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Ergonomics of human-system interaction - Part 312: Readability of electrophoretic displays (ISO/TR 9241-312:2020)

Ergonomie de l'interaction homme-système - Partie 312: Lisibilité des écrans électrophorétiques (ISO/TR 9241-312:2020)

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Ergonomie de l'interaction homme-système - Partie 312: Lisibilité des écrans électrophorétiques (ISO/TR 9241-312:2020)

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Contents

Page

European foreword

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The text of ISO/TR 9241-312:2020 has been approved by CEN as CEN ISO/TR 9241-312:2022 without any modification.

TECHNICAL REPORT

ISO/TR 9241-312

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Ergonomics of human-system interaction —

Part 312: Readability of electrophoretic displays

Ergonomie de l'interaction homme-système —

Partie 312: Lisibilité des écrans électrophorétiques

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Contents

Page

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.

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

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A list of all parts in the ISO 9241-300 series can be found on the ISO website.

Introduction

Electrophoretic technology has led to the development of reflective e-paper displays (EPD) that have fundamentally different optical characteristics compared to emissive display devices, such as backlit liquid crystal displays (LCD) or organic light emitting diode displays (OLED). EPD are used in reading devices, also known as e-readers. See Annex A for more information on the standardization of electronic displays.

The ISO 9241-300 series provides requirements from the viewpoint of human beings' visual properties and are organized by subjects.

Electrophoretic EPD were selected for the experiments reported in this document because of their widespread use as electronic reading devices.

Ergonomics of human-system interaction —

Part 312: Readability of electrophoretic displays

1 Scope

This document provides an overview of recent research on readability of electrophoretic displays. It also provides information for evaluating readability of electrophoretic displays and defining the context of their use.

2 Normative references

There are no normative references in this document.

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:

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

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

3.1
visual analogue scale
psychometric response measurement scale

3.2
legibility
ability for unambiguous identification of single characters or symbols that may be presented in a non-contextual format

[SOURCE: ISO 9241-302: 2008, 3.3.35]

3.3
readability
characteristics of a text presentation on a display that affect performance when groups of characters are to be easily discriminated, recognized and interpreted

[SOURCE: ISO 9241-302: 2008, 3.3.38]

3.4
electronic paper display
EPD
electronic display that shows information by diffuse reflection and holds the image with low power consumption

3.5
electrophoretic display
electronic paper display (3.4) which forms an image by rearranging charged pigment particles using an applied electric field