rti

Your systems. Working as one.

Corporate Overview

Accelerating the Industrial Int

Data-Centric Infrastructure for Intelligent Machines and Systems

The Industrial Internet of things interconnects machines and harnesses data to build intelligent systems and applications never before possible. Using embedded sensors and software, machines connected via the Industrial Internet have the analytical intelligence to self-diagnose and self-correct, so they can operate reliably, react to real-world changes in their environment and provide more sophisticated service to their users. These complex systems clearly need performance, reliability, and scale.

Your Systems. Working as One.

RTI Connext DDS is a high-performance and highly reliable connectivity platform that serves as the core nervous system for the Industrial Internet of Things. RTI Connext connects applications across devices, systems and networks deployed at the edge and in the cloud. It allows them to intelligently share information and work together as one. It also offers a level of performance, reliability and scalability that is unmatched. RTI offerings are based on the DDS standard, the most advanced technology for the world's most critical distributed systems.

RTI Connext DDS Professional
Fast, Scalable and Resilient Software Connectivity Platform

RTI Connext® DDS Professional is the first connectivity platform designed for the demanding requirements of the Industrial Internet of Things (IIoT). It delivers the low-latency and real-time QoS needed to monitor and control physical-world processes. It provides the reliability essential for mission-critical systems. And it complies with the Data Distribution Service (DDS) standard from the Object Management Group (OMG) to foster interoperability and an open architecture, slashing lifecycle costs.

- Accelerated distributed application development and integration of existing assets
- Interoperable across programming languages, operating systems and CPU families
- Low latency and high throughput, even at scale
- Deterministic even under load and at scale
- Reliable multicast for efficient data distribution
- Peer-to-peer architecture with no message brokers or servers
- Non-stop availability with live upgrades and no single point of failure
- Powerful tools speed development, integration and testing

RTI Connext DDS Secure
Secure Messaging for Intelligent Machines

Connext DDS Secure extends Connext DDS Professional with a rich set of security capabilities. It provides the world's first standards-compliant, off-the-shelf messaging platform that delivers the security, performance and safety required for deployment of the Industrial Internet of Things.

- Authentication, access control, confidentiality and integrity
- Powerful defense against unauthorized access, tampering and replay
- Secures communication over any transport including TCP, UDP, multicast and shared memory
- Level of security configurable per-topic, including whether data is encrypted and/or signed
- Customizable plugins integrate with existing security infrastructures and hardware acceleration
- Requires little or no modification to existing DDS applications
- Complies with OMG DDS Security specification

RTI Connext for the Industrial Internet of Things

There are several protocol standards addressing the Industrial Internet of Things challenges. RTI Connext^{TM} DDS (Data Distribution Service) is the one that most directly addresses the development of intelligent distributed machines. Connext DDS can deliver data at physics speeds to thousands of recipients with strict control of timing, reliability, failover, and language and OS translation. Examples of complex DDS applications include Air Traffic Control systems, large Wind farms, and complex medical devices.

» RTI Services: Industry-Best Expertise

Our RTI Professional Services team is made up of the best and brightest experts in critical systems development. Building on our Connext solution, we have deployed some of the largest and most complex distributed systems in the world. RTI will train your team, match your system requirements to a data distribution design and provide project development support in order to mitigate your project risk, increase productivity and ensure quality in your final deliverable—often on a shortened schedule.

RTI customers span the breadth of the Industrial Internet of Things, including medical, energy, mining, air traffic control, trading, automotive, unmanned systems, industrial SCADA, naval systems, air and missile defense, ground stations, and science. The total value of system designs that trust RTI for their fundamental architecture exceeds $1 trillion.

» Connext DDS Micro

Small-Footprint Messaging Software for Resource-Constrained Applications

RTI Connext DDS Micro provides a small-footprint modular messaging solution for resource-limited devices that have minimal memory, flash, CPU power or no operating system. Connext DDS Micro minimizes the amount of code required and reduces development costs.

