



Baidu Uses ZF's AI Control Box for Autonomous Parking

- ZF ProAI utilized as supercomputer for new valet parking system from Baidu
- Cars fitted with this technology can have the capability to autonomously drive to a parking space and back
- First application in car-sharing vehicles with large Chinese mobility provider Pand Auto

Friedrichshafen, Germany / Sunnyvale, Calif. ZF Friedrichshafen AG and Chinese tech company Baidu are presenting a new system ahead of CES 2018 which can enable autonomous valet parking without a driver. This is the first product resulting from the strategic cooperation between the two companies and is based on ZF's ProAI, a supercomputer with artificial intelligence capabilities jointly developed by ZF and NVIDIA. Electric vehicles from the car-sharing company Pand Auto are now demonstrating the functionality in a series of test drives today.

In the fall of 2017, ZF and Baidu signed a strategic cooperation to advance autonomous driving technology for the Chinese market. Now, just four months after the agreement, the first application has been developed using the ZF ProAI supercomputer for autonomous driving. The system supports a feature that can drive a vehicle to a parking space and back without driver input. This can be performed using a smartphone app, which relies in part on an intelligent control box from ZF that does all the thinking for the driver. It can process data from the vehicle's environmental sensors and from car-to-x communication. It can then send the relevant signals to the actuators such as steering and braking systems. This valet parking function is currently celebrating its debut in a test fleet from Pand Auto, one of the biggest Chinese car-sharing providers.

"ZF ProAI is ready for production. It is the result of our cooperation with NVIDIA, which we announced exactly one year ago at CES 2017. In our



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current project with Baidu, this supercomputer once again shows how we are accelerating autonomous driving and also makes it simpler for new players in the industry to demonstrate mobility innovations," said Torsten Gollewski, head of Advanced Engineering at ZF Friedrichshafen AG.

"ZF's supercomputer is ideal for our autonomous driving applications, as it can process a huge amount of data such as high-definition digital maps in real time. In addition, it combines with artificial intelligence, deep-learning capabilities and meets all the current automotive standards," said Mr. Zhenyu Li, Vice President, General Manager of Intelligent Driving Group of Baidu.

The new valet parking system directly addresses the needs of vehicle manufacturers as well as mobility service providers. Primarily, its goal is to significantly reduce the operating costs for car-sharing providers, while at the same time improving processes and convenience for customers and vehicle users. The Pand Auto electric test vehicles fitted with the automatic parking systems are being displayed to the public for the first time today at a driving event in the heart of California's Silicon Valley, in the run-up to CES 2018 in Las Vegas.

Caption:

The electric car-sharing vehicle from Pand Auto, one of the biggest Chinese providers, can be equipped with a function that finds and exits a parking space on its own thanks to the new valet parking system from ZF and Baidu.

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ZF Friedrichshafen AG

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 €35.2 billion. ZF annually invests about six 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.

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