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AAMVA Comments on Proposed UN Global Technical Regulation for Automated Driving Systems [Docket No. NHTSA-2026-0034]

The American Association of Motor Vehicle Administrators (AAMVA) appreciates NHTSA's solicitation of public input on the draft Global Technical Regulation (GTR) for Automated Driving Systems being developed through GRVA/WP.29. The harmonization of international safety standards for ADS-equipped vehicles represents a critical opportunity to advance both innovation and public safety on a global scale. AAMVA supports the draft GTR's focus on performance-based requirements rather than prescriptive design standards. The GTR appropriately emphasizes what ADS must accomplish—safely performing the Dynamic Driving Task.

GTR Provisions for Domestic Adoption

The draft GTR's framework for Dynamic Driving Task (DDT) performance requirements represents the type of outcome-based regulation that should be incorporated into U.S. standards. Rather than specifying sensor configurations or algorithmic approaches, the GTR establishes what the ADS must achieve: safe navigation, appropriate responses to dynamic conditions, and reliable performance within defined parameters.

NHTSA should endorse the establishment of mechanisms for mutual recognition of ADS performance capabilities. When an ADS demonstrates compliance with GTR requirements in one jurisdiction, other contracting parties should recognize those validated capabilities. This collaborative approach streamlines deployment while maintaining safety standards. NHTSA should adopt the GTR's performance-based DDT framework as the foundation for future domestic ADS regulations and should determine how it can best ensure that the vehicles it authorizes for deployment fit the same safety standards designated through the work of the GTR and CRVA/WP.29. Conversely, NHTSA should prioritize the identification of unsafe vehicles that are being offered for deployment globally and ensure that they are not suitable for deployment domestically when they have been designated as unsafe, defective, or unready for deployment in the United States.

Operational Design Domain (ODD) Transparency and Enforcement

While the draft GTR addresses ODD specifications, it can be strengthened to ensure ADS vehicles operate exclusively within their designated and validated operational parameters. The GTR's requirement for clear ODD specification and documentation provides an excellent template that NHTSA should incorporate domestically. The draft establishes that manufacturers must explicitly define geographic boundaries and road types where the ADS can operate, environmental conditions (weather, lighting, traffic density) within which safe operation is validated, and the specific operational scenarios the ADS is designed to handle. This structured approach to ODD definition should become standard in U.S. regulations, providing clarity for manufacturers, regulators, law enforcement, and the public in understanding that both the limitations and the intended environment under which ADS vehicles operate are clearly understood and any problems identified in ODD operations can be shared across jurisdictions.

Both the GTR and NHTSA may consider whether to require a globally standardized method for indicating whether an ADS is currently engaged and operating within its approved ODD. This could include standardized visual indicators, data reporting requirements, and event data recorder specifications. *The GTR's work on user-ADS interaction requirements provides a strong foundation for such indicators.*

Additionally, NHTSA and the GTR may consider whether to develop reporting mechanisms to ensure that ADS vehicles respect local traffic regulations regardless of where their ODD is designated. An ADS certified for highway operation in one country should comply with all applicable traffic laws when operating on highways in other contracting party nations. When they do not, there should be a centralized reporting repository for the analysis of how frequently the vehicles violate traffic laws and the severity of the safety implications.

Compliance with State, Local, and National Traffic Laws

AAMVA understands the complexities of international motor vehicle and traffic law. However, state and local policy should continue to dictate what is safest for the community in which vehicles operate. The draft GTR must explicitly require that ADS-equipped vehicles comply with all applicable traffic safety laws in their operating jurisdiction, not merely those incorporated into the GTR itself.

NHTSA and the GTR should consider including provisions requiring:

- ADS to be programmed to recognize and obey jurisdiction-specific traffic control devices, speed limits, and rules of the road.
- Regular updates to ADS software to reflect changes in local traffic regulations.
- Documentation demonstrating how the ADS accounts for variations in traffic laws across different regions.
- Mechanisms for local authorities to communicate location-specific requirements (e.g., school zones, construction zones, temporary restrictions) to ADS operators as needed.

Information Sharing and Accountability Framework

The safety case approach in the draft GTR is valuable and appears to be on track for emulation in the United States but must be complemented by robust post-deployment monitoring and international information sharing. The GTR Safety Case framework requires manufacturers to systematically identify potential hazards and risks, document how design and operational measures mitigate those risks, provide evidence supporting safety claims, and demonstrate comprehensive testing and validation for consideration.

This evidence-based approach requires manufacturers to affirmatively demonstrate safety through analysis and documentation. NHTSA should incorporate required safety case data submission, pre-approval, and methodology into domestic regulations, with the additional requirements of independent third-party review of safety case submissions, public disclosure of Safety Case summaries (with appropriate protection of confidential business information), and periodic safety case updates based on operational and observed data.

Additionally, the GTR's post-deployment monitoring provisions establish the critical principle that safety oversight extends beyond initial certification. NHTSA should adopt and expand these active monitoring requirements domestically.

