OMG: DDS Consolidated JSON Syntax (DDS-JSON) Request For Proposal (RFP)

return to the DDS Family of Standards

Table 1: Data sheet for DDS Consolidated JSON Syntax (DDS-JSON) Request For Proposal (RFP)

Title	DDS Consolidated JSON Syntax (DDS-JSON) Request For Proposal
Acronym	DDS-JSON
Version	
OMG Document Number	mars/2018-03-01
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About RFP	https://www.omg.org/news/releases/pr2018/04-17-18.htm
Document	https://www.omg.org/cgi-bin/doc?mars/18-03-01.pdf

> **Note**: The following is an excerpt from the actual document. It is provided here as a convenience and is not authoritative. Refer to the original document as the authoritative reference.

Motivation

The DDS family of standards specifies a complete connectivity framework with a standard wire protocol, APIs, and type system. DDS enables thousands of mission-critical systems that span multiple domains (e.g., transportation, smart energy, medical devices, simulation and test, airspace, and defense). As a result, it is considered one of the core connectivity frameworks of the Industrial Internet of Things.

One of the most important requirements of Industrial Internet systems is the ability to exchange information between disparate systems. This poses a number of interoperability challenges, as many of these systems often rely on domainspecific connectivity frameworks with different type systems and serialization formats. The Industrial Internet Connectivity Framework [IICF]—a reference architecture recently published by the Industrial Internet Consortium (https://www.iiconsortium.org)—proposes the use of standard connectivity gateways to bridge information across connectivity frameworks.

One of the first examples of standard connectivity gateways is the Web-Enabled DDS [DDS-WEB] specification. It defines the building blocks necessary to bridge DDS systems with web services using REST and WebSocket APIs. To achieve fully interoperability, [DDS-WEB] specifies an XML syntax to represent DDS resources and leverages existing XML syntax to represent DDS data and QoS policies. As a result, implementations of [DDS-WEB] may exchange information serialized in XML format with web applications one one side, and information serialized in CDR and XCDR [DDS-XTYPES] format with native DDS applications on the other side.

Recently, all the XML syntax to represent DDS resources, data, and QoS policies has been formally consolidated into a single document: the DDS Consolidated XML Syntax specification [DDS-XML]. This specification contains all the necessary building blocks to serialize information in XML format, and to

define a textual representation of DDS system that may be used to deploy DDS applications.

While XML is a highly popular language-independent format to represent structured information, many systems and connectivity frameworks rely on other lighter-weight textual formats like JSON. This is true especially in web applications, such as those that [DDS-WEB] bridges, where REST and WebSocket APIs rely on JSON as their serialization format to represent data and resources. Hence, this specification solicits proposals for a DDS consolidated JSON syntax to represent DDS resources, QoS Policies, and data.