

Ergonomic requirements for office work with visual display terminals (VDT's) - Part 14: Menu dialogues

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 9241-14:2001 sisaldab Euroopa standardi EN ISO 9241-14:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 9241-14:2001 consists of the English text of the European standard EN ISO 9241-14:1998.</p> <p>This document is endorsed on 18.06.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
<p>Käsitlusala: This part of ISO 9241 provides conditional recommendations for menus used in user-computer dialogues to accomplish typical office tasks.</p>	<p>Scope: This part of ISO 9241 provides conditional recommendations for menus used in user-computer dialogues to accomplish typical office tasks.</p>

ICS 13.180, 35.180

Võtmesõnad:

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 Bildschirm-
geräten – Teil 14: Dialogführung
mittels Menüs (ISO 9241-14 : 1997)

This European Standard was approved by CEN on 1999-04-01.

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.

The European Standards exist 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, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

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

Foreword

International Standard

ISO 9241-14 : 1997 Ergonomic requirements for office work with visual display terminals (VDTs) – Part 14:
Menu dialogues,

which was prepared by ISO/TC 159 'Ergonomics' of the International Organization for Standardization, has been adopted by CMC as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by October 1999 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 9241-14 : 1997 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

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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 -6: Workstation and environment

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

ISO 9241-10 through -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.

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.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 9241. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9241 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9241-8:—,¹ *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 8: Requirements for displayed colours.*

3 Definitions

For the purposes of this part of ISO 9241, the following definitions apply.

3.1 accelerator keys: Key combinations (sometimes called "shortcut keys") which invoke a menu option without displaying the menu on which the option appears or intermediate menus.

3.2 cascading menu panels: Menu panels in a menu hierarchy displayed so that each submenu originates adjacent to the choice selected from the higher level menu (suggesting a "cascading" effect).

3.3 critical option: Option with significant positive impact on system or task performance, or which can halt or reverse significant degradation to system or task performance (e.g. save the user or the system from disaster).

3.4 destructive option: Option which can seriously degrade system or task performance, or destroy work or data (e.g. deleting a file).

3.5 hierarchical menus: Series of menus which are structured in a hierarchical or "tree-like" manner, where the selection of an initial option leads to another menu containing additional options, which may lead to another menu, etc., until the desired results are obtained.

3.6 level: Nesting order within a menu hierarchy. The first choice level (initial, or main menu) in the hierarchy would be level 1, the next choice level (obtained by a selection of a level 1 option) would be level 2, etc.

NOTE 1 See figure 1 for an example of a two-level hierarchy displayed on the same menu panel.

NOTE 2 If several groups of options are presented on a menu panel, but a selection from any of these groups would lead to a lower level menu, these groups would be considered as at the same level.

¹ To be published.