

Velodyne LiDAR Sensor Guides the Way, As Baidu's Self-Driving Car Hits the Road in Beijing

Outfitted with Velodyne HDL-64E 3D LiDAR Sensor, Modified BMW is First Fully Autonomous Car in China; Traverses Complex 18.6 Mile Route

MORGAN HILL, Calif. ([PRWEB](#)) January 19, 2016 -- [Velodyne](#) LiDAR announced today that, in a milestone for China's autonomous driving effort, a self-driving car from Baidu, Inc. has successfully completed rigorous, fully autonomous tests on one route with mixed roads under a variety of environmental conditions – guided throughout by Velodyne's HDL-64E 3D real-time sensor. Baidu, Inc. is the leading Chinese language Internet search provider.

The Baidu vehicle, a modified BMW 3 Series, is the country's first to have demonstrated full autonomy under complex road conditions. The 18.6-mile drive through highways and side streets required execution of a comprehensive set of driving actions and accurately responding to the driving environment. The road test followed conclusion of a June 2015 deal between Baidu and BMW to launch an autonomous car before the end of the year.

The test drive route began at Baidu's Beijing headquarters near Zhongguancun Science Park in Haidian District, extended to the G7 highway, Fifth Ring Road, Olympic Park, then looped back and ended at Baidu headquarters. The car demonstrated full autonomy over the entirety of the route and successfully executed driving actions including making right turns, left turns and U-turns, decelerating when detecting vehicles ahead, changing lanes, passing other cars and merging into traffic from on-ramps and exiting from off-ramps. The vehicle reached a top speed of 62 miles per hour during the test runs.

"Fully autonomous driving under mixed road conditions is universally challenging, with complexity further heightened by Beijing's road conditions and unpredictable driver behavior," said Wang Jing, SVP of Baidu and General Manager of Baidu's newly established Autonomous Driving Business Unit.

"Velodyne LiDAR has become the de facto standard for autonomous vehicles and we're honored to have assisted Baidu in its rigorous inaugural test," said Wei Weng, Velodyne Asia Sales Director. "Baidu's autonomous car performed superbly, completing nuanced maneuvers that included recognizing road lanes and the distance between – and speed – of other vehicles. These are genuine breakthroughs for the company."

Baidu's Institute of Deep Learning, one of the three labs under Baidu Research, has led the autonomous driving project since 2013. Baidu AutoBrain, the core of Baidu's autonomous driving technology, includes highly automated driving (HAD) maps, positioning, detection, and smart decision-making and control. Relying heavily on Velodyne LiDAR sensors, Baidu's proprietary HAD maps record 3D road data to within a few centimeters of accuracy of vehicle positioning. With Baidu's leading object recognition and environment perception technology, the car can detect, recognize, and follow other vehicles with high accuracy; recognize road lanes; and accurately gauge distance and velocity.

Baidu AutoBrain showcases the company's advanced automotive vertical technologies, and highlights its cutting-edge big data and advances in artificial intelligence. Baidu's autonomous driving initiative is currently the only research project in China that has passed the ISO 26262 functional safety standard.

The Baidu test run extends Velodyne's recent strong showing in China. In November, 17 of 20 competitors in China's Intelligent Vehicle Future Challenge (IVFC) relied on real time multi-channel 3D LiDAR sensors from Velodyne LiDAR – and the top five finishers all used the company's groundbreaking HDL-64E.

About Velodyne LiDAR

Founded in 1983 and based in California's Silicon Valley, Velodyne LiDAR Inc. is a technology company known worldwide for its real-time LiDAR (light detection and ranging) sensors. The company evolved after founder/inventor David Hall competed in the 2004-05 DARPA Grand Challenge using stereovision technology. Based on his experience during this challenge, Hall recognized the limitations of stereovision and developed the HDL-64 Solid-State Hybrid LiDAR sensor. Velodyne subsequently released its compact, lightweight HDL 32E sensor, available for many applications including UAVs, and the new VLP-16 LiDAR Puck, a 16-channel real-time LiDAR sensor that is both substantially smaller and dramatically less expensive than previous generation sensors. Market research firm Frost & Sullivan has honored the company and the VLP-16 with its 2015 North American Automotive ADAS (Advanced Driver Assistance System) Sensors Product Leadership Award. Since 2007, Velodyne LiDAR has emerged as the leading developer, manufacturer and supplier of real-time LiDAR sensor technology used in a variety of commercial applications including autonomous vehicles, vehicle safety systems, 3D mobile mapping, 3D aerial mapping and security. For more information, visit www.velodynelidar.com. For the latest information on new products and to receive Velodyne's newsletter, [register here](#).



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