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December 10, 2018

Deputy Administrator Heidi King
U.S. Department of Transportation
1200 New Jersey Ave. SE
Washington, DC 20590

Submitted electronically via www.regulations.gov

RE: *Pilot Program for Collaborative Research on Motor Vehicles With High or Full Driving Automation*, Docket NHTSA-2018-0092

Dear Deputy Administrator King:

The Center for Auto Safety ("the Center") appreciates the opportunity to comment on the Advance Notice of Proposed Rulemaking (ANPRM) for *Pilot Program for Collaborative Research on Motor Vehicles With High or Full Driving Automation* (hereinafter: AV Pilot Program). The Center, founded in 1970, is an independent, non-profit consumer advocacy organization dedicated to improving vehicle safety, quality, and fuel economy. On behalf of our members, and all drivers, passengers, and pedestrians nationwide, the Center maintains our previous objections to the Department of Transportation's (DOT) hands-off approach to basic safety regulation of Autonomous Vehicle (AV) technology, and believes that the AV Pilot Program should proceed only after development and adoption of rules and protocols by the National Highway Traffic Safety Administration (NHTSA), as discussed below, that assure public safety.

In order to assuage public skepticism of AV technology, it is critical for NHTSA to ensure that automated vehicles, and automated vehicle technology, are safe before allowing their introduction onto public roads. The best way to accomplish this goal is a measured approach that guarantees safety prior to deployment, using the tools and authorities provided by the DOT to NHTSA. Unfortunately, the DOT's continued myopic commitment to voluntary guidance over effective regulation prevents the development of safeguards that would provide the public with basic and reliable information on the safety of AVs, and places users of American roads at the mercy of unproven technology as unwitting participants in potentially life-threatening experiments.

This is not the first time the Center has called on NHTSA to utilize its current authority to require safety be built into AV technology prior to deployment. In fact, the consistency of the Center's position on the need for action in this area has only been matched by DOT's continued failure to act:

- In response to DOT's version 1.0 voluntary guidance for autonomous vehicle development, we wrote: "The ongoing rush to achieve public acceptance and marketability of automated vehicles must not be permitted to minimize the critical importance of such issues, particularly as they address the potentially hazardous consequences of interactions between human operators, conventional vehicles using the highway system, and vehicles embodying various levels of automation. This will be true especially during the decades-long transition between today's driver-dependent fleet and the future potential for a fully-autonomous vehicle fleet. There are serious safety and ethical issues involved in AV which must be resolved by the government with input from the public. A voluntary approach that places automakers in direct control of the deployment of AV technology will not properly protect the driving public during this time of transition."[1]

- In the Center's November 6, 2017 testimony on AV 2.0, we called for mandatory safety assessment reports, and a prohibition on testing on public roads. At the time, we said: "It would be in the best interest of all stakeholders to make sure that NHTSA, researchers, and the public have access to all the necessary data to assure the vehicles are performing as promised – and when there are problems – providing enough information for everyone to understand what happened. This includes making the type of information that is listed in the "Voluntary Safety Self-Assessment Template" on crashworthiness mandatory – and making the same true of the other 11 priority safety design elements. Currently, ADS 2.0 states that Safety Assessment letters are neither required nor is there any mechanism to compel entities to submit them – this must change."[2]

- In the Center's December 3, 2018 response to AV 3.0, we called for an AV regulatory framework that would promote both public safety and continued development, and wrote, "Unfortunately, the DOT's actions to this point make it clear that the department is uninterested in creating a framework that balances both corporate and public interests. Rather, DOT's voluntary approach rests on unproven assumptions and is based on strict anti-regulatory ideology and willingness to completely defer to industry control over public safety.[3]" We hope that NHTSA uses the AV Pilot Program to right the ship and develop standards and protocols that protect public safety and private investment in AV testing on public roads.

