



September 21, 2022

Ann Carlson, Chief Counsel and Acting Administrator  
National Highway Traffic Safety Administration  
1200 New Jersey Avenue, S.E.  
Washington, D.C. 20590

**RE: Ford Motor Company and General Motors/Cruise Receipt of Petitions for Temporary Exemption From Various Requirements of the Federal Motor Vehicle Safety Standards for an Automated Driving System-Equipped Vehicle (Docket No. NHTSA-2022-0066 & -0067)**

Dear Ms. Carlson,

The Alliance for Automotive Innovation (“Auto Innovators”) appreciates the opportunity to provide comments in response to the July 21, 2022 Notice of Receipt of Petitions for Temporary Exemption from both Ford Motor Company (“Ford”) and General Motors and Cruise (“GM and Cruise”) for their Automated Driving System (ADS) equipped vehicles. Auto Innovators represents the auto manufacturing sector, including automakers that produce and sell nearly 98% of the new light-duty vehicles in the United States. Our association also includes original equipment suppliers, technology and other automotive-related companies, and trade associations.

Auto Innovators strongly supports both petitions and encourages NHTSA to grant them expeditiously. The temporary exemption process under 49 U.S.C. Part 555 provides the only viable pathway currently for non-conforming ADS-equipped vehicles to achieve compliance and enter the stream of commerce in the United States. In order to foster the continued development of this important, potentially life-saving technology, Auto Innovators encourages NHTSA to prioritize the review of these petitions and grant them as quickly as possible. In support of this effort, Auto Innovators has provided responses to the questions posed in the Notices, which are attached to this letter as an Appendix.

We thank you again for the opportunity to provide comment and for the agency’s consideration of these comments. Should you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Hernandez", is written over a light grey circular graphic element.

Mike Hernandez  
Senior Director, Safety

## Appendix

The following numbered items are copied from the Federal Register notices for both the Ford and General Motors & Cruise petitions<sup>1</sup>, which include the terms and conditions specified by NHTSA and for which the Agency seeks comment. Auto Innovators has responded to select items, which appear in **red text**.

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*Please comment on whether NHTSA should apply the following terms and conditions to a potential grant of Ford/GM's exemption request:*

*1. Reporting within 24 hours of an exempt vehicle being involved in any crash, to include:<sup>2</sup>*

*a. The data elements specified in [49 CFR part 563](#), Event Data Recorders.<sup>3</sup>*

*b. If the ADS was in control of the vehicle during the event, a detailed timeline of the 30 seconds leading up to the crash, including a detailed read-out and interpretation of all sensors in operation during that time period, the ADS's object detection and classification output, and the vehicle actions taken ( i.e., commands for braking, throttle, steering, etc.).*

*c. If a human operator took over control of the vehicle prior to the event, a detailed timeline of the 30 seconds leading up to the human operator taking over control, including a detailed read-out and interpretation of all ADS sensors in operation during that time period, the ADS's object detection and classification output, and the vehicle actions taken ( i.e., commands for braking, throttle, steering, etc.).*

*d. If a human operator was in control of the vehicle at any point during or up to 30 seconds before the event, a detailed timeline of any actions the human operator took that affected the crash event, as well as any technical problems that could have contributed to the crash (signal latency, poor field of view, etc.).*

*e. Any additional information about the event that NHTSA deems pertinent for determining either crash or injury causation, including additional information related to the ADS or remote operator system.*

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<sup>1</sup> Ford's petition: <https://www.federalregister.gov/documents/2022/07/21/2022-15556/ford-motor-company-receipt-of-petition-for-temporary-exemption-from-various-requirements-of-the>

GM and Cruise's petition: <https://www.federalregister.gov/documents/2022/07/21/2022-15557/general-motors-receipt-of-petition-for-temporary-exemption-from-various-requirements-of-the-federal>

<sup>2</sup> Ford/GM and Cruise are currently required to submit reports to NHTSA for crashes involving ADS pursuant to NHTSA Standing General Order (2021-01). More information about the General Order is available on NHTSA's website at <https://www.nhtsa.gov/laws-regulations/standing-general-order-crash-reporting-levels-driving-automation-2-5>.

<sup>3</sup> See Table I-Reported Data Elements and Table II-Reported Data Element Format. [85 FR 78426](#), [7841](#) (February 11, 2020).

