OMG: OPC-UA/DDS Gateway (DDS-OPCUA)

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Table 1: Data sheet for OPC-UA/DDS Gateway (DDS-OPCUA)

Title	OPC-UA/DDS Gateway
Acronym	DDS-OPCUA
Version	1.0
OMG Document Number	formal/20-01-01
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About Specification	https://www.omg.org/spec/DDS-OPCUA/
Document	https://www.omg.org/spec/DDS-OPCUA/1.0/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.

Scope

Data Distribution Service (DDS) is a family of standards from the Object Management Group® (OMG®) that provide connectivity, interoperability, and portability for Industrial Internet, cyber-physical, and mission-critical applications.

The DDS connectivity standards cover Publish-Subscribe (DDS), Service Invocation (DDS-RPC), Interoperability (DDS-RTPS), Information Modeling (DDS-XTYPES), Security (DDS-SECURITY), as well as programing APIs for C, C++, Java and other languages.

The Open Platform Communication Unified Architecture (OPC-UA) is an information exchange standard for Industrial Automation and related systems created by the OPC Foundation. The OPC UA standard provides an Addressing and Information Model for Data Access, Alarms, and Service invocation layered over multiple transport-level protocols such as Binary TCP and Web-Services.

DDS and OPC UA exhibit significant deployment similarities:

- *Both enable independently developed applications to interoperate even when those applications come from different vendors, use different programming languages, or run on different platforms and operating systems.*
- *Both have significant traction within Industrial Automation systems.*
- *Both define standard protocols built on top of the TCP/ UDP/IP Internet stacks. The two technologies may coexist within the same application domains; however, while there are solutions that bridge between DDS and OPC UA, these are based on custom mappings and cannot be relied to work across vendors and products.*

This specification overcomes this situation by defining a standard, vendor-independent, configurable gateway that enables interoperability and information exchange between systems that use DDS and systems that use OPC UA.