[1] Center for Auto Safety November 22, 2016 comment on 1.0, available here: https://www.autosafety.org/wp-content/uploads/2016/11/Federal-Automated-Vehicles-Policy-Comment.pdf

[2] Center for Auto Safety testimony on AV 2.0, available here: https://www.autosafety.org/wp-content/uploads/2017/11/Center-for-Auto-Safety-Written-Comments-for-11-6-17-NHTSA-AV-Listening-Session.pdf

[3] Center for Auto Safety AV 3.0 December 3, 2018 AV 3.0 comment, available here: https://www.autosafety.org/wp-content/uploads/2018/12/Center-for-Auto-Safety-AV-3.0-Comment.pdf

Unfortunately, press releases notwithstanding, up until this point in the development of AV technology the most basic of public safety protections have yet to be pursued by NHTSA, which has broad authority in this area. To that end, the Center filed a petition for rulemaking in October 2018 to mandate the submission of safety information by companies testing self-driving vehicles on public roads.[4] Manufacturers have bristled at providing the public critical safety information for decades and are doing so once again with the DOT's blessing in AV 3.0. Why is NHTSA promoting introduction of unlicensed vehicle operations on public roads, without any supporting evidence of safe operation?

The Federal Motor Vehicle Safety Standards ("FMVSS") were established so that the industry would have design guidelines and requirements. They have been successful in incentivizing safety enhancements, have harmonized industry safety progress, and undeniably prevented countless tragedies. There is no evidence that similar regulation of AV development would inhibit technology or undermine safety. What is missing is binding action by DOT and its agencies that would prevent major setbacks and allow truly life-saving, proven AV technology to be deployed on American roads, as is anticipated by the AV Pilot Program. Such action is consistent with the DOT's traditional oversight role and needed immediately as there are already multiple manufacturers who have deployed unproven vehicles in communities across the country. The history of auto safety has demonstrated time and again, mandatory standards are needed sooner or later to ensure public safety. Autonomous vehicle technology is already on our roads and is anticipated to be accelerated by the AV Pilot Program. The time for DOT to act in the name of safety is now.

1. **First, NHTSA seeks comments on potential factors that should be considered in designing a pilot program for the safe on-road testing and deployment of vehicles with high and full driving automation and associated equipment.**

1.1. PUBLIC SAFETY demands that every motor vehicle operated on the nation's public roads be controlled by a licensed operator, qualified by examination, with no exceptions, as is currently the case. This simple notion underlies all Federal, state, and local road laws; vehicular tort case law; commercial, for-hire, and private licensing; vehicular law enforcement; operator training and certification; and vehicular design. There must be no exception for high and full driving automation[5] and associated equipment. For high and full driving automation, when the vehicle occupants are not in control of operations or there is no human vehicular occupant,

[4] See Center for Auto Safety Petition for Rulemaking, October 19, 2018: https://www.autosafety.org/wp-content/uploads/2018/10/Center-for-Auto-Safety-Petition-for-Rulemaking-to-mandate-Safety-Assessment-Letter.pdf

[5] Automated Vehicles for Safety, https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety , High Automation = Level 4, Full Automation = Level 5

the AV developer[6] is the operator. Passive vehicle occupants are not operators, any more than a taxi passenger is a taxi operator. The high and full driving AV developer is the vehicle operator whether the software is embedded in the vehicle or the vehicle is operated (partially or fully) via remote inputs or affirmative control.

The Center believes that a gated certification licensing program proving conformance to objective safety standards as enumerated below in section 1.2, using examinations as described in section 1.3, is an essential element to ensure the safety of humans when it comes to high and full driving automation equipped vehicles being tested on public roads. There is ample precedent for such an approach to demonstrating operator competence in the area of a specialized vehicle's operational capabilities. The program would be modelled on the Federal requirements for commercial driver's license and include three gates. These gates, described in more detail in section 1.3 below, are analogous to the present qualification for an operator's driver's license.

1.2. OBJECTIVE OPERATIONAL STANDARDS must be established immediately so that designers and engineers can develop governing design requirements. Establishing these requirements are the foundation of cost-effective engineering design and development.[7] The Center recommends the following set of objective safety requirements, for compliance by automated driving systems (ADS) and AV developers:

1.2.1. AV's shall do no harm.

Prove[8] that AV technology is safer for both occupants and the public and is as environmentally benign as the equivalent or comparable model year technology available in a full-time human-operated vehicle without AV technology implementation. AV developers must prove that both test vehicles and vehicles offered to the public for sale or use enhance occupant, driver, and public safety in all specified, experienced, modeled, and tested operational conditions.

Prove that the vehicles modified to include AV capabilities are at least as safe in collisions for all occupants, emergency responders, and recovery personnel as comparable model year full-time human-operated vehicle or equivalent without AV technology.

