



VSI
Labs



Case Study VSI Labs & HERE

VSI Labs is a leading technology researcher for companies that develop systems or components used in ADAS and automated driving applications. In June of 2018, [HERE Technologies](#) became a sponsor of VSI's research vehicle. HERE sought to have their high definition (HD) maps integrated into VSI's Ford Fusion research vehicle to test various driving applications. They were also looking to grow the reach of their brand through vehicle press opportunities.

Map-Based Lanekeeping

Most L2 solutions available today perform lanekeeping using cameras to detect roads' lane lines. This can be problematic considering these systems are totally dependent on the presence and visibility of lane markings. Using a lane model from an HD map can solve these common issues, with the maps acting as "virtual infrastructure" enabling the automated vehicle to know exactly where lane boundaries and centerlines are located even if they are covered in snow.

After updating their lane detection and lane centering stack that relied on computer vision, VSI's engineers developed the code and algorithms necessary to use map data for localization.

VSI tested the new system in various driving scenarios, such as roadways without lane lines, and areas in which lane lines widen or expand into a turn/exit lane. Throughout testing, the map-based lane keeping system provided **more reliable and consistent performance** over the computer vision only lane keeping system.

Additional Map-Based ADAS Applications

VSI observed through further testing that HD maps can reduce false positives associated with some ADAS applications. For example, targets outside of the vehicle trajectory can cause erratic behavior with adaptive cruise control (ACC) and automatic emergency braking (AEB). **Precision lane models substantially reduce false positives with ADAS features.**



The Drive West & Beyond

The testing and development work done with HERE maps culminated in VSI's Automated Drive West and East, in which VSI successfully utilized HERE maps for **over 3,000 miles** of highway driving.

HERE will continue to sponsor the VSI research vehicle in 2020, and VSI will continue to promote HERE at conferences worldwide, featuring their maps as an enabler of AV and ADAS driving applications.

Why Work with VSI?

- Leverage VSI's applied research expertise
- Get your component integrated into a fully functioning semi-autonomous vehicle
- Grow your brand's reach through VSI's marketing & events
- Demonstrate your technology to industry leaders & other stakeholders

Ready to Get Started? Contact Us:

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