SLOVENSKI STANDARD
SIST EN ISO 9241-910:2011

01-december-2011

Ergonomija medsebojnega vpliva človek-sistem - 910. del: Okvirna specifikacija za otipno in haptično medsebojno vplivanje (ISO 9241-910:2011)

Ergonomics of human-system interaction - Part 910: Framework for tactile and haptic interaction (ISO 9241-910:2011)

Ergonomie der Mensch-System-Interaktion - Teil 910: Rahmen für die taktile und haptische Interaktion (ISO 9241-910:2011)

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Ergonomie de l'interaction homme-système - Partie 910: Cadre pour les interactions tactiles et haptiques (ISO 9241-910:2011)

Ta slovenski standard je istoveten z: EN ISO 9241-910:2011

ICS:

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

SIST EN ISO 9241-910:2011   **en,fr,de**

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 9241-910

July 2011

ICS 13.180; 35.180

English Version

Ergonomics of human-system interaction - Part 910: Framework for tactile and haptic interaction (ISO 9241-910:2011)

Ergonomie de l'interaction homme-système - Partie 910: Cadre pour les interactions tactiles et haptiques (ISO 9241-910:2011)

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This European Standard was approved by CEN on 8 July 2011.

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Foreword

This document (EN ISO 9241-910:2011) has been prepared by Technical Committee ISO/TC 159 "Ergonomics" in collaboration with Technical Committee CEN/TC 122 "Ergonomics" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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The text of ISO 9241-910:2011 has been approved by CEN as a EN ISO 9241-910:2011 without any modification.

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INTERNATIONAL STANDARD

ISO
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Ergonomics of human-system interaction —

Part 910:
Framework for tactile and haptic interaction

Ergonomie de l'interaction homme-système —

Partie 910: Cadre pour les interactions tactiles et haptiques

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 9241-910 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*.

ISO 9241 consists of the following parts, under the general title *Ergonomic requirements for office work with visual display terminals (VDTs)*:

— *Part 1: General introduction*

— *Part 2: Guidance on task requirements*

— *Part 4: Keyboard requirements*

— *Part 5: Workstation layout and postural requirements*

— *Part 6: Guidance on the work environment*

— *Part 9: Requirements for non-keyboard input devices*

— *Part 11: Guidance on usability*

— *Part 12: Presentation of information*

— *Part 13: User guidance*

— *Part 14: Menu dialogues*

— *Part 15: Command dialogues*

— *Part 16: Direct manipulation dialogues*

— *Part 17: Form filling dialogues*

ISO 9241 also consists of the following parts, under the general title *Ergonomics of human-system interaction:*

— *Part 20: Accessibility guidelines for information/communication technology (ICT) equipment and services*

— *Part 100: Introduction to standards related to software ergonomics* [Technical Report]

— *Part 110: Dialogue principles*

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— *Part 129: Guidance on software individualization*

— *Part 143: Forms*

— *Part 151: Guidance on World Wide Web user interfaces*

— *Part 171: Guidance on software accessibility*

— *Part 210: Human-centred design for interactive systems*

— *Part 300: Introduction to electronic visual display requirements*

— *Part 302: Terminology for electronic visual displays*

— *Part 303: Requirements for electronic visual displays*

— *Part 304: User performance test methods for electronic visual displays*

— *Part 305: Optical laboratory test methods for electronic visual displays*

— *Part 306: Field assessment methods for electronic visual displays*

— *Part 307: Analysis and compliance test methods for electronic visual displays*

— *Part 308: Surface-conduction electron-emitter displays (SED)* [Technical Report]

— *Part 309: Organic light-emitting diode (OLED) displays* [Technical Report]

— *Part 310: Visibility, aesthetics and ergonomics of pixel defects* [Technical Report]

— *Part 400: Principles and requirements for physical input devices*

— *Part 410: Design criteria for physical input devices*

— *Part 411: Evaluation methods for the design of physical input devices* [Technical Specifiction]

— *Part 420: Selection of physical input devices*

— *Part 910: Framework for tactile and haptic interaction*

— *Part 920: Guidance on tactile and haptic interactions*

The following parts are under preparation:

— *Part 154: Interactive voice response (IVR) applications*

Human-centred design and evaluation methods, optical characteristics of autostereoscopic displays, and requirements, analysis and compliance test methods for the reduction of photosensitive seizures are to form the subjects of future parts 230, 331 and 391.

Introduction

Tactile and haptic interactions are becoming increasingly important as candidate interaction modalities in computer systems such as special-purpose computing environments (e.g. simulation) and assistive technologies.

While considerable research exists, it involves a wide diversity of terms, meanings of terms, viewpoints, software and hardware objects, attributes and interactions. This diversity can lead to serious ergonomic difficulties for both developers and users of tactile/haptic interactions.

This part of ISO 9241 provides a common set of terms, definitions and descriptions for the various concepts central to the design and use of tactile/haptic interactions. It includes basic guidance (including references to related standards) in the design of tactile/haptic interactions. It also provides an overview of the range of tactile/haptic applications, objects, attributes and interactions.

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Ergonomics of human-system interaction —

Part 910:
Framework for tactile and haptic interaction

1 Scope

This part of ISO 9241 provides a framework for understanding and communicating various aspects of tactile/haptic interaction. It defines terms, describes structures and models, and gives explanations related to the other parts of the ISO 9241 "900" subseries. It also provides guidance on how various forms of interaction can be applied to a variety of user tasks.

It is applicable to all types of interactive systems making use of tactile/haptic devices and interactions.

It does not address purely kinaesthetic interactions, such as gestures, although it might be useful for understanding such interactions.

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2 Terms and definitions (standards.iteh.ai)

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

2.1
haptics, noun
sensory and/or motor activity based in the skin, muscles, joints and tendons

NOTE   Haptics consists of two parts: touch and kinaesthesis.

2.2
haptic, adj
appertaining to haptics

NOTE   While there is no difference between *haptic* and *tactile* in most dictionary definitions, in the area of haptics, researchers and developers use *haptic* to include all haptic sensations, while *tactile* is limited to mechanical stimulation of the skin. In ISO 9241, the word *haptic* covers all touch sensations and *tactile* is used in a more specific manner. Also, both terms can be used together to assist in searches.

2.3
touch
sense based on receptors in the skin

NOTE   Cutaneous receptors are used for the perception of touch.

2.4
cutaneous
belonging to the skin

NOTE   Cutaneous receptors respond to mechanical stimulation and temperature changes.

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