

Futuristic cars are coming faster than you think

April 13 2012, By Alisa Priddle

Cars that drive themselves are not just the stuff of sci-fi movies. The technology is real, the cars can now drive legally and the debate is starting on whether society is better off when software is behind the wheel.

Automotive supplier Continental is testing a self-driving car that, by month's end, could be among the first licensed for use on public roads in Nevada, the first state to pass laws governing driverless vehicles.

Continental, which has its U.S. headquarters in Auburn Hills, Mich., removed brake and steering controls in a [Volkswagen Passat](#) and replaced them with sensors and advanced technology to read the surroundings and drive accordingly.

To qualify for Nevada's special license, Continental engineers have racked up and documented almost 10,000 miles of autonomous driving. That included a recent trip from Las Vegas to Brimley, Mich., where Continental has a development and testing center. More than 90 percent of the journey was without a hand on the wheel or a foot on a pedal, said Ibro Muharemovic, lead engineer of Continental's Advanced Engineering unit and one of three engineers riding shotgun.

A final trip is being planned to hit the 10,000 mark in the next few weeks.

Most of the technology is already on the market as [safety features](#) to

avoid accidents, or at least mitigate their severity.

[Google](#) started the debate about autonomous driving when it took a [Toyota Prius](#) and attached sophisticated but expensive equipment so the car could drive itself.

Both companies are chasing the same goal: to reduce accidents, congestion and [fuel consumption](#). With driverless cars, the age and state of the driver does not matter, and parking is not an issue when cars can drop off passengers and drive home.

"There is a strong business case for an autonomous car that can drop you off or a cab without the expense of a driver," said Ravi Pandit, CEO of KPIT Cummins, a global IT and engineering company in Pune, India.

This is the future of the auto industry, and it is happening faster than consumers realize.

TECH IS ALREADY HERE

A production semiautonomous car is still a few years from production, but much of the safety technology that makes it possible is on the market now. But the whole idea of cars driving themselves raises questions about liability and regulation and whether the public is ready to accept them.

The National Highway Traffic Safety Administration will start studying aspects of autonomous driving in August with a one-year pilot project in Ann Arbor, Mich., to test 3,000 cars with equipment to communicate with one another to prevent accidents. Officials have expressed support for technology that addresses distracted driving and prevents accidents.

Issues still to be resolved include who is liable in a crash and whether

drivers of autonomous cars are legally exempt from bans on texting.

"When you put everything together, a car can drive automatically," Muharemovic said.

"It's an exciting area and the natural progression of vehicles," Pandit said.

Most automakers have joined the quest.

Ford Executive Chairman Bill Ford addressed a conference in Barcelona, Spain, where he urged the telecom industry to help solve mobility problems as the world approaches global gridlock. He called for cars to communicate with one another and their surroundings.

Mercedes, BMW and Audi are among the companies developing systems that assist driving in traffic jams.

The all-new Cadillac XTS coming in May will feature a package of sensors, radar and cameras to provide 360-degree input to detect the risk of a crash and try to prevent it. Alan Taub, General Motors vice president of research and development, said in October that GM will have semiautonomous cars on the road by 2015 and fully autonomous ones by the end of the decade.

Already on the road are cars that park themselves, adjust their speed to that of the car in front, and brake, accelerate or steer when a crash is imminent.

STATES HURRY TO CATCH UP

The law also is working to catch up with the technology.

Nevada is the first state to pass a law making driverless cars legal, and bills have been introduced in Florida, Hawaii, California and Oklahoma. Arizona introduced a bill, but it failed.

Nevada's Department of Motor Vehicles Director Bruce Breslow said the new regulations "establish requirements companies must meet to test their vehicles on Nevada's public roadways, as well as requirements for residents to legally operate them in the future."

Engineers at Continental are within weeks of completing 10,000 test miles of autonomous driving with their Passat, at which point, the car will qualify to be registered legally in Nevada and receive a special red license plate allowing it to drive on designated public roads.

In the future, production driverless cars would get a green license plate.

STRESS? FORGET ABOUT IT

The Passat has driven safely through traffic congestion and shouldered the burden on long stretches of mind-numbing highway, all of which has been carefully documented.

"I was surprised by how well it worked," said Muharemovic, who made adjustments during testing. Also in the car were software and algorithm engineers from Continental in Germany.

The test Passat has a stereo camera in the windshield that monitors the ground for speed bumps or potholes, long-range radar in the front grille that looks out about 220 yards and short-range radar sensors on corners of the car to capture details of the surroundings and command the car to steer, brake and accelerate accordingly.

The sensors detect if the car in front stops, if there is a construction

barrier on the right and a delivery truck cutting in from the left. The car stops and does not resume driving until the road clears; the engineers nod their approval and continue to check e-mail and send texts.

Plans for a long highway drive should be equally free of stress and fatigue because once again, the car will do the driving. The driver takes over control only to pass or change lanes.

"We still have a long way to go, but the technology is amazing," said Christian Schumacher, director of engineering systems and technology for Continental in North America.

Like cruise control, the self-driving mode can be tapped on and off. "The driver is always in control and can override the system any time," Muharemovic said.

The driver must stay awake and pay enough attention to satisfy a camera in the vehicle that is monitoring him or her and will make warning sounds threatening to revert to automatic control.

"We're looking at reducing accidents and deaths," Muharemovic said of Continental's plans to build more test vehicles to hone the technology.

Pandit believes safety is not a concern. "A car can see better than a human can, and the car responds faster," he said.

GOOGLE STILL IN THE GAME

Google's more ambitious goal of a fully [autonomous car](#) is further out. The seven Google test cars on the road rely on a spinning \$70,000 Lidar, a laser-range finder that acts like a set of eyes to map the surroundings and compare the data against GPS and other onboard systems.

"The Google car is more capable but the cost is (higher by) a factor of 1,000," Schumacher said, compared with Continental's semiautonomous solution.

"I'm not sure if I'm excited or should feel sad because I'm a [car](#) guy," Muharemovic said of a world of [driverless cars](#).

(c)2012 the Detroit Free Press
Distributed by MCT Information Services

Citation: Futuristic cars are coming faster than you think (2012, April 13) retrieved 11 May 2024 from <https://phys.org/news/2012-04-futuristic-cars-faster.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--