1.2.2. AV's shall provide built-in-test (BIT)/built-in-diagnostics (BID) to verify safe operational capability prior to embarkation and during operations.

[6] "AV" means autonomous vehicle which is a motor vehicle equipped with high or full automation capability, and "AV developer" is the legal entity that manufactures or provides vehicles equipped with high or full driving automation capability for sale or public use.

[7] http://www.fdot.gov/traffic/its/projects_deploy/SEW/2012_september/SE%20WS%20Session%203%20V%202012-08-29.pdf

[8] The term "proof" as used herein is statistically significant evidence of demonstrable, safe, repeatable, and reliable AV performance.

Prove that the AV has BIT/BID capability that identifies and safely mitigates any hardware, software, communications, or data processing fault that might arise before, during, or after passenger transportation.

1.2.3. AV's shall always defer to commands by a designated occupant.

Prove that the AV will:

- override preprogrammed or remote operational commands in favor of commands by designated occupant,
- discriminate between commands by the designated occupant and other occupants
- ignore commands by other occupants
- enable the designated occupant to reassign operational control responsibility to another occupant if necessary or desired
- only accept unambiguous control inputs.

1.2.4. AV's shall respond promptly and appropriately to emergency and public safety vehicles, to emergency situations as directed by emergency personnel, and to police instructions in all traffic situations.

Prove that the AV is capable of responding appropriately and safely to lawful signals and commands from police, fire, ambulance/EMT and other public officials in all traffic conditions, including:

- emergency vehicle lights and sirens,
- yielding to emergency vehicles
- responding to hand, verbal, and visual commands and
- obeying commands that contravene conventional traffic rules (e.g., directions to detour the wrong way down a one-way street).

1.2.5. AV's shall safely transition to occupant control.

Prove that AV's equipped for primary or optional human operational control have suitable control devices, provide human operators with sufficient time and situational awareness to take control, and have a default safe shutdown capability if the human operator cannot or does not take over control safely when needed.

1.2.6. AV's shall assure occupant situational awareness and safe egress.

Prove that AV occupants are notified of any imminent hazardous condition in the vehicle that potentially compromises safety and provides a means for safe passenger egress at any time, for any reason.,

1.2.7. AV's shall provide cybersecurity.

- Prove that the AV will automatically transition to a safe operational fall back state (i.e., minimal risk condition response to faults or failure) in the event of any safety-critical cybersecurity breach; and that AV data processing is secure, reliable, and uncompromised by:
    - communication faults whether caused by communication equipment, terrain, or weather
    - spoofing or misdirection
    - malignant software, firmware, data processing equipment, or other logic-bearing components resident in the AV or remote-control system components.

1.2.8. AV's shall respect their mechanically limited and logically limited geographic operational limits.

Prove that the AV cannot be:

- directed to destinations, conditions, or terrain that are outside of its safe automatic operational envelope (its operational design domain [ODD])
- programmed to endanger passengers by routing to a dangerous destination outside of its safe operational limits

and that occupants and/or controllers will receive appropriate notification of vehicle fuel or performance limitations inhibiting executing destination instructions in time for them to effectively remedy the condition.

1.2.9. AV's shall respect naturally occurring inclement weather and hazardous environmental conditions.

Prove that the AV will respond safely to naturally occurring weather emergencies (e.g. squalls, thunderstorms, tornadoes, hurricanes, flooded roads, etc.) and other suddenly emerging natural environmental concerns (e.g., earthquake, sinkholes, forest fires, dust storms, lava flows, solar or lunar interference with sensors, etc.) that could compromise occupant safety even if such conditions unexpectedly arise after the AV embarkation.

1.2.10. AV's shall appropriately respond to compromising, unusual or undocumented artificial road conditions.

Prove that the AV detects and responds appropriately and safely to unplanned or emergency road conditions due to human action or inaction (e.g., potholes, flag persons, toll booths whether manual or automated, emergency road closures, temporary and dynamic traffic patterns at construction sites, road debris, sensor-disabling glint from surfaces, other vehicles, stray light from illuminations or signs, etc.)

1.2.11. AV's shall protect occupants from uncontrolled or malicious drivers in other vehicles.

Prove that the AV provides a safe response to other drivers performing unsafe or illegal acts that potentially endanger AV occupants.