[Auto Innovators Response]:

Auto Innovators notes that reporting is already required for these vehicles under the Standing General Order 2021-01 (“SGO”). As NHTSA noted in its press release on the SGO, those reporting requirements along with NHTSA’s enforcement authority is sufficient to “identify potential safety issues and impacts resulting from the operation of advanced technologies on public roads and increase transparency”;<sup>4</sup> therefore, there is no need for the additional data elements mentioned above for NHTSA to maintain appropriate oversight over these exempted vehicles. NHTSA maintains full authority to request additional information *as needed*, up to and including deploying its Special Crash Investigation team.

Of additional concern is the requirement of Subsection (b), which requires details from all operational sensors up to 30 seconds prior to the crash. Not only does this represent a potentially enormous amount of data, but we question whether all of this data is even relevant for the agency’s safety assessment of these vehicles. For instance, sensors may be placed 360 degrees around the vehicle and only those forward-facing may provide relevant and useful information in a frontal crash. Beyond the utility of this data, the requirement for 30 seconds of reporting is unnecessary for the purpose of reconstructing a crash. Even NHTSA’s own argumentation in its June 22, 2022, Event Data Recorder (EDR) NPRM indicates that 20 seconds is required to accurately assess pre-crash causation.<sup>5</sup> Notwithstanding the Auto Innovators comments specific to the EDR NPRM, the utility of sensor information required under these terms longer than 5 seconds is questionable.

Lastly, we note that the “ADS’s object detection and classification output” (also under Subsection (b)) is an extremely broad category and could conceivably entail a significant amount of data of questionable utility. We encourage the Agency to consider industry consensus standards (such as SAE J3197 and the *AVSC Best Practice for Data Collection*), which provide a balanced approach to data collection that minimizes both exposure of intellectual property as well as data bandwidth. These industry standards also serve to provide easily comprehensible information sufficient to understand the relevant circumstances in the event of a crash. As previously stated, the SGO reporting requirements, in addition to NHTSA’s enforcement authority, would provide NHTSA with the relevant safety related information regarding exempted vehicles.

*2. Beginning 90 days after the date of the exemption grant, and at an interval of every 90 days thereafter, a report detailing the operation of each exempted vehicle in operation during that time period. This report may provide this information either in aggregate or on a per-vehicle basis, but it must include the following:*

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<sup>4</sup> NHTSA Press Release on SGO: <https://www.nhtsa.gov/press-releases/nhtsa-orders-crash-reporting-vehicles-equipped-advanced-driver-assistance-systems>

<sup>5</sup> Event Data Recorders NPRM: <https://www.federalregister.gov/documents/2022/06/22/2022-12860/event-data-recorders> (87 FR 37289)

*a. A calculation of the total miles the vehicle has traveled using the ADS during the report period, and heat maps of the geofenced area in which the vehicle operates to illustrate travel density.*

[Auto Innovators Response]:

The reporting of vehicle miles traveled (VMT) should not be required for exempted vehicles for multiple reasons. First, each exempted ADS will likely have a varied and unique Operational Design Domain (ODD), which may not be reflected in assessments that the agency may use VMT in calculating (e.g., crashes per mile will likely vary significantly for urban versus rural ODDs). In addition, these metrics may result in inappropriate comparisons between ADS, ADAS, and human-driven vehicles, further complicating the assessment of the vehicles under the present exemption request. Should NHTSA require such comparative VMT data, we recommend alternative processes outside of the exceedingly limited numbers of exempted vehicles through which NHTSA could collect this information. We also recommend that any VMT data collected by the agency be done under confidentiality in order to protect this nascent technology in this critical early deployment stage.

Regarding heat maps, this information is not something typically generated by ADS manufacturers and represents an undue burden with little anticipated utility to the agency. Beyond its perceived lack of utility, this information is confidential to the ADS manufacturer due to its relationship with the ODD. Beyond confidentiality concerns, the heat map also would not provide sufficient context to evaluate the agency's other concerns, for example, equity. Therefore, we recommend that the agency not require heat maps as a condition for exemption.

