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Software ergonomics for multimedia user interfaces —

Part 3: Media selection and combination

Ergonomie des logiciels pour les interfaces utilisateur multimédias —

Partie 3: Sélection et combinaison des médias

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

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Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms and definitions 2

4 Application of this part of ISO 14915 6
4.1 Intended user groups 6
4.2 Applying the recommendations 6
4.3 Reporting conformance to this part of ISO 14915 6

5 General guidelines for media selection and combination 6
5.1 General 6
5.2 Supporting user tasks 6
5.3 Supporting communication goals 7
5.4 Ensuring compatibility with the users' understanding 7
5.5 Selecting media appropriate for the users' characteristics 7
5.6 Supporting users' preferences 7
5.7 Considering the context of use 7
5.8 Using redundancy for critical information 8
5.9 Avoiding conflicting perceptual channels 8
5.10 Avoiding semantic conflicts 8
5.11 Designing for simplicity 8
5.12 Combining media for different viewpoints 8
5.13 Choosing media combinations to elaborate information 8
5.14 Guarding against degradation 9
5.15 Previewing media selections 9
5.16 Using static media for important messages 9

6 Media selection for information types 9
6.1 General 9
6.2 Consider information types 11
6.3 Consider multiple-information types 11
6.4 Selecting and combining media 11
6.4.1 Physical information 11
6.4.2 Conceptual information 11
6.4.3 Descriptive information 11
6.4.4 Spatial information 11
6.4.5 Value information 12
6.4.6 Relationship information 12
6.4.7 Discrete action information 12
6.4.8 Continuous action information 12
6.4.9 Event information 12
6.4.10 State information 12
6.4.11 Causal information 13
6.4.12 Procedural information 13

7 Media integration 13
7.1 General 13
7.2 Design issues 13
7.3 Media integration guidelines 13
7.3.1 General 13

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7.3.2 Advance organizers 14
7.3.3 Synchronized, related media 14
7.3.4 Separating audio content sources 14
7.3.5 Avoiding interference in audio media 14
7.3.6 Limiting speech interruptions in audio and language-based media 14
7.3.7 Integrating non-realistic images with realistic images 14
7.3.8 Use of captions with images 14

8 Directing users' attention 15
8.1 General 15
8.2 Direct-contact points for key thematic links 15
8.3 Direct-contact points for linked components 15
8.4 Indirect-contact points 16
8.5 Sequence of contact points to connect a thread of topics 16
8.6 Guidelines for contact points between media pairs 16
8.6.1 General 16
8.6.2 Source medium: realistic audio 18
8.6.3 Source medium: non-realistic audio 18
8.6.4 Source medium: speech 19
8.6.5 Source medium: still image 20
8.6.6 Source medium: text 21
8.6.7 Source medium: moving image 22

Annex A (informative) **Decision trees for classification of types** 23

Annex B (informative) **Guidelines for media-combination pairs** 27

Annex C (informative) **Examples of media-combination patterns** 37

Annex D (informative) **Design issues and cognitive background** 39

Bibliography 42

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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 3.

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 part of ISO 14915 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14915-3 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*.

ISO 14915 consists of the following parts, under the general title *Software ergonomics for multimedia user interfaces*:

— *Part 1: Design principles and framework*

— *Part 2: Multimedia navigation and control*

— *Part 3: Media selection and combination*

Annexes A to D of this part of ISO 14915 are for information only.

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Introduction

The design of user interfaces for multimedia applications typically involves a much wider range of design and evaluation issues than that of conventional user interfaces based only in textual and graphical format. Many different techniques and design options are available. Multimedia user interfaces incorporate, integrate and synchronize different media (static media such as text, graphics, images, and dynamic media such as audio, animation, video or other sensory modalities). Within each medium, further distinctions can be made. Graphics, for instance, can be presented either in two- or three-dimensional format and audio can be further categorized according to the level of sound quality or with respect to mono, stereo or surround sound.

Ergonomic design enhances the ability of users to operate multimedia applications effectively, efficiently and with satisfaction (see ISO 9241-11). This can be achieved by careful design of multimedia applications with respect to the tasks they are intended to fulfil (e.g. for work, education or performance support), user characteristics and the environment in which the system will be used. Multimedia applications are often used for communicative purposes. An ergonomic design of multimedia user interfaces can also improve the safety of operating a system (e.g. delivering an alarm in both visual and auditory media).

The range of media available and the interaction of these media have a variety of perceptual, cognitive and other ergonomic implications for the users of multimedia applications. Multimedia can potentially impose on users a high perceptual load, structural and semantic complexity, or a large volume of information to be conveyed through the system. Manipulation of data or information presented in multimedia applications is also often part of the user's activity.

This part of ISO 14915 provides guidance on the selection, combination and integration of media. The focus is primarily on presentational aspects of multimedia (i.e. from system to user) as opposed to control and navigation issues, which are addressed in ISO 14915-2. This part of ISO 14915 starts from information requirements, which are stated in logical terms, and addresses the design issues concerning which media combinations to choose for the information requirements. This is followed by guidance on how the user’s reading/viewing sequence can be directed by design effects to ensure that the user acquires the desired information. Supplementary design guidance for different media combinations and integration are presented in informative annexes A to D.

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