DATASHEET

RTI in Oil and Gas

DELIVERING SECURITY, INTEROPERABILITY AND SAFETY

HIGHLIGHTS

Integration from edge to cloud over challenging terrain

Replaces low-level communications programming with a data-centric publish/subscribe model

Delivers microsecond latency, safety certification, fine-grained security and proven operational readiness

Operating modern oil and gas reservoirs requires superior monitoring and control, connectivity and process automation. Previously deployed technology limits the ability to quickly and reliably integrate and robustly operate field-to-cloud systems across large installations. The Industrial Internet of Things (IoT) offers industry leaders an opportunity to transform their infrastructures to take advantage of open, high-bandwidth protocols and low-cost intelligent networks.

INDUSTRY CHALLENGES AND OPPORTUNITIES

The Oil and Gas industry is currently experiencing unprecedented technology challenges, including massive data flow from new sensor technology, new analysis techniques, complex drilling processes and rapidly changing requirements and regulations for well monitoring and reservoir management. Concurrently, the number of field experts is plummeting; approximately 60 percent of the current technical field experts are expected to retire over the next decade. This shortage of a qualified workforce results in an urgent need for equipment modernization and greater process automation.

To address the industry changes, companies are embracing more intelligent systems and processes. In addition, with the current cyclic reduction in oil prices, technological advancements must be cost effective, labor effective and minimally disruptive. They need to leverage existing infrastructure and preserve prior investments in equipment and personnel training.

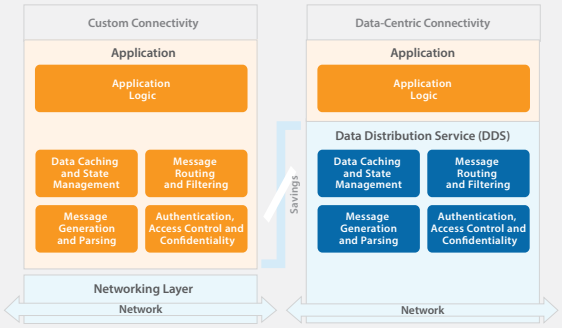
The Industrial IoT helps address the business realities of shrinking oil prices and the upcoming shortage of qualified technical personnel. The intelligent data- connectivity technology running at the core of smart distributed systems enables safer operations with more automated oversight. It also helps companies gain a competitive advantage by accelerating development of new value-added applications and services in the future.

INDUSTRIAL IOT PLATFORM FOR OIL AND GAS

Industry leaders are already funding efforts to get ahead of the competition through technology differentiation. One such example is the next-generation open and secure automation initiative, funded by a large national oil distributor. The strategic investment will result in a new architecture to control and optimize refining and chemical manufacturing facilities, while enabling future equipment and information services such as preventative maintenance and fleet optimization.

The open data connectivity standard of the Industrial IoT, Data Distribution Service (DDS), provides an ideal foundation for control and process automation frameworks, as well as future revenue-generating information services. Replacing low-level communications programming with a data-centric

publish/subscribe model saves tens of thousands of lines of application code, avoiding years of effort and millions of dollars in cost.



HOW COMPANIES USE CONNEXT DDS

RTI Connext® DDS, the leading DDS implementation, provides the connectivity platform for the Industrial IoT. Connext DDS has already been widely adopted by the world's largest companies in the oil and gas, automotive, robotics, underground mining, medical systems, military systems, air traffic control and other industrial sectors. Connext DDS is the only middleware technology to deliver microsecond latency, safety certification, fine-grained security and proven operational readiness.

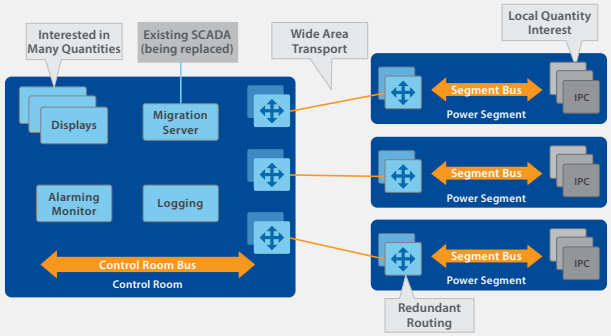
ENABLE INTELLIGENT WELL DRILLING AND COMPLETION AUTOMATION

A leading global provider of oil and gas drilling and production equipment and services uses Connext DDS as a high-speed databus to connect sensors and actuators at the wells with a process controller. In addition to automating drilling and completion, Connext DDS is used for equipment health monitoring, activity analysis and log status readings.

It also integrates the well domain with a remote control center. A wireless link or fiber network allows well information to be automatically sampled, with readings downloaded and stored in the control center. The gathered data helps remote technical experts intelligently analyze well operations and send corrective feedback to the well systems. When local automation fails to handle errors, the system alerts engineers in the control center to debug or restart remote processes.

ENSURE CRITICAL INFRASTRUCTURE AVAILABILITY

The largest power plant in North America has replaced its SCADA control system with a new distributed control system based on Connext DDS. The aging, monolithic SCADA system was not scaling to meet today's important requirements – extreme availability, fault tolerance, performance, security and ability to implement wide-area communications. The new, DDS standard-based control system is modern, distributed, secure and very reliable. Compared to the old system, it is smarter, more efficient and easier to evolve. Also, because it is based on modern networking protocols, the new design can leverage new technology as it becomes available, such as cloud computing, connectivity and security.



ABOUT RTI

Real-Time Innovations (RTI) is the largest software framework provider for smart machines and real-world systems. The company's RTI Connext® product enables intelligent architecture by sharing information in real time, making large applications work together as one.

With over 1,500 deployments, RTI software runs the largest power plants in North America, connects perception to control in vehicles, coordinates combat management on US Navy ships, drives a new generation of medical robotics, controls hyperloop and flying cars, and provides 24/7 medical intelligence for hospital patients and emergency victims.

RTI is the best in the world at connecting intelligent, distributed systems. These systems improve medical care, make our roads safer, improve energy use, and protect our freedom.

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 headquarters in Spain and Singapore.

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

Your systems. Working as one.

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