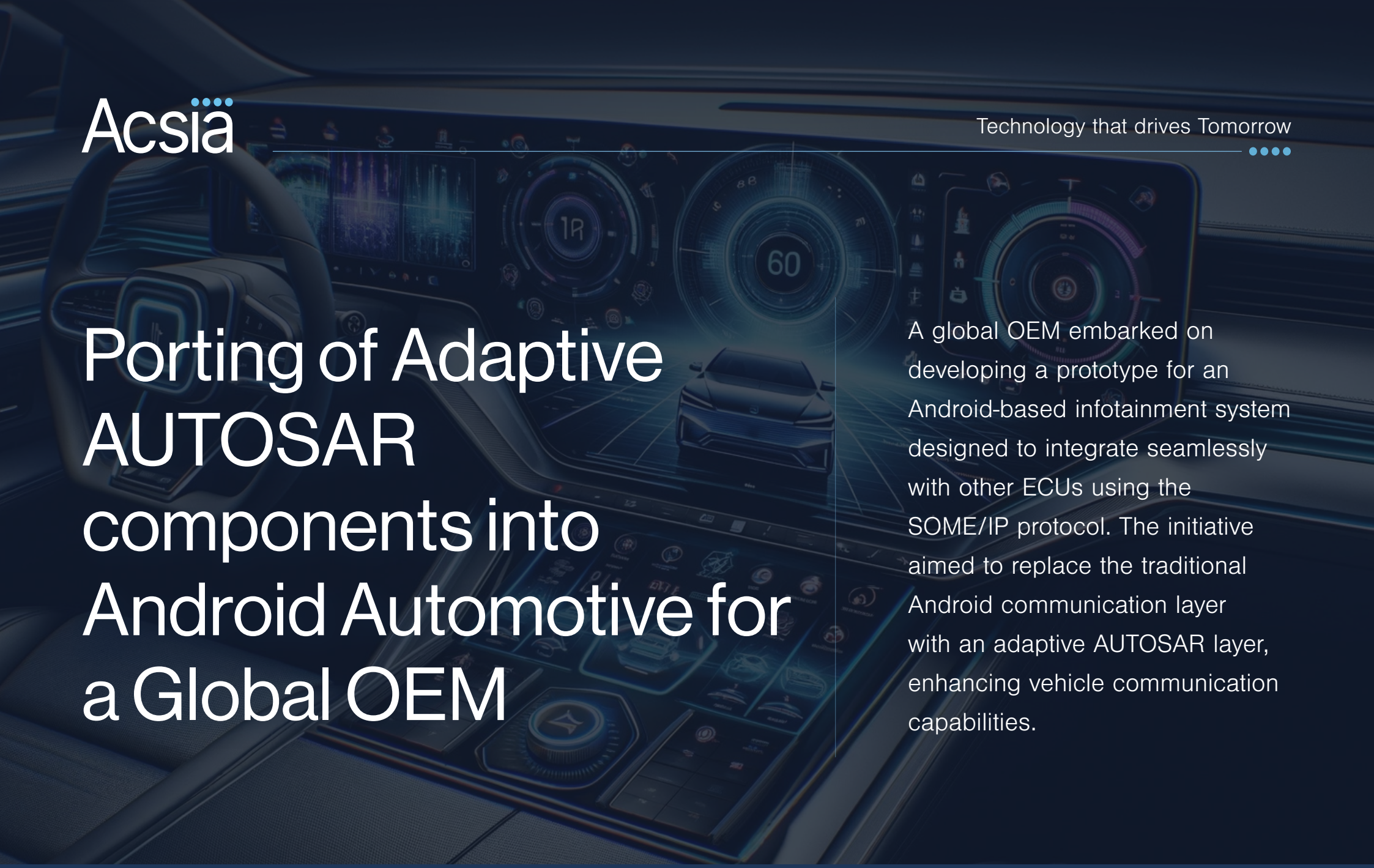
Acsia

Technology that drives Tomorrow



Porting of Adaptive AUTOSAR components into Android Automotive for a Global OEM

A global OEM embarked on developing a prototype for an Android-based infotainment system designed to integrate seamlessly with other ECUs using the SOME/IP protocol. The initiative aimed to replace the traditional Android communication layer with an adaptive AUTOSAR layer, enhancing vehicle communication capabilities.

