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**Ergonomics of human-system interaction - Evaluation
directives for the design of input system**

人-系统交互工效学输入系统设计评估导则

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

Introduction

Input devices are tools that users can use to input data into an interactive system.

A tool that detects changes in user behavior (such as gestures, finger movements, etc.) and converts such changes into signal sensors that can be recognized by the interactive system.

As the main interactive medium between people and systems, the ergonomic design requirements, evaluation methods and selection principles of input devices directly affect the user's usability.

The level of usability is regulated by the ISO 9241 400 series standard internationally, but my country currently lacks relevant ergonomics standards.

standard.

At the same time, new input methods such as touch and tactile interaction and gesture interaction are becoming more and more popular as auxiliary technologies in special-purpose computing environments.

The more important it is, the more it can be used as an auxiliary technology for tablet computers, wearable devices (such as tactile arrays, instrument gloves), etc.

Failure to consider ergonomics may lead to device incompatibility and conflicts, low application usability and other issues.

Based on the above demand status, this document is based on the international standard ISO 9241 series standards on input systems, tactile and tactile interaction and the seven interactive ergonomics standards related to gestures specify ergonomic technical contents such as input devices, tactile interaction, and gesture interaction.

The main contents of each chapter in this document are as follows.

---Chapter 4 mainly specifies the design criteria for physical input devices.

--- Chapter 5 mainly specifies the laboratory analysis and comparison methods of input devices in interactive systems. It does not include the requirements of input devices.

keyboard, mouse, mouse pointer, joystick, trackball, touchpad, handwriting tablet/overlay, touch screen and optical Methods for assessing whether input devices such as pens comply with the requirements of Chapter 4.

--- Chapter 6 is based on the input device related characteristics specified in GB/T 18978.400-2012 and the product design mentioned in Chapter 4 the guidelines provide guidance for selecting input devices. They also include workplaces and user organizations where input devices are used.

Test and evaluation methods, which can also be applied by relevant testing organizations.

---Chapter 7 provides common terms, definitions, and descriptions of the various core concepts involved in the design and use of tactile interactions.

It should include basic guidelines for tactile interaction design (including relevant standards and references), as well as tactile applications, objects, properties, and interactions.

Overview of the scope of interaction.

--- Chapter 8 presents ergonomic recommendations for interacting with haptic hardware and software, including issues related to hardware and software design and evaluation.

The guidelines are technology independent and can be adapted to new technologies in the future.

---Chapter 9 presents an evaluation process for tactile interaction devices and systems containing tactile interaction devices, explaining the evaluation procedures in Chapters 7, 8,