AUTOSAR Expertise

Boosting Efficiency in Next-Gen ECU Development.

The automotive landscape is experiencing a transformative shift. Consumers are demanding increasingly personalized and feature-rich driving experiences without compromising on safety. The rise of advanced driver-assistance systems (ADAS) and technologies like V2X communication and over-the-air (OTA) software updates necessitates a significant leap forward in ECU software capabilities. This evolution presents an opportunity for innovation through strategic ECU consolidation. Manufacturers can unlock new possibilities by reducing the number of individual controllers and integrating System-on-Chip (SoC) components. Established platforms like Classic AUTOSAR and Adaptive AUTOSAR play a crucial role in this transformation.

How Acsia Can Help?

Acsia's capabilities span the complete spectrum of AUTOSAR, addressing the various requirements of ECUs.

Software Design & Development

Knowledge across consulting, design, and development with various AUTOSAR stacks and micro-controllers.

Consulting

- Impact Assessment
- Adoption Framework

Platform Development

Leverage wide experience in multi-core Classic AUTOSAR platforms and automotive micro-controllers for efficient development.
- MCAL/CDD Development
- Standard Development
- Standardization of Existing CDDs for AUTOSAR
- Porting, Migration, Configuration, and Support
- Classic AUTOSAR Stack Vendors: Vector Informatik – DaVinci Configurator Pro/DaVinci Developer, Elektrobit – Tresos Studio, AVIN Systems, Dassault Systèmes – AUTOSAR Builder
- Micro-controllers: Renesas, Infineon, NXP, ST, Cypress etc.

Application Development

Portable application component development.
- Custom SWC development
- Model-Based Design & Development

Integration, Verification & Validation

Expertise in establishing continuous integration pipelines, test automation infrastructure, undertaking software to vehicle level testing, and SIL/MIL/HIL simulation and testing.

Integration

- OEM SWC (Software Component) + BSW (Basic Software) + MCAL (Micro-Controller Abstraction Layer)
- Continuous Integration
- Automated Integration Testing

Verification & Validation

- Acceptance Testing Framework
- Test Automation
- Specific Testing (OEM/Tier-I)

System Health Profiling & Performance Optimization

In-house AUTOSAR performance tracers & visualizers

Extensible and configurable System Health Tracing & Profiling Suite capable of
- Boot and Application Tracing
- CPU Profiling
- Memory Profiling
- Stack Profiling
- NVM / Flash Dump Analysis

Acsia's AUTOSAR capabilities are designed to support OEMs to migrate to standardized architectures and enable ECU consolidation. Comprehensive MCAL development solutions from Acsia, pave the way for the next generation of automobiles.

Why Acsia?

10 years with AUTOSAR

A decade-old relationship with the AUTOSAR consortium as an active member.

Extensive knowledge of AUTOSAR platforms

MCAL/CDD development, multi-core deployments, porting, migration, configuration, integration, testing, and support.

Rich experience working with Classic AUTOSAR stack vendors

Vector Informatik (DaVinci Configurator Pro/DaVinci Developer), Elektrobit (tresos Studio), AVIN Systems, Dassault Systèmes (AUTOSAR Builder).

Proven expertise with leading automotive micro-controllers

Renesas, Infineon, NXP, ST, and Cypress.

Model-Based Development (MBD) Expertise

MBD of system architecture in MATLAB Simulink and StateFlow; MBD for Classic AUTOSAR compliant software architecture; Code generation using Embedded Coder & TargetLink; MISRA compliant code generation.

What's In It For You

Simplified ECU Development

OEMs can focus on developing application-specific functionalities rather than reinventing the wheel for basic software functions, thanks to AUTOSAR's modular pre-defined software components and standardized interfaces.