- Small memory footprint
- User-configurable feature set through build options
- Support for low-power CPUs
- Scalability from embedded 16-bit microcontrollers to multicore 64-bit CPUs
- Pre-built support for Linux (x86), Windows, FreeRTOS (ARM), VxWorks (PowerPC) and devices without OS

» Connext DDS Cert

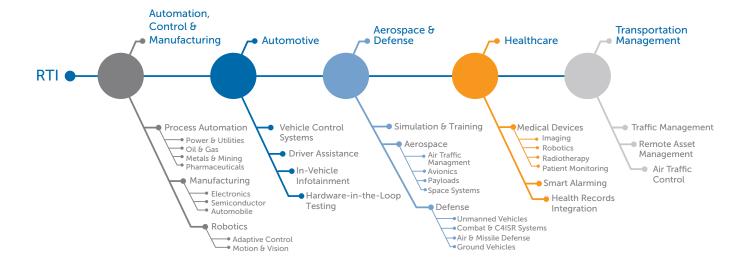**Certifiable Messaging Middleware for Safety-Critical Systems**

RTI Connext DDS Cert is a safety-certifiable communications infrastructure with an available DO-178C Level A Certification Package. Based on the DDS standard, its run-time libraries provide developers with high-level publish/subscribe communication APIs that simplify application logic while eliminating the need for custom networking code. This can save tens of thousands of lines of application software and the need to develop its accompanying certification artifacts, avoiding years of effort and millions of dollars in cost.

- Meets stringent safety certification standards
- Reusable certification evidence
- Small memory footprint
- Highly portable across operating systems and CPUs

Big Data? No problem.

There's a transformation in the way the world interconnects and functions. The Industrial Internet of Things is growing and must function across existing platforms such as cloud, mobile, and enterprise software, and expand to newer Industrial Internet of Things nodes and devices. Managing your data—integrating disparate systems, incorporating legacy applications, ensuring scalability, and planning for the future—can be a challenge. RTI makes it an advantage. RTI's messaging software provides the architectural foundation to keep your data moving so you have the data you need–precisely when you need it.

RTI's performance, reliability and interconnection experience across platforms, devices and industries is unparalleled. RTI has worked with the most experienced Industrial Internet architects and innovators across leading industries. Together we can play an important role in delivering systems that solve today's problems and define the future.

RTI

Automation, Control & Manufacturing
- Process Automation
  - Power & Utilities
  - Oil & Gas
  - Metals & Mining
  - Pharmaceuticals
- Manufacturing
  - Electronics
  - Semiconductor
  - Automobile
- Robotics
  - Adaptive Control
  - Motion & Vision

Automotive
- Vehicle Control Systems
- Driver Assistance
- In-Vehicle Infotainment
- Hardware-in-the-Loop Testing

Aerospace & Defense
- Simulation & Training
- Aerospace
  - Air Traffic Managment
  - Avionics
  - Payloads
  - Space Systems
- Defense
  - Unmanned Vehicles
  - Combat & C4ISR Systems
  - Air & Missile Defense
  - Ground Vehicles

Healthcare
- Medical Devices
  - Imaging
  - Robotics
  - Radiotherapy
  - Patient Monitoring
- Smart Alarming
- Health Records Integration

Transportation Management
- Traffic Management
- Remote Asset Management
- Air Traffic Control

RTI in the Industrial Internet of Things

About RTI

RTI provides the connectivity platform for the Industrial Internet of Things.

Our RTI Connext® messaging software forms the core nervous system for smart, distributed applications. RTI Connext allows devices to intelligently share information and work together as one integrated system. RTI was named "The Most influential Industrial Internet of Things Company" in 2014 by Appinions and published in Forbes.

Our customers span the breadth of the Internet of Things, including medical, energy, mining, air traffic control, trading, automotive, unmanned systems, industrial SCADA, naval systems, air and missile defense, ground stations, and science.

RTI is committed to open standards, open community source and open architecture. RTI provides the leading implementation of the Object Management Group (OMG) Data Distribution Service (DDS) standard.

RTI is the world's largest embedded middleware provider, privately held and headquartered in Sunnyvale, California.

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