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| CWS/7/5 |
| ORIGINAL: English  |
| DATE: May 20, 2019  |

**Committee on WIPO Standards (CWS)**

**Seventh Session**

**Geneva, July 1 to 5, 2019**

Proposal for JSON specification

*Document prepared by the International Bureau*

## INTRODUCTION

 The International Bureau observes that more and more Intellectual Property Offices (IPOs) have started using JavaScript Object Notation (JSON) format for data dissemination, in particular via web services. JSON is text-based data interchange format considered to be lightweight, especially in comparison to the XML format. However, there is currently no widely accepted industry standard on JSON schemas.

 The XML4IP Task Force (XML4IP TF) has considered use of JSON format since 2013, in addition to the Standard XML schemas being managed by the Task Force. The Task Force noted that JSON is the preferred option when exchanging data between applications and web services while XML is the preferable format for sharing and storing documents between IPOs.

 The Committee on WIPO Standards (CWS) also considered the JSON format for the web services when Task No. 56 was created to:

“Prepare recommendations for data exchange supporting machine to machine communications focusing on:

* + message format, data structure and data dictionary in JSON and/or XML; and
	+ naming conventions for Uniform Resource Identifier (URI) of resources.”

 Taking into account the emerging needs and usage of JSON format by IPOs and the description of Task No. 56 above, the XML4IP TF prepared a draft working document for new WIPO standard on IP data using JSON, which is provided as the Annex of this document. This draft specification was developed using the proposal by the United States Patent and Trademark Office (USPTO) as a basis and is provided for consideration and comment by the CWS at its seventh session.

## WORKING DRAFT OF THE NEW JSON STANDARD

 The set of guidelines which forms the working draft is closely aligned with WIPO Standard ST.96, including a very similar naming convention to that defined in the ST.96 Annex I - XML Design Rules and Conventions. The XML4IP Task Force highlights the importance of compatibility between JSON objects and XML instances and suggests the re-use of the ST.96 schema component names, except provided in lower-camel-case format to indicate that they are instead JSON objects.

 WIPO ST.96 consists of a Main body and six Annexes. As the contents of the Specification is similar to ST.96 Annex I, a final composition of JSON standard will likely have more recommendations, e.g., implementation rules and guidelines such as ST.96 Annex V.

### Scope of the standard

 The XML4IP TF considers that this standard should provide guidance to IPOs and other interested parties that create or store IP data using JSON resources.

### Objective of the standard

 The Task Force agreed that this draft standard should aim to provide guidelines on drafting JSON schemas, in order to streamline productions of these by IPOs. Although this working draft is in the early stages of development, it seeks to achieve a single vocabulary, for both XML and JSON, to avoid any confusion in naming. The Task Force seeks to extend this specification to include JSON schema, preferably built from the atomic level.

 More specifically, the purpose for this standard is to:

* provide guidance on JSON data mark-up standardization;
* ensure consistency by establishing design principles for JSON;
* improve data exchange efficiency by promoting reuse of JSON resources among IPOs, as well as data provided to the public; and
* promote ease of use and understanding of the data over time with reuse.

### Structure of the standard

 The latest working draft, draft 0.1, consists of the following five chapters, as well as an introduction:

* naming conventions based on WIPO ST.96;
* JSON Schema Design Rules: for the schema itself;
* JSON Schema Constructs Design Rules: for objects and types;
* JSON Schema Identifiers: defining the URI that locates the JSON resource; and
* JSON Instance Design Rules: the structure and constraints for the JSON instance.

 In addition, there are three appendices:

* Appendix A: a series of tables which provide a mapping between XML and JSON schemas;
* Appendix B: representational terms used i.e. broad classes and their data types;
* Appendix C: a list of standard acronyms and abbreviations that must be used in place of the full term.

## FURTHER DISCUSSION AND DEVELOPMENT

 The International Bureau organized an online Meeting of the XML4IP TF in February 2019 to discuss the proposal prepared by the United States Patent and Trademark Office. The XML4IP TF members reviewed an initial proposal presented by United States Patent and Trademark Office at the Meeting in Seoul, March 2019. The Task Force agreed to develop JSON schema based on WIPO ST.96 and to start with simple-structured XML components, i.e., the atomic-level components.

 There are around 1,800 XML schema components defined in WIPO ST.96. The International Bureau, as the XML4IP Task Leader, in collaboration with the XML4IP TF members, will investigate a solution to facilitate the transformation of WIPO ST.96 XML schemas to JSON schema.

 The XML4IP TF will continue to improve the draft specification and plan to present a final proposal for consideration by the CWS at its eight session.

 *The CWS is invited to:*

1. *note the content of the present document;*
2. *comment on the working draft of JSON Specification*
3. *encourage its Members to participate in the discussion on the JSON Specification, to test JSON schema; and provide feedback to the XML4IP Task Force; and*
4. *request the XML4IP Task Force to present a final proposal for consideration by the CWS at its eighth session.*

[Annex follows]