



# ALKALEE

## THE AUTOMOTIVE E/E ARCHITECTURE SOFTWARE SUITE AND TOOLCHAIN FOR AN OPEN AND AGILE MOBILITY INDUSTRY

### + WHAT IS ALKALEE

Alkalee has developed a software suite and toolchain that systems developers and integrators can use to rapidly and safely integrate innovative technologies for tomorrow's smart vehicles.

Artificial intelligence and connectivity are revolutionizing the mobility industry by enabling new vehicle services and use cases. Today's automotive electrical and electronic (E/E) architectures, developed over more than 35 years of incremental innovation, are not agile or efficient enough to support emerging technologies.

Renault and the CEA planted the seeds of startup Alkalee when they collaborated on the design of a new generation of interoperable and modular E/E architecture for tomorrow's connected and autonomous vehicles.

Alkalee's solution allows users to design modular and real-time ECUs and systems that include multiple very complex and versatile applications, including AI-based systems. Embedded software ensures real-time and operating safety during execution, and a software suite and associated toolchain offer complete design and validation capabilities.

### DEMO @ CES 2021

Alkalee will be showcasing a new generation of complex software platform deployed on an automotive ECU. The functional model presented will highlight how compact and modular the ECU is. Here, the demonstrator will include critical and heterogeneous functions distributed on several processors with a motherboard/daughterboard architecture.

The demonstrator will illustrate the benefits Alkalee's software and toolchain can bring to automotive E/E specifications, integration, and verification of software functions.

## + WHAT'S NEW?

Alkalee's solutions are built on a mathematical model used to formally express and analyze the interactions between a vehicle's different functions. This model runs across all of our tools from managing the target system's specifications to proving correct implementation. Our supervision system, integrated into the vehicle, measures drift from the desired behavior and applies palliative or corrective measures as needed



### ALKALEE & MOBILITY

Alkalee addresses some of the major challenges facing the mobility industry. With solutions that allow application developers to access next-generation E/E architectures, Alkalee is helping speed up the digitalization of vehicles. Alkalee's software and toolchain ensure fast, safe integration of heterogeneous applications. Sharing computing power and data also supports value creation and vehicle customization to meet customers' needs.

## INTERESTED IN THIS TECHNOLOGY?

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## APPLICATIONS

Alkalee provides solutions for companies operating in the mobility industry, where the demand for smarter, more autonomous vehicles is on the rise.

- Automotive
- Trucks and shuttles
- Construction and farming equipment
- AGVs
- Defense

### KEY FIGURES:

- **€20 million** invested in R&D
- **<3 months** to add a new service
- **6** exclusive patent licenses held
- Unlimited application providers

## + WHAT'S NEXT?

- **July 2020:**  
Date founded
- **April 2021:**  
Trial license (SaaS) available
- **July 2021:**  
Co-integration services for customer vehicle design
- **March 2022:**  
Hardware acceleration for embedded software
- **October 2022:**  
ASIL B (Automotive Safety Integrity Level) certification



ALKALEE is a CEA spinoff.