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Chairwoman Janice D. Schakowsky  
House Subcommittee on Consumer  
Protection and Commerce  
2125 Rayburn House Office Building  
Washington, DC 20515

Ranking Member Cathy McMorris Rodgers  
House Subcommittee on Consumer  
Protection and Commerce  
2322 Rayburn House Office Building  
Washington, DC 20515

Dear Chairwoman Schakowsky and Ranking Member McMorris Rodgers:

In advance of tomorrow's hearing, Uber appreciates the opportunity to offer our views on legislation that will promote the safe development and deployment of self-driving vehicles, and to update the committee on the progress we have made on safety over the last two years. We appreciate the continued leadership of the House Commerce Subcommittee on Consumer Protection and Commerce on these important matters.

Developing self-driving technology is one of the biggest technical challenges of our time. If successful, these vehicles have the potential to make our roads safer and transportation more affordable and accessible for everyone.

We believe that safe development of safe self-driving technology can be further enabled by strong, evidence-based legislative and regulatory frameworks that build trust and confidence in the technology that developers are building. That's why Uber supports Congress advancing legislation to address those issues which are necessary for the development and commercialization of automated vehicles (AVs) featuring high degrees of automation. We believe that such legislation should have three essential components: (1) a framework to ensure that the National Highway Traffic Safety Administration (NHTSA) fulfills its responsibility to modernize safety design standards for AVs; (2) preemption that respects the traditional division between state and federal authorities, and ensures nationwide uniformity in the approach to regulating AV design; and (3) exemptions for safe testing and deployment.

A bill which addresses the issues identified above will not create a permanent regulatory structure or diminish any existing tools available to regulators. Rather, any legislation will serve to create regulatory clarity for the developers of self-driving vehicles during the interim period when NHTSA has not yet modernized the Federal Motor Vehicle Safety Standards (FMVSS) to accommodate self-driving vehicles or related equipment. Such legislation will not diminish NHTSA's existing authorities to remove unsafe vehicles from the road, to promulgate regulations related to the design of autonomous vehicle equipment, or to regulate across an array of safety design issues.

We understand the legitimate concerns and questions about the safety of testing developmental self-driving vehicles on public roads. Uber Advanced Technologies Group

(ATG) remains deeply regretful for the March 2018 crash in which an Uber ATG test vehicle, that was under human supervision, struck and killed a pedestrian in Tempe, Arizona. Since this tragic crash, Uber has worked closely with the National Transportation Safety Board, The National Highway Traffic Safety Administration, and local officials throughout their respective investigations to fully understand the facts surrounding this tragic event. We are committed to continuous improvements and have used the facts from these investigations and other sources to enhance our self-driving program and to share our learnings on safety with the broader industry. Please refer below to an overview of key changes we have implemented since March 2018, including hyperlinks to public resources and page number references to our [Voluntary Safety Self-Assessment](#) (VSSA).

## Operational Changes

- **Revised Operator Roles** - Uber has raised technical competency required, added Commercial Driver's License-level medical fitness requirements, and increased involvement in development process, targeting roughly half of working time out of the vehicle (VSSA, pages 36-37, 41-44, 55-56).
- **Enhanced Operator Training** - Uber has increased training on defensive driving, distracted driving, fatigue, system capabilities and failure modes, and policies ([blog post](#)) (VSSA, pages 41-44).
- **Revised In-Vehicle Staffing** - There are now two Mission Specialists in-vehicle for all testing and has reduced our hours of service limit to four hours behind the wheel in a given workday and two hours without taking a break or switching positions (VSSA, page 36, 55-56).
- **Driver Monitoring System** - We have incorporated a camera system which detects a distracted operator. The system sounds an audible alert in the cabin, and immediately sends a notification to a remote monitoring team for review and action (VSSA, page 56).
- **Public Safety Officials & First Responders' Guide** - Uber published a training tool for public safety officials that may interact with Uber ATG's developmental self-driving vehicles ([blog post](#), [guide](#), [pocket guide](#)).

## Technical Changes

- **Software Improvements** - Uber ATG implemented modifications to reduce system latency, improve detection/tracking of pedestrians and cyclists, and drive more defensively.
- **Automated Emergency Braking** - Volvo's emergency braking system has been modified to enable simultaneous operation with our self-driving technology.
- **Operator Interface** - We've made revisions to touchscreen software that minimizes distraction and introduced an excess speed warning feature during manual driving (VSSA, pages 55-58).
- **Simulation and Track Testing** - Uber formalized and improved the process by which on-road testing is requested and approved, in order to increase the accountability and traceability of every mile we drive (VSSA, pages 46-50).

## Organizational Changes

- **Operational Safety** - A new Operational Safety team has been created within the independent System Safety team, with responsibilities that include Mission Specialist training.
- **Systems Engineering** - A new, separate Systems Engineering and Testing team has been formed and tasked with the adoption of a rigorous systems engineering approach, including new practices for change management and quality management.
- **Safety Concern Reporting** - Uber revamped its anonymous reporting system with non-retaliatory protection as part of our reinvestment in Safety Culture (VSSA, page 53).
- **Voluntary Safety Self-Assessment** - Uber published a detailed VSSA in accordance with guidance from the U.S. National Highway Traffic Safety Administration ([blog post](#), [report](#)).
- **Safety Case Framework** - Uber developed and published an open-sourced framework for our safety case. The safety case framework is an argument that, when coupled with articles of evidence, convinces key stakeholders that the risk of harm from the system has been reduced to an acceptable level ([blog post](#), [framework](#)).
- **Self-Driving Safety and Responsibility Advisory Board** - Uber has established an independent panel of safety experts charged with reviewing and suggesting changes to Uber ATG's self-driving enterprise ([blog post](#)).

While we are proud of our progress, we will never lose sight of what brought us here or our responsibility to continue raising the bar on safety. Over the last two years, we have provided the NTSB with complete access to information about our technology and the developments we have made since the crash. Uber has and will continue to carefully review the NTSB's findings and recommendations, with an eye towards continuing to improve and enhance our safety program and overall safety culture.

Sincerely,



Danielle Burr  
Head of Federal Affairs

CC: Members of the House Subcommittee on Consumer Protection and Commerce