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**House Energy and Commerce Subcommittee on Digital Commerce and Consumer Protection Hearing; “Self-Driving Cars: Road to Deployment”**  
**General Motors Response to Questions for the Record**

**The Honorable Jan Schakowsky**

- 1. We heard at the hearing that a number of companies have already made automatic emergency braking (AEB) standard on all new vehicles. I know a voluntary commitment was made for model year 2022, but is GM working to speed up the roll out? How soon will we see AEB on 100% of GM cars?**

GM supported the industry AEB agreement reached in early 2016 and intends to make AEB standard on nearly all models by September, 2022. In the meantime, GM has continued to make AEB widely available. For example, about half of our 2017 Model U.S. vehicles already offer AEB, including:

- Chevrolet Bolt EV, Volt, Malibu, Impala, Tahoe, and Suburban
- Buick Envision, Regal, and Lacrosse
- Cadillac – all models
- GMC – Acadia and Yukon

For 2018 Model Year, the recently unveiled all-new Chevrolet Equinox and Traverse, and the GMC Terrain also will offer AEB. By 2021 Model Year, AEB will be offered on about 90% of our models.

- 2. What assurances will GM provide before putting AVs on the roads that they are protected from cybersecurity attacks?**

GM has devoted substantial resources to cybersecurity and we will continue to do so. We are taking a multi-layered approach to in-vehicle cybersecurity and are designing vehicle systems so they can be updated with enhanced security measures as potential threats evolve.

We were the first auto manufacturer to create an integrated and dedicated global organization focused on minimizing the risks of unauthorized access to vehicles and customer data. Through GM’s established policy of cybersecurity by design, our Chief Product Cybersecurity Officer has the responsibility for the end-to-end cybersecurity of our vehicles and reports on a regular basis to our CEO and Board of Directors. We have collaborated with experts in the defense and aerospace industries, government organizations, academia and industry consortiums on the development of best practices and key lessons.

GM also applauded the release of NHTSA's Cybersecurity Best Practices in October of last year. GM continues to work with NHTSA in achieving our mutual goals of advancing automotive cybersecurity through the implementation of best practices.

We also fully support the Auto Information Sharing and Analysis Center (Auto ISAC), which identifies trends and common cyber threats and supports the industry's ongoing efforts to safeguard vehicle electronic systems and networks. The Auto ISAC's membership represents 99% of cars on the road in North America and has recently opened membership to commercial vehicles. Many major auto suppliers, including major telecommunications providers, have joined the Auto ISAC. GM's Chief Product Cybersecurity Officer is the Vice Chairman of the Auto ISAC Executive Committee.

- 3. There is a lot of interest in expanding NHTSA's authority to grant exemptions from FMVSSs. Does GM support public notice and comment period when automakers request an exemption or should NHTSA be allowed to make these determinations without public input? If GM does not support notice and comment, why?**

GM supports the concept of providing the Department of Transportation with authority to grant specific exemptions to FMVSS for self-driving vehicles. As you may know, NHTSA's current exemption process requires a notice to be published in the Federal Register for public comment. Once there is an entire exemption proposal for self-driving vehicles to review, GM will provide a perspective on any particular aspect such as a public notice and comment period.

- 4. It has been widely reported that autonomous commercial motor vehicles could precede autonomous cars in widespread distribution. Will GM be selling AV trucks? If yes, when will this begin? What assurances will GM provide to the motoring public that AV trucks are safe?**

GM does not currently manufacture commercial motor vehicles and has no immediate plans to manufacture self-driving commercial motor vehicles.

- 5. There has been a lot of discussion about the importance of data sharing among the companies, with NHTSA, and with the public. I understand the sensitivity around sharing certain company data, and I know that no company wants proprietary information revealed to its competitors.**
  - a. Assuming confidential business information is adequately protected and that only relevant safety information is shared, does GM agree that more data sharing would help improve self-driving cars and lead to quicker deployment? Does GM agree that the public needs more information to know self-driving cars are safe?**

Under the proper circumstances and conditions, we believe data sharing can help to advance autonomous vehicle technology. We also agree that it is important to educate the public on the safety attributes for autonomous vehicles. This is one reason why GM supports controlled ride sharing projects where the public can experience autonomous vehicle technology in a safe and

structured environment. This real world experience and the data that it generates can help to move the technology forward.

