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BSI Standards Publication

Ergonomics of human-system interaction

Part 143: Forms

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This British Standard is the UK implementation of EN ISO 9241-143:2012. It supersedes BS EN ISO 9241-17:1998, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PH/9, Applied ergonomics.

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

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Foreword

This document (EN ISO 9241-143:2012) 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of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

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

This document supersedes EN ISO 9241-17:1998.

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Endorsement notice

The text of ISO 9241-143:2012 has been approved by CEN as a EN ISO 9241-143:2012 without any modification.

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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 9241-143 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction.*

This first edition of ISO 9241-143 cancels and replaces ISO 9241-17:1998, of which it constitutes a technical revision.

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

— *Part 1: General introduction*

— *Part 2: Guidance on task requirements*

— *Part 4: Keyboard requirements*

— *Part 5: Workstation layout and postural requirements*

— *Part 6: Guidance on the work environment*

— *Part 9: Requirements for non-keyboard input devices*

— *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*

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ISO 9241 also consists of the following parts, under the general title *Ergonomics of human-system interaction*:

— *Part 20: Accessibility guidelines for information/communication technology (ICT) equipment and services*

— *Part 100: Introduction to standards related to software ergonomics* [Technical Report]

— *Part 110: Dialogue principles*

— *Part 129: Guidance on software individualization*

— *Part 143: Forms*

— *Part 151: Guidance on World Wide Web user interfaces*

— *Part 154: Interactive voice response (IVR) applications*

— *Part 171: Guidance on software accessibility*

— *Part 210: Human-centred design for interactive systems*

— *Part 300: Introduction to electronic visual display requirements*

— *Part 302: Terminology for electronic visual displays*

— *Part 303: Requirements for electronic visual displays*

— *Part 304: User performance test methods for electronic visual displays*

— *Part 305: Optical laboratory test methods for electronic visual displays*

— *Part 306: Field assessment methods for electronic visual displays*

— *Part 307: Analysis and compliance test methods for electronic visual displays*

— *Part 308: Surface-conduction electron-emitter displays (SED)* [Technical Report]

— *Part 309: Organic light-emitting diode (OLED) displays* [Technical Report]

— *Part 310: Visibility, aesthetics and ergonomics of pixel defects* [Technical Report]

— *Part 331: Optical characteristics of autostereoscopic displays* [Technical Report]

— *Part 391: Requirements, analysis and compliance test methods for the reduction of photosensitive seizures*

— *Part 400: Principles and requirements for physical input devices*

— *Part 410: Design criteria for physical input devices*

— *Part 411: Evaluation methods for the design of physical input devices* [Technical Specification]

— *Part 420: Selection of physical input devices*

— *Part 910: Framework for tactile and haptic interaction*

— *Part 920: Guidance on tactile and haptic interactions*

User-interface elements, human-centred design and evaluation methods, ergonomic requirements for the reduction of visual fatigue from stereoscopic images, and the evaluation of tactile and haptic interactions are to form the subjects of future parts 161, 230, 392 and 940.

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Introduction

This part of ISO 9241 is concerned with the ergonomic design of forms.

Forms, including dialogue boxes, are appropriate for data entry tasks requiring input or modification of multiple data items. Forms are used in various circumstances, including

— filling forms, such as income tax forms, registration (school, motor vehicle), and service order completion,

— entering information received over the telephone,

— interactively populating data in an application, such as database updates, consumer profiles and e-commerce transactions,

— specifying the application options and parameters (complex data retrieval requests, personalisation, system configurations settings), and

— responding to a mediate request for system information (e.g. using a dialogue box).

Forms can vary in content and complexity from a simple field to complex data entry that involves multiple data records. Forms are often based on a visual spatial metaphor but can be implemented in other modalities (e.g. voice user interfaces over the telephone).

Form users fill-in, select entries for, modify fields and/or use, the form to retrieve information from the system.

This part of ISO 9241 is aimed at

a) user-interface designers, who will apply it during the development process,

b) the designers of printed forms which serve as source documents,

c) buyers, who will reference it during the product procurement process,

d) evaluators responsible for ensuring products meeting its requirements and recommendations,

e) the designers of development tools to be used by interface designers, and

f) end users, who will gain from the potential benefits it provides.

This part of ISO 9241 provides requirements and recommendations concerning forms. Some of these are conditional with respect to whether they are relevant in terms of context of use variables such as particular kinds of users, tasks, environments or technology.

Designers using this part of ISO 9241 ought to be able to determine whether they are developing an interface that will meet those of the standard's requirements and recommendations that are applicable. Likewise, buyers and evaluators ought to have a means of determining how a product matches the applicable requirements and recommendations. It is not intended that every requirement and recommendation given in this part of ISO 9241 be applied, only those that are relevant. Annex B provides an example of a procedure for evaluating the applicability of, and conformance with, the requirements and recommendations.

The application of this part of ISO 9241 is expected to improve the overall quality of the form, but this International 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 form consumer, which may include specifications based on this part of ISO 9241.

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ISO 9241-110 describes dialogue principles that are relevant for the design of forms. The principles provide the designer and evaluator with additional information concerning the ergonomic rationale for the various recommendations given in this part of ISO 9241 and, therefore, assist in making trade-offs. However, it is often necessary to base trade-offs on other considerations as well.

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Ergonomics of human-system interaction —

Part 143: Forms

1 Scope

This part of ISO 9241 provides requirements and recommendations for the design and evaluation of forms — in which the user fills-in, selects entries for, or modifies labelled fields on, a “form” or dialogue box presented by the system. Often the system then creates or updates the data associated with the form. Form-based entries typically are in the form of typed input (abbreviations, or full names) or selections from available option lists.

This part of ISO 9241 is applicable to forms regardless of the modality in which they are rendered (visual, spatial, vocal). However, much of the guidance is based on a model of visual and spatial relationship.

In addition, this part of ISO 9241 specifies the use of non-text methods for providing forms entries (e.g. list boxes) and pertains to dialogue boxes which utilize form techniques. Guidance is provided on the selection and design of those user-interface elements relevant to forms.

While lists used to enter forms data are covered in this part of ISO 9241, menus which are similar to lists are outside its scope but are covered in ISO 9241-14. Neither is this part of ISO 9241 applicable to the hardware aspects of forms.

NOTE Some of the requirements and recommendations in this part of ISO 9241 are based on Western Language conventions. For other languages, particular requirements or recommendations might need to be modified to fit the readability and/or text input considerations inherent in these languages.

The requirements and recommendations in this part of ISO 9241 are applicable throughout the development process — for example, as guidance for designers during design, as a basis for heuristic evaluation, as guidance for usability testing — and in the procurement process.

2 Normative references

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

ISO 9241-12:1998, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 12: Presentation of information*

ISO 9241-16, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 16: Direct manipulation dialogues*

ISO 9241-171:2008, *Ergonomics of human-system interaction — Part 171: Guidance on software accessibility*

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