

Draft Fast Track explanatory report for The JSON Data Interchange Format ECMA-404 1st Edition submission

The following paragraphs are numbered following the clause numbering in section 7.4 (Document Related Criteria) of JTC 1 Standing Document: Guide to the Transposition of Publicly Available Specifications into International Standards.

7.4.1 Quality

JSON stands for JavaScript Object Notation. This Standard defines the JSON Data Interchange Format. JSON is a text format that facilitates structured data interchange between all programming languages.

JSON is a lightweight, text-based, language-independent data interchange format. It was derived from the ECMAScript programming language, but is programming language independent. JSON defines a small set of structuring rules for the portable representation of structured data.

JSON is syntax of braces, brackets, colons, and commas that is useful in many contexts, profiles, and applications. JSON was inspired by the object literals of JavaScript aka ECMAScript as defined in the ECMAScript Language Specification, third Edition. It does not attempt to impose ECMAScript's internal data representations on other programming languages. Instead, it shares a small subset of ECMAScript's textual representations with all other programming languages. Though JSON was first developed for ECMAScript, but since then it proved to be useful for several other languages and applications. This standard specifies all the common parts of the data interchange for all JSON applications.

It is expected that other standards will refer to this one, strictly adhering to the JSON text format, while imposing restrictions on various encoding details. Such standards may require specific behaviours. JSON itself specifies no behaviour.

Because it is so simple, it is not expected that the JSON grammar will ever change. This gives JSON, as a foundational notation, tremendous stability. JSON was first presented to the world at the JSON.org website in 2001.

7.4.1.1 Completeness (M)

JSON is a lightweight, text-based, language-independent data interchange format. It was derived from the ECMAScript programming language, but is programming language independent. JSON defines a small set of structuring rules for the portable representation of structured data.

a) How well are all interface specified?

JSON does not attempt to impose ECMAScript's internal data representations on other programming languages. Instead, it shares a small subset of ECMAScript's textual representations with all other programming languages. JSON specifies all the common parts of the data

interchange for all JSON applications. Thus in an application application specific behaviours and specifications might be added.

- b) How easily can implementation take place without need of additional descriptions?

Since ECMA-404 contains only the common core a concrete implementation also requires application specific additions.

- c) What proof exists for successful implementations (e.g. availability of test results for media standards)?

JSON has been implemented in many applications and in large numbers (e.g. in billions of Internet Browsers). JSON today has a significant breakthrough and market penetration.

7.4.1.2 Clarity

- a) Straight text of 6 pages only, very compact standard, with four figures are used to provide definitive specifications.

- b) What tables, figures and reference materials are used to remove ambiguity? No tables, only four figures are included in the document.

- c) What contextual material is provided to educate the reader?

In the introduction reference is made to the JSON.org website where JSON was first presented to the world at in 2001 and lot of interesting additional material is to be found.

7.4.1.4 Testability (M)

The specification had sufficient review over an extended time (since 2001) period to characterise it as being stable.

The extent, use and availability of conformance/interoperability tests or means of implementation verification (e.g. availability of reference material for magnetic media) shall be described, as well as the provisions the specification has for testability. Do we have tools for that????

7.4.1.4 Stability (M)

- a) The 1st edition ECMA-404 was approved by the General Assembly of Ecma International in October 2013. JSON existed on JSON.org since 2001. ECMA-262 Ed. 1 which included JSON first for ECMAScript was approved in 2009. The respective fast-tracked ISO/IEC standard including JSON was approved in 2011. Because it is so simple, it is not expected that the JSON grammar will ever change. This gives JSON, as a foundational notation, tremendous stability JSON stands for JavaScript Object Notation.

- b) The Products using JSON has been around since 2001.

- c) Ecma International's due processes are used to track versions, fixes and addenda.

7.4.1.5 Availability (M)

Ecma International publishes its specifications at

- a) The standard is available as ECMA-404 from Ecma International.
- b) The 1st edition of this standard has been posted in October 2013.
- c) The distribution of ECMA-404 is not restricted.
- d) ECMA-404 is available free of charge.

7.4.2 Consensus (M)

The specification has achieved international consensus expressed by unanimous approval of the Ecma General Assembly.

7.4.2.1 Development Consensus

- a) Ecma International development process has been applied.
- b) Ecma International approval process has been applied.
- c) After approval of the Ecma technical committee TC39 the general Assembly of Ecma International approved this standard.

7.4.2.2 Response to User Requirements

- a) ECMA-404 is a clear response to users' requirement to use JSON not only for ECMAScript but also for many other languages and uses.
- b) No users have demonstrated dissatisfaction.

7.4.2.3 Market Acceptance

JSON (and also ECMA-404) has complete market acceptance over many years.

7.4.2.4 Credibility

- a) What is the extent and sue of conformance tests or means of implementation verification?
- b) What provisions does the specification have for testability?

7.4.3 Alignment

The specification has unique scope and is not conflicting with any international standard..

7.4.3.1 Relationship to Existing Standards

- a) ISO/IEC 16262 Ed. 3 already contains JSON to be used for ECMAScript. ECMA-404 is the common syntax (including of ISO/IEC 16262 Ed.3) for all JSON applications.
- b) The proposed ECMA-404 is a natural extension to ISO/IEC 16262 Ed.3.
- c) JSON is already part of ISO/IEC 16262 Ed.3 and it is not planned to remove or replace JSON.

7.4.3.2 Adaptability and Migration

- a) What adaptations (migrations) of either the specification or International Standards would improve the relationship between the specification and International Standards?

- b) How much flexibility do the proponents of the specification have?
- c) What are the longer-range plans for new/evolving specifications?

7.4.3.3 Substitution and Replacement

- a) What needs exist, if any, to replace an existing International Standard?
Rationale? Currently there is no replacement of an existing International Standard. In future, if accepted, the JSON syntax and interchange format may move out from ISO/IEC 16262 and normatively reference the separate JSON international standard. This approach is selected also in the new ECMA-262 Edition 6.
- b) What is the need and feasibility of using only a portion of the specification as an International Standard? ECMA-404 is the common syntax core and transfer format for all JSON application. Thus no further subset is foreseen.
- c) What portions, if any, of the specification do not belong in an International Standard (e.g. too implementation-specific)? All portions of this specification belong in an International Standard.

7.4.3.4 Document Format and Style

- a) This specification conforms to ISO/IEC directives part 2.