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Mercedes-Benz

Press Information

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Efficient last-mile delivery: Further development of the Mercedes-Benz SUSTAINER and cargo bike cooperation with ONOMOTION

- New logistics concept: intelligent linking of Mercedes-Benz eSprinter and e-cargo bike takes efficiency in delivery to a new level
- With new concepts and the improvement of existing features, the SUSTAINER stands for the consistent implementation of Mercedes-Benz Vans' sustainable business strategy
- Greater thermal efficiency: near-body heating reduces energy consumption by up to 50 percent
- Better air quality: front module filter reduces particulate emissions by 55 percent

Berlin/Stuttgart. With the evolution of the [SUSTAINER](#) (SUSTAINABILITY PIONEER) technology demonstrator, Mercedes-Benz Vans is once again providing an insight into what sustainability could look like in the delivery transport of the future. The all-electric van based on the Mercedes-Benz eSprinter combines a variety of innovative concepts for decarbonizing the entire vehicle life cycle, reducing resource consumption, and increasing the circular economy, as well as improving the quality of life and well-being of the driver. The innovations and technical solutions in the SUSTAINER were designed with the possibility of series production in mind to enable their use in future Mercedes-Benz Vans vehicle generations. All innovations are continuously evaluated, optimized, and supplemented with new concepts.

Innovative logistics concept for a wide range of industries

With the further developed SUSTAINER, Mercedes-Benz Vans is now presenting an efficient logistics concept for last-mile delivery with zero local CO₂-emissions. In cooperation with the Berlin-based cargo bike manufacturer ONOMOTION, the company is combining the all-electric van and the electric cargo bike to create a seamless supply chain. The eSprinter becomes a mobile micro-depot. It brings pre-packaged goods in special containers to cargo bikes, which take care of delivery to the front door. Transferring the goods to the ONO e-cargo bike takes just a few minutes. As a result, the eSprinter does not have long idle times and can continue straight away – either to the next cargo bike or to deliver goods itself. Parallel delivery with cargo bikes and all-electric vans increases efficiency and shortens delivery times in both urban and rural areas. The innovative logistics concept is suitable for a wide range of industries – from courier, express and parcel services to large bakeries, service providers for workwear and company textiles or food suppliers.

Tandem of Mercedes-Benz eSprinter and e-cargo bike relieves traffic infrastructure, reduces delivery and waiting times

The consignments can be pre-picked in the logistics center according to the delivery route and loaded into the interchangeable wheeled ONOMOTION containers. The all-electric van then transports them to the handover point, where they are loaded onto the e-cargo bike. The special wheeled containers offer a load volume of more than 70 cu.-ft. and a payload of up to 440 lb. They can be flexibly configured for various applications, such as parcel delivery. The Mercedes-Benz SUSTAINEEER presents an integrated lifting arm customized for these containers. The container lift works hydraulically, has recessed rollers, and can be controlled electronically via a hand-held transmitter. This allows the containers to be loaded and unloaded quickly, safely, and effortlessly. Two containers fit into the new eSprinter configured as a long panel van with a high roof. Nevertheless, there is still enough space for a shelving system to transport additional bulky goods. The shelving system can be accessed at any time (even when the containers are loaded) via the right-hand rear door.

Efficient delivery on the last mile

The all-electric van stops at defined points along its route and transfers the containers to an ONO e-cargo bike. This is done in a few simple steps: simply roll the container onto the cargo bike's loading area and couple it up. This means no time-consuming reloading of individual packages. There is also no need to hire a temporary storage facility, as the eSprinter acts as a micro-depot. It can continue its journey after a few minutes to deliver to the next ONO e-cargo bike in another neighborhood or village or take bulky goods to their recipients. The eSprinter therefore, has significantly fewer delivery points and idle time at the curb, known as curbside time. This reduces traffic flows, relieves the burden on infrastructure and contributes to a new quality of life – especially in urban areas. The eSprinter also returns to the logistics center faster and can, for example, complete a second route more quickly. By dispensing with micro-hubs, CEP service providers can deliver more parcels per day, shortening delivery and waiting times, and thus reduce costs. Initial dialogue with courier and parcel service providers has already begun to ensure that the individual needs of the industry are considered in further development.

The ONO e-cargo bike's benefits for last-mile delivery

The ONO e-cargo bike rider sits in a weatherproof cabin and can ride along cycle paths to any doorstep without having to look for a parking space which speeds up delivery and allows delivery staff to walk less. As the consignments are packed according to the delivery route, no searching or rearranging is necessary. The ONO e-cargo bike has a range of up to 15.5 miles and the 1.4 kWh battery offers pull-away assistance up to 3.7 mp/h. It can be replaced in a matter of seconds. A replaceable battery on board effectively doubles the range. Charging is possible via a standard earthed socket. Additional advantages: No driving license is required for the cargo bike. This makes deployment planning more flexible and facilitates the search for new employees. In addition, the cargo bike requires significantly less space in traffic, which can lead to increased acceptance of delivery transport, especially in the city.

