rti
Your systems. Working as one.

Integrating Operational Systems: Bridging to the Enterprise

Data on the Move »

Moving data intelligently is the key to building advanced systems.

An independent world of "operational technology" (OT) is developing separately from IT groups. Where IT systems are traditionally at the hub of the enterprise, OT systems are at the edge in operational environments. IT systems provide information for business decisions. OT systems control physical processes and manage physical assets. Today's IT and OT systems must integrate distributed applications, mix platforms and merge data models — frequently across remote locations. This convergence of IT and OT results in larger, more complex systems of systems.

As systems grow larger, connections grow slower, more brittle and less reliable. Today's technologies and architectures fall short in delivering both the performance to connect many devices and the power and flexibility to integrate systems. Often, the result is a plethora of custom connections, inefficiencies and lack of situational awareness needed to manage businesses effectively.

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RTI Connext™ solutions provide a flexible data distribution infrastructure for integrating data sources of all types. At its core is the world's leading ultra-high performance, distributed networking data bus. It connects data within applications as well as across devices, systems and networks. It also delivers large data sets with microsecond performance and granular quality-of-service control. RTI Connext is standards-based and an open architecture connecting devices from deeply embedded real-time platforms to enterprise servers across a variety of networks.

RTI Connext Micro

Small-footprint messaging software for resource-constrained and/or certifiable applications

Connext Micro addresses the data bus requirements of applications running in resource-constrained environments that have minimal memory, Flash, CPU power or no operating system. Additionally, Connext Micro is designed to become a certifiable component in high-assurance systems. Benefits include:

- Accommodates resource-constrained environments
- Modular and user extensible architecture
- Designed to be a certifiable component for safety-critical systems
- Seamless interoperability with Connext DDS and Connext Messaging

RTI Connext DDS

Data-centric messaging software for advanced distributed systems and applications

Connext DDS addresses the sophisticated data bus requirements in complex systems including an API compliant with the Object Management Group (OMG) Data Distribution Service (DDS) specification. DDS is the leading data-centric publish/subscribe (DCPS) messaging standard for integrating distributed real-time applications. Connext DDS is the dominant industry implementation with benefits including:

- OMG compliant DDS API
- Advanced features to address complex systems
- Advanced Quality of Service (QoS) support
- Comprehensive platform and network transport support
- Seamless interoperability with Connext Micro and Connext Messaging

What if all your systems — from OT systems to IT systems — worked together? What if you could connect sensor to action, action to analysis, analysis to intelligence and intelligence to decision? What if your thousand-node system could react in milliseconds, feed real-time web applications, meld in existing systems and infuse the enterprise with instant information?

RTI Connext™ product family is the only messaging and integration platform with the speed, scalability and power to put it all together. RTI Connext forms the data distribution and integration backbone for your demanding applications.

RTI enables efficient OT system development and system-of-systems integration while spanning the gap to the business enterprise.

RTI Services: Industry-Best Expertise

Our RTI Professional Services team is made up of the best and the brightest in the area of critical systems development. Building on our Connext solution, we have deployed some of the toughest 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 provides critical solutions for large-scale process automation, financial services systems, advanced aerospace & defense combat systems, closed-loop robotics and highly distributed traffic management and asset management systems. The RTI team leverages real-world experience building sophisticated distributed systems as well as our advanced internal research projects on systems technologies and architectures.

RTI Connext Messaging
Universal messaging software backbone for both OT and IT applications

Connext Messaging provides a versatile and highly scalable messaging middleware for developing applications leveraging a variety of embedded and enterprise design patterns. Connext Messaging flexibility reduces development, integration and testing costs and enables rapid implementation of new system requirements. Benefits include:

- Communication patterns for publish/subscribe, request-reply, command/response, point-to-point with queues or a hybrid of patterns for unique customization
- Support for Persistence Service for late joiners and Recording Service for logging data for deep analysis and archiving
- APIs for JMS and Connext DDS
- Tools to monitor, analyze and debug your complete system
- Seamless interoperability with Connext Micro and Connext DDS

