The Automotive Communication Framework Leader for Software-Defined Vehicles
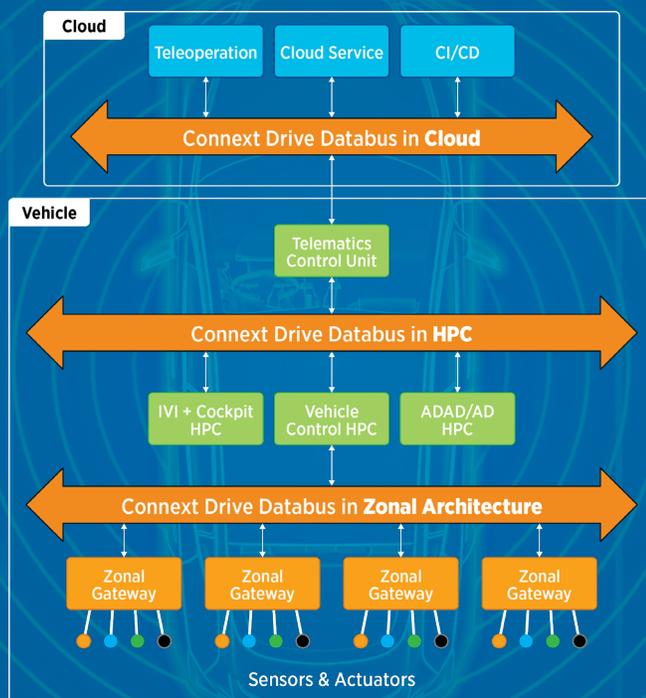
Real-Time Innovations (RTI) is the global leader in **communication framework software** based on the Data Distribution Service (**DDS™**) standard for data-centric **middleware** technology. Privately-held, RTI has the largest engineering team in the world dedicated to DDS, with professional services and global support to help drive project success. This focus provides RTI customers with a communication framework that allows them to **manage risk**, while increasing the **scalability**, **modularity** and **reusability** of their solutions with the **highest levels of safety** and **cybersecurity**.

In automotive, RTI works with over **25 automotive vendors** who use our technology to accelerate their software-defined vehicle programs. Today, over 2 million vehicles run on Connext Drive®. RTI is in **production with leading OEMs** who rely on RTI software to design zonal, ADAS and telematics architectures as they **evolve in the software-defined** era. RTI technology provides OEMs with an essential component for a variety of **reference platforms** from leading Tier-1 suppliers.

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> RTI's impressive leadership within the DDS standard domain and its decades of experience with complex systems will help XPENG accelerate design and reduce risk as we develop our future vehicles.
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> **YU PENG**
> VICE PRESIDENT, XPENG
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Figure 1. Data-centric software-defined vehicle architecture

RTI is enabling the industry transition to software-centric design through its collaboration in standards organizations such as **AUTOSAR**, **COVESA**, **OMG**® and **SOAFEE**, as well as with the leading automotive technology providers. This work enables interoperability across technology platforms for lower costs, productivity gains across global development teams and faster time-to-market.

We invite your project teams to take Connext Drive for a test drive.

rti.com/drive

RTI Connext Drive: From Simulation to Production

Connext Drive is an automotive-grade communication framework **based on the DDS standard** for **middleware** that distributes vehicle dataflow in real time to **ensure vehicle safety and performance**.

Specifically designed for the automotive industry, Connext Drive provides dedicated software components for key software-defined vehicle (SDV) use cases: ECUs, zonal gateways, high performance compute in ADAS, digital cluster and vehicle control, as well as telematics, cloud implementations and OEM-specific applications. RTI's development processes for Connext Drive have been officially certified to **ISO 26262 ASIL D**, **ISO/ SAE 21434 CAL-4** and **ASPICE CL1** offering manufacturers an accelerated path to building safety-critical systems for electric and autonomous vehicles.