*b. Detailed descriptions of any material changes made to the subject vehicle's Operational Design Domain (ODD) or ADS software during the reporting period.*

[Auto Innovators Response]:

Auto Innovators recommends that manufacturers receiving exemptions should only be required to report software changes if they are relevant to the specific safety standards from which the part 555 exemption is being requested. NHTSA already has broad authority to request software update information as part of a follow-up to a crash reported under the SGO. In addition, NHTSA will already receive reports of software changes made to remedy safety defects in vehicles outside of the manufacturer's direct control, in accordance with Part 573. Items such as map updates, sensor calibrations, and the like should not be required to be reported to the Agency as these types of updates may occur frequently and would provide little, if any, value to the Agency to determine the vehicle's level of safety.

With regard to the ODD, it is likely that changes will be made on a regular basis to account for changes in the external driving environment, such as the introduction of a work zone and subsequent reduction in speed limit. Each change in the ODD will result in a change to the ADS's software, but software changes are not limited to changes in the ODD. Software changes are made for a wide variety of reasons, which may even include changes to the vehicle that

have nothing to do with the driving task. Manufacturers receiving exemptions should not be required to report software changes that do not impact the FMVSS for which exemptions were sought.

Changes made by the manufacturer or ADS developer to account for real world changes in the driving environment are expected to occur on a regular basis; therefore, the volume of potential data required to be reported under this subsection could be burdensome to the manufacturer without much utility to the agency.

*c. Detailed descriptions of any incidents in which any exempted vehicle violated any local or State traffic law, whether operating using the ADS or under human control.*

[Auto Innovators Response]:

Auto Innovators agrees that cited violations by the ADS of state or local traffic laws should be reported. However, we would like to clarify that an “incident” entails some kind of enforcement action by the local authorities. In other words, violations of any traffic laws should not be reported unless the vehicle is issued a citation.

We do not agree that manufacturers should be required to report ADS-equipped vehicles driven by a human driver that violate traffic laws. NHTSA should explain the utility that it contends this information would provide the agency because on its surface, it is irrelevant to the performance of the ADS itself or the integrity of the exemption request. This is particularly true for dual-mode ADS vehicles that have the ability to be driven manually by a human driver, which would not materially differ from any other conventional vehicle.

*d. Detailed descriptions of any incidents in which the exempt vehicles experienced a sustained acceleration of at least 0.7g on any axis for at least 150 ms, or of any incidents in which the vehicle had an unexpected interaction with humans or other objects (other than crashes that require immediate reporting).*

[Auto Innovators Response]:

Auto Innovators does not agree that reporting of high acceleration instances should be required for manufacturers of exempted vehicles. Any instance of high accelerations that lead to a crash will already be covered under the SGO. A braking deceleration, for example, of 0.7g for 150ms can be achieved in normal, non-emergency scenarios that would not otherwise result in a crash. These scenarios cannot reasonably be considered “near misses” and we question the utility of such information to the agency in making a determination of the safety of the ADS.

We do not agree that “unexpected interactions with humans or other objects” is a necessary reporting requirement. In fact, the ADS is designed to always be prepared to react safely in the presence of pedestrians. As noted, *any* crashes, including with vulnerable road users, other vehicles, objects, etc., are already required to be reported to the agency. Any other interaction with humans that meets the subjective definition of “unexpected” will not necessarily have

road safety implications and therefore should not require reporting to the agency. For example, an interaction with a human who recognizes an ADS-equipped vehicle stopped at a crosswalk and interferes with the vehicle's progress by blocking its path does not generally pose a safety risk and such instances do not support the need for reporting to the Agency.

Similar to pedestrians, the ADS is designed to avoid collisions with "other objects" that may pose a safety hazard but may ignore objects that do not appear to pose a threat to safety. For example, a plastic bag in the roadway will likely be ignored by the ADS and these types of "unexpected...other objects" should not require reporting to the agency. Any unexpected object that causes a crash as defined in the SGO will, again, already require reporting under the SGO and additional requirements are unnecessary.

*e. Detailed descriptions of all instances in which a public safety official, including law enforcement, attempted to interact with an exempted vehicle, such as to pull it over, or contacted Ford/GM regarding an attempted interaction with an exempted vehicle.*

[Auto Innovators Response]:

Reports of incidents involving interactions with law enforcement have been addressed in response to subsection (c) of this section. To reiterate, we agree that such interactions that result in citations should be reported to the agency. However, we would like to clarify that only reports of traffic *violations* are required to be reported. For example, if the exempted vehicle is being directed by a police officer, no reporting should be required unless the vehicle fails to follow the police officer's instruction and receives a traffic violation.

