



IS AV AN AUTONOMOUS OR AUTOMATED VEHICLE?

The difference between automated and autonomy may seem subtle, but this subtlety has preoccupied science fiction writers, futurists and forward thinkers for decades.

AV trucks are in the news it seems daily. But are they autonomous or automated? Mark Twain wrote, “Use the right word, not its second cousin” in his *Fenimore Cooper’s Literary Offenses*.

A random sampling of recent items highlights the use of “autonomous” by analysts, reporters and even organizations responsible for product.

- One estimate from Markets and Markets reporting on the Semi-Autonomous & Autonomous Truck Market is that, “The global autonomous truck market size is projected to reach USD 1,550 million by 2030.”
- TuSimple’s CTO was quoted in *Robot Truck Startup TuSimple Raises \$1Billion in First Self-Driving Startup IPO*, in the April issue of Forbes, saying, “Autonomous driving is a problem that can be solved.”
- TuSimple touts itself in its SEC stock prospectus filings as “The Global Leader in Autonomous Trucking.” The Prospectus states, “Autonomous driving is an emerging technology and involves significant risks and uncertainties. Our autonomous driving technology is highly dependent on internally developed software, as well as on partnerships with third parties such as semi-truck original equipment manufacturers (OEM) and other Tier 1 suppliers. We develop and integrate our autonomous driving technology and work with OEMs and other suppliers to develop autonomous driving technology hardware.”

- The Underwriter’s Laboratory published in April 2020 ANSI/UL 4600 Standard for Safety for the Evaluation of Autonomous Products.

Automation is the counterpoint term to autonomous as defined in the de facto official standard SAE J3016 *Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles*.

“Essentially, an autonomous vehicle would mean it is self-aware, able to make its own decisions – an independent entity.”

The SAE document states terms like autonomous, self-driving, unmanned and robotic are inconsistent and confusing. “Automation is the appropriate term for systems that perform part or all of the DDT (dynamic driving task),” the document states. The 35-page 2018 update [SAE J3016B](#) is available as a free download from SAE and revision C is in process.

SAE states simply to look at the Oxford dictionary which defines the verb automate as “to use machines and computers instead of people to do a job or task.” According to SAE, autonomous

words have power



conveys, “the ability and authority to make decisions independently and self-sufficiently.”

Essentially, an autonomous vehicle would mean it is self-aware, able to make its own decisions – an independent entity. SAE feels the term automated is more appropriate because an automated vehicle “operates based on algorithms and otherwise obeys the commands of users.”

The U.S. Department of Transportation seems on board with using automation to describe these AVs in its January 2021 [Automated Vehicles Comprehensive Plan](#). The report states “...several companies are already testing automated driving system (ADS)-equipped commercial motor vehicles (CMV) and operational models in revenue service, including on routes in California, Arizona, Georgia, and Texas.” The term autonomous is not used in the body of the report other than footnotes by others.

The difference between automated and autonomy may seem subtle, but this subtlety has preoccupied science fiction writers, futurists and forward thinkers

for decades. In today’s world of hype and hyperbole, marketing and advertising, fact and opinion, words are powerful. Picking the right one is important. As Mark Twain also said, “The difference between the almost right word and the right word is really a large matter. ’Tis the difference between the lightning bug and the lightning.”

About the Author: Rick Mihelic is Emerging Technologies Director for The North American Council for Freight Efficiency. He has authored for NACFE four Guidance Reports on electric and alternative fuel medium- and heavy-duty trucks and several Confidence Reports on Determining Efficiency, Tractor and Trailer Aerodynamics, Two Truck Platooning, and authored special studies on Regional Haul, Defining Production and Intentional Pairing of tractor trailers. President of Mihelic Vehicle Consulting LLC he has 38 years’ experience in the trucking and aerospace industries including 20 years in commercial vehicle development for PACCAR and Peterbilt. He was involved in the development of aerodynamic vehicles and groundbreaking systems including the Peterbilt/Cummins DOE SuperTruck and instrumental in developing compliance systems for EPA GHG regulations. He was awarded the prestigious SAE L. Ray Buckendale Award in 2016 and SAE Crawford award in 2020.



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