Technology & Business Landscape

The project began against a backdrop of key trends within the automotive industry

AUTOSAR Adaptive Platform

Deployed by the AUTOSAR consortium, this platform catered to the escalating demands of automotive systems in terms of complexity and connectivity, crucial for autonomous driving and advanced driver-assistance systems (ADAS).

Centralized E/E Architectures

OEMs were moving towards centralized architectures to enhance system efficiency and flexibility, incorporating advanced virtualization technologies and AUTOSAR enhancements in ECU hardware.

Android Automotive OS

Increasingly adopted as a native operating system fully integrated into vehicle hardware, with Android 11 being employed for this project despite the availability of Android 12.

Widespread Adoption

Major manufacturers, including Volvo, Polestar, and General Motors, were standardizing on Android Automotive OS for their new vehicle models.

Customer Problem Statement

After migrating their autonomous driving functions from safe Linux to QNX, the OEM aimed to prototype an Android-based infotainment system capable of direct communication with other ECUs using the SOME/IP protocol, integrated through an adaptive AUTOSAR communication layer.

Acsia Solution

Acsia, renowned for its expertise in digital cockpit solutions, was entrusted with the project. The Acsia team undertook the integration of the Adaptive AUTOSAR stack into the Android Automotive Vehicle HAL layer.

- Created sample Software Components (SWCs)
- To robust integration, established communication pathways from HVAC and SWC

Business Outcome & Impact

Timely Resolution

The project was completed in just 35 days, well ahead of the projected six-month timeline.

Streamlined Inter-ECU Communication

By integrating Adaptive AUTOSAR and SOME/IP-based inter-ECU communication, Acsia successfully streamlined communication for futuristic systems.

Reusability

The shift to a common interface language across systems increased operational efficiency and reduced development times for future projects.

Key Learning

This project demonstrated Acsia's proficiency in navigating complex software integrations within the automotive sector. The successful implementation of Adaptive AUTOSAR components alongside Android Automotive, and the establishment of a more streamlined communication process, sets a precedent for future automotive software developments.

Expert Speak

Anil S
VP Delivery

"Our team's ability to deliver the prototype in just 35 days, far ahead of the deadline, showcases our commitment to excellence and speed in innovation. This project not only met but exceeded the OEM's expectations, paving the way for future collaborations."

Vasantharaj G
VP Technology & Innovation

"Integrating IP-based inter-ECU communication through Adaptive AUTOSAR with Android Automotive is a leap towards the future. This futuristic technology enhances vehicle responsiveness and intelligence, promising a more connected and intuitive driving experience for users."

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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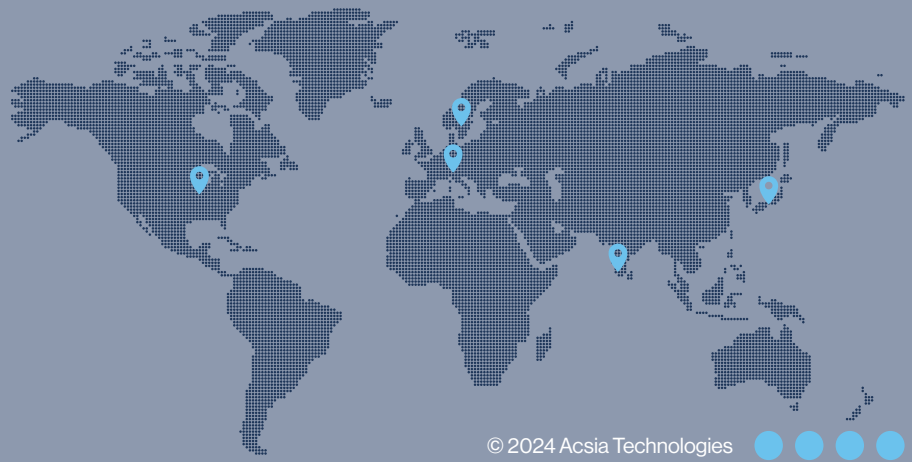

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