1.2.12. AV's shall implement data recorders that provide public safety officers and government officials necessary access to operational history and state necessary to understand the cause of a crash.[9]

Manufacturers must:

- include a survivable data recorder
- provide the capability to resolve the state of an AV prior to and immediately following a crash, including sufficient detail on all safety-critical data including speed, environmental conditions, programmed instructions, operational state and user-selectable operational options, communications, data processing capability, and software/firmware configuration to allow unambiguous reconstruction of events leading to the crash and resolution of root cause
- enable recording, archival, and independent access by authorized officials to safety critical data that must be recorded and provided in flat files using non-proprietary formats so that they can be recovered, read, and analyzed without intervention of the AV manufacturer.

1.2.13. AV's shall detect and respond appropriately to collisions.

Prove that an AV will:

- automatically detect collisions with other vehicles, vulnerable road users, or property,
- automatically and safely stop after the event
- automatically summon emergency response
- allow third parties including witnesses, victims, and law enforcement officers (without electronic access to proprietary operational data) to access operator, vehicle identification, and insurance data (analogous to human drivers exchanging license, registration, and insurance information after a crash).

[9] https://www.axios.com/when-avs-crash-limited-data-access-can-impede-investigations-fb1440cd-36c0-4115-9cd0-930703cff44d.html

1.2.14. AV developers shall prove that they have the financial resources to cover the risks that AV development, test, and operations on public roads entail.

Prove that the AV developer has sufficient liquid assets, insurance, security bond, or equivalent to settle claims due to property damage, injury, or death caused by the AV.

1.2.15. AV manufacturers shall provide conspicuous visual and audible warning of automatic vehicle operation to other users of public roads prior to completion of operator licensing.

Prove that a developmental vehicle tested on public roads without a fully licensed operator will be clearly visible and audible to other road users so that they can protect themselves against hazardous AV maneuvers that might occur, analogous to the "STUDENT DRIVER" signs used during human driver training.

1.3. Recommended Gated Certification is a disciplined process by which a knowledgeable third-party documents that an engineering development conforms to the established set of requirements, such as those listed above. This approach is commonly used in complex projects that expose the public to risk, whether by FAA certification of airlines, Coast Guard certification of ships, professional engineer certification of civil engineering structural designs, Underwriter's Laboratory certification that electrical devices are safe for public use, elevator inspectors reviewing design and operations, etc. All vehicles legally operated on US roads are under the control of licensed operators who have been qualified by proof of capability and competency at incrementally more demanding levels of performance.[10] Vehicles with high and full driving automation and associated equipment should also be exclusively operated by licensed operators. In such vehicles the actual operator is the AV developer. Gated certification is a process by which such vehicles and operators may be similarly licensed to operate on public roads with incrementally demanding levels of performance tied to incrementally proven levels of competency by showing conformance to safety requirements such as those provided above in section 1.2. The proposed gated certification process is not

[10] *See, e.g.:* Texas CDL requirements: Note medical certification and basic knowledge examination before applying for CLP (equivalent to gate 0). https://www.dps.texas.gov/DriverLicense/CommercialLicense.htm . Note that the referenced TEXAS COMMERCIAL MOTOR VEHICLE DRIVERS HANDBOOK for interstate CLD https://www.dps.texas.gov/internetforms/Forms/DL-7C.pdf includes its statement of compliance with applicable federal CDL requirements, "In 1989, the Texas Legislature established the Commercial Driver License Law to comply with the federal Commercial Motor Vehicle Safety Act of 1986. These laws were passed to reduce traffic accidents involving commercial motor vehicles."
Texas, their current Graduated Driver License Program is described at https://www.dps.texas.gov/DriverLicense/gdl.htm.

a type certification, since it is solely performance based and is agnostic with respect to the vehicle design.

Certification for public use of various transportation assets may be accomplished by government officials, private entities licensed by the government, or private agencies delegated authority by the appropriate government body. Certification typically does not involve proprietary features except to the extent that they potentially impact public safety.

There are many examples of industry/government partnerships related to sophisticated system design and technology development. For one example, the FAA accepts the use of privately developed DO-178C as an acceptable framework for aircraft cybersecurity.[11] There are many other examples of industry/government partnerships related to technology, notably the Department of Transportation, use of the Society of Automotive Engineers vehicle automation levels as the default standard for AV development in its Automated Vehicles 3.0, Preparing For The Future Of Transportation, and in many other DOT documents and activities related to AV development. The SAE is developing a host of technical standards aligned with specific component or system technologies for AV development, most or all of which are likely to incorporated into AVs. Still, a gap exists for the high-level safety requirements that all vehicles must adhere to, and that all underlying technologies must support.

