

PRESSEMITTEILUNG

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Schaeffler Paravan at IAA Transportation 2022 Space Drive as a key technology for autonomous vehicle applications

- Drive-by-wire solutions are the basis for implementing autonomous and remote-controlled (remote) vehicle applications in the commercial vehicle sector.
- Roland Arnold, CEO of Schaeffler Paravan Technologie GmbH & Co. KG: "The logistics, special vehicles and agricultural sectors are particularly predestined for the introduction of autonomous driving systems and represent a significant growth market."
- Flexible and diverse areas of application and use



Optimizing logistics chains, relieving drivers, protecting the environment, reducing costs: The transport and logistics industry will undergo major changes in the coming years. This process will take place much faster than in the area of passenger cars or individual transport. What is needed above all are reliable solutions to redesign the vehicles of the future. This calls for innovative technologies that have the functionality to make these concepts a technical reality. This is precisely where Schaeffler Paravan comes in with its Space Drive driving and steering system.

"The logistics, special vehicles and agricultural sectors are particularly predestined for the introduction of autonomous driving systems and represent a significant growth market that will continue to gain momentum," says Roland Arnold, CEO of Schaeffler PARAVAN Technologie GmbH & Co. KG; who developed the Space Drive system 20 years ago from mobility for the disabled. "In the future, an autonomously driving truck will no longer need a mechanical steering column if the signals are controlled, for example, by an AD system - through artificial intelligence of the various sensor systems."

Steer-by-wire system Space Drive on its way to series production

Space Drive 3 AddOn represents the entry into series production. The drive-by-wire system complies with the general standards and norms of the automotive industry. The redundant system is based on a consistent safety concept for vehicles with functional safety relevance, developed according to the ASPICE process. In addition, it will meet the highest requirements according to the ISO 26262 safety standard and can thus significantly support the homologation process of new vehicle concepts to be developed. Automobile manufacturers will benefit from maximum scalability while at the same time having the greatest possible scope for model- and vehicle-specific customization. This is an important milestone on the way to steer-by-wire in large-scale production, both for road vehicles (cars and trucks) and for people movers or vehicle solutions for operation in industrial facilities, such as ports, logistics centers or airports.

The AUTOSAR-based system also enables direct connection to the vehicle electronics as well as communication and network architecture. This is an enormous added value with regard to the integration of already existing driver assistance systems. Space Drive 3 AddOn is designed for small series of up to 5,000 vehicles and forms the basis for the future integrated large series solution. The control unit and the software provide an important platform for further development.

Wide range of applications in the commercial vehicle sector

Concepts and applications in the area of logistics yards and service providers in delimited areas are already in demand today, in addition to applications in passenger and local transport, in order to realize viable business models. The cost savings result in interesting competitive advantages. Autonomous shuttle solutions at airports or trade fairs are other interesting areas of application. "With Space Drive 2, we already have a road-approved drive-by-wire system with a very broad range of applications that is ideal for retrofitting. Thanks to the wide range of interfaces, we are completely flexible in terms of adaptation," says Rolf Gramenske, Head of Technical Sales and responsible for project implementation at the customer. The commercial vehicle sector in particular is predestined for the retrofit solution. "Special vehicles are not at all easy to replace. Space Drive is available for 12 and 24 volt applications. We can customize the hardware and the software, with the same interface." Space Drive has road approval according to ECE-R13 (brake) and ECE-R79 (steering). The system has now been in use for almost 20 years, with over 9,000 systems installed and over one billion kilometers driven on public roads.

In addition to autonomous solutions for special-purpose vehicles in the truck sector or for equipping proto-types, the application horizon is much wider, whether autonomous, remote-controlled (remote) or in platooning applications, i.e. the parallel operation of several vehicles with only one manned lead vehicle. One example is the use of snow removal equipment at airports. Forwarding yards could operate much more efficiently if refueling, washing and loading of vehicles were done teleoperatively.

Tier 2 suppliers, such as sensor manufacturers, can already realize functional samples and prototypes in projects with the help of Space Drive "This allows manufacturers to save time and retrofit vehicles now so that the developers of autonomous systems can do their homework. Development can thus be accelerated considerably in advance," says Gramenske. Another important topic is reintegration in the workplace, for example after an accident.

The development of rolling chassis applications, a modular platform for new mobility concepts, is another important field of application for driverless mobility solutions for the transport of people or goods or for special applications in small and large series.

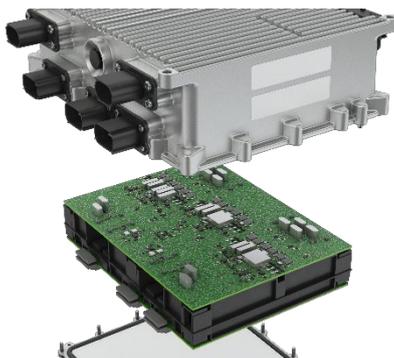
For the first time, Schaeffler Paravan is an exhibitor at the IAA Transportation in Hanover and presents innovative solutions for the transportation and logistics industry. The focus is on chassis components with a focus on electronic drive and steer-by-wire solutions. Visit us at the **Schaeffler booth in hall 12, booth B37.**



The transport and logistics industry will undergo major changes in the coming years, driven by autonomous driving applications. Photo: Adobe Stock



To realize autonomous driving maneuvers, the Space Drive driving and steering system is a key technology with quite flexible applications. Photo: AdobeStock



Space Drive 3 AddON is a key technology to realize autonomous driving functions, Photo: Schaeffler Paravan



Thanks to Space Drive, a wide variety of applications can be realized, for example platooning applications. Up to ten snow removal machines can be guided by a lead vehicle. Photo: Overassen

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About Schaeffler Paravan Technologie GmbH & Co. KG

Schaeffler Paravan Technologie GmbH & Co. KG is a company specializing in the development of fail-operational drive-by-wire systems - "Space Drive" - and chassis system solutions. It is headquartered in Herzogenaurach with an operating facility in Pfronstetten-Aichelau. Schaeffler Paravan Technologie is a joint venture (90 percent Schaeffler and ten percent Roland Arnold) and was founded in October 2018. The Space Drive system developed by Paravan founder, Roland Arnold was completely transferred to the joint venture and will be industrialized there. For future autonomous driving vehicles, Schaeffler Paravan is also developing a "rolling chassis" with intelligent corner modules - with integrated Schaeffler wheel hub motors, brakes, space drive steering (90 degrees) and suspension in one system.
www.schaeffler-paravan.de