

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 9241-910:2011 sisaldab Euroopa standardi EN ISO 9241-910:2011 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 29.07.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.07.2011.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 9241-910:2011 consists of the English text of the European standard EN ISO 9241-910:2011.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 29.07.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 15.07.2011.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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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)

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

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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of an identical text or by endorsement, at the latest by January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

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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.

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.

2 Terms and definitions

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 kinaesthesia.

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.