Gated Certification as proposed is a process for independent evaluation of compliance with objective safety standards at certain points in development, appropriate for that development level, before allowing the development to proceed to the next development phase. Many complex engineering developments are based on gated certification, to make sure that safety, engineering, performance, and financial targets have been reached before committing to the next development level. It is our belief that AV's are complex engineering developments, and present significant risk to public safety and property. The public needs to be fully aware of the related technical, financial, and legal issues before AV developers are allowed access to public roads. The best way for AV developers to provide needed visibility into the hazards they cause and their plans to manage those hazards is for a gated certification process that includes knowledgeable experts, advocates for safety, government officials, and the public at each stage of development for which access to public roads is sought.

An example of gated certification may be found in DOD 5000, Operation of the Defense Acquisition System,[12] where specific milestones include preliminary design review, critical design review, and final design review by a panel of program officials, other government employees, and third party experts who review and critique all aspects of a design's compliance with requirements and intended use as

[11] FAA Advisory Circular AC No. 20-115C, Subject: Airborne Software Assurance, specifies acceptability of RTCA DO-178C, "Software Considerations in Airborne Systems and Equipment Certification, dated December 13, 2011"

[12] https://www.acq.osd.mil/fo/docs/500002p.pdf

documented and presented by the AV developer. Performance based requirements are agnostic with respect to design.

For AV in the proposed process, official review of AV certification would include an authorized official examiner, data and presentations by the AV developer, and independent review by qualified third parties assisting the official review. This is fundamentally no different than any other graduated driver's license review process. Third party participants would include DOT representatives, public safety experts, state and local transportation officials to assure requirements compliance in jurisdictions where the AV would be operated, within approved defined and approved ODDs and therefore subject to applicable state and local laws and regulations. The authorized official would then approve a license to operate in the approved regime if the AV developer passes the examination, just like any other licensed motor vehicle operator.

