



April 1, 2021

BY ELECTRONIC SUBMISSION

Dr. Steven Cliff
Acting Administrator
National Highway Traffic Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Request for Comments on Advance Notice of Proposed Rulemaking Regarding Framework for Automated Driving System Safety

Docket No. NHTSA-2020-0106

Dear Acting Administrator Cliff:

HERE Technologies respectfully submits these comments into the Advance Notice of Proposed Rulemaking (“ANPRM”) on a Framework for Automated Driving System Safety, Docket No. NHTSA-2020-0106.

With over 8,000 employees in 56 countries, HERE is a global leader in digital location technology. Our products and services enable people, enterprises and cities around the world to harness the power of location and create innovative solutions that make our lives safer, more efficient, productive and sustainable. We aggregate massive amounts of information from devices, vehicles, infrastructure and many other sources, in compliance with applicable privacy protections, and using advanced analytics and tools such as artificial intelligence and machine learning, transform this data into real-time location services that play a key role in how we move, live and interact with one another. HERE’s vision is to create an autonomous world for everyone, based on open availability of the vast amounts of data that will be generated by the hundreds of billions of connected devices in our increasingly connected world.

HERE has a 30-plus-year history integrating the latest advances in navigation, location and related technologies into the vehicles used by millions of drivers. Over 100 million vehicles are equipped with HERE systems.

HERE provides location intelligence solutions to nearly all global automotive OEM brands, in addition to many market-leading Internet and technology companies, governments, and municipalities. From navigation to real-time mobility solutions, to high-definition mapping, to the provision of a cross-brand safety data platform, the HERE platform and innovations are leading the development and deployment of automated vehicle solutions. We also have



a long history of working with governments at various levels and have partnered with road authorities all over the world on several innovative digital transportation infrastructure projects that demonstrate the potential of connected and automated vehicles to increase road safety and improve traffic flow and efficiency.

The opportunity

HERE supports NHTSA's consideration in a fresh and collaborative manner of how automated driving systems ("ADS") and self-driving vehicles ("SDV") should be approached by the federal government. We fully support developing a safety framework from a basis of ensuring continued innovation, co-creation and testing with different partners in the value chain. As NHTSA noted, the path for ADS is a still evolving one and developing a framework with private sector stakeholders is a critical piece in ensuring we secure the benefits of an automated driving future.

We support creating a framework that encourages and promotes safety for all road users and recognize that the proper framework brings us the safety improvements of SDV and ADS within the boundaries of the public's continuing trust.

We support NHTSA's commitment to being technology neutral and leveraging performance-based metrics and standards in this pursuit. We applaud the decision to consider process and engineering standards for the safe functioning of ADS. Performance-based, flexible standards are key to moving forward both expeditiously and judiciously. Getting this right while getting these systems on the roads is critical to achieving safety goals.

HERE supports market-based innovation over compulsory regulation, particularly at this early stage of development, and commends NHTSA for recognizing the potential for unintended consequences, including for safety, from premature regulation. In addition, we appreciate the recognition that both safely and efficiently deploying ADS and SDV technologies is an achievable goal.

The importance of collaboration

As we all seek to modernize the framework and rulemaking approach, HERE supports efforts to promote collaboration and transparency. HERE brings together partners across the ecosystem and through this diversity of interests, expertise and data we see a powerful future for SDV and ADS.

We were pleased to see NHTSA reference "Safety First for Automated Driving," whereby 11 companies, including HERE, shared safety by design, and verification and validation efforts to facilitate the development and deployment of SDV and ADS. Greater partnering and



collaboration will continue to be a critical piece of the puzzle and we encourage NHTSA to continue to look to the value of private sector efforts to this end.

Mapping and safety

HERE was pleased to see NHTSA reference the key role of mapping in the development and deployment of SDV and ADS. Based on years of studying the market and collaboration with passenger and commercial vehicle OEMs, system vendors and other partners in the value chain, HERE strongly believes there should always be map content as part of any ADS solution. Location technology is at the heart of ADS development. **Without maps, the automated vehicle cannot exist.**

Location technology creates a digital representation of the physical world and only a HD Live map offers the required precision, which can be even further enhanced with the implementation of 5G. This requires that the map must be updated continuously as fresh data is received by vehicle and other sensors, based on a cloud in which data will be aggregated and consistently incorporated to update the map. The concept of “Electronic Horizon” allows the car to anticipate events which are unperceivable by sensors, and thereby, allows the car to “see around the corner.” The HD map can be considered as an extended sensor. Sensors and HD mapping must go hand in hand if we want to be serious about the deployment of automated driving in the United States.

Where NHTSA described the utility of critical safety elements such as the determination of legal speed limits integrated into SDV and ADS through mapping technologies, we would highlight that legal speed limit information cannot be based on cameras only. Speed limit signs can be missed, occluded and misinterpreted. Only a map can fully capture and interpret this information, and then adapt the information for the vehicle.

We also appreciate the recognition that compliance with more situational or judgmental rules, such as driving too fast for conditions or driving recklessly, requires additional contextual information. The safe driving speed depends not just on the legal speed limit but also on road topology and curvature, current road and traffic conditions, environmental conditions like rain, black ice and is often lower than the legal speed limit.

The value of Advanced Driver Assistance Systems (ADAS) and iteration

NHTSA should look to the benefits of existing advanced driver assistance technologies such as Advanced Emergency Braking systems which will introduce features such as cameras and radar into all categories of vehicles, which are requirements for automated driving. Broadening the reach of such technologies will undoubtedly be a milestone towards self-driving vehicles.



Similarly, ADAS already integrate shared sensor data. The future of SDV and ADS will be supported by the sharing of sensor data and iterating upon current technologies is a valuable pathway to future deployment.

Conclusion

Vehicles today are more intelligent and more connected than ever before and their role is becoming far more complex than that of a simple transportation tool. Automated vehicles will go far beyond being merely safe and efficient transportation methods and will instead enable the development of entirely new and unimagined business models and applications that hold the promise of bringing mobility to everyone. The opportunity for significant economic growth, as well as the potential to capture meaningful societal benefits such as creating sustainable cities with safer roads, reduced emissions and increased mobility are key considerations as we seek an equitable and successful future.

We commend NHTSA for seeking this input from industry and the public and we look forward to bringing forth safety-fulfilling technologies.

Sincerely,

/s/ Robert Schill

Robert Schill
Government Relations - Americas
HERE Technologies