

Semi-Autonomous Driving 'Right Around the Corner'

by Jim Stickford

It's not quite the car from the TV show, "Knight Rider," but technology to help drivers avoid accidents will be pretty much standard in the next generation of automobile.

And that plays right into the strengths of TRW Automotive, said John Wilkerson, senior communications manager at the auto supplier.

Several forces are in play causing the addition of new technologies to passenger vehicles, Wilkerson said. First, there are new government regulations in the North American, European and Asian markets concerning safety and mileage.

In order to meet higher mileage and safety standards, vehicles will have to incorporate new technology, Wilkerson said, so TRW's new generation of camera technology becomes very valuable.

"TRW is a worldwide organization with 65,000 employees around the world," said Wilkerson. "Our headquarters is in Livonia, and last year's revenues were \$16 billion. Our mantra is 'safety' and 90 percent of our business is safety-related."

Tolgo Oal, vice president for global electronics at TRW Automotive, said the company is able to make vehicles safer by making them smarter. They have electronic "brains" that can monitor and coordinate electronic systems within a car. This is an advancement because, previously, each system – whether it was tire monitoring or radar or cameras – had its own "brain." That meant more weight and the systems weren't synced.

Andy Whydell, senior manager – Product Planning for Global Electronics at TRW Automotive, said that a lot has changed in driver as-

sistance technology over the last 10 years. And as CAFE standards have pushed cars to get better mileage, they've become less "safe." That's because the vehicles are lighter and lighter generally means not as strong.

So putting in active safety systems is a way to counter that trend.

"Since 2009, highway fatalities have been dropping at a rate of about 900 deaths a year in the U.S.," Whydell said. "Technology could help lower that more. The U.S. government is heading toward policies that will actively push active safety technology in cars. So we're seeing strong growth in the radar and camera market. We expect that by 2016 there will be 11.5 million cars with cameras in them."

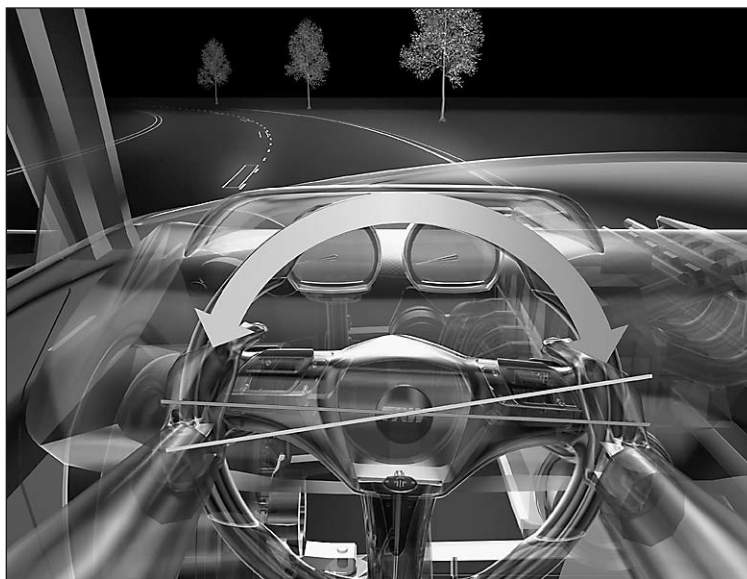
Cameras allow drivers to see behind them when they are backing up, as well as covering a car's blind spot. Radar warns drivers about vehicles in front, in back and on the sides when they get too close. There are technologies that are being tested right now to see how well they can "read" traffic signs.

Whydell said TRW is in the process of developing its third-generation vehicle camera. The company will be able to put in different lenses so that different systems will have different costs. Which one is chosen will be up to the OEM.

"What's good about all of this," Whydell said, "is that we're able to combine all this technology with our brakes and steering systems. We can personalize our offerings to meet individual OEM ideas of how this technology is to be used."

Whydell said the OEMs are all adopting this tech, but each company has its own individual idea of just how it's to be used and in what combinations.

