

May 29, 2020

BY ELECTRONIC SUBMISSION

Docket Management Facility
U.S. Department of Transportation
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, SE
Washington, DC 20590-0001

**Re: Request for Comments on Notice of Proposed Rulemaking
regarding Occupant Protection for Automated Driving Systems,
Docket No. NHTSA-2020-0014**

Dear Sir or Madam:

The Hyundai-Aptiv Autonomous Driving Joint Venture (Hyundai-Aptiv AD LLC) submits these comments on the National Highway Traffic Safety Administration's ("NHTSA") Notice of Proposed Rulemaking regarding Occupant Protection for Automated Driving Systems, Docket No. NHTSA-2020-0014 (the "Proposed Rule").

Background

The Hyundai-Aptiv Autonomous Driving Joint Venture develops world class production-ready autonomous driving systems (SAE Level 4). The joint venture leverages Hyundai Motor Group's design, engineering, and manufacturing expertise and Aptiv's autonomous driving software stack to commercialize a platform for robotaxi providers, fleet operators, and automotive manufacturers. Our team's expertise in autonomous driving can be traced from our R&D roots at MIT and Carnegie Mellon, where we showcased our autonomous technology in the DARPA Grand Challenge and DARPA Urban Challenge, to our present-day commercial operation in Las Vegas, which has provided more than 100,000 self-driving rides to members of the public.

Response to the NRPM

Hyundai-Aptiv AD is grateful for the opportunity to engage the federal government broadly on policy matters related to highly automated vehicles (AVs), and specifically, on this NPRM. The proposed rulemaking is a significant step on its own towards practical business models for AVs and is a positive signal of broader evolution towards comprehensive safety regulations.

In particular, this NPRM proposes updates to the FMVSS that will reduce barriers to novel AV form factors that the technology enables. As an organization committed to the deployment of Level 4 technology, these updates will improve the prospects of industry by creating an improved pathway towards a broader range of future vehicle platforms while upholding rigorous safety requirements. We look forward to continuing our engagement with the Department on this matter.

Additionally, as the Department continues to move forward with research, policy development, and eventually, regulations on the safety performance of AVs, we look forward to continued engagement. In 2018, we became the first company to publicly release a dataset from our AVs, and our scientists and engineers continue to proactively engage outside our organization, including with governments and standard bodies. We work closely with these stakeholders on core questions of AV safety assurance and measurement, as we believe that growing public trust requires an industry-wide approach.

As the Department continues its work beyond this rulemaking, we look forward to a collaborative and constructive dialogue on some of the key issues involved in comprehensive safety regulation.

We echo and endorse comments submitted by The Consumer Technology Association (“CTA”) regarding FMVSS exemptions. Expediting and providing more clarity on the exemption process, in line with this docket’s proposed rule-making, will give the industry and general public confidence. In addition, we are submitting the following feedback on requested items by NHTSA:

NHTSA’s proposal that “current crashworthiness requirements intended to protect human occupants should not apply to such [occupant-less vehicles] as they meet 571.3 definition of truck.

Even if crashworthiness standards that protect human occupants would be redundant in an occupant-less vehicle, other standards of crashworthiness certainly would apply.

International standards, specifically EuroNCAP, that prioritize protecting pedestrians and other road users are a constructive place to look when measuring crashworthiness performance. To be clear: The EuroNCAP testing

framework is useful, but it is not recommended to be enforced in the United States.

Regarding the impact of where passengers sit and requiring more protection in specific situations (such as children in the driver's seat)

Seating configuration is currently a limitation in forward impact test specifications (for example FMVSS 208 and 214)

Autonomous vehicles open up numerous opportunities for novel seating positions that should be considered when defining impact configurations. Assuming the introduction of more novel configurations, it should be up to the manufacturer to meet impact severity scale requirements.

In identifying children in the driver's seat, NHTSA raises an interesting and foreseeable misuse condition that should be a considered use case for the vehicle. So long as rendering equipment inoperable is not a legal option, preventing foreseeable misuse of manual controls would be needed, unless a capable and certified driver would always be present. Consider similar situations where an adult, but not one with a driver's license, is in the driver's seat – or adults with impairments that make them unable to operate a vehicle.

Modifying the definition of driver

NHTSA should modify the definition of driver. From the outset of AV testing in the United States, and outlined in iterations of NHTSA's AV Policy document, the agency looks to industry to guide in these areas. There is emerging consensus among industry now for what that updated definition of driver could be. Specifically, the new version of SAE J3016 contains updated definitions of vehicle user, driver and remote driver; and SaFAD TR4804 is reportedly doing very similar updates.

Can NHTSA accurately apply occupant protections to the first "row" of a bus (currently, first row is defined in reference to driver's seat). Also, questions of occupant protection for AV buses.

It would be helpful for NHTSA to provide more background on the intent of the application. Given that this is already present in many school and regular buses, it should be applied to all.

Other comments outside the scope of this NRPM

Outside of the scope of this NRPM, we lend our support to several other measures in discussion across government, academia, and the private sector.

We urge NHTSA and the Department of Transportation to maintain a broad research program and continue industry engagement. In the long term, we believe that comprehensive safety standards will promote public acceptance. To be both useful and practical, these standards will require significant input from industry and academic experts. Eventual comprehensive safety standards should be technology-neutral and organized around a performance standard that should incorporate consensus of industry standards.

In the shorter term, both industry and the public will benefit from a regulatory program that shows progress towards this goal and constructive, measured, and appropriate engagement from policymakers. This might take the form of active government engagement with safety research and convening collaborative safety efforts, which can be done on a non-competitive basis. Our organization has worked to create an industry-leading method for specifying acceptable on-road behavior of AVs, and we are participating in standards-setting around this approach. We continue to work with researchers and academic experts on creating a technology-neutral, driving behavior model with tunable parameters, and we look forward to continuing to engage policymakers as they explore regulatory models that might incorporate similar models.

The government should monitor and engage with standards bodies; we are encouraged by the broad range of new standard efforts, but the sheer number of efforts presents an obstacle for active engagement. Government monitoring, participation, and evaluation can help organize the development of standards more effectively.

Further to the points above, there should be a particular focus on standards related to vehicle automation (at all levels of automation) emerging from regulators worldwide. A signal from regulators on which standards are viewed favorably by the federal government will help align systems across the industry around a common set of expectations. For example, the EuroNCAP testing framework is useful in testing automated system performance but is not recommended or enforced in North America.

Action or guidance from federal regulators could help align this and other best practices across the industry and accelerate the creation of common safety practices

Thank you for the opportunity to provide input on this endeavor. We look forward to working with NHTSA in developing regulation that protects the public, supports the industry, and fosters innovation.

Please reach out to Sam Wempe with any questions at samuel.wempe@aptiv.com