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Ergonomija medsebojnega vplivanja človek-sistem - 112. del: Načela za prikaz informacij (ISO/DIS 9241-112:2023)

Ergonomics of human-system interaction - Part 112: Principles for the presentation of information (ISO/DIS 9241-112:2023)

Ergonomie der Mensch-System-Interaktion - Teil 112: Grundsätze der Informationsdarstellung (ISO/DIS 9241-112:2023)

Ergonomie de l'interaction homme-système - Partie 112: Principes relatifs à la présentation de l'information (ISO/DIS 9241-112:2023)

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35.180	Terminalska in druga periferna oprema IT	IT Terminal and other peripheral equipment

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Ergonomics of human-system interaction —

Part 112:
Principles for the presentation of information

Ergonomie de l'interaction homme-système —

Partie 112: Principes et lignes directrices relatives à la présentation de l'information

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oSIST prEN ISO 9241-112:2023

Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Introduction to the presentation of information ... **4**
4.1 Sources of guidance on presentation of information within the ISO 9241-100 series and their relationship ... 4
4.2 Modalities and media ... 5
4.3 Accessibility ... 6
4.4 Action guidance ... 6
4.5 Information presentation and aesthetics ... 6
5 Introduction to the principles for presentation of information ... **6**
5.1 Overview ... 6
5.2 Relationship to other sets of principles in the ISO 9241-100 series ... 7
5.3 Relationship between individual principles ... 7
6 Principles and recommendations ... **8**
6.1 Detectability ... 8
6.1.1 Principle of detectability ... 8
6.1.2 Guidance related to using prominence ... 8
6.1.3 Guidance related to timely presentation of information ... 8
6.1.4 Guidance related to making controls detectable by the user ... 9
6.1.5 Guidance related to using continuity to aid detectability ... 10
6.2 Freedom from distraction ... 10
6.2.1 Principle of freedom from distraction ... 10
6.2.2 Guidance on minimizing and avoiding distractions ... 10
6.3 Discriminability ... 11
6.3.1 Principle of discriminability ... 11
6.3.2 Guidance related to the structuring of presented information ... 11
6.3.3 Guidance related to using presentation attributes ... 12
6.3.4 Guidance related to grouping using proximity ... 13
6.3.5 Guidance related to using similarity ... 13
6.4 Interpretability ... 14
6.4.1 Principle of interpretability ... 14
6.4.2 Guidance related to ensuring comprehensibility ... 14
6.4.3 Guidance related to ensuring unambiguous meaning ... 14
6.4.4 Guidance related to using closure appropriately ... 15
6.4.5 Guidance related to textual coherence ... 16
6.4.6 Guidance related to selection and use of media/modality ... 16
6.4.7 Guidance related to user capabilities ... 16
6.5 Conciseness ... 17
6.5.1 Principle of conciseness ... 17
6.5.2 Guidance related to conciseness of content ... 17
6.5.3 Guidance related to conciseness of actions ... 18
6.6 Consistency (internal and external) ... 18
6.6.1 Principle of consistency ... 18
6.6.2 Guidance related to consistency across pieces of information ... 18
6.6.3 Guidance related to logical consistency ... 19
6.6.4 Guidance related to consistency with conventions known to the user ... 19
Bibliography ... **21**

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(https://standards.iteh.ai) Document Preview
oSIST prEN ISO 9241-112:2023
https://standards.iteh.ai/catalog/standards/sist/...-iso-9241-112-2023

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Foreword

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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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

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The committee responsible for this document is ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human–system interaction*.

This second edition cancels and replaces the first (ISO 9241-112:2017), which has been technically revised.

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

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— definitions have been updated
— minor corrections and clarifications have been made

A list of all parts in the ISO 9241 series can be found on the ISO website.

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Introduction

This document presents principles for the presentation of information that apply to the design and evaluation of user interfaces.

The application and use of the principles and general recommendations in this document results in a variety of benefits to users of interactive user interfaces, including improvements in speed, accuracy, mental effort, and user experience. They also help prevent users from experiencing usability problems with presented information. Examples of such problems include the following:

— Users do not detect information, although the information is present.

— Users are distracted from information they are focusing on by other information.

— Users cannot discriminate between pieces of information, since they appear to be identical.

— Users misinterpret information since the meaning of the information is ambiguous.

— Users expend unnecessary time in understanding information since the information is presented is unnecessarily lengthy.

— Users do not understand information due to unknown conventions used in the information.

The principles and general recommendations will help to avoid misinterpretations by providing guidance on the appropriate and effective presentation of information. The guidance in this document does not deal with the identification of the specific information to be presented.