Whydell said semi-autonomous driving is right around the corner. So



Lane Centering warns driver that the car is straying into the next lane.

using radar and cameras connected to braking and steering systems, drivers can be warned when they're drifting between lanes. A vehicle might self-adjust when a driver is changing a lane and a car is in the blind spot. TRW is working with Mobileye of Israel to develop technology to identify people and objects in the path of a car and then make adjustments to avoid hitting the obstacle.

Other factors are affecting the adoption of these new technologies, Wilkerson said. OEMs don't want to be "left behind" by not offering it, in addition to the technology helping meet mileage and safety requirements.

And, he said, consumers are more interested in safety and OEMs are better able to use safety as a selling point.

"This is quite different from, say the 1960s and 1970s, when Ralph Nader was preaching about safety," Wilkerson said. "Consumers weren't that interested in safety when buying a car. That's not the case right now. Safety, along with price, become important points consumers consider when looking at cars."

Wilkerson said that within the next five years, much of this technology will become standard in just about every new car sold in the country.

Chamber Reminds 'Skeet and Meet' Set for May 14

Both experienced and new skeet shooters are invited to join the Auburn Hills Chamber of Commerce 3-6 p.m. May 14 for a Skeet & Meet at Bald Mountain Shooting Range, 2500 Kern Road, Lake Orion.

Participants will have an opportunity to enjoy the Michigan outdoors while networking on the course. A range of individual prices with trainer and equipment, and prices for teams of four, are available.

For information or to register, go to auburnhillschamber.com.

Durand to Feature Railroad Exhibit

People who are into trains, railroads and train station history may want to check out the Depot Archive Art Show at the Durand Union Station in Durand, which is between Flint and Lansing.

Opening reception for the show, which features train- and station-related art works collected over the past 30 years, is Saturday, May 11, from 2 p.m. to 5 p.m., at the station's ballroom.

"It's going to be quite a variety of mediums," from acrylics to oils to pencils, said Museum Director Mary Warner-Stone.

BorgWarner's R3S Boosts Power and Fuel Economy

Auburn Hills-based BorgWarner's hard work in designing a three-stage (R3S) turbocharging system has paid dividends.

During a ceremony held in Detroit, BorgWarner received a 2013 *Automotive News* PACE Innovation Partnership Award for its collaboration with BMW on the first regulated R3S turbocharging system for diesel engines.

The technology achieves a V8's powerful output with the fuel economy of an inline-6 engine.

BorgWarner worked closely with BMW to develop the three-stage technology, which debuted on the BMW M Performance diesel engine, the most powerful 6-cylinder in-line diesel engine in the world, say BorgWarner officials.

"BorgWarner's successful partnership with BMW was forged more than a decade ago with the development and introduction of regulated two-stage turbocharging," said Frederick Lissalde, president and general manager – BorgWarner turbo systems passenger car products.

"Our mutual drive to push the limits of performance and fuel economy led to close collaboration beginning in the earliest development stages of the R3S turbocharging system.

"Engineers in both companies were dedicated to achieving ambitious targets, developing a benchmark diesel engine technology and bringing the innovation to market first.

"We are very proud to receive these awards. They symbolize the entrepreneurial spirit and dedication of the many employ-

ees at BorgWarner and BMW who helped develop and produce this important innovation."

Designed with many new components for fuel-efficient turbocharging, BorgWarner's R3S turbocharging system consists of two small high-pressure variable turbine geometry turbochargers integrated with one larger low-pressure turbocharger.

The three turbochargers are activated successively at different engine speeds. The first high-pressure turbocharger starts at engine speeds just above idle. With increasing revs, the larger low-pressure turbocharger comes into play.

At higher speeds, the second high-pressure turbocharger also comes on line with all three turbochargers working in harmony. For effective and efficient boost pressure, the exhaust flow and supply of fresh air are precisely regulated.

PACE stands for Premier Automotive Suppliers' Contribution to Excellence. The 19th annual PACE Award winners were chosen based on a comprehensive written application, site visit and extensive review by industry, academic and business leaders.

BorgWarner's R3S turbocharging system was named a winner in the Product category, which recognizes innovations in new products, services or their development that have significant market impact and act as "game changers" in the automotive industry.

BorgWarner has received seven PACE Awards, four PACE Innovation Partnership Awards and one PACE Environmental Award since 2005.

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