International Standard 6093

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Information processing — Representation of numerical values in character strings for information interchange

Traitement de l'information — Représentation des valeurs numériques dans les chaînes de caractères pour l'échange d'information

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6093 was prepared by Technical Committee ISO/TC 97, *Information processing systems.*

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Information processing — Representation of numerical values in character strings for information interchange

1 Scope and field of application

This International Standard specifies three presentations of numerical values, which are represented in character strings in a form readable by machine, for use in interchange between data processing systems. This International Standard also provides guidance for developers of programming language standards and implementors of programming products. These representations are recognizable by humans, and thus may be useful in communication between humans.

The base of representation is 10.

This International Standard applies only to numerical values consisting of a finite number of digits with or without the decimal mark. It does not specify the mechanism to communicate the accuracy of the number being represented or the method of delimiting the numerical representations or the organization of the numerical representations into larger aggregates.

2 Conformance

A representation of a numerical value is in conformance with this International Standard if it is one of the three representations specified herein.

A conformance statement shall identify the representation and, where applicable, specify whether COMMA or FULL STOP is used as the decimal mark. In the absence of such a statement, the FULL STOP is deemed to be the decimal mark.

3 References

ISO 646, *Information processing — ISO 7-bit coded character set for information interchange.*

ISO 2022, *Information processing — ISO 7-bit and 8-bit coded character sets — Code extension techniques.*

ISO 4873, *Information processing — 8-bit code for information interchange — Structure and rules for implementation.*

4 Definitions

For the purpose of this International Standard the following definitions apply.

4.1 decimal mark: The character that separates the digits forming the integral part of a number from those forming the fractional part.

4.2 field: A continuous string of character positions on a data carrier.

4.3 field description: The set of characteristics possessed by the field to ensure that its contents have an unique numerical interpretation to the interchange parties. For each field within a set of interchanged data the field description is specified in documentation associated with the interchange agreement between the parties. The field description includes the specification of the length of the field.

4.4 length of a field: The number of character positions of a field.

4.5 positional notation: A numeration system in which a real number is represented by a string of characters in such a way that the value contributed by a character depends on its position as well as on its value.

5 Character set

5.1 Description

The character set for the representation of numerical values shall be a sub-set of the ISO 646-coded character set.

5.2 Syntax

The following syntatic objects are defined using the method of syntax specification described in annex A.

a) digit = 0/1/2/3/4/5/6/7/8/9

b) sign = + / –

c) decimal-mark = , / .

d) space = SPACE

e) exponent-mark = E / e