

OMG: RTPS TCP/IP PSM for DDS Interoperability

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Table 1: Data sheet for RTPS TCP/IP PSM for DDS Interoperability RFP

Title	TCP/IP Platform-Specific Model (PSM) for the DDS Real-Time Publish Subscribe (RTPS) Protocol
Acronym	RTPS TCP/IP PSM
Version	
OMG Document Number	mars/17-09-24
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About RFP	https://www.omg.org/techprocess/meetings/schedule/RTPS_TCP-IP_PSM_for_DDS_Interop_RFP.html
Document	https://www.omg.org/cgi-bin/doc?mars/17-09-24.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 [Data Distribution Service \(DDS\) Real-time Publish-Subscribe wire protocol \(DDSI-RTPS\)](#) specification defines a set of requirements for a [wire protocol](#) suitable for the Data Distribution Service (DDS). Primary considerations in the design of the [Real-time Publish-Subscribe \(RTPS\)](#) wire protocol are: [performance](#), [configurability](#) (tuning quality-of-service), [fault-tolerance](#) (no single points of failure), [extensibility](#) (support new transports), [plug-and-play connectivity](#) (automatic discovery), [modularity](#), [scalability](#), and [type safety](#).

[RTPS](#) imposes very little requirements on the underlying transport: a connectionless service capable of sending packets [best-effort](#) is sufficient. A connection-oriented protocol can be used but is not required. The mechanisms of the underlying protocol map to the generalized notions of the RTPS [Platform Independent Model \(PIM\)](#).

The original [DDSI-RTPS](#) specification defined a [Platform Specific Model \(PSM\)](#) built upon the [udp](#) because of its simplicity, universal [availability](#), best-effort and connectionless capabilities, predictable behavior, scalability, and [multicast](#) support.

However, some [Data Distribution Service \(DDS\)](#) systems would benefit from an RTPS PSM built upon the [tcp](#). Among other scenarios, a TCP PSM would be better suited for communication through firewalls, where often UDP traffic is filtered; could leverage existing TCP-based [load-balancing](#) infrastructure; and would allow DDS to be deployed in some applications where governance mandates TCP exclusively. Therefore, the [goal](#) of this [Request For Proposal \(RFP\)](#) is to meet the requirements set forth by the RTPS PIM with minimum possible overhead using TCP.

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