SLOVENSKI STANDARD
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Identification card systems - Man-machine interface - Part 1: Design principles for the user interface

Identification card systems - Man-machine interface - Part 1: Design principles for the user interface

Identifikationskartensysteme - Schnittstelle Mensch-Maschine - Teil 1: Gestaltungsgrundsätze für Benutzerschnittstelle

Systemes de cartes d'identification - Interface homme-machine - Partie 1: Principes de conception pour l'interface utilisateur

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35.240.15	Identifikacijske kartice in sorodne naprave	Identification cards and related devices

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English version

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Systèmes de cartes d'identification - Interface homme-machine - Partie 1: Principes de conception pour l'interface utilisateur

Identifikationskartensysteme - Schnittstelle Mensch-Maschine - Teil 1: Gestaltungsgrundsätze für Benutzerschnittstelle

This European Standard was approved by CEN on 5 May 1999.

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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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 224 "Machine-readable cards, related device interfaces and operations", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by December 1999, and conflicting national standards shall be withdrawn at the latest by December 1999.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.

This European Standard is one of a series of standards, under the general *title "Identification card systems - Man-machine interface*" and the different parts are the following :

- *Part 1 : Design principles for the user interface ;*
- *Part 2 : Dimensions and location of a tactile identifier for ID-1 cards ;*
- *Part 3 : Key pads ;*
- *Part 4 : Coding of user requirements for people with special needs.*

Introduction

Machine readable cards facilitate the provision of a growing variety of services across Europe. The purpose of this standard is to increase the accessibility of these services for the benefit of consumers. This will be achieved by facilitating the inter-sector and cross-border interoperability of machine readable cards and to do so with the maximum possible degree of user-friendliness.

EN 1332 addresses the needs of all users, including people with special needs, not overlooking first time users, minors, those not conversant with the local language.

EN 1332 specifies :

a) the design principles for the user interface (including functions to be represented by symbols) to be incorporated into the design of card operated equipment, but not the machine operations associated with the selection and delivery of goods or services ;

b) a tactile identifier to be incorporated into the design of machine readable cards ;

c) a standard layout for the keypads of card operated equipment ;

d) coding of user requirements for people with special needs.

The contents of this standard are generically based, not sector specific, and cover card operated equipment. It is recognised that the equipment may also be operated by other means, such as the insertion of notes and coins, but the scope of this standard has been, as indicated, narrowly defined.

Issues relating to such consumer concerns at the man-machine interface as PIN presentation are dealt with in a separate standard, see ENV 1257-1.

1 Scope

This European Standard defines design principles for card based services that are applicable to any sector (eg banking, telecommunications, mass transport, parking, logical access control, physical access control). It also provides recommendations for the operational procedures to be followed when users interact with a card operated device :

- in order to enter a system;
- whilst using a system;
- leaving a system.

The purpose of this European Standard is to facilitate user's interactions with card operated systems by standardising key components of the user interface.

In principle all devices should be physically accessible to all users including those with special needs. How this can be achieved is not within the scope of this standard.

In particular, this European Standard will :

- aid the user's interaction with the system through a consistent user interface when entering, navigating and exiting card-based systems ;
- promote user confidence in card-based systems in general ;
- promote efficient use of card-based systems ;
- reduce the possibility of error when the user enters, navigates in or exits the system ;
- enable those with different levels of ability and comprehension (minors, elderly, visually impaired, foreign language, etc) and different levels of experience (eg first time users) to use card-based systems;
- improve the learnability of card-based systems through consistency.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 1332-4, *Identification card systems - Man-machine interface - Part 4: Coding of user requirements for people with special needs.*

EN 29241-3:1993, *Ergonomic requirements for office work with visual display terminals (VDTs) - Part 3 : Visual display requirements* (ISO 9241-3:1992).

EN 29564-1:1993, *Banking - Personal Identification Number management and security - Part 1 : PIN protection principles and techniques* (ISO 9564-1:1991).

ISO 9241-10:1996, *Ergonomic requirements for office work with visual display terminals (VDTs) - Part 10 : Dialogue principles.*

ISO/DIS 13407, *Human centred design processes for interactive systems.*

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of this standard, the following definitions apply :

3.1.1
automated teller machine (ATM)
a customer operated device that dispenses cash and other services

3.1.2
card operated equipment
equipment operated by a card which is designed to offer some service or goods

3.1.3
cardholder verification method (CVM)
a method of automatically identifying the cardholder e.g. Personal Identification Number, finger print, voice print

3.1.4
dialogue
interaction between a user and a system to achieve a particular goal [ISO 9241-10:1996]

3.1.5
feedback
a system output which a user recognises as a reaction of the system to the user's input

3.1.6
inter-sector use
use in more than one sector and thus not restricted by particular requirements defined in a sector standard. Inter-sector includes, but is not restricted to, the use of a card in one sector, issued or with data added to it in another sector

3.1.7
legibility
the visual properties of a character or symbol that determine the ease with which it can be measured. [EN 29241-3:1993]

3.1.8
machine readable card
card incorporating a technology such as magnetic stripe, integrated circuit etc, that may be read by a machine

3.1.9
navigate (to)
to progress through a transaction using navigation aids such as Page Up, Page Down, Next Page, Return to Menu etc.

3.1.10
Personal Identification Number (PIN)
the code or password the customer possesses for verification of identity. [EN 29564-1:1993]

3.1.11
readability
the characteristics of text which allows groups of characters to be easily discriminated, recognised and interpreted

3.1.12
status information
information indicating the current state of components in the system when concerning interaction with the user

3.1.13
symbol
may be either a pictogram or an icon

3.2 Abbreviations

ATM automated teller machine

CVM cardholder verification method

PIN personal identification number

4 Dialogue design principles

It is important to see all the principles listed below in relation to each other as they are closely interlinked. Adopting just one or two of the principles will not ensure good user interface design.

4.1 Suitable for the task

A dialogue system is suitable for a task to the extent that it supports the user in the effective and efficient completion of the task. For example, a dialogue should only present the user with those concepts and choices that are directly related to the user´s activities.

4.2 Self descriptive

A dialogue system is self descriptive to the extent that each dialogue step is immediately comprehensible through feedback from the system. For example : "Now enter your PIN" is presented on the screen, and acoustically, whilst the back lighting on the keyboard flashes to indicate where one should key in the PIN.

4.3 Consistent

A dialogue system should be consistent both within and between the way a system operates allowing the users to improve their skills and predict the effects of their actions. For example, control actions should have the same outcomes throughout the system ; control sequences have the same syntax ; terms and labels remain the same and display items have a designated location.

4.4 Conforms with user expectations

A dialogue conforms with user expectations to the extent that it corresponds to the user's task knowledge, education, experience and commonly accepted conventions. It is recommended that within each sector similar applications should have the same sequence of operation.

4.5 Controllable

A dialogue system is controllable to the extent that the user is able to control the interaction until the goal has been reached. For example, the user should be able to control the time allowed for each part of the operation, where practical and within the constraints of good security.

4.6 Error tolerant/forgiving

A dialogue system is error tolerant or forgiving if, despite evident errors in input, the intended result may be achieved with either no or minimal corrective action. Informative error messages should lead the card holder forward. For example, cards should not be captured owing to an incorrect operation, without prior warning.

4.7 Individual adaptation

A dialogue system is suitable for individual adaptation when the system allows modifications to its interfaces and operations. These modifications may be prompted by the cardholder with their needs and preferences recorded on the card (see prEN 1332-4).