

## **Buoyed by tech to support evolving consumer needs in electrification, software and automation, Bosch Mobility in Americas aims for growth**

### **New technologies debut at Bosch Mobility Experience 2024**

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- ▶ Bosch Mobility focused on growth -- ambition to increase the Americas region to 25 percent of global revenue by 2029
- ▶ Consumer choice and value drive innovation as industry evolves to electrification
- ▶ Bosch offers comprehensive solutions for software-defined reality – helping to balance consumer expectations with vehicle cost
- ▶ New by-wire braking and steering concepts ultimately enable automation

**Flat Rock, Mich.** – Today, at the Bosch Mobility Experience 2024, Bosch is displaying advanced technologies including several making their debut in North America. Highlighted innovations, demonstrated through dynamic displays at the company’s recently-upgraded proving grounds in Flat Rock, Mich., include advanced by-wire systems, comprehensive vehicle motion management and enhanced power loss safeguards.

Consumer expectations are driving new vehicle technologies, which also demand significant software developments. Bosch is leading this transformation with the seamless integration of advanced software, and hardware, in solutions that help to enable precise vehicle control, enhance performance and support safety.

“The North American market – and the U.S. in particular – has been moving at an increased pace driven by new OEM strategies and consumer behavior,” said Paul Thomas, president of Bosch in North America and president of Bosch Mobility in the Americas. “Our mobility team is focused on profitable growth as part of the global Bosch portfolio. We have the benefit of tapping into a network of innovators, technology, and manufacturing experts of the largest automotive supplier in the world – but we also have the talent and the license to develop solutions here in the region.”

The Americas is a critical growth region for Bosch, particularly in the mobility sector. By 2029, the ambition for Bosch Mobility in the Americas is to contribute approximately 25 percent of the company's global annual mobility turnover (\$60.8 billion globally in 2023), up from the current 20 percent (\$12.4 billion in 2023), reflecting Bosch's commitment to the region's strategic importance. The focus is on driving profitable growth by developing innovative solutions to meet the requirements of original equipment customers and the expectations of end consumers making vehicle purchasing decisions.

The Bosch Mobility Experience event is focused on three main themes:

- Evolution towards electrification: Consumer choice and value drives innovation
- Journey towards software-defined reality: Comprehensive solutions that meet consumer needs on the path to software-defined vehicles
- Progression towards by-wire: New braking and steering concepts ultimately enable automation

### **Evolution towards electrification: Consumer choice and value drives innovation**

In the U.S., the pace of electrification continues to shift and options such as hybrid vehicles continue to emerge to support consumer choice in the market. At the same time, vehicle affordability is a key consideration driving the pace of electrification. As a long-standing expert in powertrain solutions, Bosch supports customers with a variety of options to support these trends.

**Electrified axles** are increasing in prominence as a suspension design approach for automakers as the industry continues on the path towards electrification. These eAxle systems are being demonstrated at the Bosch Mobility Experience in collaboration with Linamar, showcasing how the industry is collaborating to bring forth new solutions for customers. The Ram 2500 technology demo vehicle from Linamar is equipped with front and rear eUD10 Beam eAxles, which create 4WD capability delivering over 15,200 Nm of peak torque and 750 kW peak power. These eAxle Systems can be applied to full EV, hybrid or hydrogen vehicle applications.

Bosch brings extensive system knowledge and industry-leading tools for simulation and modeling to optimize the performance of the motor, inverter and axle in one cohesive unit. Bosch offers electrification products that seamlessly integrate with rigid axles to enhance vehicle performance, towing capacity and payload capabilities.

The complexity of vehicle electrical systems increases with higher levels of electrification, software and automation. **Powernet Guardian**, being shown for the first time publicly in North America at the Bosch Mobility Experience, helps to provide an ongoing power supply for safety-critical functions in the event of a fault. The system provides real-time diagnostics and monitoring of a vehicle's electrical system, including the battery, alternator and power distribution network to help identify potential issues before they lead to failures.

**Journey towards software-defined reality: Comprehensive solutions that meet consumer needs on the path to software-defined vehicles**

Bosch is supporting its customers with software and hardware solutions that continue the journey towards the software-defined vehicle while also recognizing the need to manage vehicle costs for the end consumer.

**Vehicle Motion Management** is a hardware-agnostic control software layer that integrates and optimizes the various driving dynamics systems in a vehicle to enhance overall performance, safety and comfort. It controls vehicle motion in all six degrees of freedom, coordinating braking, steering, powertrain and suspension. Hardware-agnostic software features optimize vehicle dynamics, handling and efficiency. In addition, Vehicle Motion Management helps make the complexity of new vehicle architectures manageable. Its systems-integrating software on central vehicle computers controls the diverse actuators of the various vehicle domains. It also can help contribute to improved fuel efficiency, or EV battery management, by optimizing power delivery and braking energy recovery.

