



Maryland Department of Transportation
The Secretary's Office

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Pete K. Rahn
Secretary

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November 22, 2016

Docket Management Facility
U.S. Department of Transportation
1200 New Jersey Ave SE
West Building, Ground Floor
Washington, DC 20590-0001

RE: U. S. Department of Transportation, National Highway Traffic Safety Administration.
Response to Request for Comment on "Federal Automated Vehicles Policy"
[Docket No. NHTSA-2016-0090]

Dear Docket Clerk:

The Maryland Department of Transportation (MDOT) welcomes the opportunity to offer comments on the proposed Federal Automated Vehicles Policy. In 2015, Maryland Transportation Secretary Pete K. Rahn convened the Autonomous and Connected Vehicle Working Group, a diverse group of more than 90 stakeholders, including all MDOT business units; more than seven additional state agencies, including Maryland State Police, the Maryland Department of Aging, Department of Disabilities, representatives from more than 17 other organizations; local governments; elected officials, industry representatives, institutions of higher education and nongovernmental organizations.

Over the past year, the Working Group has examined the latest research, tracked federal and state laws, policies and programs, and coordinated with other agencies, organizations and businesses to encourage the safe introduction of highly autonomous vehicles into Maryland's transportation system. While not reflective of the entire Autonomous and Connected Vehicle Working Group, our submission does incorporate comments from several members of this group.

On behalf of the MDOT and several members of the Maryland Autonomous and Connected Vehicles Working Group, we offer the following comments on the proposed *Federal Automated Vehicles Policy*:

I. The safety of all road users, including pedestrians, bicyclists and motorcyclists should be the absolute and immovable priority as the *Policy* is refined, implemented, and revised.

II. We endorse and support the National Highway Traffic Safety Administration's (NHTSA) efforts to clarify the roles and responsibilities of the federal government, state governments, highly autonomous vehicle (HAV) manufacturers and other involved industries in a manner that is flexible to the emerging technology.

III. We support the adoption of the SAE levels of automation to clearly and consistently communicate meaningful distinctions between the range of functions of HAV. On page 10, “Using the SAE levels, DOT draws a distinction between Levels 0-2 and 3-5 based on whether the human operator or the automated system is primarily responsible for monitoring the driving environment.” However, on page 43, it reads that “Fully automated vehicles are driven entirely by the vehicle itself and require no human driver, SAE levels 4-5”. The *Levels of Automation* needs some clarity in respect to the grouping of driver assisted automation and HAVs as it seems that L3 is considered to be both in the lower level and HAV grouping at different times throughout the guide.

IV. We recommend addressing lower levels of automation in the Policy, including some of the driver-assistance systems already being deployed by automakers today as connected vehicles (CV).

V. NHTSA should articulate and communicate to the states its plans to address HAVs and technologies already deployed for testing and for consumer use.

VI. The Object and Event Detection and Response section of the Policy identifies a number of behavioral competencies to be addressed by HAV. One of the 29 competencies listed is “Follow Local and State Driving Laws.” Each state has adopted unique laws and rules related to the safe operation of vehicles, including bicycles and motorcycles, and for safe travel by pedestrians. NHTSA should consider engaging in an effort to update the Uniform Vehicle Code (UVC) that considers and addresses issues unique to HAV, and is coordinated with the provisions of the Manual of Uniform Traffic Control Devices (MUTCD) and other related standards and guidelines. An updated UVC, or other guidance or model policy on traffic laws, should include standardized and clarifying definitions of the following: driver; operator; autonomous vehicle, and autonomous vehicle technology.

VII. In its ongoing work related to the interaction between HAV and law enforcement personnel, NHTSA should address the following:

- A. Vehicle Status Identification:
 - 1. External identification of a vehicle that is capable of autonomous operation.
 - 2. External indication of autonomous modes “Active” or “Inactive” status.
 - 3. External indication of level of autonomous mode.
- B. Human traffic direction.
- C. Identifying and interacting with traffic directions; accident scene, power outage, extreme weather.