Connext Drive supports the co-location of different technologies by operating natively on DDS, or by providing direct **integrations within AUTOSAR Classic and AUTOSAR Adaptive and interoperability with ROS 2**. Based on the rising importance of Con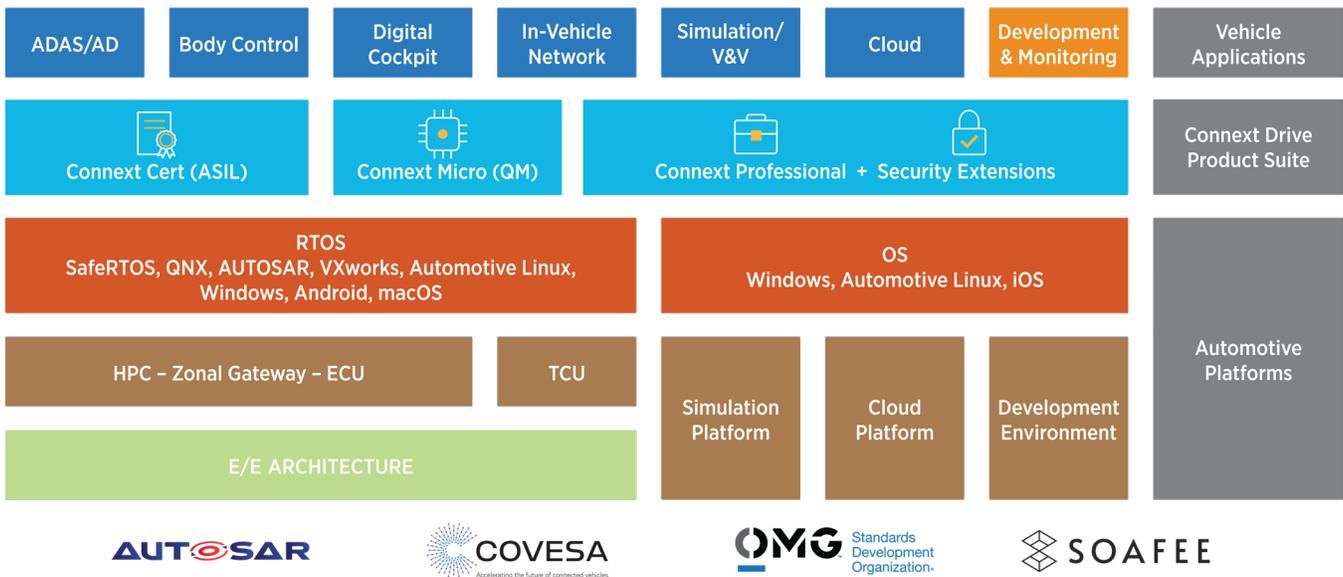tinuous Integration and Continuous Delivery (CI/CD) in automotive, Connext Drive supports communication of **Microservices** in **Container** and **Virtual Machine**-based environments.

In addition, Connext Drive includes a suite of **Tools** that help distributed and autonomous system developers to expedite and ease the **entire development lifecycle** from prototype to production.

The Connext Drive licensing model supports suppliers at each phase, reducing development cost, risk and time to market. This is due to a **flexible licensing model** and **extensive platform support** that includes, but is not limited to, the following:

- **Cores:** Arm and Tricore™
- **Operating Systems:** Android, Automotive Grade Linux, iOS, QNX, SAFERTOS®, Ubuntu, VxWorks®, Windows
- **Compilers:** Green Hills, HighTec, Tasking
- **AUTOSAR Vendors Integrations:** Elektrobit, ETAS, Siemens Embedded, Vector

Figure 2. RTI Connext Drive Software Stack

ABOUT RTI

RTI delivers the real-time data streaming platform that powers the next generation of Software Defined Vehicles (SDVs). RTI is the safety-certified communication framework leader for SDVs, trusted by OEMs to bridge from legacy to modern architectures, thereby accelerating development from simulation to production. RTI Connext Drive® powers over 2 million vehicles on the road today and is used by more than 25 automotive companies to accelerate their SDV programs and enable zonal, ADAS, and telematics architectures.

Experience the industry's leading solution and try Connext Drive for free at **rti.com/drive**.