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## STMicroelectronics introduces the first automotive microcontroller with AI acceleration for edge intelligence

- *Stellar P3E automotive microcontroller (MCU) enables real-time AI applications at the edge significantly enhancing vehicle intelligence*
- *Simplifies multi-function integration for X-in-1 Electronic Control Units*
- *Delivers flexible, real-time performance for safe, responsive applications from hybrid/EV systems to body zonal architectures*

**Geneva, February 10, 2026 -- STMicroelectronics (NYSE: STM)**, a global semiconductor leader serving customers across the spectrum of electronics applications, today announced [the Stellar P3E](#), the first automotive microcontroller (MCU) with built-in AI acceleration for automotive edge intelligence. Designed for future software-defined vehicles, the Stellar P3E simplifies multi-function integration for X-in-1 Electronic Control Units (ECUs) that reduce system cost, weight, and complexity.

*“Stellar P3E sets a new benchmark for automotive electrification by combining high-performance real-time control and edge AI in a single device that meets the highest automotive safety levels,”* said Luca Rodeschini, Group Vice President and General Purpose and Automotive Microcontrollers Division General Manager, STMicroelectronics. *“Its increased processing power, AI acceleration, large and extensible memory, rich analogue content, smart sensing capabilities, and intelligent power management functions support new applications such as virtual sensors. This better enables automakers with the tools to create safer, more efficient and more responsive driving experiences.”*

A defining feature of [the Stellar P3E](#) is its integrated ST Neural-ART Accelerator™ for real-time AI efficiency —making it the first MCU with an embedded neural network accelerator for the automotive industry. Powered by this dedicated neural processing unit (NPU) with an advanced data-flow architecture for AI workloads, and combined with its rich sensing capabilities, the P3E enables smart sensing that opens the door to new applications such as virtual sensors.

The P3E delivers inference processing at microsecond speeds, achieving up to 30x greater efficiency compared to traditional MCU core processors. This enables always-on, low-power artificial intelligence (AI) that can support real-time functions, including predictive maintenance and smart sensing, delivering significant benefits across a wide range of applications. For example, these capabilities can enhance

charging speed and efficiency in electric vehicles and enable rapid deployment of new features, whether in the factory or in the field. Original equipment manufacturers (OEMs) can introduce new functions and more intuitive behaviors through different AI models, reducing the need for additional sensors, modules, wiring, and integration effort.

*“Shifting neural processing from centralized hubs to the edge of the vehicle enables sub millisecond-level decision-making, which is essential for the next generation of in-vehicle intelligence. Integrating AI hardware acceleration at the MCU level allows OEMs to deliver advanced capabilities, such as predictive maintenance for vehicle performance and smart sensing with virtual sensor applications. This enables very low latency sensing, actuation control, and other sophisticated features, without the cost and thermal burden of a full-scale SoC,”* said Greg Basich, Associate Director, Counterpoint Research.

As the automotive industry embraces the shift toward software-defined vehicles (SDVs), Stellar P3E’s integrated xMemory, ST’s proprietary non-volatile memory based on [phase-change memory \(PCM\)](#), provides the essential scalability and flexibility needed. Offering twice the density of traditional embedded flash memory and qualified for automotive environments, this extensible memory solution enables dynamic expansion of software storage to accommodate new features and updates without requiring any hardware redesign.

The P3E is fully supported within the [ST Edge AI Suite](#), a comprehensive edge-AI ecosystem that spans from dataset creation to on-device deployment for data scientists and embedded engineers. As part of this suite, NanoEdge AI Studio tool is now available for the entire Stellar MCU family. In addition, the Stellar P3E is already integrated into [Stellar Studio](#), ST’s all-in-one development environment tailored for automotive engineers. Together they reinforce a robust hardware and software ecosystem designed to streamline the deployment of sophisticated edge AI solutions in demanding automotive environments.

The start of production of [the Stellar P3E](#) is planned in the fourth quarter of 2026.

### **Key technical highlights:**

- 500 MHz Arm® Cortex®-R52+ cores delivering the highest CoreMark score in its class - exceeding 8,000 points.
- Split-lock architecture enabling designers to optimize the balance between functional safety and peak performance.
- Open Arm architecture, leveraging a vast global developer community for accelerated innovation.
- Rich I/O and analog capabilities support diverse functions, including advanced motor control for enhanced vehicle dynamics.

## About STMicroelectronics

At ST, we are 48,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An integrated device manufacturer, we work with more than 200,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of cloud-connected autonomous things. We are on track to be carbon neutral in all direct and indirect emissions (scopes 1 and 2), product transportation, business travel, and employee commuting emissions (our scope 3 focus), and to achieve our 100% renewable electricity sourcing goal by the end of 2027. Further information can be found at [www.st.com](http://www.st.com).

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