

pepper at IAA TRANSPORTATION, Hanover

September 19th to September 25th, 2022

Customized electrification solutions: the modular pepper drive system for retrofitting and new vehicles enables availability at short notice

At IAA TRANSPORTATION, pepper will be presenting its modular drive system for the customized electrification of commercial vehicles. The key component of this system is pepper's proprietary Vehicle Control Unit (VCU), a system software architecture with which the entire vehicle can be reliably controlled to the automotive industry's highest functional safety standard (ISO 26262). Using this technology, electrification kits for all market-relevant vehicle models (buses, trucks, and used and new vehicles) with different applications can be made available on the market at short notice.

Customized retrofitting concept

pepper's award-winning, production-readyetrofit electrification kit, which gives used diesel commercial vehicles an environmentally friendly second life as an electric vehicle, is being used as a battery electric drive system in vehicles such as the Mercedes-Benz Actros MP3. pepper is displaying the converted popular semitrailer truck for distribution transport of up to 26 tons at stand A21 in hall 20. The Mercedes-Benz Actros MP5 and the Mercedes-Benz Atego will also soon be available in series quality.

Another commercial vehicle electrified using pepper technology is the Mercedes-Benz Citaro C1, which will be used as a shuttle bus at IAA and can therefore be experienced live by visitors to the trade fair. Other bus models such as the Iveco Crossway and the Mercedes-Benz Citaro C2 are already under development and will soon be available.

pepper's innovative modular drive system used in these vehicles is entirely compatible with all technologies, as shown by an ongoing H2 research and development project for a next-generation fuel cell drive, which is funded by Bayerisches Energieforschungsprogramm (Bavarian Energy Research Program). The first vehicles (Mercedes-Benz Atego truck and Mercedes-Benz Citaro C2 bus) with a fuel cell powertrain in series quality should be in use on the roads very soon – by 2024 at the latest.

State-of-the-art development processes – tier 1 solutions for new vehicles

Modern development processes at the OEM level enable innovative, zero-emission drive systems for new vehicle electrification. pepper is now also offering its cost-effective electrification kits – a tier 1 solution – to OEMs and producers of specialist vehicles. The kits can be flexibly integrated into newly developed vehicles or existing vehicle series and enable vehicle manufacturers to offer their customers proprietary zero-emission new vehicles without high development costs.



pepper telematic services undergoing practical trials, first digital services available from 2023

Telematic services are essential for fleet operators when it comes to accelerating their mobility transition, optimizing fleet management, and reducing operating costs. From simulation in pepper software development to live data capture, pepper aims to reach an important milestone in the digitalization of public transport and the transport sector with its own telematic services: as pepper is an independent manufacturer of telematic services, the solution will soon be migrating from the software lab to practical trials. In the near future, field tests are expected to enable functions such as over-the-air software updates during day-to-day operation. The data exchange in both directions takes place via mobile network or WLAN.

After IAA TRANSPORTATION, the first official version of the pepper telematic unit will be available for customers from 2023. As a first step, vehicle tracking, online diagnosis and the capture of live data about the vehicle state are to be available at the time of the launch in addition to over-the-air software updates. Thanks to predictive analytical software from pepper's technology partner TWAICE, the use of a digital battery twin increases the service life, efficiency and sustainability of the batteries used. Further useful value-added services for the digitalization of fleet management are already under development.

Introducing the concept of the pepper ecosystem – a holistic solution for the decarbonization of commercial vehicle fleets

The rapid transition to climate-friendly, zero-emission mobility that is increasingly being demanded by the government and society poses challenges for companies in public transport and the transport sector. A new, complex ecosystem of vehicle fleets is looming – one with highly efficient electric drive systems based on different technologies and using different charging and refueling infrastructures that extend to the production and use of green energy. Implementing such an ecosystem successfully requires customized solutions that are holistic but cost effective.

One of pepper's proprietary concepts assists customers with overcoming the challenges of transitioning to zero-emission vehicles by providing them with an entire ecosystem. In different modules, it includes solutions for supplying green electricity at competitive prices, the necessary charging infrastructure at the customer depot, vehicles, and their operation (not including drivers), servicing and maintenance, as well as additional add-ons such as training and sustainability reports. As a result, existing vehicles and infrastructures can be retained and transformed in a risk-free manner.

Custom combinations of service modules from the pepper ecosystem world are used in a way that is tailored to the customer's needs. The customer is relieved of high initial investments, uncertainty regarding new technologies and a dramatically changing energy



market, and the complexity of operating zero-emission vehicle fleets. Unlike comparable all-in-one products, the customer is able to remain the cornerstone of the concept. They keep their core expertise and, working with pepper, can expand at will in a future-proof manner. Local value creation is at the heart of our concept. As members of the "pepper Community," customers benefit from a contractually defined kilometer price and exclusive tools and services, meaning that they can concentrate entirely on their core business. pepper remains a central point of contact throughout the contract term.

During IAA TRANSPORTATION, pepper will be introducing its concept to the public for the first time. The intensive dialog in specialist and customer discussions will help to expand the expert network, take into account further customer-specific requirements, and enable pepper to officially launch the first stage of its proprietary ecosystem by the end of 2022.

About pepper motion GmbH

As the first digital OEM worldwide (without its own warehousing and manufacturing), pepper offers innovative solutions for the electrification (retrofitting) of used and new commercial vehicles. With its holistic approach to telematics, charging infrastructure, and fleet management, the company designs quickly implementable and cost-efficient solution packages for a sustainable mobility transformation.

By retrofitting existing commercial vehicles with certified retrofit kits for buses and trucks, vehicles are given an environmentally friendly "second life" and therefore enable the most sustainable form of mobility, both ecologically and economically, making an active contribution to reducing emissions in transport and implementing the Clean Vehicles Directive.

pepper is ISO 9001 certified and as such is the only supplier of conversion solutions to ensure operational safety according to international automotive industry standards such as ISO 26262 for functional safety. A network of international partners guarantees service and availability across Europe.

pepper motion GmbH with headquarters in Denkendorf and offices in Garching near Munich and Paderborn employs more than 100 people. The subsidiary pepper motion Austria GmbH, based in Vienna, is the pepper Group's software development center. pepper is represented with further sales partners in Italy, France, and Poland.

www.peppermotion.com

Press contact:

360°communications GmbH

Email: peppermotion@360communications.de

Phone: +49 89 5436994 00