*f. Detailed descriptions of any "minimal risk condition fallback" events that occurred, even if no crash has occurred. If the event has occurred because the vehicle self-diagnosed a malfunction of a vehicle system, the report must include a detailed description of the cause and nature of the malfunction, and what remedial steps were taken. If the event was caused by the vehicle encountering a complex or unexpected driving situation, the report must include a detailed timeline of the ADS's decision-making process that led to the event, including any difficulties the ADS had in detecting and classifying objects.*

[Auto Innovators Response]:

Certain fallback strategies are not caused by safety relevant faults and therefore should not require reporting as they may occur regularly, even without any indication to a passenger that the vehicle may be in a minimal risk condition (MRC). For example, Ford notes in its presentation to the agency [NHTSA-2022-0066-0007] that the MRC for a low beam malfunction during daylight will allow the ADS-equipped vehicle to complete its trip and schedule service at a central service station. Such instances do not negatively affect safety and would be of questionable utility given the burden.

Any instance of a fallback condition that results in either a crash or an interaction with law enforcement is already covered by the SGO or other subsections of these terms. Therefore, we recommend that no additional reporting be required for ADS fallbacks.

*g. In addition, Ford/GM must make necessary staff available to meet with NHTSA staff quarterly to discuss the status of its deployment program.*

[Auto Innovators Response]:

We note that manufacturers regularly make staff available to meet with NHTSA, but do not oppose a set schedule for this program.

*3. Ford/GM must have a documented cybersecurity incident response plan that includes its risk mitigation strategies and the incident notification requirements listed below.*

*a. Ford/GM must cease operations of all exempt vehicles immediately upon becoming aware of any cybersecurity incident involving the exempt vehicles and any systems connected to the exempt vehicles that has the potential to impact the safety of the exempt vehicles.*

*b. No later than 24 hours after being made aware of a cybersecurity incident, Ford/GM must inform NHTSA's Office of Defects Investigations (ODI) of the incident. Ford/GM must also respond to any additional requests for information from NHTSA on the cybersecurity incident.*

*c. Prior to resuming its operation of any exempt vehicles following the discovery of a cybersecurity incident, Ford/GM must inform NHTSA of the steps it has taken to patch the vulnerability and mitigate the risks associated with the incident, and receive NHTSA approval to resume operation.*

No Response Provided.

*4. Ford/GM must be capable of issuing a "stop order" that causes all deployed exempted vehicles to, as quickly as possible, cease operations in a safe manner, in the event that NHTSA or Ford/GM determines that the exempted vehicles present an unreasonable or unforeseen risk to safety.*

[Auto Innovators Response]:

Auto Innovators notes that NHTSA already has enforcement authority to issue a stop order irrespective of a vehicle's exemption status. We do not believe that additional terms requiring a stop order are necessary for safety and that NHTSA should not exert operational authority over a private fleet.

*5. Ford/GM must coordinate any planned deployment of the exempted vehicles or change to the ADS/ODD with State and local authorities with jurisdiction over the operation of the vehicle as required by the laws or regulations of that jurisdiction.*

[Auto Innovators Response]:

Auto Innovators believes that this requirement for exemption is unnecessary as manufacturers are already obligated to follow all local laws and jurisdictions.

*6. The exempted vehicles must comply with all State and local laws and requirements at all times while in operation. Each vehicle must be duly permitted, if applicable, and authorized to operate within all properties and upon all roadways traversed.*

[Auto Innovators Response]:

See response to Section 5 above.

*7. Ford/GM must maintain ownership and operational control over the exempted vehicle that are built pursuant to this exemption for the life of those vehicles.*

[Auto Innovators Response]:

Auto Innovators strongly opposes the requirement that manufacturers maintain ownership and operational control of the exempted vehicles for two reasons. First, temporary exemptions have historically served as an alternative pathway to compliance for vehicles with non-conforming technologies to allow manufacturers to sell to the public. Establishing a precedent of restricting ownership of ADS-equipped and exempted vehicles removes this key aspect from the benefit that temporary exemptions otherwise provide. Second, requiring the maintenance of ownership by the manufacturer precludes ADS developers, fleet operators, or other entities involved in the development and/or operation of the ADS-equipped vehicles from having such operational arrangements. Similar to the commercial aviation industry, aircraft manufacturers are not responsible for ownership and operation of the products they produce. Instead, airlines purchase aircraft from manufacturers and operate them according to the standards set by the manufacturers. Similar operating models may be useful for automotive manufacturers and should not be precluded by the terms of an exemption. For these reasons, we recommend that NHTSA eliminate this requirement from the terms and conditions of exemptions.

