ZF ProAI: Artificial Intelligence System for Autonomous Cars, Trucks and Industrial Applications

- System enables vehicles and industry applications to see, think and act
- Cooperation between ZF and NVIDIA with NVIDIA DRIVE PX 2 AI supercomputing platform as basic

ZF and NVIDIA will develop a system that makes artificial intelligence (IA) available for the transportation industry, including automated and autonomous driving systems for passenger cars, commercial trucks, and industrial applications.

ZF ProAI will enable vehicles to better understand their environment by using deep learning technology to process sensor and camera data. In addition, the companies are developing solutions for more advanced highly automated driving, in which systems have the capability to control the vehicle with greater levels of autonomy.

Current electronic control units in cars consist of numerous processors, each of which controls a system or a specific function. However, their computing power is no longer sufficient for autonomous driving.

“With NVIDIA, we are bringing the supercomputing power required for artificial intelligence into cars and commercial vehicles,” explains ZF CEO Dr. Stefan Sommer. “ZF is enabling vehicles to see, think and act. NVIDIA’s AI platform lets us take a giant leap forward when it comes to enabling vehicles – whether passenger cars, trucks or forklifts – to think.”

ZF ProAI will use the scalable NVIDIA DRIVE PX 2 AI computing platform to process inputs from multiple cameras, plus lidar, radar and ultrasonic sensors.
ZF ProAI will have the capability to understand in real time what is happening around a vehicle, precisely locate itself on an HD map and plan a safe path forward. The solution will meet automotive-grade standards to function when exposed to extreme temperatures, moisture and dust. Series production is planned from 2018 onwards.

“Transportation is a massive industry that AI can transform,” said Rob Csongor, Vice-President and General Manager of Automotive at NVIDIA. “With NVIDIA’s autonomous driving technology and ZF’s powerful position in transportation, AI self-driving can now be enabled in any vehicle from passenger cars to commercial vehicles worldwide.”

**AI opens up massive possibilities**

Supercomputing and deep learning capabilities are dramatically accelerating the development of autonomous cars. The NVIDIA DRIVE PX 2 AI platform provides the enormous computing power necessary to comprehend a 360-degree view around a vehicle and plan appropriate actions.

ZF is delivering ZF ProAI as an in-vehicle system capable of over-the-air updates to add new features and capabilities throughout the life of the vehicle. It is also configured for V2X applications, so it can communicate with other vehicles and with the surrounding infrastructure. In addition, the learning and networking capacity of ZF ProAI can help make an entire vehicle fleet safer and more efficient by means of “swarm intelligence.”

“We see NVIDIA’s deep learning platform as the basis for our future AI-capable software, plus we will make it available to third parties,” explains Torsten Gollewski, Head of Advanced Engineering at ZF. “In addition to autonomous cars, we see many opportunities to bring this technology to commercial vehicles and other industrial applications. AI-capable software and deep learning will become more prevalent in many AI industries in the coming years.”
Picture Caption:
With ZF ProAI, ZF and NVIDIA are bringing artificial intelligence to the transportation industry—laying the groundwork for the accelerated adoption of autonomous driving functions.
(Picture: ZF)

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ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company has a global workforce of around 137,000 with approximately 230 locations in some 40 countries. In 2016, ZF achieved sales of approximately €35 billion (preliminary figures). ZF annually invests about five percent of its sales in research & development—ensuring continued success through the design and engineering of innovative technologies. ZF is one of the largest automotive suppliers worldwide.

ZF allows vehicles to see, think and act. With its technologies, the company is striving for Vision Zero—a world of mobility without accidents and emissions. With its broad portfolio, ZF is advancing mobility and services in the automobile, truck and industrial technology sectors.

Industrial Technology is the division where ZF bundles its activities for “Off-Road” applications. It comprises the development and production of transmissions and axles for agricultural- and construction machinery as well as driveline technology for material handling systems, rail- and special vehicles. The division is also responsible for the worldwide business of marine propulsion systems, aviation technology as well as the development and production of gearboxes for wind turbines and industrial applications. Test systems for all kinds of applications in driveline and chassis technology are also included in the division’s portfolio.

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