Global Safety Data Repository

An important element to comprehensive and shared data between public safety agencies will be the establishment of a centralized, international database where safety oversight parties can report safety-relevant incidents involving ADS vehicles. Having visibility into data supporting safe operation beyond the safety case environment will be critical for active safety monitoring of the performance of these vehicles. Additionally, a centralized reporting repository will allow manufacturers to document software updates and their rationales in a centralized location (once established). Safety pattern recognition can identify systemic issues across multiple jurisdictions and researchers and regulators can access data to inform the safety case and applicable safety standards as the technologies evolve.

The GTR's monitoring framework provides the foundation for such a repository; implementation requires coordination among WP.29 contracting parties to establish data standards, reporting protocols, and access mechanisms.

Considerations for the centralized safety data repository should include:

Violation Tracking and Response:

- Documented instances where ADS vehicles consistently violate traffic laws or operate outside their designated ODD.
- Real-time, or as close to real-time, information sharing as possible.
- Consideration of graduated enforcement responses, from manufacturer notification to temporary operational restrictions.
- Enable pattern analysis across international borders to identify systemic compliance issues.

Transparency Requirements: Mandate public disclosure of:

- Aggregate safety performance metrics by ADS manufacturer and system type
- Disengagement rates, near-miss incidents, and traffic violations.
- Software update frequency and nature of modifications
- Changes to ODD based on operational experience

The GTR's emphasis on post-deployment monitoring creates space for these transparency measures; NHTSA should lead in establishing specific disclosure requirements that can serve as models for other contracting parties.

SAE Level Designation and Verification

The draft GTR might benefit from a more explicit framework for classifying and verifying the SAE automation level of deployed ADS. The draft GTR's approach to manufacturer responsibility for the DDT effectively captures the essence of SAE Level 4+ automation without getting mired in classification debates. By focusing on the system's ability to perform the complete DDT within defined parameters, the GTR creates a functional definition that assists in the definitive declaration of a vehicle's capabilities, but the vehicle itself may need to have a designation attached to its VIN, or frame of reference, that ensures common understanding of the vehicle's performance capabilities.

NHTSA may wish to establish a process whereby recognized national or international authorities officially designate the SAE operational level (Level 3, 4, or 5) for each ADS following evaluation and this designation is recorded in a globally accessible registry maintained by WP.29 or a designated entity. The designation should be clearly indicated on the vehicle and in all associated documentation and any changes to the SAE level (through software updates or operational changes) should require specific reporting requirements.

Where possible, NHTSA and the GTR should develop clear, testable criteria distinguishing between SAE levels, particularly between the boundary between Level 3 (conditional automation) and Level 4 (high automation), commonly recognized requirements for minimal risk condition achievement, vehicle fallback performance obligations, and ODD limitation parameters specific to each level. The GTR's testing system and environmental requirements provide a strong foundation for such verification standards.

It remains important that to the greatest degree possible any SAE level designation:

- Uses standardized terminology across all contracting parties.
- Is easily verifiable by vehicle by enforcement personnel through vehicle identification systems.
- Appears prominently in vehicle records or documents.
- Is accessible through standardized query protocols for traffic enforcement.

Compatibility with U.S. Safety Standards

The draft GTR appears generally compatible with existing FMVSS, but careful analysis will be required during domestic implementation.

The GTR's Safety Management System requirements align well with quality management approaches already familiar in the automotive industry (ISO 26262, ISO/PAS 21448) while extending them specifically to ADS development and deployment. NHTSA should adopt this framework as it provides:

- A structured approach to hazard analysis and risk assessment
- Documentation requirements that enable regulatory oversight without prescribing specific technical solutions
- Lifecycle safety considerations from design through deployment and updates
- Integration with existing automotive safety practices

NHTSA should conduct and publish a detailed gap analysis identifying areas where the GTR exceeds current FMVSS requirements (and where U.S. adoption would enhance safety or vice-versa), provisions in existing standards that may need modification to accommodate the GTR, regulations that may conflict with GTR provisions, and opportunities to harmonize FMVSS with international standards while maintaining safety as the priority.

Testing and Safe Deployment

A globally harmonized GTR will significantly benefit ADS innovation by reducing redundant testing and certification across multiple jurisdictions. The GTR's testing system and environment framework represents years of collaborative international work that NHTSA should consider domestically. The framework addresses scenario-based testing methodologies that capture real-world driving complexity, simulation validation requirements that enable extensive testing beyond physical test track limitations, real-world testing protocols that generate meaningful safety data, and a combination of approaches using simulation, closed-course, and public road testing. While these methods may assist in the testing and submission of preliminary safety data associated with ADS-equipped vehicles, these efforts must be continuously paired with real-world, required safety data submissions for active monitoring of performance in real-world environments.

