

Full Committee Hearing  
“Paving the Way for Self-Driving Vehicles”  
Senate Committee on Commerce, Science, and Transportation  
Written Questions for the Record from Senator Ron Johnson to Mr. John Maddox

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*Question 1.* A recent Deloitte research paper illustrates how the transportation industry is leveraging the wireless platform to innovate and grow. According to this paper, wirelessly connected self-driving cars could reduce travel times by nearly 40% and delays by 20%, annually generating \$447 billion in savings and saving 21,700 lives. Can you describe the American Center for Mobility’s work with wireless providers to speed up the delivery of self-driving vehicles?

Answer:

Our current transportation system is comprised of people, vehicles, and roads (infrastructure). The American Center for Mobility (ACM) is convinced that modern communications networks will make up a critical and necessary component of our future transportation system, right alongside people, vehicle, and roads. This modern transportation communications network will enable the rapid distribution and collection of data, forming a data backbone which will create the possibility for a systems-approach for the efficient flow of people and goods.

Highly Automated Vehicles (HAVs) will rely heavily on this data backbone. HAV technology is critical to a future transportation system that continues to support our national economy, and deployment of these communications and vehicle technologies will help ensure our continued international economic competitiveness.

ACM is creating a national-scale proving ground for the future of transportation where these future transportation products and services can be tested, verified, and validated. In addition to testing for vehicles and roads, ACM is building a facility for critical testing and development of the communications systems that will form this data backbone.

ACM is collaborating with AT&T, and other companies who will be announced at a later date, to design, build, and operate a dedicated network so that manufacturers, developers, service providers, government bodies, and other stakeholders can rapidly develop and deploy beneficial transportation technologies in a collaborative fashion. This dedicated network will include, among other technologies, 4G/LTE cellular, Dedicated Short Range Communication (DSRC), wi-fi, cloud services, edge computing, and 5G when it is ready.

We anticipate that this transportation communications testing capability will be in high-demand and will enable the very rapid development of Connected and Automated Vehicle technology.

*Question 2.* As more connected and autonomous vehicles hit the road, they will need to “talk” to each other and everything around them in a secure manner to realize the full potential of the technology. There will be an enormous growth in data as vehicles and surrounding infrastructure become connected. How is the American Center for Mobility working with the wireless industry

to ensure that the wireless infrastructure exists to handle the vast amounts of data needs that will come with autonomous vehicles?

Answer:

The American Center for Mobility (ACM) is convinced that a modern communications network is a required component of our future transportation system to enable needed data systems. Highly Automated Vehicles (HAVs) present both challenges and opportunities regarding data and data sharing, as the vehicles themselves require that a large amount of data and information be sensed, acquired, amalgamated, analyzed for rapid decision-making, and acted upon through control decisions and operational monitoring. However, the processing, distribution, and eventual storage of these extremely large amounts of data is itself a significant challenge. It is highly unlikely that it will be practical to transfer and store all of the data from thousands, much less hundreds of thousands, of vehicles throughout the vehicle lifetime. Therefore, data selection and harvesting processes must be developed.

ACM is working with telecom, automotive, cybersecurity, computing, simulation, and infrastructure industry partners to create a model communications system whereby they can test, develop, verify, and validate their key technology and offerings.

We are also focused on partnering with key Standards Development Organizations (SDOs) to rapidly create, publish, and update critical voluntary standards around communications systems, as well as the vehicle and roads themselves. It is critical that we begin and accelerate the work to establish these voluntary standards to support the deployment on this technology and to help ensure our continued international economic competitiveness.