

Press and IR Release

Schaeffler acquires drive-by-wire technology

- **Schaeffler Group and Paravan establish Schaeffler Paravan Technologie GmbH & Co. KG**
- **Joint Venture to acquire SPACE DRIVE drive-by-wire technology from Paravan and Mover activities from Schaeffler**
- **Paravan founder Roland Arnold to become CEO**
- **Drive-by-wire is key-enabling technology for the fast-growing market segment autonomous driving**
- **Schaeffler developing chassis segment into chassis systems integrator**

HERZOGENAURACH, *August 6, 2018*. The Schaeffler Group in cooperation with Roland Arnold and Paravan GmbH agreed on a master agreement for the formation of a joint venture company which was signed today. The transaction is pending regulatory approval by Germany's Federal Cartel Office. The parties have agreed not to disclose the financial details of the deal. The object of the joint venture company, which will be called Schaeffler Paravan Technologie GmbH und Co. KG, is the further development of Paravan's SPACE DRIVE drive-by-wire technology and the development and sale of mobility systems. As part of the transaction, the joint venture will acquire Paravan's SPACE DRIVE technology. Schaeffler Technologies AG & Co. KG will have a 90 percent stake in the new company. A leading drive-by-wire technology, SPACE DRIVE was developed by Paravan GmbH to help drivers with physical disabilities by replacing cumbersome mechanical vehicle control systems with 100%-reliable, fully electronic systems.

Alongside electronic accelerator and brake activation, SPACE DRIVE features steer-by-wire functionality, which enables safe and reliable vehicle steering by purely electronic means, thereby eliminating the need for a steering wheel, steering column and associated mechanical linkages. Steer-by-wire is a key enabling technology for self-driving cars, for which safe and highly reliable steering is a fundamental requirement. Even in part-time autonomous passenger cars with steering wheels, the space saved by eliminating the steering column opens up completely new possibilities for vehicle and cab interior design. SPACE DRIVE features triple redundancy and is currently the only integrated drive-by-wire solution in the world to be manufactured in accordance with the highest quality and safety standards including certification according to the extremely exacting ISO 26262 ASIL D functional safety standard. Consequently, is the only system of its kind to be licensed for on-road use in multiple countries worldwide, while at the same time having the potential for technical and commercial viability in large-series automobile production. SPACE DRIVE also has an unblemished record of over 500 million kilometers of accident-free driving.

The new joint venture company will have its operational headquarters in Aichelau and Herzogenaurach and will be headed by a team comprising Paravan founder Roland Arnold as CEO, and Dr. Dirk Kesselgruber, head of the business division Chassis Systems at Schaeffler, and one other, yet-to-be-decided, employee of the Schaeffler Group.

“We are both delighted and immensely proud to have on board such a competent and successful partner as Mr. Arnold for this pioneering collaboration,” commented Schaeffler AG Deputy CEO and Chief Technology Officer Prof. Dr. Peter Gutzmer. “Today’s agreement is a major milestone for Schaeffler. The acquisition of this tried and proven drive-by-wire technology gives us access to a key technology that will enable us to develop our Chassis Systems business division into a chassis systems integrator. The rolling chassis business is a decisive opportunity for Schaeffler to leverage its core competencies to gain a technological foothold in the fast-growing autonomous car market helping to further diversify our powertrain and chassis businesses. Today’s deal is therefore another major step towards achieving our ‘Mobility for tomorrow’ strategy.”

The SPACE DRIVE technology and the associated core competencies in functional safety through high-reliability electronics complement Schaeffler’s core competencies in mechatronics and will accelerate the development of future by-wire steering systems by strengthening expertise in key areas, particularly systems engineering, electronics and functional software.

Under the deal, the Schaeffler Group will contribute its Schaeffler Mover technology to the joint venture, where it will play a pivotal role. Schaeffler Mover is a concept for a small and highly versatile rolling chassis that is fully electric and can be combined with various body versions to support a range of different urban mobility and transport applications. Schaeffler unveiled the Mover concept to the public for the first time at its 2018 Annual General Meeting.

Dr. Dirk Kesselgruber said: “The Schaeffler Mover concept demonstrates our commitment to being an innovative partner for mechatronic chassis systems and to further growing this capability and thereby positioning ourselves in the medium term as a leading provider of rolling chassis systems. The Schaeffler Mover is primarily a platform for developing and industrializing future products for auto manufacturers. We see SPACE DRIVE as a functionally safe and reliable foundation for these products, and we will therefore actively pursue its systematic and customer-centric further development and refinement under the joint venture. Indeed, in the future we may even develop entire vehicle platforms for logistics and service companies.”

“Schaeffler is the perfect partner for further developing, scaling and industrializing our unique SPACE DRIVE technology,” said Roland Arnold. “The company has technical expertise in a wide range of areas, particularly in the highly promising areas of mechatronics and mechanical actuator systems. Just as important, in my view, is the fact that our two companies are a good cultural fit. As family-owned businesses, we have a similar outlook. This is a win for both companies. Like Schaeffler, Paravan GmbH and its customers will benefit from the partnership we have forged here today.”

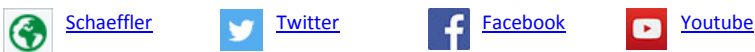
Photo: Schaeffler



Caption: Schaeffler Mover is a concept for a small and highly versatile rolling chassis that is fully electric and can be combined with various body versions to support a range of different urban mobility and transport applications.

About Schaeffler

The Schaeffler Group is a global automotive and industrial supplier. Top quality, outstanding technology, and exceptionally innovative spirit form the basis for the continued success of the company. By delivering high-precision components and systems in engine, transmission, and chassis applications, as well as rolling and plain bearing solutions for a large number of industrial applications, the Schaeffler Group is already shaping “Mobility for tomorrow” to a significant degree. The technology company generated sales of approximately EUR 14 billion in 2017. With more than 90,000 employees, Schaeffler is one of the world’s largest family companies and, with approximately 170 locations in over 50 countries, has a worldwide network of manufacturing locations, research and development facilities, and sales companies.



About Paravan GmbH

Paravan GmbH is a global market leader for highly customized vehicle solutions which are adapted to the needs of people with disabilities. A workforce of around 180 develops and produces individually tailored automotive conversions, power-wheelchairs, movement trainers and much more. A technological highlight is Space Drive, an intelligent digital steering system in line with the drive-by-wire principle. It is completely fail-safe, thanks to active redundancy of the servo motors and the first that has approval for use on the road anywhere in the world. This innovation enables severely persons with disabilities, sometimes without arms and legs, to drive cars independently and safely. Over the last 15 years, Space Drive has proved itself worldwide in over 500 million kilometers of road driving. The system is certified according to ISO 26262 ASIL D and is manufactured in accordance with the highest international quality-standard, IPC-A-600 class 3. Numerous vehicle manufacturers, automotive suppliers and research facilities use Space Drive for vehicles and projects involving autonomous driving.

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