*8. Ford/GM must create and maintain a hotline or other method of communication for the public and Ford/GM employees to directly communicate feedback or potential safety concerns about the exempted vehicles to the company.*

No Response Provided.

*9. If there are other categories of data that should be considered, please identify them and the purposes for which they would be useful to the agency in carrying out its responsibilities under the Safety Act.*

[Auto Innovators Response]:

Given the current SGO, the software changes (as discussed in response to subsection (b)), and citations issued by law enforcement (as discussed in response to subsections (c) and (e)), no additional data elements should be required to be reported as part of these terms and conditions for an exempted ADS-equipped vehicle. Manufacturers that seek exemptions should have the opportunity to report on other data elements that they see fit, however, those data elements should not be required as terms of the exemption.

*10. If the agency were to require the reporting of data, for what period should the agency require it to be reported—the two-year exemption period or the vehicles' entire normal service life?*

[Auto Innovators Response]:

Quarterly reporting (aside from that required under the SGO) for the duration of the exemption period is sufficient for NHTSA to maintain appropriate oversight of the exempted vehicles. No additional reporting beyond the exemption period should be required without appropriately supported analysis by the agency and sufficient justification. It is worth noting that NHTSA will maintain their defect authority over these vehicles as long as they are in operation, even if that duration exceeds the time of the exemption.

*11. Given estimates that vehicles with ADS would generate terabytes of data per vehicle per day, how should the need for data be appropriately balanced with the burden on manufacturers of providing and maintaining it and the ability of the agency to absorb and use it effectively?*

[Auto Innovators Response]:

To be most effective, NHTSA should limit the number of data elements to those discussed in the above responses. Such a reporting structure will allow minimal burden to manufacturers while simultaneously providing adequate information to the agency to effectively monitor the safety of the exempted vehicles. As a corollary benefit, limiting the amount of data required to be reported will also facilitate the ease of transfer of data to the agency, which can be accomplished in a similar reporting manner as the SGO. In other words, an online template with form submissions is adequate for the data elements recommended for reporting in our previous responses. However, if the data reporting requirements are substantially unchanged from what is presently proposed, then an online form submission will likely be insufficient to appropriately convey all data elements.

*12. As explained in the section above, NHTSA has broad authority to determine whether the public interest and general goals of the Safety Act will be served by granting an exemption. NHTSA seeks to understand the many diverse effects of the exemption, including: the overall safety of the transportation system beyond the analysis required in the safety determination; how an exemption will further technological innovation; whether the exemption will address transportation accessibility and equity; economic impacts, such as consumer benefits; and environmental effects.*

[Auto Innovators Response]:

ADS-equipped vehicles have the potential to significantly improve overall safety on our nation's roadways. With roadway fatalities increasing in recent years, the ability of ADS-equipped vehicles to contribute meaningfully to reducing this number and addressing this crisis should, on its own, provide sufficient public interest justification for granting the exemptions. In fact, requiring significant reporting on public interest considerations beyond safety could inadvertently discourage the deployment of ADS-equipped vehicles and the resulting safety benefits. For purposes of part 555 exemptions, we encourage NHTSA to maintain its primary focus on safety.

*13. With regard to environmental impacts, how should NHTSA use the part 555 exemptions to learn about the interplay between fuel efficiency and ADS technologies? Should the agency adopt reporting requirements that would allow the agency to better understand the energy use of the vehicles throughout their service life and possibly better assess, and quantify, the environmental impacts of ADS-equipped vehicles? Should NHTSA require an entity whose petition has been granted to provide data about, for example, how often and how far its vehicles are driving around unoccupied vs. occupied? Is there other information related to the environmental consequences and effects of the vehicles covered by the petition that NHTSA should require from entities granted an exemption?*

[Auto Innovators Response]:

As auto manufacturers continue their transition to an electrified future, we expect to see ADS-equipped vehicles do the same. Safety is the highest priority and the ADS technology under development today has been optimized with a focus on safety and the ability to quickly incorporate lessons learned.

