



HIGHLIGHTS

Automotive-grade data-centric software framework to help optimize cost, time-to-market and modular development

Enables reliable, real-time data transport for critical applications, such as monitoring, prediction and autonomous functions

Supports broad integration of different automotive platforms in a common architecture, including Android, QNX, QT and Automotive Grade Linux

Provides a safety certification pathway to achieve up to ISO 26262 ASIL D compliance

Modern infotainment platforms have evolved exponentially. Today, information and entertainment systems have merged into a Digital Cockpit and become an integral element of the software-defined vehicle era. Driven by consumer demand, new business models now require infotainment architectures that can provide flexibility, scalability, compatibility and upgradability on different hardware components, while also fulfilling key technical and safety requirements.

REDUCING COMPLEXITY TO ACCELERATE DEVELOPMENT

Modern infotainment systems are complex designs that require several years of development with large software development teams. Nearly half of the engineering effort goes to support the integration of different platforms. In addition to media and directions, modern vehicles often include new functionalities such as monitoring, prediction and autonomous functions that improve the driving experience, which in turn creates the need to meet advanced safety and cybersecurity requirements.

Today, in-vehicle infotainment enables a set of unique capabilities not only for the OEM, but throughout the complete digitalization of the supply chain, with functions that require taking collaboration to completely new levels. Increasingly, modern digital cockpit platforms require extensive co-development with different OEM systems teams, as well as with Tier-1 suppliers, application developers and third party integrators.

To help manage this level of complex co-development, RTI Connex Drive® provides an open, interoperable platform that supports out-of-the-box integration across different automotive platforms in a common architecture, including Android, QNX, QT and Automotive Grade Linux. This reduces both risk and time-to-market by allowing software developers to concentrate on the infotainment applications, instead of the data connectivity infrastructure.

MODULAR DEVELOPMENT TO ACCELERATE PRODUCTIVITY

Within the vehicle, infotainment systems have the highest update rates. Changes in any component require a high level of coordination and extensive rework among multiple development teams, involving new features and updates, ensuring backwards compatibility, and then pushing the updates out to the vehicles. To be competitive, these changes need to be accelerated across the supply chain. Productivity must move at a speed that can sustain innovation, enabling automakers to roll out new features to the marketplace ahead of the competition.

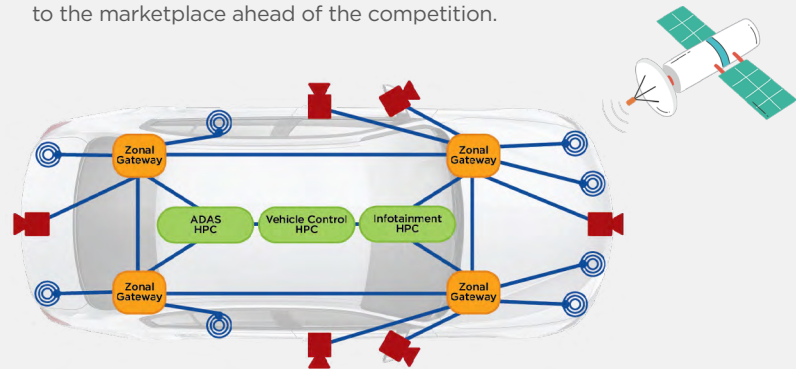


Figure 1: Connex Drive provides a flexible, interoperable framework for infotainment systems

RTI software enables developer productivity through a modular and collaborative environment that can scale as needed and facilitate a common data model across the most complex scenarios, as well as across different hardware and software architectures. Based on the Data Distribution Service (DDS™) standard, Connex Drive provides a data-centric architecture that can increase developer productivity by simplifying the development environment.

Connex Drive helps automakers achieve this goal by providing a single middleware layer for all user-defined Quality of Service (QoS) configurations, resulting in streamlined maintainability for all data sources and faster integration into information data models. This data-centric approach also enables the integration and evolution of disparate data sources that feed key applications, such as lidar, GNSS or other sensors.

THE RIGHT QoS, ANYTIME AND ANYWHERE

Connex Drive enables developers to set QoS policies, providing an advanced level of control. QoS policies can be configured and fine-tuned to help infotainment and digital cluster systems achieve the desired level of performance and to work as designed under pressure.

The extensive set of QoS tools in Connex Drive simplifies the overall vehicle design for OEMs, enabling the necessary level of collaboration with automotive Tier-1 suppliers and solution providers to accelerate the path towards continuously improving in-vehicle infotainment.

RTI: DRIVING COLLABORATIVE ENGINEERING INNOVATION IN THE DIGITAL COCKPIT

RTI is active in several leading consortia looking to solve critical problems needed to accelerate the digital cockpit in the software-defined vehicle era, including:



REAL-WORLD USE CASE

Li Auto: Li Auto uses RTI Connex Drive to accelerate its infotainment development, streamline communication between components, and support more sophisticated data models and application algorithms.

“With the development of intelligent equipment in the vehicle, the communication becomes more and more complex. And we can find much more various data sources which were never used in vehicles such as lidar, camera and so on. Meanwhile the application algorithms also vary a lot which show new requirements on communication. FUSA and cybersecurity are also considered. DDS can be a great solution for these issues.”

– Douhan Li, Director, Li Auto.

To learn more about Connex Drive, please visit: rti.com/drive.

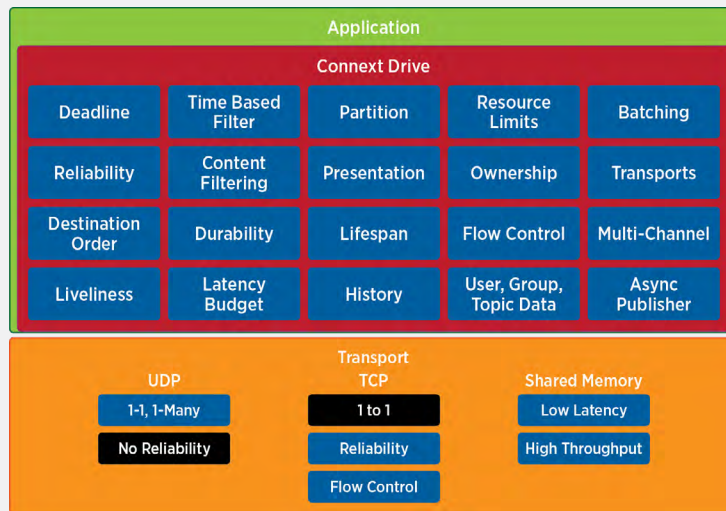


Figure 2: Connex Drive QoS tools simplify vehicle design

ABOUT RTI

Real-Time Innovations (RTI) is the largest software framework company for autonomous systems. RTI Connex® is the world’s leading architecture for developing intelligent distributed systems. Uniquely, Connex 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 1,800 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 Connex Drive software today: www.rti.com/free-trial/drive.

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