

Made in Aachen: First DIN SAE Specification for uniform evaluation and characterization of LiDAR sensors released

Aachen, Mai 2023: LiDAR technology (Light Detection and Ranging) offers high potential in machine perception for automated driving and currently available comfort and safety features due to its precise distance sensing and three-dimensional point cloud image generation. In the past years, growing number of new and established sensor manufacturers has been working on LiDAR sensors for automotive applications. This broad field of providers and the maturing of different technological approaches, lead to a wide variety of available sensor types and models based on the LiDAR principle. All these sensors are referred to as "LiDAR". However, the differences in the measurement principles, technology and components make the comparison of the specifications and evaluation of performance challenging.

In pursuit of a generally accepted test framework for LiDAR sensors, the innovative Aachen-based engineering service provider fka has joined forces with a number of committed partners to form a consortium in order to provide common guidelines for the characterization of sensors as well as a common and application-relevant evaluation/test concept. This is intended to provide a clear market overview and segmentation of LiDAR sensors based on the performance on point cloud level.

fka and its partners the German Institute for Standardization (DIN) and the Society of Automotive Engineers (SAE) have now successfully published the DIN SAE Specification 91471. This specification provides an evaluation methodology for LiDAR sensors, independent of the sensor design, its specification and technical approach. Its application to vehicle manufacturers and sensor suppliers enables a defined evaluation of sensor performance at the point cloud level, such as range, accuracy, precision and robustness of the measurement. In addition, the specification supports standardization of testing procedures. R&D facilities, hardware and software developers, proving ground operators, testing organizations and ADAS and AD system manufacturers will benefit from the newly created framework.

The DIN SAE Specification 91471 is available for download [here](#).

Following the successful publication of the specification, fka is kicking off a follow-up project together with the DVN network. The project aims to investigate the performance evaluation of LiDAR sensors under adverse conditions such as adverse weather, contamination and interference from other LiDARs/light sources.

The partners of the LiDAR Sensor Specification- and Test-Framework

fka GmbH, ADAS Management Consulting, Daimler Trucks, Ford, Luminar, Innoviz, MicroVision und Valeo.

About the fka

For 40 years, fka has been internationally known as an innovative engineering service for the mobility industry. Driving the world by developing ideas and creating innovations is the mission statement that fka's 160-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.

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