FederatedDesigns

PRODUCT BRIEF

PASSIVE DDS OBSERVABILITY

Nexus Workbench

A DDS participant can tell you what it knows. **Workbench can help you discover what it doesn't.**



SYSTEM OVERVIEW Participants, topics, matching health, and issues in one view.

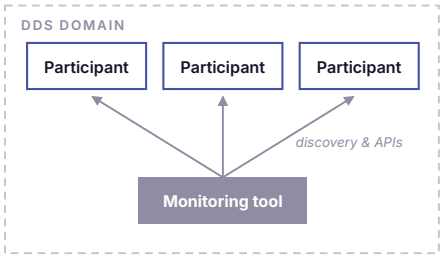
A participant reports what it discovered, matched, and received. **Workbench adds the insight a participant can't provide:**

- **What happened elsewhere** on the network
- **Why another participant** never discovered it
- **Which communications** never arrived

Workbench passively observes RTPS traffic and reconstructs what participants actually exchanged, without joining the domain, changing applications, or relying on vendor instrumentation.

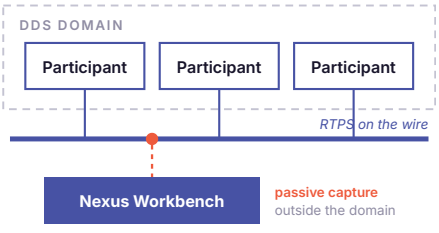
Two observation points

PARTICIPANT-BASED MONITORING



Inside the domain. The tool joins as another participant and learns through discovery and middleware interfaces, adding its own discovery traffic.

NEXUS WORKBENCH



Outside the domain. Workbench observes the RTPS messages participants exchange and reconstructs their relationships independently.

Why passive observation matters

See beyond one participant. A participant's view is local. Workbench sees discovery and endpoints across the whole system.

Find discovery and matching failures. See what was advertised, what was discovered, and whether endpoints are compatible.

Evidence, not just state. Examine what was actually transmitted and visible at the capture point.

AT A GLANCE

Observation
Passive, from outside the DDS domain

Input
Live capture or recorded traffic (pcap)

Standards
Built on the OMG DDS standards: DDSI-RTPS, DDS, and DDS-XTypes

Interoperability
Vendor-neutral. Works with any standards-compliant DDS implementation, or a mix of them.

Application changes
None required

ACROSS THE LIFECYCLE

Development
See how components discover and communicate.

Integration
Find incompatibilities across DDS implementations.

Test & validation
Compare actual exchanges with the architecture.

Troubleshooting
Investigate failures without modifying applications.

WHAT WORKBENCH SEES

Workbench analyzes traffic visible at its capture point, so placement determines coverage. Where DDS Security protects discovery or payloads, inspection is limited to what remains visible on the wire.

From network activity to actionable answers.

Workbench interprets captured RTPS traffic and organizes it into views of participants, endpoints, topics, and their interactions, so nobody has to reconstruct discovery from packets by hand.

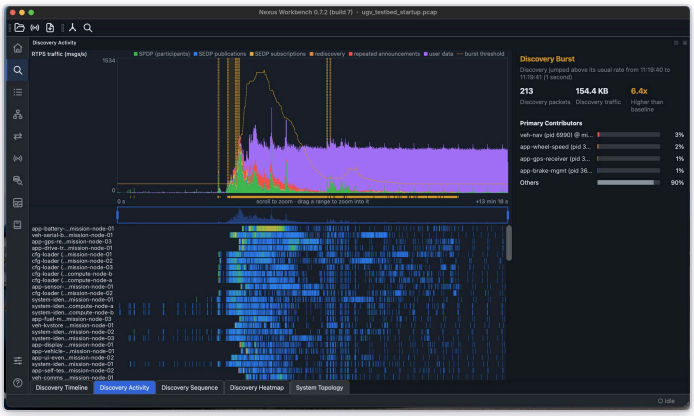


COVERAGE

Find what never connected

Every topic, by host, classified from what was advertised on the wire. These are the gaps a participant may never report.

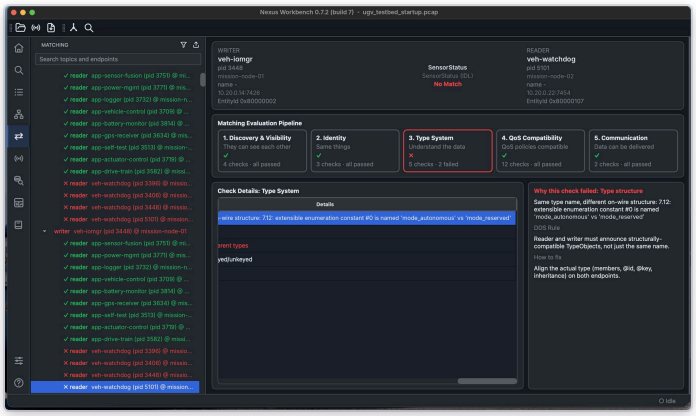
Matched	371
Unmatched	280
Publishing to nobody	117
Listening for nothing	163
Incompatible	15



DISCOVERY

Investigate discovery bursts

Spot discovery that spikes above baseline and see which participants contributed, across the full capture timeline.



MATCHING

Diagnose endpoint compatibility

Step through discovery, identity, type, QoS, and communication checks for any writer and reader. See which failed, the DDS rule behind it, and the fix.

A different position, not a replacement

	PARTICIPANT-BASED DIAGNOSTICS	NEXUS WORKBENCH
Observation point	Inside the DDS environment	Outside the DDS environment
Discovery	What the participant discovers or reports	Discovery messages visible on the network
Endpoint matching	Local matching state	Advertised endpoints, compatibility evaluated independently
Failed discovery	Limited visibility into undiscovered entities	Discovery messages on the wire, successful or not
Impact on discovery	Monitoring participant adds discovery traffic	No added participant or discovery traffic
Vendor dependence	May rely on vendor APIs or instrumentation	Standards-based RTPS analysis

See what your DDS system is actually doing.

Not just what it reports.

TALK TO US

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