Near-body heating and zonal air conditioning significantly reduce energy requirements

With the SUSTAINEER technology demonstrator, Mercedes-Benz Vans is bringing together many innovative concepts for future delivery transport over the last mile. A number of these are currently undergoing intensive testing with a view to possible series production. These include, for example, the combination of heating close to the body and zonal air conditioning. Test series in the Mercedes-Benz climate chamber in Sindelfingen have shown that it significantly reduces the energy required to heat the large driver's cab of an eSprinter. This has a positive effect on the range of electric vehicles. The test setup exemplified a common entry and exit process of a courier driver at different outside temperatures. During the comparison, an equivalent level of thermal comfort was ensured for the driver. Various parameters for physical well-being were measured at different points on the body. At -44.6 degrees Fahrenheit, zonal air conditioning with heating close to the body consumed around 25 percent less energy than conventional ambient air heating while providing comparable thermal comfort. At a temperature of +41 degrees Fahrenheit, the energy requirement was reduced by about 50 percent. In addition, the interior does not cool down as quickly after an unloading stop when the doors are opened and closed. The heating surfaces in the footwell, on the driver's door and on the steering column paneling remain warm. This increases comfort when getting into the vehicle. Acoustic comfort is also improved. As only the area around the driver and not the entire interior is heated, the air conditioning fan can run at a low level. Pre-air conditioning also cools or heats the vehicle during the charging process if desired, so that the full battery charge is available when the journey begins. This also has a positive effect on the range.

Front module filter in the SUSTAINEER reduces particulates by 55 percent

Another promising solution in the SUSTAINEER is the particulate filter integrated into the front module. It was developed in cooperation with the filtration specialist MANN+HUMMEL and designed to further minimize ingress of the particulates caused by wear from tires, brakes and asphalt. In a pilot project lasting more than a year, the innovative filter has confirmed its efficiency in real-life operation. Österreichische Post in Graz equipped two eSprinter in its fleet with it. Together, both vehicles covered around 22,680 miles from August 2022 to November 2023. On average, they each drove around 31 miles a day and delivered 160 parcels at around 100 stops. The front module filter compensated for particulate emissions with a particle size of up to 10 micrometres (PM10) in the immediate vicinity of the vehicle by 55 percent when the fan ran continuously while the vehicle is stationary, charging and driving at speeds below 35 km/h. The analysis showed that 35 percent of the filtered PM10 particulate emissions were direct vehicle emissions. Road abrasion and particulates kicked up from the road accounted for 61 per cent of the filtered particles. The effectiveness in environments with filtration increases further due to higher particulate pollution. This means that even larger quantities of particulate matter can be filtered in urban areas with poorer air quality. The reliability of the filter system was confirmed by the pilot project and a negative impact on the vehicles and delivery operations was ruled out. The project was scientifically supported by the Institute for Environment & Energy, Technology & Analytics e.V. (IUTA) in Duisburg.

Mercedes-Benz SUSTAINER demonstrates consistent implementation of the sustainable business strategy

All technical solutions and concepts installed in the SUSTAINER were designed with a view to possible series-production application in future Mercedes-Benz vans. These include a solar panel on the roof, components made from recycled materials and a mobilization seat for the driver. The continuous further development of the technology demonstrator showcases consistent implementation of the company's sustainable business strategy. By 2039, the company has set itself the target of making the entire fleet of new commercial and private vans net carbon-neutral along the entire value chain and the entire life cycle. The key levers for this are the electrification of the vehicle fleet, the extensive use of recycled materials and the use of renewable energies in production and when charging the vehicles. Mercedes-Benz Vans already offers a fully electric version of every commercial and private van. By 2030, they are expected to make up more than 50 per cent of total sales. The company's own production plants have been net carbon-neutral since 2022. The aim of Mercedes-Benz Vans is to offer the most desirable vans and services while aiming to lead in electric drive and digital experience.

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About ONOMOTION

ONOMOTION is a European cargo bike manufacturer based in Berlin. The company's goal is to improve the quality of life in cities by rethinking urban logistics. The company combines the topics of micro mobility, containerization, and physical internet to make city logistics significantly more efficient and sustainable. The e-cargo bike, the ONO, is being used by customers in many German cities.

About Mercedes Benz

Mercedes-Benz USA (MBUSA), headquartered in Atlanta, is responsible for the distribution, marketing and customer service for all Mercedes-Benz products in the United States. MBUSA offers drivers the most diverse lineup in the luxury segment with 18 model lines ranging from the sporty GLA SUV to the flagship S-Class and the dynamic all-electric vehicles from Mercedes-Benz. MBUSA is also responsible for Mercedes-Benz Vans in the U.S. More information on MBUSA and its products can be found at www.mbusa.com and www.mbvans.com.

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