- D. Traffic stops:
 - 1. How will law enforcement signal the vehicle to stop, and where to stop safely?
 - 2. Criminal stops, disable vehicle and prevent re-activation, and vehicle operation during vehicle searches.
- E. Crash scenes:
 - 1. External ability to disable vehicle to ensure safe environment for First Responders to render aid and or extract injured.
 - 2. Prevent re-activation by remote operator.
 - 3. Allow for towing capability/pushing vehicle.

VIII. Human performance under emergency conditions and an HAV “fall back risk condition” are a significant concern. NHTSA should invest in research and active monitoring of human and HAV real-world system performance to ensure the reliable safety of all road users, including pedestrians, bicyclists and motorcyclists in emergency conditions.

IX. Much more specificity is needed on the “contemplated” safety assessment letter to be voluntarily submitted by manufacturers to NHTSA. States will need to review and approve applications for testing of HAV to ensure that safety and security considerations have been addressed, to protect the traveling public. Therefore, the safety assessment letter must be sufficiently detailed to assure states that the guidelines have been fully met.

X. It is expected that automation technology will change at a rapid rate. NHTSA should address what threshold of change must be met to warrant an update to the safety assessment letter and what information must be included. NHTSA should also provide for a system by which to immediately update states when revised safety assessment letters are submitted and reviewed by NHTSA.

XI. The Model State Policy, Section 3. Jurisdictional Permission to Test, recommends consulting with the jurisdictional law enforcement agency before responding to a request from a manufacturer or other entity. Given that travel on public ways involves both state and local jurisdictions and a range of agencies within those jurisdictions, we recommend that NHTSA specifically recommend that lead agencies work in consultation with local jurisdictions in review of requests. Given that a range of jurisdictional agencies may have related responsibilities or interest, such as local public works agencies, we recommend that the recommended consultation not be limited to law enforcement.

XII. Regarding, "Liability and Insurance" (page 45) was left open for the state legislatures to determine; however, this issue (without further guidance or a set standard) will likely be one that slows the development of deploying AVs. We recommend that NHTSA facilitate a national dialog on this topic to promote consistency across the states.

XIII. NHTSA should consider the benefit of including in the data collection section - data that is not only be safety focused, but include:

- A. Any operational characteristics;
- B. Information on interaction;
- C. Interface with infrastructure and other vehicles;
- D. Mobility data (to get a sense of the improvements or not in mobility, which is also a safety issue);
- E. Anonymized volume; and
- F. Major routes data (to understand where these vehicles are mostly operating so that State DOTs can focus limited resources on those corridors where there is more use of these vehicles at first, and cross check with current community and freight flow patterns).

XIV. Several topic areas under the Vehicle Performance Guidance have direct effects on issues under the states' authority and it's important for the states to have input as these Guidelines evolve. Whether it is via the American Association of Motor Vehicle Administrators, special working groups, or workshops, we request that NHTSA include the states in these discussions and handling of these topic areas as the issue evolves. Specifically:


- A. Vehicle registration and certification – states will need a way to identify HAV capability as part of the Certificate of Origin or as part of the Vehicle Identification Number;
- B. Federal, state and local laws – As manufacturers are to have documented plan detailing how they intend to comply with all laws where they plan to test, there is a need for interaction with the states and/or federal minimum UVC for a unified approach;
- C. Data recording and sharing – not only the data elements, but also the data synthesis and sharing are important aspects that should be universal;

D. Consumer education and training – as this information on any potential mechanisms that could change functional behavior are to be continually evaluated for effectiveness and updated, it is the states that have the relationship with the vehicle dealers and customers on a local level to provide input and updates; and

E. Human machine interface – as it is the states that are to regulate the human side of the issue with licensing, education, enforcement, etc, the states need to be fully engaged in these issues in order to provide appropriate information and processes.

Thank you for providing us an opportunity to comment on the proposed Federal Automated Vehicles Policy.

Sincerely,



James F. Ports, Jr.
Deputy Secretary of Maryland Department of Transportation



Christine Nizer
Administrator of Maryland Motor Vehicle Administration