ICS 13.180 SLOVENSKÁ TECHNICKÁ NORMA Júl 2022

STN	**Ergonómia Interakcia človek-systém Časť 394: Ergonomické požiadavky na zníženie nežiaducich biomedicínskych účinkov vizuálne vyvolanej pohybovej choroby počas sledovania elektronických obrázkov (ISO 9241-394: 2020)**	**STN EN ISO 9241-394** 83 3580

Ergonomics of human-system interaction - Part 394: Ergonomic requirements for reducing undesirable biomedical effects of visually induced motion sickness during watching electronic images (ISO 9241-394:2020)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/22

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EUROPEAN STANDARD

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English Version

Ergonomics of human-system interaction - Part 394: Ergonomic requirements for reducing undesirable biomedical effects of visually induced motion sickness during watching electronic images (ISO 9241-394:2020)

Ergonomie de l'interaction homme-système - Partie 394: Exigences ergonomiques pour la réduction des effets biomédicaux indésirables des cinétoses induites par stimulus visuel lors de l'observation d'images électroniques (ISO 9241-394:2020)

Ergonomie der Mensch-System-Interaktion - Teil 394: Ergonomische Anforderungen zur Reduzierung unerwünschter biomedizinischer Effekte der visuell induzierten Bewegungskrankheit bei der Betrachtung elektronischer Bilder (ISO 9241-394:2020)

This European Standard was approved by CEN on 13 March 2022.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of ISO 9241-394:2020 has been prepared by Technical Committee ISO/TC 159 "Ergonomics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 9241-394:2022 by 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of an identical text or by endorsement, at the latest by September 2022, and conflicting national standards shall be withdrawn at the latest by September 2022.

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

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Endorsement notice

The text of ISO 9241-394:2020 has been approved by CEN as EN ISO 9241-394:2022 without any modification.

INTERNATIONAL STANDARD

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Ergonomics of human-system interaction —

Part 394: Ergonomic requirements for reducing undesirable biomedical effects of visually induced motion sickness during watching electronic images

Ergonomie de l'interaction homme-système —

Partie 394: Exigences ergonomiques pour la réduction des effets biomédicaux indésirables des cinétoses induites par stimulus visuel lors de l'observation d'images électroniques

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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

Introduction

With the advancement in image technologies, it is now possible to experience various new types of images through different kinds of electronic displays, for example, ultra-high definition (UHD) images and virtual reality images. These technologies make our daily lives more convenient and enable different lifestyles.

The new products of advanced image technologies can be popularized both by solving technical issues and by devising countermeasures for reducing incidences of undesirable biomedical effects, such as visually induced motion sickness.

This document describes the basic and minimal conditions for reducing incidences of visually induced motion sickness. It is intended to promote an environment in which viewers can enjoy the benefits of images without the adverse effects of visually induced motion sickness. In such an environment, new technologies for images can also be actively developed and applied in various fields. This document is not intended to restrict the freedom of expression or artistic creativity in the image culture.

This document is based on scientific findings related to the possible undesirable effects of visually induced motion sickness. In the future, this document could be revised as new scientific data become available.

This document is part of the ISO 9241 series, which specifies human–system interaction standards. Readers who need guidance on other aspects of human–system interaction can therefore refer to other documents in the ISO 9241 series. See Annex A for an overview of the ISO 9241 series.

INTERNATIONAL STANDARD **ISO 9241-394:2020(E)**

Ergonomics of human-system interaction —

Part 394: Ergonomic requirements for reducing undesirable biomedical effects of visually induced motion sickness during watching electronic images

1 Scope

This document establishes the requirements and recommendations for image contents and electronic display systems to reduce visually induced motion sickness (VIMS), while viewing images on electronic displays.

This document is applicable to electronic display systems, including flat panel displays, projectors with a screen, and virtual reality (VR) type of head mounted displays (HMDs), but not including HMDs that present electronic images on/with real-world scenes.

NOTE 1 This document assumes the images are viewed under appropriate defined conditions. See Annex B for the appropriate viewing conditions.

NOTE 2 This document is useful for the design, development, and supply of image contents, as well as electronic displays for reducing VIMS.

NOTE 3 ISO 9241-392[3] provides guidelines for stereoscopic 3D displays, of which the methods are also used in HMDs.

NOTE 4 The International Telecommunication Union (ITU) generally sets the standards for broadcasting.

2 Normative references

There are no normative references in this document.

