

PRESS RELEASE

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Premiere: Mr. Space Drive drives Space Drive at the GTC Race at the Lausitzring

- » Roland Arnold: "Experiencing steer-by-wire technology on the racetrack itself is a logical and important step, enabling us to accompany future development steps even more efficiently."
- » Dialog between development drivers and engineers is extremely important for the future development of Space Drive
- » Big Data as the basis for accelerated development of autonomous driving functions.

Roland Arnold, the developer of Space Drive and CEO of PARAVAN GmbH and Schaeffler Paravan Technologie GmbH & Co.KG, will be sitting in the Space Drive cockpit of his PARAVAN Mercedes-AMG GT3 himself as a development driver from next weekend.



"Mr. Space Drive" Roland Arnold is in action for the first time as a Space Drive development driver at the GTC Race at the Lausitzring, Photo:PARAVAN

It's not just the first Space Drive race for the black-and-chrome PARAVAN Mercedes-AMG with start number #65, but also for its driver: When Roland Arnold takes to the track for the first time as a Space Drive development driver at the GTC race weekend at the Lausitzring (July 16/17, 2022), he will definitely be accompanied by a fair amount of respect: "At the age of 56, I'm no longer planning to become a racing driver," explains the developer of the only road-legal drive-by-wire system. "But before my first race with Space Drive, I'm naturally a bit nervous. And that's just as well." Technically, everything is perfectly prepared for this weekend's start: The Space Drive system installed in his PARAVAN Mercedes-AMG with starting number #65, which does not require any mechanical connection at all between the steering unit and the steering gear, is prepared and supported by the team of experienced Space Drive technicians who have been integrating the technology into the vehicles of PARAVAN customers and automotive projects for many years.

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"Driving the steer-by-wire technology on the racetrack itself is actually a logical step so that we can accompany future development steps even more efficiently," says Roland Arnold, who developed Space Drive a good 20 years ago from mobility for the disabled and has since expanded the system into a key technology for autonomous driving. For the founder and managing director of PARAVAN GmbH and CEO of Schaeffler Paravan Technologie GmbH & Co. KG, his commitment goes far beyond racing. ""Our drive-by-wire technology not only ensures that the steering column disappears from vehicles. The friction values and road data that we capture via our digital steering system form the basis for all other players in autonomous driving - from sensor manufacturers to artificial intelligence providers. This treasure trove of data will be crucial in accelerating the implementation of autonomous driving functions!"

Roland Arnold earned his racing license just over two years ago. After that, he first got to grips with his vehicle and drove it with conventional steering. "That was important so that I could now assess the differences more accurately. I also had to get to know the vehicle and the tracks first," says the Space Drive pioneer. Since then, he has completed tests at various race tracks and competed in his first races as part of the GTC Race at Oschersleben at the beginning of April "For the last test at the Hockenheimring with the Mercedes-AMG GT3, I then got behind the steer-by-wire wheel myself, and the difference was impressive."

The engineers are currently working on the development of the third-generation Space Drive, which will mark the entry into large-scale production. An important aspect of this, understanding how steering signals and impulses picked up from the road are fed back to the steering wheel. This makes it possible to give the driver precisely the feeling at the steering wheel that he or she actually needs for the current driving situation - from speed-dependent steering angle to data on road surface conditions. "That's the claim," says Arnold, "this data is relevant to safety and later also a decisive factor for driving automation in autonomous driving systems."

The innovative Space Drive driving and steering system emerged from the disability mobility sector just over 20 years ago and has already helped more than 9,000 people achieve new mobility. The only road-legal drive-by-wire system represents a key technology for autonomous driving and is a very valuable data provider in the development process, with a view to completely new safety features. "We are taking a "from track to road" development approach here and have been using the accelerated and very tough development field of motorsport since 2019," says Arnold, who has brought the technology to the race track. "We have had very good experience with it. The development benefits from the data collected during the race, but on the other hand also from what the drivers say. Combining this information helps us to better understand the system and develop it efficiently, especially with a view to series development; the steering column will no longer be present in future vehicle concepts."

In the GTC Race and in the DTM, the Space Drive technology, which has been approved by the German Motor Sports Federation (DMSB), has been an integral part of the regulations since 2020 and was also used in the Nürburgring 24h races in 2020 and 2021, in the ADAC GT Masters and in rallies. Internationally successful racing drivers such as Bernd Schneider, Markus Winkelhock, the reigning 2021 DTM champion Maximilian Götz in numerous GTC race events, DTM Space Drive driver Maximilian Buhk, and European Rally Champion Armin Schwarz have worked with the Schaeffler Paravan development team to raise Space Drive steer-by-wire technology to a new level, providing an important basis for Level 5 autonomous driving.

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Roland Arnold's PARAVAN Mercedes-AMG GT3 with start number #65 has been converted into a Space Drive development vehicle in recent weeks, Photo: GTC Race



The Space Drive digital steering and braking system does not require any mechanical connection between the steering unit and the steering gear. Photo: PARAVAN

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About Paravan GmbH:

Paravan GmbH is the world market leader for highly customized vehicle solutions for the disabled. Around 180 employees develop and produce individually adapted automobile conversions, power wheelchairs. Paravan pursues a holistic approach with the "all-in-one concept". The technological highlight is Space Drive, an intelligent digital control system based on the drive-by-wire principle. Thanks to the active redundancy of the servo motors, it is completely fail-safe and the first in the world to be approved for road use. With the help of this innovation, severely disabled people, some without arms or legs, can drive independently and safely. It is not possible for these drivers to simply intervene in the steering wheel. Worldwide, Space Drive has proven itself on over one billion road kilometers in the last 18 years and is used by numerous industrial customers for test vehicles in the field of autonomous driving. The system is available as a retrofit kit with an open interface for all known vehicle types. www.paravan.de

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 Pfrontstetten-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