We develop the mobility of tomorrow

Future mobility must be a positive experience, safe and sustainable, with the user always in the center. At fka's exhibition booth at this year's Aachen Colloquium Sustainable Mobility, projects and research results from recent years will be presented in a vivid way using interactive exhibits. The scientific background and research results will be presented and discussed in subject-specific sessions.

With the increasing spread of automated driving functions, the safe and comfortable transfer of driving responsibility between humans and vehicles is becoming more and more important. Against this background, ZF, Faurecia and fka have jointly developed the **Safe Human Interaction (SHI) Cockpit**. The goal in the development was to increase both safety and comfort through the appropriate design of interaction and interior. "As demonstrated with the SHI cockpit, fka's extensive expertise provides support for the complete development process, from requirements elicitation and conceptual design to implementation and evaluation of the developed solutions. The focus is on a user-centered and iterative approach in order to develop only those solutions that represent real added value for users," says Jan Bavendiek, Manager HMI at fka GmbH. The SHI Cockpit can be tested by interested visitors of the Aachen Colloquium.

Steer-by-wire is one of the key technologies for achieving advanced automated driving functions. For example, the implementation of highly dynamic evasive maneuvers requires a decoupling of wheel steering angle and steering wheel angles. This prevents the driver from being confronted with a spontaneously and rapidly turning steering wheel. The digitization of the steering system offers many other advantages in this regard, but a number of challenges must be solved for its introduction. For years, fka has benefited from the practical experience gained from implementing a steer-by-wire concept in the SpeedE research vehicle. The sidestick in fka colors presented at the booth is designed as a grip element for vehicle lateral guidance which participants are invited to test.

Due to its precise distance measurement and three-dimensional point cloud formation, **LiDAR** (Light Detection and Ranging) technology offers high potential for machine perception in automated driving and the comfort and safety functions available today. The fka has formed a consortium with a number of committed partners to define how LiDAR sensors can be jointly described and tested to address the relevance of LIDAR for automotive applications. Of course, each sensor manufacturer promises high-quality solutions and sensor performance, mostly based on their own test procedures and resulting specifications. Currently, there is no universally accepted test framework for these sensors to determine the performance of automotive LiDAR sensors under various conditions and for specific applications. A defined specification and test procedure for LiDAR sensors is urgently needed to further improve perception capabilities for automated and safety-enhanced driving functions.

Participants of the colloquium can enjoy a driving experience in vehicles of the fka and its cooperation partners, which will be presented at the Circus Minimus in front of the Eurogress during the event:

A golf cart was equipped with a steer-by-wire system by fka and BCS. Instead of a steering wheel, it is controlled with a drivestick. This results not only in a unique driving experience and improved properties in terms of the chassis, but also in a new interior design that offers many advantages even for very small vehicles.

The second innovation is a serial drivetrain that can be experienced in the E-Jet research vehicle of our long-standing cooperation partner, the Institute of Automotive Engineering at RWTH Aachen University. The E-Jet research vehicle serves as an innovative example of alternative mobility concepts of the future. In the area of tension between pedal-driven vehicles and the classic passenger car, this project is creating an innovation vehicle for future-oriented mobility. As a "human hybrid" vehicle with serial drive, it represents a sustainable mobility solution, which is complemented by a future-oriented steering concept and exceptional aerodynamics.

All projects and exhibits exemplify fka's high level of innovation and integration. fka supports its customers from the idea to the conception and simulation, the prototypical implementation and the final testing. For this purpose, in addition to an extensive test infrastructure, fka has all the necessary tools at its service to implement ideas in real life, to integrate them into vehicles and to evaluate them on test benches and in road tests. "I am very pleased that this year we will once again be able to present many innovations to our customers, which can also be tried out and experienced first-hand. The creation of new ideas and their efficient prototypical implementation illustrates one of fka's core competencies," says Dr. Jens Kotte, Managing Director of fka GmbH.

About the fka

For more than 40 years, fka has been internationally known as an innovative engineering service provider for the mobility industry. Driving the world by developing ideas and creating innovations is the mission statement that fka's 170-strong team is committed to.

The team is inspired by a passion for efficient, safe and fascinating mobility. As one of the first companies on the Aachen campus, the spin-off of the Institute for Automotive Engineering of the RWTH Aachen University demonstrated entrepreneurial foresight. Interdisciplinary expertise in all aspects of mobility and technological visions, combined with the advantages of the inspiringly creative location, are fka's fuel. Ideas, innovations and unique methodological expertise are shaped into well-founded and secured solutions that give fka's customers the necessary edge in a wide range of issues. A complete spectrum of services, ranging from consulting and conception to simulation and design, prototype construction and experimental testing, forms the basis for this.

With the credo "creating ideas & driving innovations", the team constantly has the mobility of the future in mind.

www.fka.de

Julian Refghi
Head of Marketing & Communication
Telefon +49 241 8861 227
E-Mail: julian.refghi@fka.de