**Vehicle dynamics control 2.0**, an innovative smart control feature that helps enable the vehicle to think ahead, is part of Vehicle Motion Management. Using information from the vehicle dynamics sensors, the system helps to anticipate vehicle behavior and can potentially intervene proactively.

Bosch is developing solutions specific to the North American market. In 2022, data revealed that 11 million American households owned a recreational vehicle. As interest in travel and outdoor activities surges, making trailering easier and more accessible could significantly boost sales of trucks and trailers.

**Anywhere parking trailer**, next generation technology using software and sensors to automatically park a vehicle and a trailer with the touch of a button, will be shown for the first time publicly in North America at the Bosch Mobility Experience event. Bosch is expanding on its Anywhere parking system designed to simplify the parking process using data fusion from cameras, sensors, geo-

coordinates and input from the driver to park in a precise position, even in difficult situations like unmarked pavement or tight spaces.

### **Progression towards by-wire: New braking and steering concepts ultimately enable automation**

Bosch will showcase both brake-by-wire and steer-by-wire technologies at the Bosch Mobility Experience. As the industry continues to work towards increasing levels of automation options for vehicles, by-wire technologies are a key enabler. These new technologies can allow for new possibilities in human-machine interface and vehicle design.

The **Brake Control Pad**, being shown for the first time publicly in North America at the Bosch Mobility Experience, enables a new, fully-integrated brake-by-wire system that replaces the traditional brake pedal with a force-based pad, requiring only a simple touch of the brake to measure driver input. Instead of using physical connections, the Brake Control Pad senses and sends braking commands electronically, driving towards more precise braking through improved integration with electrification and other advanced driver assistance systems.

Bosch has a long and storied history in anti-lock braking systems (ABS), dating back to 1969 with in-house predevelopment of an anti-lock braking system that became standard on all new vehicles in the U.S. in 2012. This groundbreaking technology was developed to prevent wheel lock-up during braking, enhancing vehicle control and safety. Over the decades, Bosch has continued to innovate in ABS technology, expanding its applications to trucks, motorcycles and now bicycles.

Bosch **eBike ABS**, which is now available in the U.S. market, is an advanced anti-lock braking system designed specifically for electric bicycles, enhancing rider safety and control. The system continuously monitors wheel speed and adjusts braking pressure to aid performance in a variety of conditions.

**Press photos and videos are available on the Bosch Media Service at [us.bosch-press.com](https://us.bosch-press.com).**

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**About Bosch**

*Having established a presence in North America in 1906, today the Bosch Group employs 42,000 associates in more than 100 locations in the North American region (as of Dec. 31, 2023). Bosch generated consolidated sales of \$16.5 billion in the U.S., Mexico and Canada in 2023. For more information visit [www.bosch.us](http://www.bosch.us), [www.bosch.mx](http://www.bosch.mx) and [www.bosch.ca](http://www.bosch.ca).*

*The Bosch Group is a leading global supplier of technology and services. It employs roughly 429,000 associates worldwide (as of December 31, 2023). The company generated sales of \$99 billion in 2023. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. With its business activities, the company aims to use technology to help shape universal trends such as automation, electrification, digitalization, connectivity, and an orientation to sustainability. In this context, Bosch's broad diversification across regions and industries strengthens its innovativeness and robustness. Bosch uses its proven expertise in sensor technology, software, and services to offer customers cross-domain solutions from a single source. It also applies its expertise in connectivity and artificial intelligence in order to develop and manufacture user-friendly, sustainable products. With technology that is "Invented for life," Bosch wants to help improve quality of life and conserve natural resources. The Bosch Group comprises Robert Bosch GmbH and its roughly 470 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. Bosch's innovative strength is key to the company's further development. At 136 locations across the globe, Bosch employs some 90,000 associates in research and development, of which nearly 48,000 are software engineers.*

*The company was set up in Stuttgart in 1886 by Robert Bosch (1861–1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-four percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The remaining shares are held by Robert Bosch GmbH and by a corporation owned by the Bosch family. The majority of voting rights are held by Robert Bosch Industrietreuhand KG. It is entrusted with the task of safeguarding the company's long-term existence and in particular its financial independence – in line with the mission handed down in the will of the company's founder, Robert Bosch.*

*Additional information is available online at [www.bosch.com](http://www.bosch.com), [www.iot.bosch.com](http://www.iot.bosch.com), [www.bosch-press.com](http://www.bosch-press.com).*

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