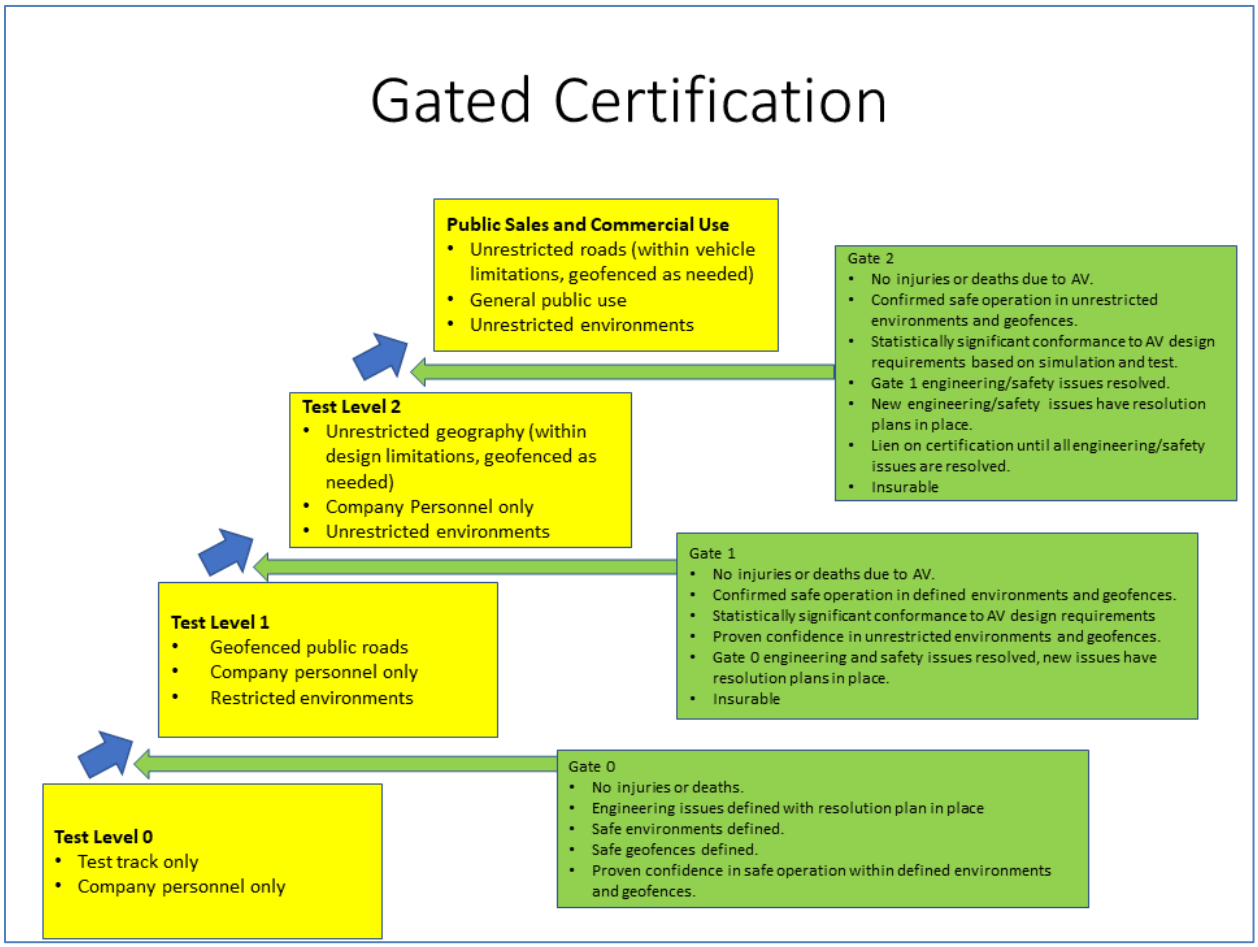

Figure 1 Increased scrutiny commensurate with increased public exposure..

A gated certification process appropriate for AV development is shown in figure 1 above.

In this model, an AV developer would be free to do whatever it wanted on its own test track using its own personnel. This is consistent with current practice. Before

leaving the test track and starting tests on public roads, the AV developer would need to pass through a gate and demonstrate that the AV was ready to be safely operated on approved public roads and neighborhoods, assuring public safety.

1.3.1. At **Gate 0**, analogous to satisfying the requirements for a learner's permit, the AV developer would need to show that:

- It has complied with all applicable safety requirements.
- Engineering issues have been defined and resolution plans are in place.
- Software stress testing has been completed and passed.
- Data processing margins have been evaluated and sufficient margins demonstrated.
- No injuries or deaths have occurred in the controlled environment while testing the applicant's current AV hardware/software configuration.
- Safe operating environments (provisional ODD, including geofences) have been defined.
- Demonstrate proven confidence in safe operation within the limits it has defined.
- Demonstrate data recorder sufficiency.

Once the AV developer passes through Gate 0,[13] i.e., the certification authority has determined that the AV developer has achieved the Gate 0 criteria, the AV developer would be licensed by the appropriate public authority:

- Approved provisional ODD.
- Access to geofenced public roads for additional AV testing.
- Operational test using company personnel only.
- Operational test only within the specified safe operating environments (provisional ODD).

1.3.2. At **Gate 1**, analogous to a provisional driver's license, the AV developer would show that:

- There have been no injuries or deaths due to AV operation whose root cause has not been accommodated by design changes.
- It has complied with all applicable safety requirements.
- Confirmed conformity with operational limits of defined by approved ODD.
- Confirmed safe operation in Gate 0 defined environments and geofences.
- Statistically significant[14] conformance to AV applicable safety design requirements.
- Demonstrate proven confidence in projected AV use in unrestricted environments and geofences. All outstanding Gate 0 engineering and safety issues resolved; new issues have resolution plans in place.

[13] Note that passing Gate 0 does not in any way restrict additional use of private company test assets, including test tracks. Additional private tests may be needed to meet the criteria in subsequent certification gates.

[14] https://www.rand.org/content/dam/rand/pubs/research_reports/RR1400/RR1478/RAND_RR1478.pdf

- Insurable for use in expanded environments and ranges.

After passing through Gate 1, the AV developer would be licensed to continue testing within:

- Approved interim final ODD.
- Unrestricted geography consistent with approved ODD (within design limitations, geofenced as needed).
- Test within unrestricted environments, as defined at Gate 1.
- Using company Personnel only.

