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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18978.20-2024

**Ergonomics of human-system interaction - Part 20: An
ergonomic approach to accessible design**

人-系统交互工效学 第20部分：无障碍设计的工效学方法

(English Translation)

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Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
4 Ergonomic principles for barrier-free design
5 Accessibility-focused design activities
Appendix A (Informative) International Standards on Accessibility Guidelines
Reference

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.

This document is part 20 of GB/T 18978. GB/T 18978 has published the following parts.

- Ergonomic requirements for office work using visual display terminals (VDTs) Part 1: Overview;
- Ergonomic requirements for office work using visual display terminals (VDTs) Part 2: Guidance on task requirements;
- Ergonomic requirements for office work using visual display terminals (VDTs) Part 10: Dialogue principles;
- Ergonomic requirements for office work using visual display terminals (VDTs) Part 12: Information presentation;
- Ergonomic requirements for office use with visual display terminals (VDTs) Part 13: User guide;
- Ergonomic requirements for office work using visual display terminals (VDTs) Part 16: Direct operation dialogue;
- Ergonomics of human-system interaction Part 11: Usability. Definitions and concepts;
- Ergonomics of human-system interaction Part 20: Ergonomic methods for barrier-free design;

- Ergonomics of human-system interaction Part 143: Forms;
- Ergonomics of human-system interaction Part 151: Guidelines for Internet user interfaces;
- Ergonomics of human-system interaction Part 171: Guidelines for software accessibility design;
- Ergonomics of human-system interaction Part 210: Design of human-centered interactive systems;
- Ergonomics of human-system interaction Part 300: Overview of requirements for electronic visual displays;
- Ergonomics of human-system interaction Part 304: User performance test methods for electronic visual displays;
- Ergonomics of human-system interaction Part 307: Analysis and compliance test methods for electronic visual displays;
- Ergonomics of human-system interaction Part 400: Principles and requirements for physical input devices.

This document is modified to adopt ISO 9241-20:2021 "Ergonomics of human-system interaction Part 20: Accessibility in the ISO 9241 series" Ergonomic Methods in Design.

This document has the following structural adjustments compared to ISO 9241-20:2021.

- Delete Chapter 4 "Accessibility and Ergonomics in Human-System Interaction";
- Paragraphs 1 and 2 of Chapter 4 are adjusted to 5.1;
- Chapter 5 and 5.1, 5.2, 5.3, 5.4, 5.5 are changed to Chapter 4 and 4.1, 4.2, 4.3, 4.4, 4.5, and the three-level catalog is adjusted accordingly;
- Delete the second paragraph in 5.2.1.

The following editorial changes were made to this document.

- In order to coordinate with the existing standards, the name of the standard is changed to "Ergonomics of human-system interaction Part 20: Ergonomics of barrier-free design" method";
- Delete the ISO standard number in the titles of 5.2, 5.3, 5.4 and 5.5, and put the ISO standard number in the "Note" of each article;
- Delete the standard numbers in the text of 5.2, 5.3, 5.4 and 5.5, and adjust the corresponding expressions.

Introduction

GB/T 18978 series of national standards on ergonomics corresponds to ISO 9241 series of international standards, and originally consisted of 17 parts.

This series of standards provides the ergonomic requirements for office work using visual display terminals.

The general title of ISO 9241 is "Human-system interaction".

The "Interaction Ergonomics" reflects the adjusted changes, and ISO 9241 and ISO/TC159/SC4 Technical Committee maintain the same general title and scope.

After the adjustment, the series of standards composed of multiple parts are numbered with "hundred", among which the 100 series is the software interface, and the 200 series is the human interface.

The 300 series involves visual displays, the 400 series involves physical input devices, etc.

The ISO 9241 series of standards still use the old numbering. For national standards that are equivalent to ISO 9241-11:2018, the numbering is still the same.

GB/T 18978.11.

Corresponding to the ISO 9241 series of standards, the GB/T 18978 "hundred" series of standards is planned to consist of the following series.

---100 Series. Software Ergonomics. The purpose is to identify processes and methods related to software ergonomics.

---200 Series. Human-centered Design. The goal is to provide human-centered design principles throughout the life cycle of interactive systems.

and activities provide requirements and suggestions.

---300 Series. Displays and display-related hardware. The purpose is to provide methods for the ergonomic design and evaluation of visual displays.

laws, compliance measures and guidelines.

---400 Series. Physical Input Devices. The purpose is to provide ergonomic design criteria, selection procedures, testing and Evaluation method.

---500 Series. Workspace. The purpose is to provide ergonomic principles and methods for the design of interactive system space environment.

---600 Series. Environmental Ergonomics. The purpose is to provide environmental ergonomics requirements and the impact of the environment on people.

---700 Series. Control Rooms. The purpose is to provide requirements, recommendations

and guidance for the ergonomic design and evaluation of control rooms.

---900 Series. Haptics and Tactile Interaction. The purpose is to provide guidance for the design and evaluation of haptic and tactile ergonomic interactions.

This series of standards provides ergonomic guidance to help interactive systems be accessible and meet user needs.

There are two parts dedicated to accessibility, namely ISO 9241-171 and ISO 9241-971. In addition, many other parts in the series of standards also deal with accessibility guidelines.

The accessibility of products, systems and services is important to ensure that they can be used by the widest possible range of users. Solutions that support accessible design emerge from the understanding and implementation of user needs, including those specific to accessibility.

This document presents the ergonomic principles and human-centered design approach for barrier-free design.

Ergonomics of Human-System Interaction Part 20: Ergonomic approach to barrier-free design

1 Scope

This document provides ergonomic principles for barrier-free design of human-system interaction and describes the issues related to barrier-free design during project development.

Activities, giving references to standards related to the accessibility of interactive systems.

This document applies to the accessible design of human-interaction systems, including for users with disabilities.

2 Normative references

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

Accessibility

The user group with the broadest range of needs, characteristics and capabilities uses products, systems, services, environments and facilities in specific usage contexts the degree to which a specific goal is achieved.