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*BS ISO 9241-14:1997  
(renumbers the BS ISO as  
BS EN ISO 9241-14:2000)*

# Ergonomic requirements for office work with visual display terminals (VDTs) —

## Part 14: Menu dialogues

The European Standard EN ISO 9241-14:1999 has the status of a British Standard.

ICS 13.180; 35.180

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This British Standard is the English language version of EN ISO 9241-14:1999. It is identical with ISO 9241-14:1997.

The UK participation in its preparation was entrusted by Technical Committee PH/9, Applied ergonomics, to Subcommittee PH/9/6, User system interface, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Wherever BS ISO 9241-14:1997 appears in this standard it should be read as BS EN ISO 9241-14:2000.

#### Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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#### Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, the EN foreword page, pages i to iv, the ISO title page, pages 1 to 46, an inside back cover and a back cover.

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This British Standard, having been prepared under the direction of the Health and Environment Sector Board, was published under the authority of the Standards Board and comes into effect on 15 September 1997

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ISBN 0 580 28481 6

#### Amendments issued since publication

Amd. No.	Date	Comments
10974	November 2000	Implementation of the European Standard

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ICS 13.180; 35.180

English version

# Ergonomic requirements for office work with visual display terminals (VDTs) — Part 14: Menu dialogues

(ISO 9241-14:1997)

Exigences ergonomiques pour travail de bureau avec terminaux à écrans de visualisation (TEV) —  
Partie 14: Dialogues de type menu  
(ISO 9241-14:1997)

Ergonomische Anforderungen für Bürotätigkeiten mit Bildschirmgeräten —  
Teil 14: Dialogführung mittels Menüs  
(ISO 9241-14:1997)

This European Standard was approved by CEN on 1 April 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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

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## Foreword

The text of the International Standard from Technical Committee ISO/TC 159, Ergonomics, of the International Organization for Standardization (ISO) has been taken over as a European Standard by CEN/CM.

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 October 1999, and conflicting national standards shall be withdrawn at the latest by October 1999.

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 Normative references to International Standards are listed in Annex ZA (normative).

**STANDARD**

**9241-14**

First edition  
1997-06-01

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**Ergonomic requirements for office work  
with visual display terminals (VDTs) —**

**Part 14:  
Menu dialogues**

*Exigences ergonomiques pour travail de bureau avec terminaux à écrans  
de visualisation (TEV) —*

*Partie 14: Dialogues de type menu*



Reference number  
ISO 9241-14:1997(E)

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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.

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

International Standard ISO 9241-14 was prepared by the Technical Committee ISO/TC159, *Ergonomics*, Subcommittee SC4, *Ergonomics of human-system interaction*.

ISO 9241 consists of the following parts, under the general title *Ergonomic requirements for office work with visual display terminals (VDTs)* —

- *Part 1: General;*
- *Part 2: Guidance on task requirements;*
- *Part 3: Visual display requirements;*
- *Part 4: Keyboard requirements;*
- *Part 5: Workstation layout and postural requirements;*
- *Part 6: Environmental requirements;*
- *Part 7: Requirements for display with reflection;*
- *Part 8: Requirements for displayed colours;*
- *Part 9: Requirements for nonkeyboard input devices;*
- *Part 10: Dialogue principles;*
- *Part 11: Guidance on usability;*
- *Part 12: Presentation of information;*
- *Part 13: User guidance;*
- *Part 14: Menu dialogues;*
- *Part 15: Command dialogues;*
- *Part 16: Direct manipulation dialogues;*
- *Part 17: Form-filling dialogues.*

Annex A to Annex C of this part of ISO 9241 are for information only.

## Introduction

International Standard ISO 9241 deals with several aspects of the use of VDTs. Currently, the individual parts can be grouped in the following categories:

ISO 9241-1, *Introduction*.

ISO 9241-2, *Guidance on task requirements*.

ISO 9241-5 and ISO 9241-6, *Workstation and environment*.

ISO 9241-3, ISO 9241-4, ISO 9241-7, ISO 9241-8 and ISO 9241-9, *Ergonomics pertaining to hardware*.

ISO 9241-10 through ISO 9241-17, *Ergonomics pertaining to software interfaces*.

ISO 9241-14 is concerned with the ergonomic design of menu dialogues. In menu dialogues, the dialogue system presents one or more groups of options to the user, the user chooses one or more options, and the computer executes the desired process denoted by the option(s).