Efficient Resource Utilization

OEMs can select and configure AUTOSAR's standard set of basic software modules (BSW) based on their specific ECU needs, ensuring efficient resource utilization.
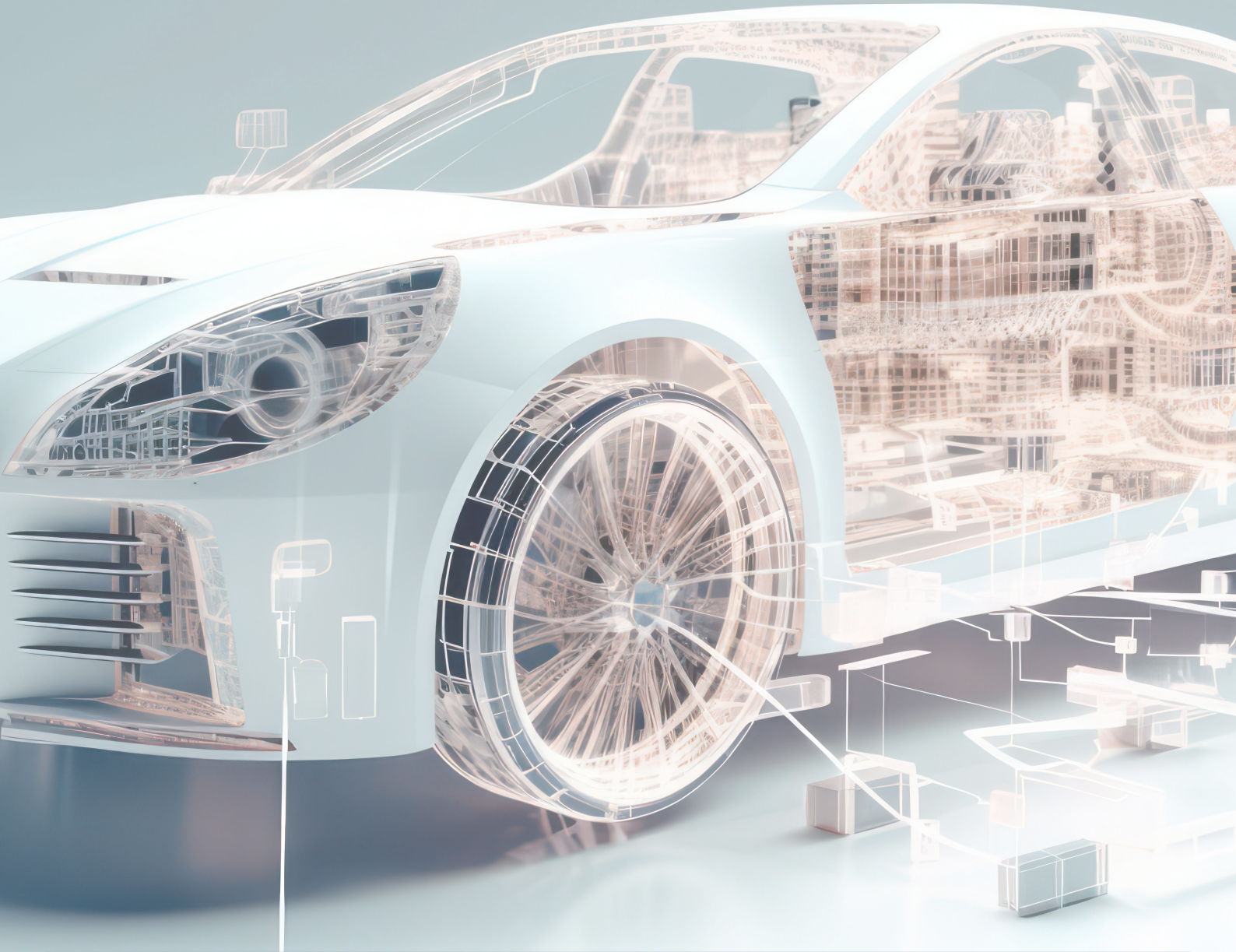
Faster Development Cycles

AUTOSAR promotes Model-Based Development (MBD) allowing for early error detection, easier configuration, and improved code generation, leading to faster development cycles, better software quality and reliability, and enhanced interoperability between ECUs from different suppliers.

About Acsia Technologies

Acsia is a global leader in automotive software powering Digital Cockpits & Displays, e-Mobility, and Telematics. We use our expertise to develop tools and platforms that simplify complex problems and create safer, sustainable, and more compelling driver and passenger experiences. With a presence across the United States, Germany, Sweden, Japan, and India, we collaborate with top car makers and Tier-1 suppliers.

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