Ergonomics of human-system interaction - Part 151: Guidance on World Wide Web user interfaces

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EESTI STANDARDIKESKUS *EVS*
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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 9241-151:2008 sisaldab Euroopa standardi EN ISO 9241-151:2008 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 9241-151:2008 consists of the English text of the European standard EN ISO 9241-151:2008.
Standard on kinnitatud Eesti Standardikeskuse 21.07.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 21.07.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.05.2008.	Date of Availability of the European standard text 15.05.2008.
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English Version

Ergonomics of human-system interaction - Part 151: Guidance on World Wide Web user interfaces (ISO 9241-151:2008)

Ergonomie de l'interaction homme-système - Partie 151:
Lignes directrices relatives aux interfaces utilisateurs Web
(ISO 9241-151:2008)

Ergonomie der Mensch-System-Interaktion - Teil 151:
Leitlinien zur Gestaltung von Benutzungsschnittstellen für
das World Wide Web (ISO 9241-151:2008)

This European Standard was approved by CEN on 8 May 2008.

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Foreword

This document (EN ISO 9241-151:2008) 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of an identical text or by endorsement, at the latest by November 2008, and conflicting national standards shall be withdrawn at the latest by November 2008.

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.

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Endorsement notice

The text of ISO 9241-151:2008 has been approved by CEN as a EN ISO 9241-151:2008 without any modification.

Contents

Introduction

It is widely accepted that usability is a key factor in successful website design but until now there has been no internationally agreed standard that specifically addressed the usability of World Wide Web (WWW or Web) user interfaces.

World Wide Web user interfaces pose particular usability problems:

— their users are diverse in knowledge, capabilities, language and other factors — for example, a World Wide Web user interface that works well for subject-matter experts may be sub-optimal for ordinary users;

— users' goals vary considerably — for example, a site optimized for one set of tasks (such as e-commerce transactions) could be sub-optimal for users whose tasks are different (such as information gathering);

— different Web browsers or user agents often render Web content in different ways — for example, the layout of individual pages can change, sometimes quite dramatically.

Users of the World Wide Web will have experienced the problems of inconsistency between websites and often even within the same website. For example, something as straightforward as a link may be denoted by underlining on one page, by a mouse-over on a second page and by nothing at all on a third page.

A number of guidelines for good practice exist, many on the Web itself, but these guidelines sometimes conflict and can also be difficult to put into practice. While not addressing Web user interfaces specifically, a number of International Standards are available that provide useful guidance on usability and the design of user interfaces: ISO 9241-11 to ISO 9241-17 and ISO 9241-110 provide ergonomic guidance on the design of software user interfaces in general, ISO 13407 on achieving usability by incorporating user-centred design activities throughout the life cycle of interactive computer-based systems, and the ISO 14915 series of standards on the design of multimedia and hypermedia aspects of user interfaces.

The recommendations and guidelines provided in this part of ISO 9241 apply primarily to the design of the content of a website or, more generally, a Web application, the user's navigation and interaction, as well as the presentation of the content. The user interface of different types of user agents (such as Web browsers) or additional tools such as Web authoring tools are not the subject of this part of ISO 9241, although some guidelines could apply to those systems as well. Aspects of the technical implementation of the recommendations are also not within its scope.

An important objective for developing Web user interfaces is to make them accessible to the widest possible range of users, including persons with disabilities. While some guidance provided in this part of ISO 9241 is also important for the accessibility of Web user interfaces, it does not aim at covering accessibility in a comprehensive manner. Common guidance on securing and improving accessibility to ICT (information and communication technology) equipment, software and services can be found in ISO 9241-20, and detailed guidance on the accessibility of software user interfaces in general can be found in ISO 9241-171, while the World Wide Web Consortium's *Web Accessibility Initiative* provides guidance specifically for Web content, user agents and authoring tools.

ISO 9241 was originally developed as a seventeen-part International Standard on the ergonomics requirements for office work with visual display terminals. As part of the standards review process, a major restructuring of ISO 9241 was agreed to broaden its scope, to incorporate other relevant standards and to make it more usable. The general title of the revised ISO 9241, "Ergonomics of human-system interaction", reflects these changes and aligns the standard with the overall title and scope of Technical Committee ISO/TC 159, SC 4. The revised multipart standard is structured as series of standards numbered in the "hundreds": the 100 series deals with software interfaces, the 200 series with human centred design, the 300 series with visual displays, the 400 series with physical input devices, and so on.

See Annex A for an overview of the entire ISO 9241 series.

Ergonomics of human-system interaction —

Part 151:
Guidance on World Wide Web user interfaces

1 Scope

This part of ISO 9241 provides guidance on the human-centred design of software Web user interfaces with the aim of increasing usability. Web user interfaces address either all Internet users or closed user groups such as the members of an organization, customers and/or suppliers of a company or other specific communities of users.

The recommendations given in this part of ISO 9241 focus on the following aspects of the design of Web user interfaces:

— high-level design decisions and design strategy;

— content design;

— navigation and search;

— content presentation.

The user interfaces of different types of user agents such as Web browsers or additional tools such as Web authoring tools are not directly addressed in this part of ISO 9241 (although some of its guidance could apply to these systems as well).

Web user interfaces are presented on a personal computer system, mobile system or some other type of network-connected device. While the recommendations given in this part of ISO 9241 apply to a wide range of available front-end technologies, the design of mobile Web interfaces or smart devices could require additional guidance not within its scope; neither does it provide detailed guidance on technical implementation nor on issues of aesthetic or artistic design.

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 9241-11, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 11: Guidance on usability*

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

ISO 9241-13, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 13: User guidance*

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

ISO 9241-15, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 15: Command dialogues*

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

ISO 9241-17, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 17: Form filling dialogues*

ISO 9241-20, *Ergonomics of human-system interaction — Part 20: Accessibility guidelines for information/communication technology (ICT) equipment and services*

ISO 9241-110, *Ergonomics of human-system interaction — Part 110: Dialogue principles*

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

ISO 9241-303, *Ergonomics of human-system interaction — Part 303: Requirements for electronic visual displays*

ISO 13407, *Human-centred design processes for interactive systems*

ISO 14915 (all parts), *Software ergonomics for multimedia user interfaces*

WCAG 1.0, *Web Content Accessibility Guidelines 1.0,* W3C Recommendation, World Wide Web Consortium (W3C) (MIT, INRIA, Keio)

WCAG 2.0*, Web Content Accessibility Guidelines 2.0*, World Wide Web Consortium (W3C) (MIT, ERCIM, Keio) [1]

3   Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
boolean search
search formulation using logical operators

3.2
browser
user agent allowing a person to retrieve and read hypertext, to view the contents of hypertext nodes (usually Web pages), to navigate from one node to another, and to interact with the content

NOTE   A browser also offers a set of operations, e.g. for navigating websites or for changing the visual appearance of the content displayed.

3.3
conceptual content model
abstract model describing the concepts of an application domain, the relationships among those concepts and the operations to be performed on the concepts or relationships

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[1]   Working draft. Intended to supersede WCAG 1.0 in its final published version.