SLOVENSKI STANDARD
SIST EN ISO 11064-3:2001

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Ergonomsko naļ rtovanje krmilnih centrov - 3. del: Ureditev krmilnega prostora (ISO 11064-3:1999)

Ergonomic design of control centres - Part 3: Control room layout (ISO 11064-3:1999)

Ergonomische Gestaltung von Leitzentralen - Teil 3: Auslegung von Wartenräumen (ISO 11064-3:1999)

Conception ergonomique des centres de commande - Partie 3: Agencement de la salle de commande (ISO 11064-3:1999)

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ICS:

13.180	Ergonomija	Ergonomics
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Ergonomic design of control centres - Part 3: Control room layout (ISO 11064-3:1999)

Conception ergonomique des centres de commande - Partie 3: Agencement de la salle de commande (ISO 11064-3:1999)

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This European Standard was approved by CEN on 12 December 1999.

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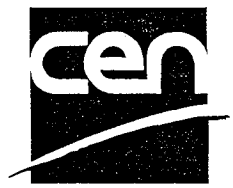

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of the International Standard ISO 11064-3:1999 has been prepared by Technical Committee ISO/TC 159 "Ergonomics" in collaboration with 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of an identical text or by endorsement, at the latest by June 2000, and conflicting national standards shall be withdrawn at the latest by June 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

NOTE FROM CEN/CS: The foreword is susceptible to be amended on reception of the German language version. The confirmed or amended foreword, and when appropriate, the normative annex ZA for the references to international publications with their relevant European publications will be circulated with the German version.

Endorsement notice

The text of the International Standard ISO 11064-3:1999 was approved by CEN as a European Standard without any modification.

INTERNATIONAL STANDARD

ISO 11064-3

First edition
1999-12-15

Ergonomic design of control centres —

Part 3: Control room layout

Conception ergonomique des centres de commande —

Partie 3: Agencement de la salle de commande

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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 Standard are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 11064-3 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*.

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

— *Part 1: Principle for the design of control centres.*

— *Part 2: Principles of control suite arrangement*

— *Part 3: Control room layout*

— *Part 4: Workstation layout and dimensions*

— *Part 5: Displays and controls*

— *Part 6: Environmental requirements for control centres*

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

— *Part 8: Ergonomic requirements for specific applications*

Annexes A and B of this part of ISO 11064 are for information only.

Introduction

This part of ISO 11064 establishes ergonomic requirements, recommendations and guidelines for control room layout.

User requirements are a central theme of this part of ISO 11064 and the processes described are designed to take account of needs of users at all stages. The overall strategy for dealing with the user requirements as strategy to be adopted for control room design 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 design of workstations, displays and controls and the physical working environment are presented in ISO 11064-4 to ISO 11064-6. Evaluation principles are dealt with in ISO 11064-7.

ISO 11064-1 to ISO 11064-7 cover general principles of ergonomic design appropriate to a range of industries and service providers. The specific requirements appropriate to particular sectors or applications areas are covered in ISO 11064-8. The requirements presented in ISO 11064-8 are to be read in conjunction with ISO 11064-1 to ISO 11064-7.

The ultimate beneficiaries of this part of ISO 11064 will be the control room operator and other users. It is the needs of these users that provide the ergonomic requirements used by the developers of International Standards. Although it is unlikely that the end user will read this part of ISO 11064, 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. It should result in a solution which will minimize error and enhance productivity.

For determining design dimensions, the practice of providing formulae, into which appropriate user population data is inserted, is adopted. A table of anthropometric data is presented in annex B.

Ergonomic design of control centres —

Part 3:
Control room layout

1 Scope

This part of ISO 11064 establishes ergonomic principles for the layout of control rooms. It includes requirements, recommendations and guidelines on control room layouts, workstation arrangements, the use of off-workstation visual displays and control room maintenance.

It covers all types of control centres, including those for the process industry, transport and dispatching systems in the emergency services. Although this part of ISO 11064 is primarily intended for non-mobile control centres, many of the principles could be relevant/applicable to mobile centres, such as those found on ships and aircraft.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO ISO 11064. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 11064 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 7250:1996, *Basic human body measurements for technological design.*

ISO 9241-3:1992, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 3: Visual display requirements.*

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

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 amd definitions apply.

NOTE To assist with the interpretation of these definitions, descriptive Figures 1 and 2 are included in this clause.

3.1
control centre
combination of control rooms, control suites and local control stations which are functionally related and all on the same site (see Figure 1)

3.2
control console
structural framework which supports equipment, worksurfaces and storage and which together comprise a control workstation

3.3
control panel
discrete surface on which groups of displays and controls are mounted; control panels may be mounted on the control workstation or on walls (see Figure 2)

3.4
control room
core functional entity, and its associated physical structure, where control room operators are stationed to carry out centralized control, monitoring and administrative responsibilities

3.5
control room operator
individual whose primary duties relate to the conduct of monitoring and control functions, usually at a control workstation, either on their own or in conjunction with other personnel both within the control room or outside

3.6
control suite
group of functionally related rooms, co-located with the control room, and including it, which house the supporting functions to the control room, such as related offices, equipment rooms, rest areas and training rooms (see Figure 1)

3.7
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 (see Figure 2)

3.8
direct operator supervision
supervision of control room operators, and other staff, by direct observation and/or via direct speech links

3.9
display
device for presenting information that can change with the aim of making things visible, audible or discriminable by tactile or proprioceptive perception

3.10
functional groups
grouping of control workstations where the operational duties are such that close, direct liaison is required and therefore benefit from proximity to one another

3.11
functional layout
layout in which the general location of differing control functions in a control room are indicated

