INTERNATIONAL STANDARD

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Ergonomic design of control centres —

Part 4: Layout and dimensions of workstations

Conception ergonomique des centres de commande —
Partie 4: Agencement et dimensionnement du poste de travail

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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. www.iso.org/directives

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*.

This second edition cancels and replaces the first edition (ISO 11064-4:2004), which has been technically revised.

ISO 11064 consists of the following parts, under the general title *Ergonomic design of control centres*:

— *Part 1: Principles for the design of control centres*

— *Part 2: Principles for the arrangement of control suites*

— *Part 3: Control room layout*

— *Part 4: Layout and dimensions of workstations*

— *Part 5: Displays and controls*

— *Part 6: Environmental requirements for control centres*

— *Part 7: Principles for the evaluation of control centres*

Introduction

This part of ISO 11064 establishes ergonomic requirements, recommendations and guidelines for the design of workplaces in control centres.

All types of control centres are covered, including those for the process industry, transport and dispatching systems and emergency services. Although this part of ISO 11064 is primarily intended for non-mobile control centres, many of the principles are relevant to mobile centres such as those found on ships, locomotives and aircraft.

User requirements are a central theme of this part of ISO 11064 and the processes described are designed to take into account the needs of users at all design stages. The overall strategy for dealing with user requirements is presented in ISO 11064-1. ISO 11064-2 provides guidance on the design and planning of the control room in relation to its supporting areas. Requirements for the layout of the control room are covered by ISO 11064-3. Displays and controls, human computer interaction and the physical working environment are presented in ISO 11064-5 and ISO 11064-6. Evaluation principles are dealt with in ISO 11064-7.

The users of this standard are assumed to have some understanding of anthropometry, its use and limitations, and its application in the context of control rooms. Where this understanding is in doubt, it is recommended that the advice of an expert be sought.

The ultimate beneficiaries of this part of ISO 11064 will be the operator within the control room and other such users. It is the needs of these users that provide the ergonomic requirements that are addressed by the International Standards developers. Although it is unlikely that the end user will read this International Standard, or even know of its existence, its application should provide the user with interfaces that are more usable and a working environment which is more consistent with operational demands, and result in a solution which will improve system performance, minimize error and enhance productivity.

Ergonomic design of control centres —

Part 4:
Layout and dimensions of workstations

1 Scope

This part of ISO 11064 specifies ergonomic principles, recommendations and requirements for the design of workstations found in control centres. It covers control workstation design with particular emphasis on layout and dimensions. It is applicable primarily to seated, visual-display-based workstations, although control workstations at which operators stand are also addressed. These different types of control workstation are to be found in applications such as transportation control, process control and security installations. Most of these workstations now incorporate flat-display screens for the presentation of information.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7250-1:2008, *Basic human body measurements for technological design — Part 1: Body measurement definitions and landmarks*

ISO 9241-410:2008, *Ergonomics of human-system interaction — Part 410: Design criteria for physical input devices*

ISO 9241-5:1998, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 5: Workstation layout and postural requirements*

ISO 11064-3:1999, *Ergonomic design of control centres — Part 3: Control room layout*

ISO 11428:1996, *Ergonomics — Visual danger signals — General requirements, design and testing*

3 Terms and definitions

For the purposes of this part of ISO 11064, the following terms and definitions apply.

3.1
control workstation
single or multiple working position, including all equipment such as computers and communication terminals and furniture at which control and monitoring functions are conducted

[SOURCE: ISO 11064-3:1999, 3.7.]

3.2
cone of fixations
angular extent to which the line of sight can be swept by rotating the eyeball in the skull while the head rests