

## **DID YOU KNOW???**

### **AUTONOMOUS VEHICLES TESTED IN THE VILLAGES, FL**

There's a lot of discussion, including in several of these Did You Know articles, about autonomous vehicles. Voyage Auto, a California-based company, is now test-driving its second-generation car, two Chrysler Pacifica Hybrid minivans, in the Village of Virginia Trace, Florida. The company is receiving feedback from four residents chosen as test passengers, according to an article by Amber Hair, a staff writer with The Villages Daily Sun.

Why test these vehicles in The Villages? There are a few major benefits to testing here, according to Timothy Carone, an associate teaching professor at the University of Notre Dame, who specializes in data science, automation and artificial intelligence. The weather is better for testing and the population can benefit from having non-driving transportation options. Road conditions in The Villages make it easier for developers to program self-driving cars. Slower speeds mean the car can stop almost instantly if the car is about to crash. Thus the chances of injury are much lower.

To make sure the vehicle is as safe as possible during rollout, Voyage built in three levels of safety. While the car is being guided by its sensors and computers, there will be a human behind the wheel at all times during the testing phase to make sure a person can assume control in case the car runs into a situation it doesn't recognize.

The second level of safety is a second person in the front passenger seat, making sure the human in the driver seat is paying attention to the road, even when they aren't driving. These two levels of safety will become redundant and phased out as the company expands its presence, but Voyage general manager Dean Bushey says there will always be a way for a human to take control in situations the car doesn't recognize.

The third level of safety is operating only on pre-mapped routes. By sticking to those routes, the sensors can focus less on the surroundings like houses and signs which won't change, and more on the surroundings that will, like golf carts and people.

The cars are programmed to obey speed limits, yield to other cars and emergency vehicles, stop for road signs when required, and recognize pedestrians nearby.

Voyage is a software company, not a car-building one, so the entire hardware safety features, like air bags, seat belts and anti-locking brakes, came with the vehicle. The biggest changes to the car are technology they added, like sensors all over the car. "The car can make 1,000 decisions a second – probably more," Bushey said.

Sally Moss, of the Village of Virginia Trace, took a 30-minute ride, 20 minutes of which the Voyage car was in self-driving mode, on January 31st. She watched as the vehicle went through its internal checklists before it started driving. The van drove slower than Moss expected. She also saw the vehicle trouble shoot as it ran into a situation that it didn't expect. There were two landscaping trucks parked on opposite sides of the road but facing the same way even though one of them should have been facing the opposite direction. The car came to a stop to figure out if either truck was moving while it processed the data; after 10 seconds, it started up again.

Moss and the other three people have all taken their first rides, and they met up to compare their experiences. Voyage sent the data from their rides back to California along with their suggestions to make the rides more user-friendly.