THREE WAYS AUTONOMOUS TECHNOLOGY IS PROGRESSING OUTSIDE OF TRUCKING

Autonomous technology continues to make strides outside of trucking.

At NACFE, our focus is naturally on trucking and how autonomous technology is already impacting that industry and will continue to do so at a steadily accelerating pace in the future.

But context is important, too. And it's worth paying attention to how autonomous technology is advancing in industries and applications outside of commercial vehicles — if only to gain deeper insight into when we can expect to see full-blown autonomous trucks moving freight in the future. And, if you're looking for interesting autonomous vehicle projects outside of trucking today, there are some pretty striking examples out there.

The Robots Go Racing

From the earliest days of the Automotive Age, racing has been a way for manufacturers to showcase new vehicle technologies while boosting the popularity of vehicles and raising public awareness about their capabilities. So it's not really surprising to see that this fall, the granddaddy of racetracks, the Indianapolis Motor Speedway, will host a Formula 1-level race without human drivers behind the wheels of the competing cars.

According to Autoweek and other news outlets, the Indy Autonomous Challenge, a high-speed, head-to-head driverless car race, will be held at the Indianapolis Motor Speedway on October 23, 2021. A grand total of 39 race teams from 11 different countries and 14 US states will compete in the event. And, importantly, more than 500 engineering students and teachers will be involved with the cars and the racing crews.

As a side note, NACFE is planning a workshop in Indianapolis in conjunction with the race. Contact NACFE's Industry Engagement Director, Dave Schaller for details.

Like early automotive racing, the event is more of a demonstration than a full-blown Grand Prix; the cars will only run 20 laps, for a total of 50 miles around the track. But the winner will robotically drive away with a hefty $1.5 million purse, which has been put up by the race's sponsor, an

American engineering software firm called Ansys.

It will be interesting to see how well autonomous vehicles can deal with a high-speed racing event, as well as tight traffic conditions and passing events. Perhaps more interesting will be gauging the level of public interest and press coverage of the race — which may provide some insight into how public perception about autonomous vehicles is changing over time.

Precision Road Work

Another interesting autonomous vehicle concept came to my attention recently — a company that is developing an autonomous vehicle system for the labor-intensive, and highly precise process of painting highway lane markings on roadways.

RoadPrintz Inc. was founded by Sam Bell, a technology enthusiast, jack-of-all-trades who cashed in his automotive repair business and founded his new company after reading about autonomous vehicle technology and realizing it could

> **"** How autonomous technology is advancing outside of commercial applications gives us plenty of new ways to think about self-driving vehicles, and the ways this technology will change our lives.

be put to use in dangerous, meticulous jobs like painting highway lane markings. Click here to see a vehicle in action.

Bell's concept and technology has been promising enough to win a National Science Foundation grant, as well as a regional award for tech start-ups in the company's home state of Ohio. At the moment, the focus of Bell's system appears to
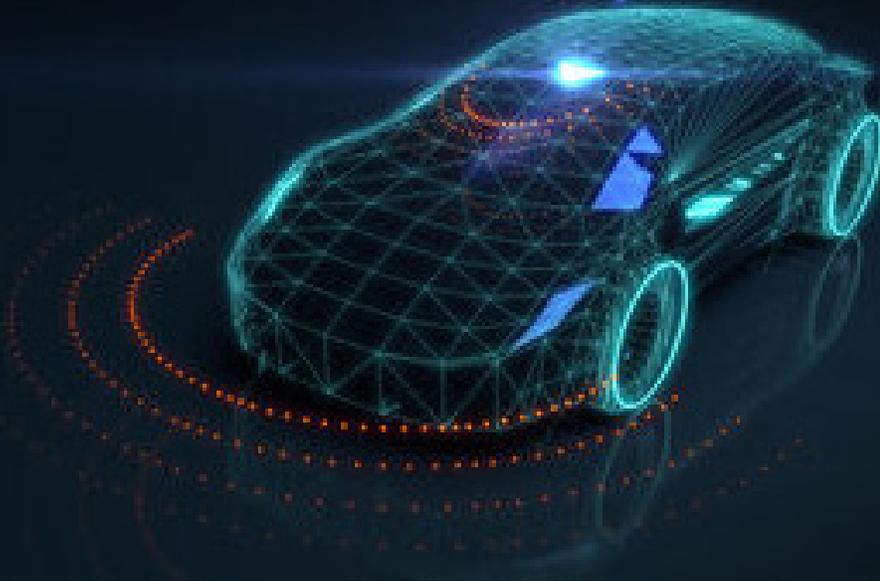
be on autonomous control of the robotic arm that actually sprays paint onto a road surface. But, as he makes clear in his videos and various blogs, Bell clearly understands that eventually, autonomous vehicle control will be a key part of his RoadPrintz technology.

New Mobility for the Disabled

One aspect of autonomous technology that has been slowly, but steadily, moving into our national dialogue is the massive transformation self-driving vehicles will have for people with disabilities. Obviously, as autonomous control systems eventually take the need to physically operate a vehicle out of play, on-demand mobility will become a reality for untold numbers of humans who have limitations, like being blind, for example, that prevent them from driving. Elderly citizens, too, will be able to go when and where they want, without having to rely on family members. And this mobility will be both for personal transport, or simply having food, groceries or household goods delivered straight to their doors.

The transformative nature of this new application for self-driving vehicles is not lost on the Epilepsy Foundation, among other groups, which recently noted remarks by Steve Owens MD, MPH, MA, vice president of programs and services at the Epilepsy Foundation, saying, "I believe autonomous vehicles would definitely change the way people living with epilepsy would be able to integrate with other aspects of society."

Echoing many of the public concerns about autonomous vehicles that are common, the Epilepsy Foundation also noted that, "A big issue in the mainstream use of AVs is a lack of trust in self-operating machinery," and adding that new

safety concerns — such as a person having a seizure being alone in a vehicle without any means to get help or issues commands to the vehicle will have to be addressed.

Moreover, the foundation also noted that designing autonomous vehicles for use by passengers with disabilities would present a different set of ergonomic challenges, including working out seating arrangements that work for various types of disabilities, ensuring service animal protection, developing crash testing — including for wheelchair users — training remote operators who can step in and assist in emergencies, basic vehicle training for new (disabled) drivers, as well as developing specific autonomous vehicle licensing and determining how that process could impact people with disabilities who currently are unable to drive, or are not allowed to drive because of their disabilities.

These are three fairly disparate examples of how people are looking at, and talking about, autonomous vehicles today. But each case also offers a fascinating glimpse into the near-term future, and gives us plenty of new ways to think about self-driving vehicles, and the many, many ways this technology will change our lives, forever.

About the Author: *Jack Roberts is a transportation journalist who has been covering North American commercial vehicles for 25 years and has developed a reputation as a leading authority/futurist concentrating on new trucking technology, including autonomous vehicles, battery-electric trucks and emerging blockchain technology.*