3.12
gross area
overall number of square metres designated for a control room

3.13
disability
any reduction in normal capacity due to mental or physical factors which prevents an individual from experiencing or performing a full complement of activities [8]

3.14
intimate zone
distance at which the presence of another person is unmistakable through such factors as sight, olfaction, heat and sound

3.15
local control station
operator interface that is located near the equipment or system being monitored and/or controlled

3.16
off-workstation display
displays which are not mounted on the control workstation; such displays, often visual, may be display panels, mimic diagrams and observation windows (see Figure 2)

3.17
primary information
information which is essential for the satisfactory exercise of control functions

3.18
primary workstation
control workstation that is usually staffed and is in the main control area

3.19
secondary information
information which is either of secondary importance to the control function or which does not need to be immediately available to the control room operator

3.20
secondary workstation
workstation on which supportive tasks are undertaken, or on which an overload of tasks can be carried out during periods of peak workloads

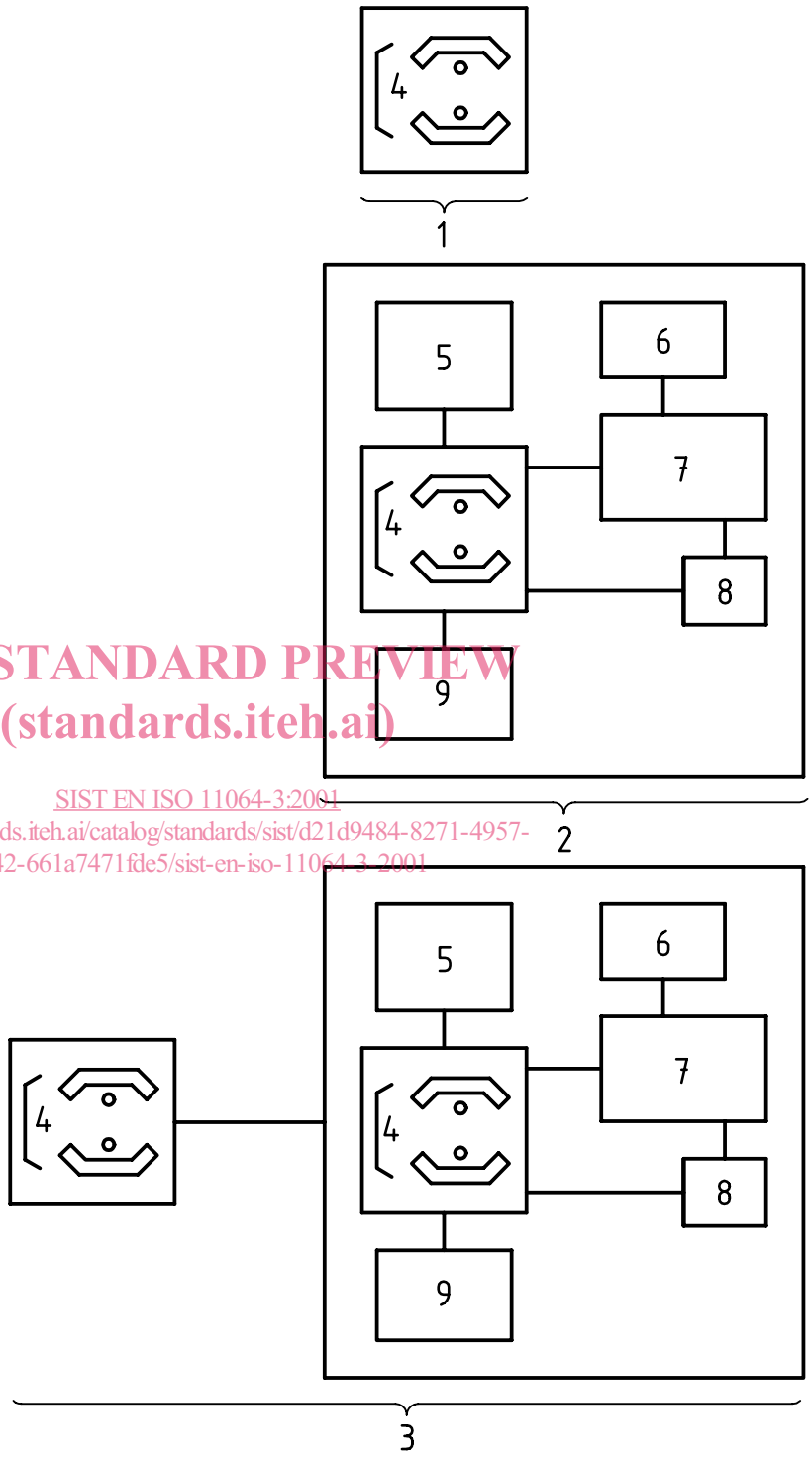
3.21
shared visual display device
on-workstation visual display which needs to be used by more than one control room operator while they are at their control workstations

3.22
stature (body height)
vertical distance from the floor to the highest point of the head (vertex)
[ISO 7250:1996]

3.23
supervisor
individual whose primary responsibilities relate to the satisfactory conduct of control functions by the control room, the supervision of staff and equipment and, when necessary, the conduct of control tasks

3.24
task analysis
analytical process employed to determine the specific behaviours required of people when operating equipment or doing work
[ISO 9241-5:1998]

3.25
usable area
gross area less deduction for unusable spaces, such as around pillars, awkward corners and nearby entrances/exits



Key

1 Control room
2 Control suite
3 Control centre
4 Control room
5 Equipment
6 Kitchen
7 Eating and rest areas
8 Toilets
9 Store

Figure 1 — Schematic illustrations of control room, control suite and control centre