Moreover, to the extent that vehicles are certified with ADS equipment installed, emissions information will be captured in the certification and fleet average requirements (for criteria pollutants, GHG, and CAFE). Finally, we note NHTSA and EPA have adopted aggressive GHG and CAFE standards through 2026 model year that will improve fuel efficiency and reduce GHG emissions from ICE vehicles, and both agencies plan additional requirements starting in 2027 model year. Unless exempted by the EPA, FMVSS-exempted vehicles must still comply with these fuel economy and emissions requirements.

*14. Should NHTSA consider the environmental impacts of ICE vehicles when deciding whether granting an exemption to an ICE vehicle is in the public interest?*

[Auto Innovators Response]:

See response above.

*15. How should NHTSA consider accessibility in applying appropriate conditions to an exemption if it were granted? As noted above, many proponents of ADS technology often claim that ADS-equipped vehicles could help advance greater transportation accessibility for persons with disabilities. Should NHTSA impose conditions on grants of part 555 exemptions to learn more*

*about specific actions that manufacturers and operators of ADS-equipped exempted vehicles are planning, or have taken, to further the attainment of accessibility and equity goals? Should NHTSA seek information from manufacturers granted an exemption as to how they ensure that their ride-hailing services comply with any applicable Americans with Disabilities Act (ADA) requirements, how many vehicles would be wheelchair accessible, how they reach people with disabilities to offer access to ride sharing services, or whether the exempt vehicles provide other accommodations for individuals with disabilities, such as communication and/or human-machine interface (HMI) features designed for individuals with sensory disabilities (such as sight or hearing) or cognitive disabilities? Should NHTSA require grantees to report on efforts, such as research or community outreach, that the manufacturer is planning, or has taken, to increase the likelihood that accessibility goals will be met? Comments are requested on whether there is other information related to accessibility that NHTSA should require from an entity when granting its petition.*

[Auto Innovators Response]:

ADS-equipped vehicles have significant potential to increase access to mobility. For example, AVs have a unique opportunity to increase access to jobs to those who are currently unemployed or underemployed because of a lack of access to transportation, including individuals with disabilities. A white paper released by the Ruderman Family Foundation and Securing America's Future Energy concluded that widespread AV deployment could open up as many as 2 million job opportunities for Americans with disabilities. However, these impacts are more likely to be realized once manufacturers and operators transition their focus from the development and deployment of the ADS technology itself to the integration of the technology into purpose-built ADS-equipped vehicles and the implementation of ADS-enabled business models at scale.

Given the importance of accessibility in transportation, we suggest that manufacturers and operators who have received an FMVSS exemption meet with the Agency on a periodic basis during the exemption period to discuss this and other important, non-safety related public interest issues. These periodic meetings could include discussion about what engagement, if any, the manufacturers and operators of ADS have had with accessibility advocates and what actions they have taken or plan to take to provide accessible services with the exempted vehicles. This could also include information about accessibility features included in or being developed for the exempted vehicles.

It is important to recognize that AVs only represent one piece of the transportation ecosystem. They are likely to improve accessibility, but cannot by themselves solve systemic issues such as transportation accessibility. It is also important to note that ADS-equipped vehicles, such as those under consideration in the present exemption requests, may still provide accessible transportation to those with disabilities who do not require the use of a wheelchair. For example, ADS-equipped vehicles may still allow blind persons to access transportation independently without physical modifications to the vehicle, thus providing accessibility beyond conventionally driven vehicles.

At the same time, we encourage NHTSA and the U.S. Department of Transportation to take important steps to help encourage accessibility across all vehicle types and address some of the remaining challenges to accessible ADS-equipped vehicles. This includes the development of best practices, including appropriate technical specifications, that manufacturers can use to develop accessible AVs. This should also include accelerated efforts to develop cross-industry standards for Wheelchair Tiedown and Occupant Restraint System (WTORS) that would allow for independent use by a wheelchair user, protecting occupants in both low-g and high-g events, and providing for interoperability between and among wheelchair manufacturers and vehicle manufacturers.

