Press release

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RTI Announces the First Connectivity Software for Highly Autonomous Systems

Connext 6 Dramatically Accelerates the Development and Deployment of Highly Autonomous Systems

SUNNYVALE (USA)/London, February 18, 2018 – Real-Time Innovations (RTI), the Industrial Internet of Things (IIoT) connectivity company, announced the newest release of its Connext® product suite, Connext 6. It includes the first connectivity software designed to accelerate the development and deployment of highly autonomous systems. It provides autonomous vehicle developers with the advanced technology they need to address the complex data distribution challenges of Level 4 and Level 5 autonomy. Connext 6 offers the only standards-based framework to support autonomous vehicle development, from research to production.

The automotive industry is undergoing a transformation where the future will be autonomous, connected and shared. Auto manufacturers are racing to develop highly and fully autonomous vehicles, necessitating a fundamental change in vehicles' compute architecture and software. A plug-and-play connectivity standard is necessary to ease integration across the automotive supply chain.

When RTI introduced the Connext product suite, it accelerated the development of Industrial IoT systems based on robust, secure and scalable connectivity compliant with the Data Distribution Service (DDS) standard. Now with Connext 6, makers of autonomous systems are able to address key technical challenges, including: effective management of high-bandwidth sensor data, simple integration with standardized interfaces and optimized security, ideal for safety-critical systems. New features are compatible and interoperable across RTI's Connext product suite: Connext DDS Secure, Professional, Micro and Cert.

High Bandwidth Data Distribution

Highly autonomous systems pose an unprecedented challenge of assimilating large volumes of streaming data from LiDAR, high-definition cameras and radar sensors; distributing it to many destinations; and simultaneously analyzing and responding to it in real-time. In order to meet these requirements, autonomous vehicle developers would otherwise be forced to develop time-intensive, in-house data distribution solutions. However, with Connext 6, developers can now efficiently distribute high bandwidth sensor data to autonomous system applications, including for sensing, perception, visualization, mapping and display.

To support high-volume data, Connext 6 offers new mechanisms that are optimized for sending and receiving large data samples. These enhancements significantly enhance throughput and latency. With typical HD camera data, they reduce end-to-end latency by up to 67% when distributing data over an Ethernet network and up to 99% when distributing data over shared memory, between two applications running on the same processor. Connext 6 enhancements include the ability to evolve data models over time while retaining interoperability with already deployed components, content-aware filtering and data introspection and DDS-compliant network interoperability.

Integration with Common Platforms and Frameworks

Automotive Original Equipment Manufacturers (OEMs) incorporate components provided by Tier 1 and Tier 2 suppliers, which can lead to integration and security challenges. Connext 6 provides a data-centric, interoperable framework that supports all of the operating systems and processor families commonly used by OEMs and their suppliers – tested on nearly 100 different platforms. RTI's software also supports use of the DDS standard in both the AUTOSAR Adaptive Platform and the Robotic Operating System (ROS2). The Connext Databus integrates AUTOSAR Adaptive, ROS2 and native DDS components together for optimized end-to-end data sharing with little or no custom integration required.

Safety Certification

Vehicle manufacturers face the challenge of eventually needing to certify

high-level autonomous systems to meet stringent safety standards, which can be expensive and highly complex. RTI's Connext DDS Micro has been proven effective in safety-critical environments and provides a pathway to certification for ISO 26262 ASIL-D, the automotive functional safety standard. By leveraging Connext 6 capabilities, developers can eliminate the need for custom networking code and accompanying certification artifacts, avoiding years of development and certification effort and millions of dollars in cost. Additionally, Connext 6 includes RTI Connext DDS Secure, the only security standard designed for real-time control and autonomous applications. With this technology, manufacturers can apply fine-grain, data-centric flow control over security policies, such as access control and encryption.

"I believe that the automotive industry is in the midst of a second electronic revolution, the Internet of Vehicles," said Karl-Thomas Neumann, Head of Mobility at EVELOZCITY and Advisory Board Member at RTI. "This time, the car is connecting to the world – requiring new concepts, new technology and new services. RTI is at the forefront of this innovation. With Connext 6, autonomous vehicle developers are able to address the industry's most technical challenges and accelerate the development and deployment of their vehicles. RTI's advanced technology and industry expertise is truly driving the future of automotive."

Availability
The Connext 6 product suite is generally available in Q1 2019. RTI customers can request a preview release by contacting their local sales representative.
Download a free 30-day trial of the latest, fully-functional Connext DDS software today: https://www.rti.com/downloads.

For more information on Connext DDS and a full list of new features, please visit: https://www.rti.com/products/connext-6

Picture (source: RTI):

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About Real-Time Innovations, Inc. (RTI) (www.rti.com)**:**
Real-Time Innovations (RTI) is the Industrial Internet of Things (IIoT) connectivity company. The RTI Connext® databus is a software framework that shares information in real time, making applications work together as one, integrated system. It connects across field, fog and cloud. Its reliability, security, performance and scalability are proven in the most demanding industrial systems. Deployed systems include medical devices and imaging; wind, hydro and solar power; autonomous planes, trains and cars; traffic control; Oil and Gas; robotics, ships and defense.
RTI lives at the intersection of functional artificial intelligence and pervasive networking[SM].
RTI is the largest vendor of products based on the Object Management Group (OMG) Data Distribution Service™ (DDS) standard. RTI is privately held and headquartered in Sunnyvale, California.

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