

# AVCC Announces New Technical Report to Help Simplify and Accelerate the Development of Software-Defined Vehicles

*AVCC's Report TR-005: Data-Oriented Communication Architecture for Automated and Assisted Driving Systems is now available for download.*

SAN JOSE, CA, USA, September 14, 2023 /EINPresswire.com/ -- [AVCC](#), a global automated and autonomous vehicle (AV) consortium that specifies and benchmarks solutions for AV computing in the automotive industry, today announced the publication of its latest technical report, [TR-005: Data-Oriented Communication Architecture](#) for Automated and Assisted Driving

Systems. This member-written multi-company technical report provides the auto industry with recommendations on common communication data architecture standards and best practices that enable an ecosystem of independently developed, reusable software components to

streamline software development, reduce software system integration risks and during their lifecycle cut costs, and shorten timelines.

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*Dr. Rajive Joshi, chair of the  
AVCC Software Portability  
Working Group*

The automotive ecosystem, including OEMs, automotive hardware and software suppliers, EV start-ups, and system Integrators, now has the information they need to eliminate one of the most pressing challenges in building software-defined vehicles: How to manage increasingly complex data flows across evolving vehicle software systems while keeping the cost of software system development and integration to a minimum. By utilizing the recommendations in this technical report, developers

and integrators can concentrate on other aspects of the vehicle software. The common data



architecture, data distribution, and data management are captured via a common data model consisting of datatypes and quality-of-service (QoS) profiles using the Data Distribution Service™ (DDS) databus standard. A common data model is used to define interoperable data-oriented communication interfaces that can be rapidly assembled to lower the cost of software system development, integration, maintenance and evolution.



“AVCC is tackling the challenges of spiraling complexity, costs, and effort of vehicle software system development and maintenance by envisioning an ecosystem of interoperable software components that work together by adhering to a common set of principles,” commented Dr. Rajive Joshi, chair of the AVCC Software Portability Working Group and Principal Solution Architect at Real-Time Innovations (RTI). “This report’s recommendations help simplify and accelerate the development of software-defined vehicles via a common communication data architecture.”

With the publication of TR-005: Data-Oriented Communication Architecture for Automated and Assisted Driving Systems, AVCC helps the automotive ecosystem to advance by:

- Providing the industry with a vendor-neutral, best-of-breed, standard-based approach to a common communication data architecture that enables an ecosystem of independently developed reusable interoperable software components
- Recognizing data-oriented architecture as a way of building interoperable and evolvable software systems
- Adopting a data-oriented communication architecture for software system composition and integration
- Adopting the DDS international open standard as its data-oriented communication architecture standard
- Developing a baseline data model using DDS for automated and assisted driving, comprising of common datatypes and quality-of-service profiles to equip system architects with a proven, standard-based approach to software system integration

AVCC’s recommendations open access to a competitive marketplace of reusable software components that can be integrated rapidly around the common data model by using a common DDS software databus on a variety of compute platforms, thus simplifying software system integration while lowering the cost of system development, deployment, and maintenance.

For more information or to download a complimentary copy of AVCC's TR-005: Data-Oriented Communication Architecture for Automated and Assisted Driving Systems, please visit AVCC's website at <https://avcc.org/tr005/>.

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