1.3.3. In preparation for public use or commercial release to the public, the AV developer would pass through **Gate 2**, equivalent to a full driver's license. At Gate 2, the AV developer would show that:

- There have been no injuries or deaths due to AV operations, whose root cause has not been accommodated by design changes.
- It has complied with all applicable safety requirements.
- Confirmed safe operation throughout its ODD in otherwise unrestricted environments and geofences.
- Confirmed conformity with operational limits defined by approved ODD.
- Statistically significant conformance to AV design requirements based on simulation and test.
- All outstanding Gate 1 engineering/safety issues resolved.
- Software stress testing has been reconfirmed and passed.
- Data processing margins have been reconfirmed and sufficient margins demonstrated.
- Reconfirm data recorder sufficiency.
- New engineering/safety issues have resolution plans in place.
- Lien on certification until all engineering/safety issues are resolved.
- AV is insurable for intended operations.

After passing through Gate 2, the AV developer would be licensed for:

- Approved final ODD.
- Unrestricted public road use (within vehicle limitations defined by approved ODD, geofenced as needed).
- General public use.
- Unrestricted environments consistent with vehicle design and approved ODD.

1.4. THROUGH DELEGATION OF AUTHORITY AND COMPOSITION OF THE CERTIFICATION LICENSING BOARD industrial, governmental, and public interests would all be provided the opportunity to review, understand, and challenge the AV developmental plans and AV developer/operator capabilities, assuring that the public interest would be served. The gated certification process as described would also provide an audit trail, pointing to improvements as experience

with AV operations is gained by all stakeholders, without imposing an unreasonable burden on AV developers.

1.5. CHANGES, UPGRADES, AND COMPONENT IMPROVEMENTS can readily be accommodated within this licensing process. AV developers would process changes through the certification authority. Major changes, those that affect vehicle safety, range of operation, or environmental suitability, would require corresponding partial recertification of the AV with respect to those changes only. Minor changes, that did not affect safety, range of operation, environmental suitability, or insurability, would not require recertification, once those changes have been evaluated by component test, interface verification, and regression testing. (For example, if an AV component manufacturer modified the range of a RADAR that was being used for vehicle control and that change measurably degraded safety or impacted operations, recertification with respect to that change would be required. On the other hand, if, for example, a RADAR component change did not affect safety nor its interaction with the vehicle control system and its licensed operator software or logic executable, such as a change from one supplier to another with the same features (e.g., RADAR radiated power, gain, reliability, and interfaces to the AV control system), then AV recertification would not be required. Both AV developers and their supply chain would thus be free to make improvements to components without AV recertification.

2. Second, the Agency seeks comments on the use of existing statutory provisions and regulations to allow for the implementation of such a pilot program.

There is little question that the agency broad statutory authority to create and conduct safety programs, but many questions remain as to what exactly NHTSA intends to implement under the guise of the AV Pilot Program. The agency's recent actions suggest that the agency is less concerned with the safety impacts of testing, and more concerned with opening new markets to on-road testing.

On January 19, 2017, the DOT announced that it was designating 10 proving grounds "to encourage testing and information sharing around automated vehicle technologies."[15] After certifying proving grounds across the United States, in various climates and geographies, the DOT recently revoked these certifications and appears to be shutting this program down completely while offering little explanation. Concurrent with the shutdown of that DOT program, NHTSA now proposes a nationwide program that allows for testing on public roads and seeks guidance for how to use existing law and regulations to enable this process. The Center believes that this effort is misplaced. Current regulations and statutory authority were not designed with an eye to mass experimental vehicle testing on public roads, and new regulations are needed to ensure the safety of the public in every area where this testing may occur.

[15] https://www.transportation.gov/briefing-room/dot1717

3. **Third, the Agency seeks comment on any additional elements of regulatory relief (e.g., exceptions, exemptions, or other potential measures) that might be needed to facilitate the efforts to participate in the pilot program and conduct on-road research and testing involving these vehicles, especially those that lack controls for human drivers and thus may not comply with all existing safety standards.**

   There is no demonstrable need for additional regulatory relief to further accelerate AV testing or development. Well over 100 corporate entities are conducting AV testing in the United States today.[16] On the contrary, there is an urgent need for development of operator safety requirements and supporting regulations at the national and local levels. In fact, the current regulatory relief and absence of safety requirements already puts AV developers and manufacturers at unnecessary risk of squandering scarce development dollars on engineering dead ends, vehicle developments that cannot be extended from one regulatory domain or ODD to another and jeopardizing public trust in advanced vehicle technology. Uniform safety and operational requirements would accelerate and reduce cost of development and also reduce cost and complexity of state and local regulation development. However, such steps must be taken with demonstrable safety as the priority, not limiting safety requirements via regulatory rollback.