*16. How should NHTSA consider equity in applying appropriate conditions to an exemption if it were granted? For example, should NHTSA require entities receiving a grant of their petition to report how the exempted vehicles were used to improve accessibility and equity in serving underserved communities? Should such an entity be required to provide plans about how it intends to ensure that access to its services is equitable in terms of neighborhood, income levels, race and ethnicity, age (etc.), and/or provide reports of how it achieved those objectives through use of the exempted vehicles? Should entities receiving a petition grant be required to report on barriers they encountered to deploying ADS-equipped vehicles in underserved communities and how those barriers could be overcome? Should such an entity be required to provide demographic data about its services, or report on efforts, such as research or community outreach, that the manufacturer is planning or has taken to ensure better that equity goals will be met? Comments are requested on whether there is other information related to equity that NHTSA should require when granting a petition.*

[Auto Innovators Response]:

As with accessibility, the equity benefits of ADS-equipped vehicles are likely to be realized as manufacturers and operators scale up their activities and implement their full-range of ADS-enabled business models. As the deployment of these vehicles reach scale, they have the potential to provide equitable solutions to today's transportation challenges, including those encountered by historically disadvantaged communities. ADS-equipped vehicles can increase access to mobility by offering alternative transportation solutions within "transit deserts," helping expand the reach of public transit to those who currently do not have access, assisting in increasing access to jobs to those who are currently unemployed or underemployed due to a lack of access to transportation, and improving access to groceries, medicines, and other essential goods in underserved neighborhoods. ADS-equipped vehicles may also help improve roadway safety and reduce traffic fatalities, including pedestrian fatalities, in which ethnic and racial minorities are overrepresented.<sup>6</sup> Finally, ADS-equipped vehicles may help avoid discrimination or harassment that may occur with a human taxi or rideshare driver, which

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<sup>6</sup> <https://www.ghsa.org/sites/default/files/2021-06/An%20Analysis%20of%20Traffic%20Fatalities%20by%20Race%20and%20Ethnicity.pdf>

occurs more frequently among women, marginalized groups, or those in underserved communities.

Equity is an important goal and should continue to be a priority for NHTSA. Auto Innovators and its member companies share NHTSA's interest in promoting transportation equity and look forward to continuing to work with NHTSA to better understand and promote the equity impacts of AVs, particularly as compared to other modes of transportation. However, part 555 exemptions should not be contingent upon reporting of the ability of these early-stage exempted vehicles to improve equity.

It is important to recognize that AVs will represent one piece of the transportation ecosystem. They are likely to improve equity, but cannot by themselves solve systemic issues such as transportation equity. That being said, should NHTSA seek preliminary information related to equity that could inform its broader equity-related work, we suggest that manufacturers and operators who have received an FMVSS exemption meet with the Agency on a periodic basis during the exemption period to discuss this and other important public interest issues.

To help facilitate equity-related impacts in the future, there are also steps that NHTSA and the U.S. Department of Transportation can take to help assist entities that are seeking to improve transportation equity through ADS-equipped vehicles. This includes issuing guidance to define "communities of concern" for purposes of transportation equity and developing a framework and a methodology for assessing AV equity.

*17. How should NHTSA consider economic impacts when applying appropriate conditions to an exemption if it were granted?*

[Auto Innovators Response]:

The economic impacts of ADS-equipped vehicles are likely to be significant. Manufacturers and operators working the ADS space are already bringing new jobs and economic development to the U.S. economy, and these impacts are expected to increase as the industry continues to grow and expand. Other potential economic impacts – such as increasing access to jobs for those who are currently unemployed or underemployed because of lack of access to transportation, bolstering existing vehicle manufacturing in the U.S., helping to alleviate existing labor shortages, improving productivity, and maintaining global competitiveness with respect to artificial intelligence and emerging automotive technologies – are only just beginning to be recognized and quantified.

We are concerned that the specific economic impact of any part 555 exemption will likely not be known or fully understood during the period of the exemption. We are also concerned that it would be difficult, if not impossible, to contextualize any economic impact data reported as part of these part 555 exemptions with what may have happened in the absence of the exemption being granted. For example, there may be an economic impact on these entities

seeking the exemptions, as well as their suppliers, their technology partners, and even the broader ADS industry if the exemptions are not granted and these entities are denied a pathway to deployment for these ADS-equipped vehicles. For this reason, it is not clear that any reporting required in connection with these exemptions will provide NHTSA with any useful or actionable information.

If NHTSA is interested in gathering non-safety related information on economic impacts, we suggest that manufacturers and operators who have received an FMVSS exemption meet with the Agency on a periodic basis during the exemption period to discuss this and other important public interest issues.