TECHNICAL REPORT

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Information technology — Specification method for cultural conventions

Technologies de l'information — Méthode de modélisation des conventions culturelles

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

— type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;

— type 3, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

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

ISO/IEC TR 14652, which is a Technical Report of type 1, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 22, *Programming languages, their environments and system software interfaces.*

This document is published as a type 1 Technical Report on the request of a number of member bodies, whose concerns are recorded in Annex D.

Introduction

This Technical Report defines a general mechanism to specify cultural conventions, and it defines formats for a number of specific cultural conventions in the areas of character classification and conversion, sorting, number formatting, monetary formatting, date formatting, message display, addressing of persons, postal address formatting, and telephone number handling.

There are a number of benefits coming from this Technical Report:

Rigid specification	Using this Technical Report, a user can rigidly specify a number of the cultural conventions that apply to the information technology environment of the user.
Cultural adaptability	If an application has been designed and built in a culturally neutral manner, the application may use the specifications as data to its APIs, and thus the same application may accommodate different users in a culturally acceptable way to each of the users, without change of the binary application.
Productivity	This Technical Report specifies those cultural conventions and how to specify data for them. With that data an application developer is relieved from getting the different information to support all the cultural environments for the expected customers of the product. The application developer is thus ensured of culturally correct behaviour as specified by the customer, and possibly more markets may be reached as customers may have the possibility to provide the data themselves for markets that were not targeted.
Uniform behaviour	When a number of applications share one cultural specification, which may be supplied from the user or provided by the application or operating system, their behaviour for cultural adaptation becomes uniform.

The specification format is independent of platforms and specific encoding, and targeted to be usable from a wide range of programming languages.

A number of cultural conventions, such as spelling, hyphenation rules and terminology, are not specifiable with this Technical Report, but it provides mechanisms to define new categories and also new keywords within existing categories. An internationalized application may take advantage of information provided with the FDCC-set (such as the language) to provide further internationalized services to the user.

This Technical Report defines a format compatible with the one used in the International string ordering standard, ISO/IEC 14651. This Technical Report is upward compatible with the ISO/IEC 9945-1:2003 POSIX, particularly its clauses 6 and 7. The major extensions

from that text are listed in annex A. This Technical Report has enhanced functionality in a number of areas such as ISO/IEC 10646 support, more classification of characters, transliteration, dual (multi) currency support, enhanced date and time formatting, personal name writing, postal address formatting, telephone number handling, and management of categories. There is enhanced support for character sets including ISO/IEC 2022 handling and an enhanced method to separate the specification of cultural conventions from an actual encoding via a description of the character repertoire employed. A standard set of values for all the categories has been defined covering the repertoire of ISO/IEC 10646-1, as referenced in the normative references clause.

The Technical Report was originally scheduled for adoption as an International Standard, but a number of members of ISO and IEC found the specification problematical. It was then decided to convert the specification into a Technical Report type I. Annex D lists a number of issues that some members of ISO and IEC have with the specification.

The following clauses are thus marked as controversial:
4.3 LC_CTYPE
4.5 LC_MONETARY
4.7 LC_TIME
4.9 LC_XLITERATE
6 REPERTOIREMAP

Information technology — Specification method for cultural conventions

1 SCOPE

This Technical Report specifies a description format for the specification of cultural conventions, a description format for character sets, and a description format for binding character names to ISO/IEC 10646, plus a set of default values for some of these items.

The specification is upward compatible with POSIX locale specifications - a locale conformant to POSIX specifications will also be conformant to the specifications in this Technical Report, while the reverse condition will not hold. The descriptions are intended to be coded in text files to be used via Application Programming Interfaces, that are expected to be developed for a number of systems which comply with ISO/IEC 9945. An alignment effort has been undertaken for this specification to be aligned with the revision of the ISO/IEC 9945 standard published in 2003.

2 NORMATIVE REFERENCES

The following referenced documents are indispensible 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 639 (all parts), *Codes for the representation of names of languages.*

ISO/IEC 2022, *Information technology - Character code structure and extension techniques.*

ISO 3166 (all parts), *Codes for the representation of names of countries and their subdivisions.*

ISO 4217, *Codes for the representation of currencies and funds.*

ISO 8601, *Data elements and interchange formats - Information interchange - Representation of dates and times.*

ISO/IEC 9945:2003 *Information technology - Portable Operating System Interface (POSIX).*

ISO/IEC 10646:2003, *Information technology - Universal Multiple-Octet Coded Character Set (UCS).* Only the fixed collection 301 plus the characters U20AC EURO SIGN and the UFFFC OBJECT REPLACEMENT CHARACTER (corresponding to UNICODE 2.1) and the control characters U0000..U001F are used in this document.

ISO/IEC 14651:2001, *Information technology - International string ordering and comparison - Method for comparing character strings and description of the common template tailorable ordering.*

ISO/IEC 15897:1999, *Information technology - Procedures for registration of cultural elements.*

