

ECMA

Standardizing Information and Communication Systems

Standard ECMA-6

6th Edition - December 1991

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7-Bit coded Character Set

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Brief History

Technical Committee TC1 of ECMA met for the first time in December 1960 to prepare standard codes for Input/Output purposes. On 30th April 1965, Standard ECMA-6 was adopted by the General Assembly of ECMA.

Subsequent international activities necessitated three revisions of ECMA-6, which were issued in June 1967, July 1970 and August 1973. In the 3rd edition, TC1 introduced a new concept, that of versions of the code and proposed at the same time an International Reference Version. This concept and this specific version were eventually adopted by ISO for the new International Standard ISO 646-1972 and by CCITT for the International Telegraph Alphabet No. 5 (CCITT Rec. V.3).

In parallel to these developments, further work on extension of the 7-bit code was achieved. The techniques for extending the repertoire of the 7-bit code, remaining in a 7-bit environment, and for expanding it to 8-bit codes are described in Standard ECMA-35 (ISO 2022). In application of these techniques the structure of, and rules for, 8-bit codes are defined in Standard ECMA-43 (ISO 4873).

This 6th Edition corresponds to the 3rd edition of ISO 646 issued in 1991, a revision of the 1983 issue prepared by WG-7 of ISO/IEC/JTC1/SC2 in which several members of ECMA/TC1 were major contributors. The differences between the 5th and the 6th editions are specified in annex C.

Adopted by the General Assembly of ECMA in December 1991.

AVVA Documents

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1 Scope

- 1.1 This ECMA Standard specifies a set of 128 characters, (control characters and graphic characters such as letters, digits and symbols) with their coded representation. Most of these characters are mandatory and unchangeable, but provision is made for some flexibility to accommodate national and other requirements.
- 1.2 This ECMA Standard specifies a 7-bit coded character set with a number of options. It also provides guidance on how to exercise the options to define specific national versions and application-oriented versions. Furthermore it specifies the International Reference Version (IRV) in which such options have been exercised.
- 1.3 This character set is primarily intended for the interchange of information among data processing systems and associated equipment, and within data communication systems. The need for graphic characters and control functions in data processing has also been taken into account in determining this character set.
- 1.4 This character set is applicable to alphabets of the Latin script.
- 1.5 This character set allows the use of control characters for code extension where its character set is insufficient for particular applications. Procedures for the use of these control characters are specified in Standard ECMA-35.
- 1.6 The definitions of the control characters mentioned in this ECMA Standard are specified in Standard ECMA-48. It is assumed that data associated with them are to be processed serially in a forward direction. When they are included in strings of data which are processed other than serially in a forward direction or when they are included in data formatted for fixed-record processing they may have undesirable effects or may require additional special treatment to ensure that they result in their desired function.

2 Conformance and Implementation

2.1 Conformance

2.1.1 Conformance of information interchange

A coded-character-data-element (CC-data-element) within coded information for interchange is in conformance with this ECMA Standard if all the coded representations of characters within that CC-data-element conform to the requirements of 8.1.

A claim of conformance shall identify the version adopted in accordance with 8.2 to 8.4.

2.1.2 Conformance of devices

A device is in conformance with this ECMA Standard if it conforms to the requirements of 2.1.2.1, and either or both of clauses 2.1.2.2 and 2.1.2.3 below. A claim of conformance shall identify the version adopted.

2.1.2.1 Device description

A device that conforms to this ECMA Standard shall be the subject of a description that identifies the means by which the user may supply characters to the device, or may recognize them when they are made available to him, as specified respectively in clauses 2.1.2.2 and 2.1.2.3 below.

2.1.2.2 Originating devices

An originating device shall allow its user to supply any sequence of characters from the version adopted, and shall be capable of transmitting their coded representations within a CC-data-element.

2.1.2.3 Receiving devices

A receiving device shall be capable of receiving and interpreting any coded representations of characters that are within a CC-data-element, and that conform to clause 2.1.1 of this ECMA Standard, and shall make the corresponding characters available to its user in such a way that the user can identify them from among those of the version adopted, and can distinguish them from each other.

2.2 Implementation

The use of this character set requires definitions of its implementation in various media. For example, these could include punched tapes, punched cards, magnetic and optical interchangeable media and transmission channels, thus permitting interchange of data to take place either indirectly by means of an intermediate