

Media information

Autonomous trucking

Trucks without drivers: AUMOVIO and Aurora are revolutionizing transport on US highways

AUMOVIO and Aurora are jointly bringing driverless trucks onto US highways. Not as a development project or for test runs, but for everyday use and on a large scale.

This is why autonomous trucks are so important: The transport and logistics sector faces immense challenges in the field of lorry freight transport. The biggest challenge is this: ever more journeys, yet fewer and fewer drivers. Added to this are rising cost pressures and the need for greater efficiency. Autonomous trucks offer economic benefits, greater safety, and improved predictability and availability of capacity. Optimized driving performance reduces fuel consumption by around ten per cent and makes CO₂ fleet targets achievable. Autonomous trucks can be deployed round the clock. This enables freight to be delivered, for example, between Fort Worth in Texas and Phoenix in Arizona (a distance of almost 1,600 km – roughly the distance between Berlin and Rome) in half the time it would take a human driver.



AUMOVIO_PP_Highway

In 2027, the world's first scalable Level 4 truck system will go into series production, enabling the safe operation of driverless trucks.

Here's what the system can do: The 'Aurora Driver', developed by Aurora, is at the heart of autonomous truck technology. It is a system comprising hardware and software components that can, in principle, be integrated into many truck models. It enables fully automated Level 4 driving: the truck takes over the entire driving task within a clearly defined area comprising interstate motorways and access roads. A fallback system developed by AUMOVIO – a backup system operating independently of the main system, similar to that used in airplanes – provides additional safety. "Aurora Driver" is particularly practical and suited to everyday use. The technology helps companies transport goods more safely, quickly and sustainably from one logistics hub to the next via US highways.

How 'Aurora Driver' works: Self-driving trucks fitted with the 'Aurora Driver' system use a combination of different technologies to operate autonomously. The vehicles are equipped with a wide range of sensors, including radar, cameras and LiDAR. The sensor data collected is processed by AI algorithms running on high-performance computers, which enable the vehicle to make reliable decisions regarding driving tasks.

Media information

These technologies come from AUMOVIO: The system is based on a modular hardware kit from AUMOVIO, which was developed specifically for the integration of the ‘Aurora Driver’ into existing truck architectures. AUMOVIO draws on a product portfolio – tried and tested millions of times over – comprising radar sensors, cameras, high-performance computers and control units for automated driving, as well as telematics units. In addition, the company has developed its own fallback system and bears full responsibility for the software development involved. AUMOVIO is responsible for system integration, industrialization and manufacturing to automotive standards, as well as providing services throughout the entire lifecycle. The manufacture and assembly of AUMOVIO’s components take place predominantly at its site in New Braunfels, Texas, USA.

These technologies come from Aurora: Aurora is responsible for the entire hardware and software system architecture – and for the software package in the ‘Aurora Driver’, which enables autonomous driving. Aurora is a leading US technology company headquartered in Pittsburgh, Pennsylvania, which specializes in the development of hardware and software for autonomous driving. The focus is on the heavy goods and logistics sector. The company was founded in 2017 by industry veterans: CEO Chris Urmson (former CTO of Google’s autonomous driving project), Chief Product Officer Sterling Anderson (who previously led the Autopilot program at Tesla) and Chief Scientist Drew Bagnell (a professor and expert in machine learning).



AUMOVIO_PP_Autonomous_Trucking

Collecting test data is an important step in the development and production of autonomous truck systems.

This is what makes the business model so forward-thinking: AUMOVIO and Aurora are adopting an innovative business model for the US transport sector, which, with an annual turnover in road freight transport of around 900 billion dollars, is one of the largest economic sectors in the United States. The Hardware-as-a-Service model is tailored to customers’ needs: The operation of driverless trucks using ‘Aurora Driver’ is billed on a per-mile basis. This guarantees customers a safe, reliable and commercially scalable solution.

Here is the timetable: AUMOVIO has been working with Aurora since 2023 on the development and production of the Level 4 autonomous system for self-driving trucks. In early 2024, the two partners finalized the system architecture and design of the central hardware and software system – a key milestone on the road to the start of production, which is scheduled for 2027 in the US. The world’s first scalable Level 4 truck system will then go into series production, enabling the safe deployment of driverless trucks.

Media information

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