RTI Connext Integrator
Integration infrastructure for connecting disparate OT systems and bridging to IT
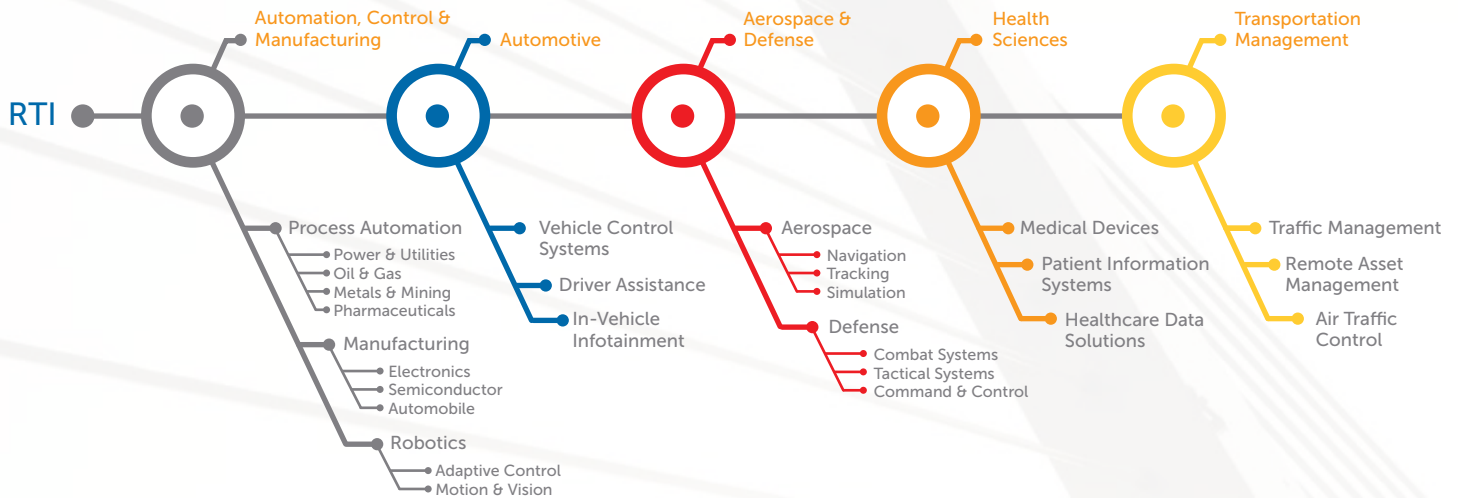
RTI Connext Integrator is a flexible integration infrastructure for OT systems, legacy systems and bridging to IT applications while requiring little or no modification. Connext Integrator is based on a proven foundation of technology and tools used in highly diverse systems, often with extreme real-time performance requirements. Connext Integrator benefits include:

- Support of a rich set of integration capabilities including Message Translator, Content Enricher, Content Remover, Splitter and Aggregator
- Integration support for standards including JMS, SQL databases, file, socket, Excel, OPC, STANAG, LabVIEW, Web Services and more
- Ability for users to create custom integration adapters
- Database Service integration for Oracle, MySQL and other relational databases
- Tools for visualizing, debugging and managing all systems in real-time

Big Data? No problem.

Data is big and data is everywhere. Managing your data — integrating disparate systems, incorporating legacy applications, ensuring scalability, planning for the future — can be a challenge or a business advantage. RTI's messaging software provides the architectural foundation that keeps your data moving so you have the data you need — precisely when you need it. RTI bridges the gap between data and better business decisions.

Customers in many industries and application areas are taking advantage of RTI's solutions and expertise to build data-critical applications and systems at the operational edge and bridge them to the business enterprise.

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

Aerospace & Defense
- Aerospace
  - Navigation
  - Tracking
  - Simulation
- Defense
  - Combat Systems
  - Tactical Systems
  - Command & Control

Health Sciences
- Medical Devices
- Patient Information Systems
- Healthcare Data Solutions

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

About RTI

RTI is the world leader in delivering fast, scalable, communications software that address the challenges of building and integrating real-time operational systems. RTI Connext solutions meet the needs of enterprise-wide integration — from the operational edge to the enterprise data center. The RTI standards-based software infrastructure improves the efficiency of operational systems while facilitating better decisions, actions and outcomes for the business enterprise.

For over ten years, RTI has delivered industry-leading products and solutions for customers in markets ranging from Aerospace & Defense, Process Automation, Financial Services, Energy, Automotive, Health Sciences and Transportation Management.

Founded in 1991, RTI is privately held and headquartered in Sunnyvale, California.

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