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

return to the DDS Family of Standards

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 Open Platform Communication Unified Architecture (UPC-UA) standard provides an Addressing and Information Model for Data Access, Alarms, and Service invocation layered over multiple transport-level protocols such as Binary Transmission Control Protocol (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.