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Information technology — User interface guidelines on menu navigation —

Part 2: Navigation with 4-direction devices

Technologies de l'information — Directives sur la navigation dans les menus d'interfaces utilisateurs —

Partie 2: Navigation avec des commandes quadridirectionnelles

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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).

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 http://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.

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

This second edition cancels and replaces the first edition (ISO/IEC 17549-2:2015), of which it constitutes a minor revision.

The main changes compared to the previous edition are as follows:

— in Figures 2, 3, and 4 supplementary explanations have been moved into notes;

— the alternative text for all figures has been included as alternative text in the PDF rather than provided in notes beneath the figures;

— an editorial error in Table 2 has been corrected;

— Annex B (informative), which was erroneously included, has been deleted;

— ISO/IEC Guide 37 and IEC 82079-1 have been moved from Clause 2 to the Bibliography as they are not cited normatively in the text;

— minor editorial corrections have been made throughout the document to fully align with ISO/IEC Directives.

A list of all parts in the ISO/IEC 17549 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.

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Introduction

Contemporary information equipment, on which the display area is associated with 4-direction devices, includes sophisticated and complex functionalities within one piece of such equipment.

The equipment needs to be operated in terms of changing default settings and to be customized for the individual user. In such a scenario, a 4-direction device is used to navigate the menu shown in the display area, where the menus are normally structured.

This document provides guidelines for the design and use of menu structures, as well as recommended types of navigation with 4-direction devices.

Note that each figure in this document, although it is not always an "image", includes the alternative text(s) in accordance with ISO/IEC/TS 20071-11. The alternative text(s) are informative only.

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Information technology — User interface guidelines on menu navigation —

Part 2:
Navigation with 4-direction devices

1 Scope

This document gives guidelines on the design of navigation methods for selection menus with the use of a 4-direction device. The guidelines are applicable to any information equipment on which the display area is associated with a 4-direction device.

This document also provides recommendations for parameters for display screen settings, character sets and languages in use.

This document is not applicable to safety-related uses on menu navigation.

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 1503, *Spatial orientation and direction of movement — Ergonomic requirements*

3 Terms and definitions

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

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

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

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

3.1
4-direction device
set of physical controls, commonly keys, only one of which is activated at any time, consisting of up-, down-, left- and right controls for respective functionality

Note 1 to entry: The 4-direction device is a mechanism directly manipulated by users, for example, a cross-key of a remote controller.

3.2
ladder menu
list of items displayed vertically in one dimension, one of which is to be selected

3.3
menu bar
set of one dimensional menu items that is always standing-by at the root of a menu hierarchy

Note 1 to entry: A menu bar provides tabular functionality and it is different from a “rolling menu”.

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3.4
focus
<4-direction devices> highlighted result of action done by a user through an input device

Note 1 to entry: If the number of keys used is one, the action is “next”. If the number of keys used is two, the actions are “previous” and “next”. Selecting a key enables highlighting of the next item visually, auditorily, and/or tactually to show the action can be activated.

3.5
activating
action done by a user through a validation key, which enables activation of a focus or an item pointed at

3.6
navigation history feedback
visual, tactile and/or audio interface output displayed after a user navigation, which enables a user to know the paths he has already explored

Note 1 to entry: For example, items already explored are highlighted in a different colour if the user already navigated to there.

3.7
separator bar
visual, tactile and/or audio interface output that is rendered in order to facilitate recognition of groups of items categorizations or the start or end of a list

3.8
sub-menu indicator
visual, tactile and/or audio interface output that is rendered in order to facilitate navigation when a sub-list of items is available and which enables user to know if they are dealing with a navigation item or not

3.9
tile menu
set of items displayed with a number of rows and columns, one of which is to be selected

4 Conformity

A navigation method conforms to this document if it meets all requirements of 5.1, 5.2.2, and 7.1.

5 Basic considerations

5.1 Common and general ergonomic aspects

The following basic ergonomic aspects are taken into account when designing user interfaces where navigation with a 4-direction device is considered:

a) users should be able to change menu languages at the highest level of the menu hierarchy;

b) control shall be consistent both in design and operation, including meeting the requirements in ISO 1503;

c) menu items should be in plain texts or comprehensible icons as far as applicable, and in agreement with the relevant provisions in ISO/IEC Guide 37 and IEC/IEEE 82079-1;

d) control shall be bi-directional and enable the user to return to the previous operation;

e) clear feedback should be given when the user is at the end of the list and when they are at the start, and the end and start feedback should be different;

f) for broad and deep menu lists, navigation history feedback shall be provided;

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