse, gradation.

3.29
visual feedback
feature that allows users to determine, by vision indication, the relevant activities on the device

EXAMPLE Displaying the visual representations of pushed keys.

3.30
voice command
spoken instruction to control the information and communications technology (ICT) system

[SOURCE: ISO/IEC 30122-1:2016, 4.1]

3.31
voice operation
feature that allows users to operate a device with *voice commands* (3.30)

EXAMPLE Device command “Play music!” starts playing music.

Note 1 to entry: Voice commands usually follow an activation keyword (e.g. “Computer!”) to distinguish them from other speech that is not intended as a voice command.

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