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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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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*.

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

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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.