



The Vehicle Suppliers Association

Comments of
MEMA, The Vehicle Suppliers Association
to the
United States Department of Transportation
National Highway Traffic Safety Administration (NHTSA)
In Response To
Zoox, Inc. Application for Temporary Exemption
From Certain Federal Motor Vehicle Safety Standards
Docket No. NHTSA-2025-0523
April 10, 2026

I. Introduction

MEMA, The Vehicle Suppliers Association (MEMA), respectfully submits these comments in response to the National Highway Traffic Safety Administration (NHTSA or Agency) *Notice of Receipt of an Application from Zoox, Inc. (Zoox) for a Temporary Exemption From Certain Federal Motor Vehicle Safety Standards (FMVSS) (Zoox Petition)*.¹ MEMA represents the suppliers of motor vehicle components and systems, including advanced safety systems, lighting, braking, visibility, and automated driving systems (ADS) technologies.

Although MEMA does not typically submit comments in individual exemption proceedings, this petition raises broader issues related to regulatory structure, technological evolution, and the application of the Safety Act's exemption authority to ADS-equipped vehicles. Accordingly, MEMA submits these comments to support NHTSA's use of its exemption authority to enable innovative vehicle designs and to reinforce principles identified in MEMA's recent comments on FMVSS modernization regarding technology-neutral regulation and removal of unnecessary regulatory barriers.²

II. Statutory Framework for Exemptions

Section 30113 of the National Traffic and Motor Vehicle Safety Act (Safety Act)³ grants NHTSA the authority to grant a temporary exemption from one or more FMVSS if the Agency determines, among other things, that the exemption would make easier the development or field evaluation of a new motor vehicle safety feature and that the exemption is consistent

¹ *Zoox, Receipt of Application for Temporary Exemption from Various Requirements of the Federal Motor Vehicle Safety Standards for an Automated Driving System-Equipped Vehicle; Request for Comment*, 91 Fed. Reg. 12042, 12042-43 (Mar. 11, 2026) (*Zoox Petition*).

² Comments of MEMA, The Vehicle Suppliers Association, Docket No. NHTSA-2026-0133 (submitted Mar. 2026) (*MEMA FMVSS Modernization Comments*).

³ National Traffic and Motor Vehicle Safety Act of 1966, Pub. L. No. 89-563, 80 Stat. 718 (codified as amended at 49 U.S.C. §§ 30101-30183).

with the public interest and the objectives of motor vehicle safety.⁴ The statute does not require strict compliance with existing prescriptive requirements where an alternative design can achieve an equivalent or greater level of safety. Rather, the exemption provision reflects Congress's recognition that vehicle technologies evolve and that controlled exemptions can enable real-world validation of emerging safety systems where prescriptive requirements may not yet align with innovative designs.⁵

III. The Zoox Petition in The Context of Evolving Vehicle Architectures

The *Zoox Petition* reflects a category of vehicle design that differs fundamentally from the legacy assumptions embedded in many FMVSS provisions. ADS-dedicated vehicles may lack traditional driver controls (e.g., steering wheel, pedals),⁶ utilize non-traditional seating configurations,⁷ rely on sensor-based perception systems rather than direct driver visibility,⁸ and integrate safety systems at the vehicle-system level rather than as discrete components.⁹

Many FMVSS provisions were developed based on assumptions regarding human drivers, fixed seating positions, and mechanical control interfaces.¹⁰ As MEMA noted in its FMVSS modernization comments, certain requirements may no longer align with contemporary vehicle designs or safety architectures.¹¹

Therefore, the *Zoox Petition* highlights a central issue: whether compliance pathways grounded in legacy design assumptions should limit deployment of vehicles that may achieve equal or greater safety through alternative means.

MEMA supports the use of NHTSA's exemption authority as a mechanism to enable the controlled deployment of innovative vehicle technologies under defined conditions, allowing for real-world evaluation of system performance while maintaining Agency oversight. Such exemptions can generate empirical data to inform future rulemakings and are consistent with prior Agency practice recognizing that alternative technologies may achieve equivalent or greater safety outcomes.¹² For example, in camera-monitor system (CMS) exemption proceedings, regulators determined that such systems could provide safety benefits including expanded field of view and reduced blind spots.¹³ These precedents support the use of exemptions where new technologies meet or exceed the underlying safety objectives of existing standards.¹⁴

⁴ 49 U.S.C. § 30113(b)(3)(B)(ii).

⁵ See *id.*; see also 49 U.S.C. § 30101 (establishing purpose of motor vehicle safety framework).

⁶ *Zoox, Inc., Application for Temporary Exemption from Federal Motor Vehicle Safety Standards* (Aug. 22, 2025), Docket No. NHTSA-2025-0523, at 8–10 (describing absence of traditional driver controls).

⁷ *Id.* at 10–12 (describing non-traditional seating configurations).

⁸ *Id.* at 12–15 (describing reliance on sensor-based perception systems).

⁹ *Id.* at 15–18 (describing integrated vehicle-system architecture).

¹⁰ See, e.g., 49 C.F.R. §§ 571.111, 571.135 (reflecting driver-based design assumptions embedded in FMVSS).

¹¹ *MEMA FMVSS Modernization Comments*, *supra* note 2.

¹² See 49 U.S.C. § 30113; see also 91 Fed. Reg. at 12043 (describing exemption framework and statutory bases).

¹³ Rear Visibility: Federal Motor Vehicle Safety Standards, 84 Fed. Reg. 54533, 54541–42 (Oct. 10, 2019) (recognizing that camera-based systems can improve field of view and reduce blind zones).

