INTERNATIONAL STANDARD

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Information technology — Programming languages, their environments and system software interfaces — ECMAScript language specification

Technologies de l'information — Langages de programmation, leurs environnements et interfaces de logiciel système — Spécification du langage ECMAScript

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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.

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 16262 was prepared by Ecma International (as ECMA-262) and was adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

This third edition cancels and replaces the second edition (ISO/IEC 16262:2002), which has been technically revised.

Introduction

This International Standard is based on several originating technologies, the most well-known being JavaScript (Netscape) and JScript (Microsoft). The language was invented by Brendan Eich at Netscape and first appeared in that company's Navigator 2.0 browser. It has appeared in all subsequent browsers from Netscape and in all browsers from Microsoft starting with Internet Explorer 3.0.

The development of this International Standard started in November 1996. The first edition of this International Standard was adopted by the Ecma General Assembly of June 1997.

That International Standard was submitted to ISO/IEC JTC 1 for adoption under the fast-track procedure, and approved as ISO/IEC 16262, first edition, in April 1998.

The second edition of this International Standard introduced powerful regular expressions, better string handling, new control statements, try/catch exception handling, tighter definition of errors, formatting for numeric output and minor changes in anticipation of forthcoming internationalization facilities and future language growth. The second edition of the ECMAScript standard was published as ISO/IEC 16262 in June 2002.

Since publication of the second edition of ISO/IEC 16262:2002, ECMAScript has achieved massive adoption in conjunction with the World Wide Web where it has become the programming language that is supported by essentially all web browsers. Significant work was done to develop a third edition of ECMAScript. Although that work was not completed and not published as a new edition of ECMAScript, it informs continuing evolution of the language. The present third edition of ISO/IEC 16262 (published as ECMA-262 5th edition) codifies de facto interpretations of the language specification that have become common among browser implementations and adds support for new features that have emerged since the publication of the third edition. Such features include accessor properties, reflective creation and inspection of objects, program control of property attributes, additional array manipulation functions, support for the JSON object encoding format, and a strict mode that provides enhanced error checking and program security.

ECMAScript is a vibrant language and the evolution of the language is not complete. Significant technical enhancement will continue with future editions of this International Standard.

Information technology — Programming languages, their environments and system software interfaces — ECMAScript language specification

1 Scope

This International Standard defines the ECMAScript scripting language.

2 Conformance

A conforming implementation of ECMAScript must provide and support all the types, values, objects, properties, functions, and program syntax and semantics described in this International Standard.

A conforming implementation of this International Standard shall interpret characters in conformance with the Unicode Standard, Version 3.0 or later, and ISO/IEC 10646 with either UCS-2 or UTF-16 as the adopted encoding form, implementation level 3. If the adopted ISO/IEC 10646 subset is not otherwise specified, it is presumed to be the BMP subset, collection 300. If the adopted encoding form is not otherwise specified, it presumed to be the UTF-16 encoding form.

A conforming implementation of ECMAScript is permitted to provide additional types, values, objects, properties, and functions beyond those described in this International Standard. In particular, a conforming implementation of ECMAScript is permitted to provide properties not described in this International Standard, and values for those properties, for objects that are described in this International Standard.

A conforming implementation of ECMAScript is permitted to support program and regular expression syntax not described in this International Standard. In particular, a conforming implementation of ECMAScript is permitted to support program syntax that makes use of the “future reserved words” listed in 7.6.1.2 of this International Standard.

3 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 10646, *Information technology ð Universal Coded Character Set (UCS)*