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Information technology — Taxonomy of cultural and linguistic adaptability user requirements

Technologies de l'information — Taxinomie des exigences utilisateur pour l'adaptabilité culturelle et linguistique

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ISO/IEC TR 24785, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 35, *User interfaces*.

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Introduction

In order to approach standardization in a systematic way, a common approach is to develop a way to classify the subject area, or a taxonomy. This helps in two ways:

— it helps to identify all aspects of the domain in question which might be subject to standardization;

— it helps to provide a logical structure for the standardization activity.

A taxonomy of relevant concepts in the domain of cultural and linguistic adaptability has been developed, based on user requirements for functionality, as discussed in CEN/TC304/PT01, Part I, Clause 4 (see bibliography item [1].

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Information technology — Taxonomy of cultural and linguistic adaptability user requirements

1 Scope

This Technical Report defines a taxonomy describing the various elements of cultural and linguistic adaptability user requirements for use in a computer environment.

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/IEC TR 10000-1:1998, *Information technology — Framework and taxonomy of International Standardized Profiles — Part 1: General principles and documentation framework*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC TR 10000-1 and the following apply.

3.1
unilingual
use of one language for the user

NOTE The user may then use other languages in other parts of the work that is meant to be accomplished.

3.2
multilingual
use of more than one language simultaneously

NOTE An example is a two-language text displayed in two columns, and aligned paragraphwise.

3.3
locale
subset of a user's information technology environment that depends on language and cultural conventions

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4 A taxonomy of cultural and linguistic adaptability user requirements

The present classification of the concepts was made through the identification of commonalties, such as characters, sets, fonts and rules relating to presentation. The analysis was based on a much wider view of “multi-cultural support”, which attempts to map some of its concepts. Areas relevant to this taxonomy were chosen and developed into the full taxonomy, shown in 5.2. This latter choice comprises the technology which relates to methods for specifying, and rules governing, the creation of unique properties and codes which facilitate the presentation, storage and transmission of individual characters.

The taxonomy in 5.2 is based on ISO/IEC TR 10000-1, ISO TR 12382 [2], IEC 824 [3] and the activities of appropriate standardization bodies, but most notably the work of ISO/IEC JTC 1.

5 Description of taxonomy

5.1 Description

User requirements may be summed up in the single phrase “multi-cultural support”, being the need to accommodate all the requirements of different types of users, whether they are racial, national, typographical, occupational or individual. The primary choice was for text based topics, in line with the capability of computer technology to code, store and process individual characters.

The taxonomy in 5.2 takes the classic form of a tree structure, where two major classes are recognized: Locales and Characters. The former deals with the cultural environment of the user, the latter with the smallest divisible parts that make up the messages which are being electronically processed. Each of the major classes is then subdivided into subcategories, which are numbered in sequence, and each subcategory may then be subdivided again, and so forth, numbering the subcategories sequentially, and each level indicated with a period.

A taxonomy of whatever phenomena can be constructed in several ways, depending on its purpose and the aspects applied. (For instance, a number of persons may be grouped firstly according to age, then according to gender, then according to place of living — or precisely the other way around, according to need.) A taxonomy for standardization purposes naturally has to take into account the most practical ways to group existing standards and standardization projects as well as the logical connections between them and any conceptual “holes” which may need to be filled in order to cover the full need for standardization.

The following taxonomy is thus intended to provide a map for almost all of the user requirements. Therefore the level of subordination in some cases goes very deep — this does not mean that the actual standardization projects need a taxonomy of the same complexity. When a sub-level is empty of existing or future standards, the entries in that sub-level are simply collapsed and only the level above remains.

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5.2 The taxonomy

What follows is a specification of the taxonomy. There is no further information, e.g. on where this work is going on, as this information changes quite frequently. That information may then be provided via web pages that can be updated more frequently than a Technical Report.

