



**National Society of
Professional Engineers®**

May 3, 2016

Nathaniel Beuse,
Associate Administrator for Vehicle Safety Research
National Highway Traffic Safety Administration
400 Seventh St. SW
Washington DC, 20590

**RE: The National Society of Professional Engineers' Public Comment on
Docket ID No. NHTSA-2016-0036**

Dear Mr. Beuse:

On behalf of the more than 31,000 members of the National Society of Professional Engineers (NSPE), NSPE submits this full comment with three attachments as part of the public record for careful consideration in Docket Number No. NHTSA-2016-0036 *Guidelines for the Safe Deployment and Operation of Automated Vehicle Safety Technologies*. On April 8, 2016, NHTSA convened one of two national hearings to provide input on developing this guidance. NSPE Executive Director Mark Golden presented NSPE's remarks (please see full remarks attached). After Mark's comments were presented, the NHTSA panel requested that, included in this submission, NSPE also include the comments and guidance we provided to the California Department of Motor Vehicles (DMV) as part of their recent rulemaking. We have therefore included this guidance, as well as a related letter to the California PATH Program at UC Berkeley, which worked very closely with the California DMV on their rulemaking, for your review.

As stated in NSPE's comments to the NHTSA hearing on April 8th:

“The promise of autonomous vehicles is significant in ways that go far beyond mere transportation... However, as impressive and encouraging as the speed of development and innovation in controlled environments have been, there is a significant work to be done before achieving the ultimate goal of an environment in which human-operated and autonomous vehicles can safely share the roadways and respond to the myriad of commonplace, constantly and rapidly changing, but highly unpredictable human, weather, road condition, situational and other factors that can instantly create hazardous conditions with zero tolerance for a failed or delayed response.

Therefore, it should come as no surprise that NSPE and the community of licensed engineers, whose primary concern is and always has been delivering the benefits of technology and innovation in a manner consistent with public health, safety and welfare, have taken a very strong interest in the development of guidelines pertaining to autonomous vehicles. We have been working with state DOTs as they consider regulations pertaining to the development and deployment of autonomous, most recently, in California and Nevada.



The U.S. Department of Transportation/National Highway Traffic Safety Administration's recent announcements of (and promise of significant resource investments in) autonomous vehicle safety initiatives, including this hearing today, are to be commended for their recognition of the importance of "a path to national consistency." Even at these early stages, there is reason for concern over potential and fundamental conflict between the diverse approaches to autonomous vehicles being taken by the various states, localities and federal regulatory agencies. For example, whether to require or rely upon smart road systems rather than entirely upon vehicle control software.

Furthermore, the importance of transparency in this process cannot be overstated. In a March 15, 2016, Senate Commerce hearing on autonomous vehicles, Senator Bill Nelson raised the issue of transparency and the need to put safety first. He cited recent tragedies and obfuscations from automobile manufacturers, including: GM ignition switches, Takada airbags; and the VW emissions scandal.

In such an environment of understandable public skepticism and distrust, an open, transparent and collaborative involvement of federal, state and local regulators, industry and the public will enhance, not diminish the economic performance and speed of deployment for manufacturers. Such transparency and consistency is necessary to increase public awareness understanding and acceptance of the new technology, which will in turn speed deployment."

NSPE, in its public comment to NHTSA at the April 8 hearing, as well as in the letters to the California DMV and the California PATH at UC Berkeley addresses specific operational environment guidelines, behavioral competencies and what aspects are not yet suitable for guidelines. Specifically, in addressing the areas of testing and compliance, NSPE states in its April 8th comments to NHTSA:

"We have been impressed by, and commend the seriousness of the commitment to safety that manufactures and developers have demonstrated. However, a century of experience demonstrates that protection of public safety is best served when there is someone in the decision chain who does *not* face pressure from shareholders or non-technical management to meet budget, project timeline or sales projections.

Public safety is best served when there is someone in the decision chain who has a duty that overrides competitive pressures to be first to market or surpass other manufacturers' offerings. Someone who has a clear and enforceable duty that overrides even peer pressure to be a team player and not the department or group within the corporation whose legitimate safety concerns might delay a high-stakes project.

Because of the profound ramifications for public safety and welfare from the use of autonomous vehicles, the multiple engineering disciplines involved in autonomous vehicles systems, and the accountability of licensed professional engineers to act in the interests of the public, it is the position of NSPE that



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the manufacturer's certification of their vehicle's compliance with all relevant state and federal standards and regulations must be performed by licensed professional engineers.

For many of the same reasons, there is a need for independent, third-party testing of vehicles prior to their deployment on public roads. Since such testing regimes fall within the practice of engineering under state licensure regulations, such tests should also be performed under the supervision of licensed professional engineers.

Finally, the notice asked what aspects of autonomous vehicle technology may **not** yet be suitable for guidelines. As stated earlier, **there are still major thresholds for safety that must be met. We do not believe that the technology has yet advanced enough to deploy fully autonomous vehicles. Deploying such cars when there are still issues with navigating in inclement weather, merging at intersections, responding to non-autonomous vehicles, responding to road hazards or sub-optimal operating conditions—in short, responding to the unexpected and variable conditions that manned vehicles routinely face on the roadway today—a vehicle without an operator poses a major threat to the public safety.** Let's acknowledge the current limitations of the technology, work within those limitations, and take an important first step, not a final one, to develop and deploy technology that offers significant but as-yet-unproven promises for improved transportation efficiency and safety."

NSPE greatly appreciates this opportunity to provide comment on *Guidelines for the Safe Deployment and Operation of Automated Vehicle Safety Technologies*. Please see the full public comment from the National Society of Professional Engineers. If we can answer any questions or comments, please contact Arielle Eiser, Senior Manager of Government Relations, at aeiser@nspe.org.

Sincerely,

Timothy R. Austin, P.E., F.NSPE
President
National Society of Professional Engineers