4. **Fourth, with respect to the granting of exemptions to enable companies to participate in such a program, the Agency seeks comments on the nature of the safety and any other analyses that it should perform in assessing the merits of individual exemption petitions and on the types of terms and conditions it should consider attaching to exemptions to protect public safety and facilitate the Agency's monitoring and learning from the testing and deployment, while preserving the freedom to innovate.**

Careful consideration of petitions for exemption from Federal Motor Vehicle Safety Standards is critical to the success of any program that envisions the on-road deployment of test vehicles. The pilot program request for comments suggests that both 49 USC 30113 – General Exemptions and 49 USC 30114 – Special Exemptions would be useful avenues by which to grant "regulatory relief" to vehicles without traditional designs. The Center has a number of concerns with this suggestion.

Our first concern is transparency of the process. General Motors filed a petition under Section 30113 in January 2018, and now, *eleven months later*, this petition has still not been made public by the agency despite multiple informal requests as well as FOIA requests by the Center and others. Under 30113, the Secretary is required to publicly disclose **the application** for an exemption within 10 days after filing, which is clearly not the case here. If NHTSA is unable to comply with the basic provisions of the exemption statute, there is a serious question as to whether the agency is capable of performing the requisite analysis to ensure safety in exempted vehicles, and whether the public will even have sufficient notice of decisions affecting public safety.

[16] https://www.cars.com/articles/which-cars-have-self-driving-features-for-2018-1420699785509/ and https://www.dmv.ca.gov/portal/dmv/detail/vr/autonomous/permit

Additionally, the request for comments suggests that the Special Exemptions provision of 49 USC 30114 would be useful in this context. We disagree, as this provision is very limited in scope, and is intended to provide a vehicle-by-vehicle exemption for very limited research, demonstration, and public display purposes. Even NHTSA acknowledges the historic limitations of this section, stating "NHTSA has historically focused these types of exemptions on the noncompliant vehicles made outside the U.S."

Moreover, 30014 only allows the Secretary to exempt one motor vehicle or item of motor vehicle equipment for each application under this exemption, and not a fleet of test vehicles all at once. If a vehicle cannot pass muster under 49 USC 30113, providing proof that it is as safe or safer than FMVSS compliant vehicles, there is little justification for allowing such a vehicle to operate on public roads until safety can be proven. 30114 should not operate as the Secretary's loophole to thrust unproven technology onto public roads. Rather than look towards little-used regulatory mechanisms that were in no way designed to evaluate mass research exemptions for new technology, the agency should pursue new rulemakings for processes that actually contemplate the scope of exemptions seeking to be granted.

The Center believes that these considerations should all be included in granting exemptions to enable companies to participate in a pilot program for the safe on-road testing and deployment of vehicles with high and full driving automation and associated equipment.

Conclusion

It is the Center for Auto Safety's position that the AV Pilot Program should be undertaken only with a comprehensive approach to setting safety standards, evaluating AV conformance to those safety standards, and licensing AV operators by examining their ability to operate AV safely, competently, and in conformity with motor vehicle laws.

Oversight has gone hand in hand with auto safety as long as there have been automobiles, because when left to their own devices, safety has always come after sales in this industry. Sadly, the modern technology industry does not have a better track record – and if anything - prefers to move fast and break things, which is not a useful ethos when talking about a several-ton vehicle under computer control. If the AV Pilot Program fails to satisfy public demands for transparency, performance, and above all else safety, it will undermine AV development progress and unnecessarily delay any benefits that would otherwise be derived from its success. The small cost of developing and monitoring compliance with AV safety standards would be overwhelmed by the opportunity costs of a failed AV Pilot Program.

All parties want to see reduced crashes, deaths, and injuries attendant to the promise of AV operation. By seizing the opportunity presented by the AV Pilot Program to promote

standards and protocols for AV safety and operator licensing, perhaps NHTSA will take real steps towards making the promise of AVs benefits a reality.

Sincerely,

Jason Levine
Executive Director