Reduce the time, cost and risk required to develop, integrate and certify your safety-critical distributed applications. Connext™ DDS Cert provides a small footprint and safety certifiable communications infrastructure for systems requiring high performance and reliability.

**Highlights:**

- Ability to meet stringent safety certification standards
- Reusable certification evidence available for DO-178C Level A
- Small memory footprint
- Support for low power CPUs
- Scalability from embedded 16-bit microcontrollers to multicore 64-bit CPUs
- Bundled source code
- Pre-built support for Linux (x86), Windows, VxWorks and VxWorks 6.6 Cert (PowerPC) and devices without OS (ARM)
- Portability to other embedded or real-time operating systems
- Completely decentralized and easy-to-embed architecture with no message brokers or daemon processes
- Standards compliance: based on DDS programming interface and RTPS wire interoperability protocol

Intelligent systems in mission-critical environments are held to an extremely high standard. Certification requirements vary based on the needs of the industry being served. But the need for high reliability, performance and assurance remains constant.

In these applications, middleware plays the critical role of enabling communication between new, third-party and legacy components. Whether these applications are in cars, planes, medical equipment or the battlefield, they rely on real-time data exchange to support real-time control and automated insight.

With its small code size and fully deterministic behavior, Connext DDS Cert offers the portability and reliability demanded by these systems. It also works in devices with minimal memory, flash, CPU power or even no operating system. By abstracting out low-level networking and communication details and providing a flexible integration framework, Connext DDS Cert reduces development time and cost by minimizing the amount of device or application specific code that has to be created.

Connext DDS Cert is specifically designed to become a certifiable component in highly reliable and high-assurance systems. It satisfies the demanding certification processes required by avionics, medical and other critical systems. By providing an off-the-shelf and standards-compliant alternative to in-house development, Connext DDS Cert significantly reduces the development and certification costs and offers a lower-risk solution.
Comprehensive Messaging Solution

Peer-to-peer communication
Connext DDS Cert uses an innovative, completely decentralized architecture that delivers consistent low-latency, high throughput and scalability. Applications directly exchange data in a true peer-to-peer manner – no servers, message brokers or daemon processes act as bottlenecks or single points of failure.

Real-time Quality of Service (QoS)
Applications have comprehensive control over and visibility into real-time behavior, including timing, deadlines, resource utilization and system state. QoS can be specified per-topic and per-subscriber.

Optimized publish/subscribe
Data can be reliably multicast to multiple applications and devices for extremely efficient streaming data distribution. With multicast, messages can be routed and filtered by the network switch instead of by the middleware or application software.

Wire efficiency
The Real-Time Publish-Subscribe (RTPS) protocol is extremely wire efficient. Data is sent in a compact binary representation. Most metadata is only exchanged once, at discovery time.

Optimized for Small-Footprint Applications

Low memory requirement
Connext DDS Cert is a library that links with your application. The library size is optimized for small footprint applications and memory allocation is kept to a minimum.

Highly portable
Bundled source code enables developers to port Connext DDS Cert to new operating systems, compilers or processor architectures. RTI Connext DDS Cert has no built-in dependency on operating system services. Applications can be implemented on platforms with minimal operating system capabilities or no operating system at all. Processor support ranges from 16-bit microcontrollers with 32-bit integer support to multicore Intel and PowerPC CPUs. Leading enterprise operating systems, including Linux and Windows, are supported as well to ease application development and testing.

Designed for Safety-Critical Applications

Safety certification
RTI Connext DDS Cert is designed to become certifiable as a component of a complete system undergoing certification to RTCA/ DO-178B/C (EUROCAE ED-12B/C). RTI provides services to support certification efforts by developing the necessary certification artifacts, including software development, verification, and configuration management plans and software requirements, design and code standards.

Certification evidence is licensed separately. Availability is planned for mid-2014.

Small code size
With minimized lines of source code, Connext DDS Cert provides a cost-effective foundation for rigorous certifications.

Deterministic behavior
The code is developed using process guidelines that ensure deterministic behavior. All memory allocation is done at startup and no memory is freed at run-time.

Complementary Products
Connext DDS Cert is fully interoperable with Connext DDS Professional, the world’s most popular implementation of the DDS standard, which is augmented with many powerful tools and run-time services.

About RTI
RTI is the real-time infrastructure software company.

RTI provides the messaging backbone for the world’s most demanding real-time systems. RTI Connext™ enables applications – running on the smallest devices and the largest enterprise servers – to seamlessly share information and work together as one.

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.

Our customers are in aerospace and defense, process automation, financial services, energy, automotive, health sciences, and transportation. RTI is privately held and headquartered in Sunnyvale, California.

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