

Vehicle Tech/Automated Driving (VT/AD)

(VT-01) Data In & Data Out: From a Driver Monitoring Perspective

Driver monitoring systems, including cameras, steering input sensors, and even smartphone apps are becoming more prevalent on today's vehicles, especially fleet vehicles. The technology can be implemented in a wide variety of ways, including assessing driver visual attention, drowsiness, medical emergencies, and inferring driver engagement while using SAE L2 driver assistance systems. The data from these systems helps various stakeholders improve road safety. Hear from speakers about how real-world crash data informs development and use of Driver Monitoring Systems to detect visual gaze, drowsiness, and other types of impaired driving, and how the data being generated by DMS and smartphone apps are being utilized, including who controls that data as well as privacy concerns.

(VT-02) The Good, the Bad, & Everything in Between - Communities' Experience with AVs

While the general public cannot buy a self-driving vehicle today, highly automated vehicles are already on the roads. Learn about the benefits and challenges firsthand from communities where these vehicles are being tested and how manufacturers are responding to these communities' experiences.

(VT-03) Now... Steps We Can Take to Get the "Good"

Using FHWA grant funds, the Virginia Tech Transportation Institute automated a Ford F-150 with various features and functionalities to demonstrate how these technologies could be applied to solve challenging interactions that Level 4 ADS vehicles might encounter with public safety professionals (law enforcement, firefighters, EMS, safety service patrol, etc.). Presenters will review 18 scenarios defined by the project partners. Through outreach, the project team investigated the context of the scenarios, feasibility of solutions, reactions to technologies, and conducted hands-on demonstrations. Outcomes of the demonstrations including feedback on the technical solutions and resulting data available to the public will be discussed.

(VT-04) Vehicle Technology & the Safe System Approach

"Safer vehicles" is one component of the Safe System Approach, but making vehicles safer cannot be done in a vacuum. The extent to which safety benefits from safer vehicles is maximized depends on (1) advances in other components, such as "safer roads" and "safer people," and (2) changes in the traffic laws and regulations. And how vehicle technology integrates into safe systems will likely vary based on vehicle lifecycle and penetration and for each SAE level of automation.

(VT-05) Safety for All: How Vehicle Technology Addresses Underserved Populations

With the development of new and improvement to existing vehicle technologies, how can we make sure that all populations can realize their benefits? This moderated discussion will address the following questions:

- What are the design considerations, such as providing occupant protection for wider range of sizes/ages/genders and providing functional vehicles for people with disabilities?
- What do underserved populations need to know about the benefits and weaknesses of different vehicle technologies?
- How can underserved populations reap the benefits of vehicle technology? What types of used vehicles or aftermarket options offer the greatest benefits?
- How can these technologies, particularly AVs, be expanded into rural communities? Are there lessons learned from "universal service?"
- How do we package all of that into a message that will resonate?

(VT-06) Did I Do That? How What You Do Influences Vehicle Design

Did you know that your work and passion can lead to vehicle safety improvements? CPS advocates were instrumental in bringing about LATCH and the Kids Transportation Safety Act. Researchers rely on crash report and hospital data to identify roadway safety problems and evaluate countermeasures. Speakers will explain how your anecdotal experiences and data are used in vehicle safety design and countermeasure development.

(VT-07) Vehicle Technology Trivia Bowl

Does level 2 mean I can take a nap? Will my vehicle take over if I have a heart attack while driving? It seems like the more we talk about vehicle technology, the more questions we have. This expert panel will dispel your misconceptions and answer your questions about what vehicle technologies can and cannot do. Along with seeded questions, the panel will poll the audience members about their assumptions.