CAPABILITY BRIEF

RTI in Healthcare and Medical Applications

ENABLING THE FUTURE FOR CONNECTED HEALTHCARE

HIGHLIGHTS

Proven, high-performance connectivity framework for reliable, interoperable data exchange among complex devices and/or large-scale systems of systems

Built-in DDS security that aligns with FDA cybersecurity guidance to protect data and patient privacy requirements

Data-centric connectivity for full visibility into data in motion and data at rest throughout the healthcare system

Plug-and-play interoperability that works seamlessly and securely between systems and medical devices

Scalability to millions of nodes for large, complex systems

Proven platform to speed time to market and lower development and maintenance costs

RTI Connext® DDS enables the data-driven medical systems of modern healthcare. It provides the medical-grade connectivity framework that seamlessly and securely exchanges real-time data between healthcare devices, applications and systems. Built on the proven OMG® DDS standard, Connext DDS manages data complexity with ease and provides a foundation for artificial intelligence (AI) and automation that leads to improved efficiency, fewer medical errors and improved patient outcomes.

SECURELY CONNECTING THE MEDICAL TECHNOLOGY OF TOMORROW

Today's healthcare systems run on real-time data. Smart systems that utilize interconnected data – from devices to imaging, from bedside to telehealth – can improve patient outcomes, reduce medical errors and lower healthcare system costs. This seamless communication requires a highly reliable connectivity framework to transport data, regardless of source, in real time.

RTI enables the development of data-aware medical technology of tomorrow with Connext DDS, the connectivity framework built for the Industrial Internet of Things (IIoT). Connext DDS streamlines connectivity within complex devices and across healthcare systems, from edge to cloud. Developers can build and link healthcare applications, regardless of architecture or operating system. Its central databus seamlessly distributes data in motion, allowing medical devices and their components – regardless of manufacturer – to work as a single integrated solution – reliably, securely and in real time. The distributed nature of the architecture ensures continuous uptime with no single point of failure.

MEDICAL-GRADE CONNECTIVITY FRAMEWORK

Connext DDS delivers a trusted medical-grade connectivity framework that addresses the wide range of demanding data connectivity requirements in healthcare. By utilizing the data centric publish/subscribe technology with strong Quality of Service (QoS), it makes it possible for the system to accommodate a dynamic network of participants. RTI Connext DDS Secure provides fine-grained security that allows developers to secure each piece of data, at rest or in motion, by the data type. It enables patient data and control data with different security requirements to align with their regulatory and system performance needs.

For development teams designing complex systems, Connext DDS provides users with the following capabilities:

- Innovative data-centric connectivity that delivers full visibility into data in motion

- A single solution to address the wide range of demanding data connectivity requirements

- Plug-and-play interoperability between systems and system components

- Scalability for increasingly large and complex systems

- Self-forming and self-healing resilient systems with no single point of failure

- Proven integration of fast local control loops with secure connectivity over long distances and with cloud infrastructure

- Low latency with real-time QoS

- Reliable systems operation over low-bandwidth communication links with long transmission delays

- Fully interoperable security support for confidentiality, integrity and access control

CONNEXT DDS IN ACTION

RTI has deep experience in supporting distributed systems within highly-regulated markets. Connext DDS users rely on RTI software to manage the connectivity aspect of their systems, decreasing time to market and lowering costs. Here are some of their stories.

Driving innovation through a common connectivity architecture

Connext DDS is the foundation for the BK Ultrasound Global Databus, providing this global ultrasound equipment leader with the flexibility to help develop applications independently, implement plug and play interoperability, ensure fine control performance, and provide real-time response and action in a distributed system. DDS readily addresses the challenge of mixing real time communications with IT infrastructure, an essential requirement for BK Ultrasound systems. Due to the flexibility that DDS offers, features can be developed independently of the need to integrate security into future releases.

Enabling faster emergency response to save lives

When a critical health event occurs, faster response times lead to better outcomes. The Stryker Physio-Control System of Care helps to improve survival for STEMI patients by linking field and hospital care teams for a more rapid care cycle. Patients also benefit from the comprehensive information delivery the system provides. Hospitals know exactly what to expect before patients reach the emergency room, allowing time for the care teams to be assembled and briefed in advance, leading to improved patient outcomes.

Lowering the cost of care through interoperability

DocBox is developing an innovative clinical process management solution for hospitals to help clinicians eliminate medical mistakes, improve clinical workflow and processes, and free up much of the time spent on administrative duties. It reduces administration time so that nurses can spend more time on providing patient care. Connext DDS is used to provide secure, interoperable device connectivity allowing proof of concept consolidation of device alarms, equipment monitoring and status. Additionally, it allows decision support to utilize data from a variety of medical devices.

Driving innovation through a common connectivity architecture

GE Healthcare is working with RTI on a data-centric approach for the hospital of the future, in order to make medical equipment work as one unified system, sharing data in real time, securely and reliably. This approach will combine with AI and advanced Clinical Decision Support (CDS) to improve patient outcomes, reduce errors and lower costs. It will help doctors and nurses ensure 24x7 quality monitoring, detect unexpected conditions and deliver critical care on time.

ABOUT RTI

Real-Time Innovations (RTI) is the largest software framework company for autonomous systems. RTI Connext® is the world's leading architecture for developing intelligent distributed systems. Uniquely, Connext shares data directly, connecting AI algorithms to real-time networks of devices to build autonomous systems.

RTI is the best in the world at ensuring our customers' success in deploying production systems. With over 1,500 designs, RTI software runs over 250 autonomous vehicle programs, controls the largest power plants in North America, coordinates combat management on U.S. Navy ships, drives a new generation of medical robotics, enables flying cars, and provides 24/7 intelligence for hospital and emergency medicine. RTI runs a smarter world.

RTI is the leading vendor of products compliant with the Object Management Group® (OMG®) Data Distribution Service™ (DDS) standard. RTI is privately held and headquartered in Sunnyvale, California with regional offices in Colorado, Spain and Singapore.

Download a free 30-day trial of the latest, fully-functional Connext DDS software today: https://www.rti.com/downloads.

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