Phased Implementation Approach

Additionally, consideration of the environment under which a phased implementation approach is rolled out can support a deliberate approach that prioritizes ADS deployment in controlled, well-mapped environments initially and then expands operational domains as safety performance data accumulates. This type of approach may also build on lessons learned from early deployments while maintaining flexibility for emerging technologies. The GTR's ODD framework and Safety Case requirements naturally support such phased deployment, as manufacturers can initially certify limited ODDs and expand them as operational data supports broader claims.

International Collaboration

As nation’s work independently to accommodate advanced safety technologies, we collectively have the opportunity to work together to strengthen opportunities for regular technical exchanges among contracting party regulators, explore joint research initiatives addressing common challenges, and coordinate responses to identified safety issues. NHTSA's leadership role in GRVA demonstrates the value of such collaboration, formalizing these mechanisms in the final GTR will ensure continued knowledge sharing.

As that collaboration continues, those involved in the process should pursue a continuous improvement framework. The collaborative effort can be leveraged to establish formal processes for regular GTR and domestic safety case updates based on operational experience and technological advances. These improvements can assist in incorporating lessons learned from incidents across all contracting parties, adapting requirements as ADS capabilities evolve, and ensuring standards remain performance-based and data reliant across jurisdictions.

Safety Management System Requirements

The draft GTR's emphasis on comprehensive Safety Management Systems is commendable and essential. The GTR's Safety Management System provisions should be adopted by NHTSA as they represent the most

comprehensive international consensus on how to oversee ADS development. Key elements that merit domestic adoption include:

- Organizational requirements: Establishing clear responsibilities, competencies, and authorities for safety-critical functions.
- Process requirements: Defining how hazards are identified, analyzed, and mitigated throughout the development lifecycle.
- Documentation requirements: Creating traceable records of safety decisions, vehicle capabilities, applicable safety data and their rationale as applied to the safety case.
- Validation and verification: Demonstrating that safety measures achieve their intended effects.

These requirements provide the structure needed for effective regulatory oversight while respecting manufacturer expertise in specific technical approaches.

NHTSA should consider adopting the GTR's Safety Management System framework and clarify expectations regarding:

- Third-party auditing or verification of safety management processes
- Documentation requirements that allow contracting parties to assess compliance
- Minimum standards for testing protocols, simulation validation, and real-world verification
- Change management processes when ADS systems are updated or ODDs modified.

The agency should also consider whether certain aspects of Safety Management System documentation should be subject to periodic audit or certification renewal, rather than one-time review at initial certification.

User Interaction and Human Factors

The draft GTR's provisions on safety of interactions between the User and ADS address critical human factors considerations that have been identified in SAE Level 3 deployments internationally. NHTSA should adopt these requirements, which address:

- Clear communication of ADS status and capabilities to users
- Appropriate takeover requests and transition periods (where applicable)
- Prevention of misuse through design and clear operational limitations
- User training and information requirements

These provisions build on years of international research and real-world experience with partially automated systems. Adopting them domestically will help prevent the confusion and misuse that has plagued some earlier driver assistance systems.

Leveraging International Collaborative Work

The draft GTR represents five years of intensive international collaboration involving government regulators, industry technical experts, research institutions, and international standards organizations. This collective expertise should be leveraged and augmented through participation and support. NHTSA should consider domestic adoption of GTR elements that represent clear international consensus on best practices around the following issue areas:

1. Performance-based approach to DDT requirements - Rather than prescriptive design rules, focus on what the ADS must achieve.
2. ODD framework - Clear structure for defining and documenting operational limitations.

3. Safety Case methodology - Evidence-based demonstration of safety claims verifiable by independent parties.
4. Testing and validation framework - Combination of simulation, closed-course, and real-world testing.
5. Centralized and accessible data supporting deployment determinations – transparent and centralized data supporting the safety case will establish trust and ensure cross-jurisdictional compliance.
6. Designation of vehicle performance capabilities – the ability to provide an accurate description of the performance level of the vehicle is essential to ensuring that it operates within its defined ODD and within the parameters of its limitations.
7. Post-deployment monitoring - Ongoing safety oversight beyond initial certification
8. Safety Management Systems - Organizational and process requirements for systematic safety management

Conclusion

The development of this GTR represents a pivotal moment for ADS safety regulation. We urge NHTSA and WP.29 to embrace this opportunity to work collectively to allow the full potential of these technologies to stem the tide of senseless deaths on the nation's roadways. Through collaborative work on the international and domestic stage AAMVA supports NHTSA's efforts to develop a harmonized international framework that enables mutual recognition of demonstrated ADS performance capabilities, ensures ADS vehicles comply with all applicable traffic laws wherever they operate, provides transparency regarding operational capabilities and limitations through standardized ODD communication and SAE level designation, establishes robust information-sharing mechanisms for safety data and compliance monitoring, creates accountability for systems that consistently violate laws or operate beyond their validated parameters, and builds on international collaborative work to date while maintaining flexibility for continuous improvement. We thank NHTSA for its global representation and look forward to close collaboration with NHTSA in our shared safety mission.

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