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Second edition
2008-08-15

Spatial orientation and direction of movement — Ergonomic requirements

Orientation spatiale et sens du mouvement — Exigences ergonomiques



Reference number
ISO 1503:2008(E)

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Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 1503 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*.

This second edition cancels and replaces the first edition (ISO 1503:1977), which has been technically revised.

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Introduction

It is essential for the safety and usability of any system or product that the relationship between the direction of its controls intended by a user/operator and the resulting direction of movement of the target object be standardized.

For example, if the operation of fire-fighting equipment is not standardized, then swift and appropriate operation in the event of a fire is difficult. If a one-hand lever is to be moved forward in Model A and backward in Model B for speed-up of a railway electric car, frequent human error and, eventually, accidents are likely to be caused. If a computer does not respond in accordance with what is shown on its screen, then its usability and the efficiency of its user/operator will suffer. In construction work, effectiveness, efficiency and user/operator satisfaction will be diminished if the user/operator's intention to make a dynamic change of the target object is not well followed in the control of earth-moving machinery.

One of the purposes of this International Standard is to contribute to the enhancement of safety by preventing human error during use as well as maintenance of a system and/or product. Another is to improve effectiveness, efficiency and user/operator satisfaction by making the change of state and/or the movements of a target object consistent with the user/operator's intention.

The first edition of ISO 1503 was constructed mainly in the framework of geometry regarding the definition of three dimensional axes, geometrical orientation and the direction of control and display movements. This revised edition incorporates the ergonomic issues that affect direction design with the aim of making the standard more directly applicable in real-world situations. It deals with ergonomics design principles and requirements for direction for products and work systems in a combined way — both for conventional technical systems and newly developed information technology-related systems.