ISO 9241-14 serves the following types of user:

- the user interface designer, who will apply ISO 9241-14 during the development process;
- the buyer, who will reference ISO 9241-14 during the product procurement process;
- evaluators responsible for ensuring products meet the recommendations in ISO 9241-14,
- designers of user interface development tools to be used by interface designers;
- end users who will gain from the potential benefits provided by the standard.

ISO 9241-14 consists of a number of recommendations, some of which are conditional, concerning menus. Conditional recommendations are recommendations that should be met only within the specific context for which they are relevant (e.g., particular kinds of users, tasks, environments, technology). These recommendations were developed primarily by reviewing the existing relevant literature and empirical evidence, then generalizing and formulating this work into recommendations. The source of the evidence for the individual recommendations can be found in Annex C.

Differences in the relative importance of the task, user, environment, and technology in the design process are inevitable and have led to the “if — then” structure of many of the conditional recommendations. For example, “If rapid search time is important, then place as many options and levels as possible on a single menu panel.” This method provides practical, usable and unambiguous guidance during user interface design.

Designers and evaluators using ISO 9241-14 need to know that they are developing an interface that will meet the recommendations provided in this part. Likewise, the buyer needs a means to determine how a product matches the recommendations in ISO 9241-14. The elements can be tailored due to the “if — then” structure in ISO 9241-14. Additionally, it is not the intent of ISO 9241-14 that every recommendation should be applied, only those that are relevant.

The application of ISO 9241-14 is expected to improve the overall quality of the menus, but this standard (like any other standard) will not guarantee the quality of the interface. Quality depends on specific usability criteria as set by the user, buyer or other menu dialogue consumer which may include specifications based on this standard.

It should be noted that ISO 9241-10 describes dialogue principles that are relevant for the design of menu dialogues. These principles should provide the designer and evaluator with additional information concerning the ergonomic rationale for the various recommendations in ISO 9241-14 and, therefore, assist in making tradeoffs. However, it may be necessary to base tradeoffs on other considerations as well.



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## 1 Scope

This part of ISO 9241 provides conditional recommendations for menus used in user-computer dialogues to accomplish typical office tasks. The recommendations cover menus presented by various techniques including windowing, panels, buttons, fields, etc. These recommendations can be utilized throughout the design process (e.g. as guidance for designers during design, as a basis for heuristic evaluation, as guidance for usability testing).

Interface design depends upon the task, the user, the environment, and the available technology. Consequently, ISO 9241-14 cannot be applied without a knowledge of the design and use context of the interface and it is not intended to be used as a prescriptive set of rules to be applied in their entirety. Rather, it assumes that the designer has proper information available concerning task and user requirements and understands the use of available technology (this may require consultation with a qualified ergonomics professional as well as empirical testing with real users).

Although this is an International Standard, some of the conditional recommendations are based on Latin-based language usage and may not apply, or may need to be modified, for use with a different language. For example, in right-to-left languages those conditional recommendations oriented towards left-to-right reading may need to be modified and adapted. In applying those conditional recommendations that assume a specific language base (e.g. alphabetic ordering of menu options, compound titles), care should be taken concerning the intent of the standard when translation is required to a different language.

The recommendations relate to the three major design components of user interfaces, i.e. dialogue, input, and output.

Dialogue design determines the way in which a user is guided by the system to make inputs and influences the amount of control the user has over the dialogue. The dialogue should be designed to support the user in his/her actual work without the user being bothered by additional work caused by system peculiarities. Menu dialogue design is covered in this part of ISO 9241 in terms of designing the menu structure, providing facilities for menu navigation and defining the selection methods for menu options.

Input design is concerned with how users input information into the system using various input devices. Menu options can be selected by means of one or more input devices such as an alphanumeric keyboard, function keys, cursor keys, pointing devices and voice (other devices are not excluded) depending on the task at hand and dialogue requirements, as well as on individual preferences. ISO 9241-14 provides conditional recommendations for the use of each of the input devices listed above.

Output design is concerned with how data should be presented consistently and perceptibly distinct on the display. ISO 9241-14 provides conditional recommendations for the placement of options and option groups, the structure and syntax for textual, graphic and auditory options and presentation techniques to indicate option accessibility and discrimination.

Providing users with the capability to alter the interface to suit their own needs has become a popular approach to software interface design. This is often a desirable feature of the interface. However, providing users with customization capabilities is not an acceptable substitute for ergonomically designed initial menus (i.e. default menus). It should be noted that customization of the menus may result in deviations from ISO 9241—14. Therefore, customization options also should be evaluated with respect to the recommendations in ISO 9241—14.