Code	**Title**
/ (no id)	TAXONOMY
L/	**LOCALES**
L/1	**Specifications**
L/1.1	Languages
L/1.1.1	Natural languages
L/1.1.1.1	Vocabulary
L/1.1.1.1.1	Standard terminology
L/1.1.1.1.2	Thesauri
L/1.1.1.1.3	Standard phrases
L/1.1.1.1.4	Translation
L/1.1.1.2	Grammar
L/1.1.1.3	Orthography
L/1.1.1.3.1	Alphabet
L/1.1.1.3.2	Spelling
L/1.1.1.3.3	Use of special characters
L/1.1.1.3.4	Capitalization
L/1.1.1.3.5	Hyphenation
L/1.1.1.3.6	Punctuation
L/1.1.1.3.7	Transcription
L/1.1.1.3.8	Ordering
L/1.1.1.3.9	Personal names and titles
L/1.1.1.4	Speech
L/1.2	Cultural conventions
L/1.2.1	Cultural elements
L/1.2.1.1	Orthography
L/1.2.1.1.1	Date and time format
L/1.2.1.1.2	Numeric separators
L/1.2.1.1.3	Monetary format
L/1.2.1.1.4	Telephone number format
L/1.2.1.1.5	Payment number format
L/1.2.1.1.6	Mail address format
L/1.2.1.1.7	National places

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L/1.2.1.2	Measurement system
L/1.2.1.3	Layout styles
L/1.2.1.4	Paper sizes
L/1.2.1.5	Use of graphical symbols
L/1.2.1.6	Use of colours
L/1.2.1.7	Artistic requirements
L/1.2.1.8	Jurisdictional requirements
L/1.2.2	Multilingual requirements
L/1.3	Operating system dependency
L/1.3.1	POSIX
L/1.3.2	Other TOG
L/2	**Registration**
L/2.1	Procedures
L/2.1.1	Supra-national
L/2.1.1.1	National
L/2.1.2	World-wide
L/3	**Implementation**
L/3.1	Fallback
C/	**CHARACTERS**
C/1	**Character information**
C/1.1	Identification
C/1.1.1	Characters
C/1.1.1.1	Identifiers
C/1.1.1.2	Attributes
C/1.1.2	Repertoires
C/1.1.2.1	Graphic characters
C/1.1.2.1.1	Natural language alphabets
C/1.1.2.1.1.1	Supra-national
C/1.1.2.1.1.1.1	General
C/1.1.2.1.1.1.2	Elderly/disabled
C/1.1.2.1.1.2	World-wide
C/1.1.2.1.2	Programming language alphabets
C/1.1.2.1.3	Non-alphabetic symbols
C/1.1.2.1.3.1	General
C/1.1.2.1.3.2	Disabled/elderly
C/1.1.2.2	Control functions
C/1.1.2.3	Registration

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C/1.1.3	Glyphs
C/1.1.3.1	Registration
C/1.1.3.2	Character correspondence
C/1.1.4	Glyph repertoires
C/1.1.4.1	Registration
C/1.1.4.2	Repertoire correspondence
C/1.2	Manipulation
C/1.2.1	Transformation
C/1.2.1.1	Case conversion
C/1.2.1.2	Transliteration
C/1.2.1.3	Fallback representation
C/2	**Input/output**
C/2.1	Input
C/2.1.1	Keyboard
C/2.1.2	Other means
C/2.2	Output
C/2.2.1	Character repertoires
C/2.2.2	Character attributes
C/3	**Electronic processing**
C/3.1	Processing of coding schemes
C/3.1.1	Encoding of graphic characters
C/3.1.2	Encoding of control functions
C/3.1.3	Code transformations
C/3.1.3.1	UCS--UCS
C/3.1.3.2	UCS--other coding schemes
C/3.2	Interchange/communication
C/3.2.1	7-bit method
C/3.2.2	8-bit method
C/3.2.3	Multiple-octet method
C/3.3	Internationalization support
C/3.3.1	Programming languages
C/3.3.1.1	Language-dependent
C/3.3.1.2	Language-independent
C/3.3.2	Operating systems
C/3.3.3	Communications
C/3.3.3.1	Directory services
C/3.3.3.2	Telematics

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Bibliography

[1] CEN/TC304/PT01, *User requirements study and programming for standardization in the field of Character Set Technology*. Available from: http://www.open-std.org/CEN/TC304/docs/pt01-fin.htm

[2] ISO/IEC TR 12382:1992, *Permuted index of the vocabulary of information technology*

[3] IEC 824:1988, *Terminology related to microprocessors*

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