This document contains general recommendations that apply across modalities. ISO 9241-125 provides detailed recommendations relating to the design and evaluation of visual user interfaces.

This document can be used with ISO 9241-110 to provide principles covering interaction with user interfaces, including the presentation of information.

These principles replace the “characteristics of presented information” listed in ISO 9241-12:1998, 4.1. The characteristic “legibility” formerly contained in ISO 9241-12 is not being dealt with specifically in this document since it is specific to visual information, but it is covered in general as part of “Discriminability” and “Interpretability”. “Clarity” and “Comprehensibility” also formerly contained in ISO 9241-12 are now being dealt with as part of “Freedom from distraction” and “Interpretability”.

This document focuses on software aspects of the presentation of information and does not include guidance on the hardware-controlled physical characteristics of information presented in different modalities (e.g. such as those identified ISO 9241-303).

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(https://standards.iteh.ai)
Document Preview
ISO 9241-112:2023
https://standards.iteh.ai/catalog/standards/sist/...-iso-9241-112-2023

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oSIST prEN ISO 9241-112:2023
https://standards.iteh.ai/catalog/standards/sist/251a3af1-5f84-46b6-9cd7-3d1ef2a4c002/osist-pren-iso-9241-112-2023

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Ergonomics of human-system interaction —

Part 112:
Principles for the presentation of information

1 Scope

This document establishes ergonomic design principles for interactive systems related to the software-controlled presentation of information by user interfaces. It applies to the three main modalities (visual, auditory, tactile/haptic) typically used in information and communication technology. These principles apply to the perception and understanding of presented information. These principles are applicable in the analysis, design, and evaluation of interactive systems. This document also provides recommendations corresponding to the principles. The recommendations for each of the principles are not exhaustive and are not necessarily independent from one another.

While this document is applicable to all types of interactive systems, it does not cover the specifics of particular application domains. This document also applies to outputs from interactive systems (such as printed documents, e.g. invoices).

The guidance in this document for presenting information is aimed at helping the user to accomplish tasks. This guidance is not aimed at the presentation of information for other reasons (e.g. corporate branding or advertising).

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It is intended for the following types of users:

— user interface designers, who will apply the guidance during the development process;

— software, system and service developers, who will apply the guidance during design and implementation of system functionality;

— evaluators, who are responsible for ensuring that products meet the recommendations;

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— designers of user interface development tools and style guides to be used by user interface designers;

— project managers, who are responsible for managing development processes;

— buyers, who will reference this document during product procurement.

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 terminological databases for use in standardization at the following addresses:

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

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

3.1
user
person who interacts with a system, product or service

Note 1 to entry: Users of a system, product or service include people who operate the system, people who make use of the output of the system and people who support the system (including providing maintenance and training).

[SOURCE: ISO 9241-11:2018]

3.2
user interface
set of all components of an interactive system that provide information and controls for the *user* (3.1) to accomplish specific tasks with the interactive system

[SOURCE: ISO 9241-110:2020, 3.10]

3.3
user-interface element
user-interface object
object
entity of the *user interface* (3.2) that is presented to the *user* (3.1) by the software

EXAMPLE Text, graphic, control.

Note 1 to entry: User-interface elements can be interactive or not.

Note 2 to entry: Both entities relevant to the task and entities of the user interface are regarded as user-interface elements. A user-interface element can be a visual representation or an interaction mechanism for a task object (such as a letter, sales order, electronic part, or wiring diagram) or a system object (such as a printer, hard disk, or network connection). It can be possible for the user to directly manipulate some of these user-interface elements.

Note 3 to entry: User-interface elements in a graphical user interface include such things as basic objects (such as window titles, menu items, push buttons, and text fields) or containers (such as windows, menus, groups of mutually-exclusive option buttons, and compound images that are made up of several smaller images). User-interface elements in an audio user interface include such things as menus, menu items, messages, and action prompts.

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[SOURCE: ISO 9241-171:2008, 3.38]

3.4
attribute
data item that modifies or describes some aspect of an action or an object

Note 1 to entry: An attribute whose value is subject to change can be treated as an object.

[SOURCE: ISO/IEC TR 11580:2007, 2.2, modified — change of the note]

3.5
action
user (3.1) behaviour that a system accepts as a request for a particular operation

EXAMPLE Pressing a key, clicking a mouse button, moving the pointer over an object, speaking a command.

[SOURCE: ISO/IEC TR 11580:2007, 2.3]

3.6
operation
predefined system behaviour that a *user* (3.1) initiates

EXAMPLE Sending mail, printing, modifying the data or properties of an object.

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