¹⁴ *Id.* at 54541–42.

IV. Relationship to FMVSS Modernization

The *Zoox Petition* illustrates several broader regulatory themes identified in MEMA's FMVSS modernization comments, for example:

- ***Design-Specific Requirements vs. Performance-Based Standards*** – Many FMVSS provisions specify particular hardware configurations rather than safety outcomes. As MEMA previously noted, a provision may warrant modernization where it (1) mandates specific hardware rather than performance, (2) reflects outdated technological assumptions, and (3) constrains demonstrably superior technologies.¹⁵
 - ADS vehicles such as those proposed by Zoox may satisfy the underlying safety objectives of these standards through different system architectures and should be considered.
- ***Test Procedures That Do Not Reflect Real-World Conditions*** – Certain FMVSS test procedures were developed based on legacy vehicle designs and may not accurately evaluate modern systems. For example, static test configurations may not reflect dynamic system behavior;¹⁶ assumptions regarding driver posture may not apply to ADS vehicles;¹⁷ and component level testing may not capture system-level safety performance.¹⁸ As MEMA has emphasized, modernization should focus on whether a requirement continues to address a measurable real-world safety risk.¹⁹
- ***Barriers to Deployment of Advanced Safety Technologies*** – MEMA members have identified instances where prescriptive requirements may inadvertently limit deployment of safety-enhancing technologies. For example:
 - Visibility systems: Camera-monitor systems may provide field of view and reduced blind zones compared to traditional mirrors.²⁰
 - Lighting systems: Advanced lighting technologies may be constrained by legacy photometric or configuration requirements developed for earlier technologies.²¹
 - Interior design assumptions: Occupant protection standards may assume forward facing seating and driver control configurations that are not present in ADS vehicles.²²

The *Zoox Petition* directly implicates the above issues.

V. Technology-Neutral Safety Evaluation

MEMA encourages NHTSA to apply a technology-neutral framework to evaluate the *Zoox Petition*. This evaluation should focus on whether the proposed vehicle achieves the underlying safety purpose of the applicable standard;²³ demonstrates equivalent or greater

¹⁵ MEMA FMVSS Modernization Comments, supra note 2.

¹⁶ See *id.*

¹⁷ See *id.*

¹⁸ See *id.*

¹⁹ See *id.*

²⁰ See 49 C.F.R. § 571.111 (rear visibility).

²¹ See 49 C.F.R. § 571.108 (lighting requirements).

²² See 49 C.F.R. § 571.208 (occupant protection).

²³ 49 U.S.C. § 30101 (safety purpose).

safety performance,²⁴ and maintains appropriate redundancy and fail-safe behavior.²⁵ This approach is consistent with the performance-based regulatory principles and supports innovation while maintaining safety outcomes.²⁶

VI. International and Regulatory Alignment

MEMA notes that global regulatory frameworks increasingly incorporate performance-based technology-neutral approaches and system-level evaluation methods, including work developed through the UNECE World Forum for Harmonization of Vehicle Regulations (WP.29).²⁷ In prior submissions related to ADS, MEMA has emphasized that safety should be evaluated at the vehicle system level rather than through prescriptive design assumptions.²⁸ While NHTSA evaluates the *Zoox Petition* under U.S. law, consideration of global regulatory approaches may support harmonization, reduced compliance burdens, and accelerated deployment of advanced safety technologies.²⁹

VII. Importance of Clear Exemption Frameworks and Public Interest Considerations

To support continued innovation while maintaining safety, MEMA recommends that NHTSA:

- Clearly articulate how equivalence of safety is evaluated for non-traditional vehicle designs.
- Ensure that exemption decisions are grounded in transparent, objective criteria.
- Provide guidance on how data from exemption deployments will inform future rulemaking.
- Consider how recurring exemption themes may indicate areas where FMVSS modernization is warranted.

Granting the *Zoox* exemption, if supported by the record, would be consistent with the public interest by:

- Enabling deployment of innovative vehicle safety technologies.
- Supporting development of ADS.
- Generating data to inform future standards.
- Advancing regulatory modernization.

Importantly, exemptions do not eliminate safety requirements but can provide an alternative pathway to achieve safety objectives through different technologies.

²⁴ 49 U.S.C. § 30113(b).

²⁵ *Nat'l Highway Traffic Safety Admin., Automated Driving Systems 2.0: A Vision for Safety (2017); Automated Driving Systems 3.0: Preparing for the Future of Transportation (2018).*

²⁶ *See id.*

²⁷ UNECE, World Forum for Harmonization of Vehicle Regulations (WP.29), Overview.

²⁸ MEMA, *Comments on UNECE Global Technical Regulation for Automated Driving Systems (2025).*

²⁹ *See id.*

VIII. Conclusion

The *Zoox Petition* presents an important opportunity for NHTSA to apply its exemption authority in a manner consistent with both the Safety Act and the realities of modern vehicle design. MEMA supports the Agency's continued use of exemptions to facilitate innovation, as long as such exemptions are supported by evidence demonstrating that the proposed vehicle achieves an equivalent or greater level of safety. This proceeding underscores the importance of aligning regulatory frameworks with evolving vehicle technologies, while preserving safety performance and avoiding unnecessary design constraints.

MEMA appreciates the opportunity to provide these comments and looks forward to continued engagement with NHTSA on broader regulatory modernization initiatives. Please do not hesitate to contact Jennifer Lewis, MEMA Vice President of Regulatory Affairs, at jlewis@mema.org with any questions or if the Agency would like additional information on any of the points articulated above.