AUTONOMOUS & CONNECTED VEHICLES

Autonomous and Connected Vehicle (ACV) Task Force Meeting #2

April 20, 2018 | 11:30 am to 2:00 pm
9815 David Taylor Drive
Charlotte, NC 28262

Catawba Meeting Room

Time	Agenda Item	Speakers
11:30 – 11:45	Grab Lunch and Networking	Task Force
11:45 – 11:50	Welcome & Latest Updates	Jason Wager, Centralina COG
11:50 – Noon	Mission and Task Force Charter Confirmation	Task Force
Noon – 1:00	Cyber-Security & ITS Considerations	Joe Averkamp, Vice President for Systems and Solutions, Parsons Corporation
1:00 – 1:45	Engagement – Priority Actions	Task Force
1:45 – 1:55	Fully AV Committee Working Groups	Jason Wager, Centralina COG
1:55 – 2:00	Next Steps & Wrap-up	Jason Wager, Centralina COG

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Glossary

5G: Fifth-generation mobile networks, an upcoming telecommunications standard expected to deliver 10 Gbps and ultra-low latency. Related topics include over-the-air (OTA) updates and vehicle-to-everything communications (V2X).

Artificial intelligence (AI): Intelligence and decision-making that come from a machine, such as an autonomous vehicle. Often referenced with deep learning; machine learning.

Autonomous Vehicle* – Sometimes referred to as "driverless vehicles," the U.S. Department of Transportation recommends defining autonomous vehicle technology levels using the SAE (Society of Automotive Engineers) J3016 standard, which divide vehicles into levels based on "who does what, when." Generally:

- Level 0: No automation: the human driver does everything;
- Level 1: Driver assistance, an automated system on the vehicle can sometimes assist the human driver conduct some parts of the driving task;
- Level 2: Partial automation, an automated system on the vehicle can conduct some parts of the driving task, while the human continues to monitor the driving environment and performs the rest of the driving task;
- Level 3: Conditional automation, an automated system can both conduct some parts of the driving task and monitor the driving environment in some instances, but the human driver must be ready to take back control when the automated system requests;
- Level 4 High automation, an automated system can conduct the driving task and monitor the driving environment, and the human need not take back control, but the automated system can operate only in certain environments and under certain conditions; and
- Level 5: Full automation, the automated system can perform all driving tasks, under all conditions that a human driver could perform them.

*Note: Vehicles with automation levels 3-5 must also incorporate connected vehicle technologies, and are sometimes referred to collectively as "highly automated vehicles" (HAVs). https://www.transportation.gov/sites/dot.gov/files/docs/AV%20policy%20guidance%20PDF.pdf

Connected Vehicle -A vehicle that communicates with the Internet (the "Cloud"), other vehicles (vehicle-to-vehicle [V2V]), roadside systems (vehicle-to-infrastructure [V2I]) and/or passengers.

Dedicated Short-range Communications (DSRC) - Similar to Wi-Fi, DSRC is a networking technology that provides the primary basis for communication flows among connected vehicles. Many vehicles today are already "connected" through cellular technology. DSRC offers unique opportunities for fast, secure, and reliable communications, and is not vulnerable to interference.

Long Term Evolution (LTE) - A mobile standard that allows data transfer rates of between 100 and 300 Mbps, or up to 10 times faster than the 3G network, and can be used to rapidly download HD movies to a car, for example – even while the vehicle is in motion.

Platooning - multiple connected and autonomous vehicles (CAVs) could safely follow in a group, significantly improving aerodynamic performance at highway speeds. Likely to decrease fuel use and emissions.

Real-time data - Data that are collected continuously and made available for immediate processing. They include information about vehicles such as current fuel consumption, braking behavior and temperature, and information on the current level of traffic or the state of the road ahead.

Telematics - A combination of the words telecommunications and informatics. It is the means of linking at least two information systems using a telecommunication system and includes sending, receiving and storing information relating to remote objects – like vehicles – via telecommunication devices.

Transportation Network Company (TNC) - Sometimes known as mobility service providers or MSPs, connects via websites and mobile apps, pairing passengers with drivers who provide such passengers with transportation on the driver's non-commercial vehicle. As drivers are removed from the equation by ACVs, questions regarding increased congestion, "zero occupancy vehicles," and related policies/issues emerge. Examples include Uber and Lyft.