- b. Please list the types of information that GM is willing to share and types of information GM is not willing to share? And detail with whom GM is prepared to share that information, such as other companies, NHTSA, or the public.**

At this juncture, third party data sharing (and related specifics) would take place on a case-by-case basis as we continue to study business and consumer privacy implications. Autonomous vehicles generate a tremendous amount of highly complex data, much of which is either confidential or not helpful to advance the technology. We will continue to work collaboratively on these matters with industry and NHTSA as this technology evolves.

- 6. Some have expressed concern that testing through miles of driving may not adequately represent all real driving conditions, e.g., that such testing is occurring on open highways and not necessarily in city conditions. Please list how many miles GM autonomous vehicles have been tested and under what conditions such testing has occurred.**

GM is testing a fleet of over 50 vehicles in San Francisco, California; Scottsdale, Arizona; and in the metro Detroit area. Our test fleet is accumulating significant miles under many different real world conditions every day. GM also publicly discloses miles tested and corresponding disengagements on California roadways. See GM/Cruise's DMV Autonomous Vehicle Disengagement Report available at [https://www.dmv.ca.gov/portal/dmv/detail/vr/autonomous/disengagement\\_report\\_2016](https://www.dmv.ca.gov/portal/dmv/detail/vr/autonomous/disengagement_report_2016)

- 7. There has been discussion of level 4 AVs being rolled out as ridesharing fleets before being sold to individuals. How does GM plan to educate ridesharing passengers on what to do should a problem occur with those vehicles?**

GM will develop appropriate plans to provide information to its ridesharing passengers before the public is allowed access to its self-driving vehicles.

- 8. Some automakers have committed to accepting liability for accidents involving self-driving vehicles. Is GM considering this model and if so, would GM accept that liability for level 4 vehicles and above?**

The laws and principles of liability related to automotive products generally are well developed and applicable to new products as well as old ones.

### **The Honorable Tony Cardenas**

- 1. California has been a pioneer and leader in technology for many years. More recently, Southern California and Los Angeles have been home to rapid growth in an exciting technology industry. Of course, as policymakers, part of our jobs is to make sure that our laws don't fall too far behind. It's definitely easier said than**

**done. Given that, I am encouraged by the conversation, and hope that we can continue to explore this in a bipartisan way, with the collaboration of industry.**

- a. We know concerns have been raised with a situation in which 50 states develop 50 different ways of addressing autonomous vehicles. When exploring the development of a federal standard, what within the California standards developed over the past few years has worked well? How has California being at the forefront contributed to AV development?**

GM and Cruise Automation have been testing in California since mid-2016. The testing application and reporting requirements have allowed companies that are testing in California the flexibility to innovate and to gain experience in real world situations. This has contributed to AV development. We are also encouraged by the California Department of Motor Vehicles' proposed regulations released on March 10, 2017 and will be providing comments to those proposals. The proposed regulations provide a path for driverless testing and deployment, which is an important step to realizing the technology's tremendous safety potential.

- 2. As technologies evolve, our workforce also evolves. I've heard some really interesting ideas from companies about how they're thinking about addressing this issue when it come to our workers.**

- a. Has GM studied the possible effects of mass deployment of autonomous vehicles on transportation jobs? If so, are there any initiatives that are being developed to ensure our workforce doesn't get left behind?**

Potential loss of employment is something that will have to be studied as this technology progresses. Job creation is an important issue for GM. This is evidenced by our recent announcement of \$1 billion of manufacturing investment in the U.S. We are also looking for ways to promote STEM education in the United States, which is critical to our business. We see job growth opportunities in AVs as well. In fact, at GM we have observed that demand for talent in automation exceeds the supply. This includes automation focused jobs that need to be filled today, and also jobs that will be created in the future.