AUTO ALLIANCE
DRIVING INNOVATION®

STATEMENT

OF

THE ALLIANCE OF AUTOMOBILE MANUFACTURERS

BEFORE THE:

SENATE COMMERCE, SCIENCE AND TRANSPORTATION COMMITTEE

MAY 15, 2013

PRESENTED BY:

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President and CEO

On behalf of the twelve automakers who are members of the Alliance of Automobile Manufacturers (Alliance)[1], thank you for this opportunity to testify today on our successes in enhancing vehicle safety and the promise of emerging technologies for the future of mobility.

For more than a century, innovation in automotive mobility has been our guidepost, producing technological advances leading to safer, cleaner, more energy-efficient cars and light trucks.

Now, looking down the road, personal transportation is poised to undergo revolutionary change, as dramatic as the introduction of the first cars on our roads. Those first vehicles changed society by connecting people to markets, to health care, and to schools.

Before us lies the potential to dramatically reshape the driving experience and redesign the whole concept of personal mobility through the combination of sensor-based safety systems, intelligent driving, driving assist systems and communications-based connected vehicle technologies.

The vision for the future is nothing less than amazing. New technologies and systems will continue to provide enhanced safety benefits, reduce environmental impacts, reduce congestion and improve our quality of life in countless ways.

A review of the road already traveled demonstrates how much road safety progress has already been achieved.

Historically, automakers have focused on engineering vehicles to enhance occupant protection in the event of a crash. Today, automobiles have a range of airbags – front, rear, side and even curtains – as well as a long list of safety enhancements, from structural reinforcements to the passenger compartment to advanced safety belts. Many of these advances were designed and introduced by the auto industry voluntarily, without any government mandate.

Our progress was recognized by the Centers for Disease Control and Prevention, where experts described the results of automotive safety advancements as one of the ten "Great Public Health Achievements" of the 20th century.

And we are continuing to see progress in this century. In 2011, the number of traffic fatalities was over 25% lower than in 2005. Moreover, the fatality rate per 100 million vehicle miles traveled showed a similar decline since the beginning of the 21st century. However, a preliminary statistical projection by NHTSA estimates that over 34 thousand fatalities occurred in motor vehicle traffic crashes in 2012 – an increase of 5% compared to 2011. So, there is more work to do.

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[1] Alliance members include BMW Group, Chrysler Group LLC, Ford Motor Company, General Motors, Jaguar Land Rover, Mazda, Mercedes-Benz, Mitsubishi Motors, Porsche, Toyota, Volkswagen Group of America and Volvo. Alliance members account for roughly three quarters of all vehicles sold in the U.S. each year.

What are some of the principle challenges to road safety today?

During the period 1997 to 2011, motorcycle deaths have more than doubled, from about 2,000 to around 4,600, while overall traffic fatalities fell in the same period by 23 percent. It now appears motorcycle deaths may exceed 5,000 in 2012, accounting for over 14 percent of all traffic fatalities. More must be done.

Despite our many efforts, about 1 in 7 Americans still is not buckling up. In recent years, about half of the passenger vehicle occupant fatalities were unbelted. NHTSA estimates that safety belts saved nearly 12,000 lives in 2011. The agency further estimates that increasing safety belt usage to 100% would save more than 3,000 lives each year. Many automakers are installing seat belt reminder systems to encourage drivers and passengers alike to buckle up.

Driver error is an overarching challenge to making our roads safer. NHTSA estimates that driver error is involved in more than 90% of crashes.

Impairment is a leading cause of driver error. Eliminating impaired driving would reduce by one-third the number of people who die on our roads each year. The Alliance supports requiring alcohol interlock devices for convicted drunk drivers. In addition, for the past five years, Alliance members have been working in partnership with NHTSA to research advanced in-vehicle technology called "DADSS" – technology that holds promise to help eliminate drunk driving one day. The Alliance appreciates the leadership role taken by this Committee last year in continuing to fund this critical research during the reauthorization of surface transportation.

Novice drivers are another source of driver error. Novice drivers generally tend to make more mistakes than experienced drivers. New driver education and training can help minimize the risk. We know motor vehicle crashes are the number one cause of death and injury among youth in this country, which is why the industry has invested in novice driving programs and technologies that help new drivers gain more experience and training behind the wheel.

The future of vehicle safety has expanded into "crash avoidance" technologies that help prevent or mitigate crashes. Crash avoidance, or "driver assist," technologies employ sophisticated software to interpret data from sensors, cameras, or radar-based technologies that allow vehicles to sense the environment around them and assist drivers to become aware of impending dangers, or in some cases may take over for drivers to help prevent or mitigate accidents.

There are about twenty different "driver-assist technologies" available already on today's vehicles, with more coming. You can see them in action on our YouTube channel at www.YouTube/DriverAssists.

What do we mean by driver-assist technologies?

Intervention technologies include electronic stability control and anti-lock brakes that help keep the vehicle under control without engagement by the driver. These two technologies are present in virtually every new passenger car sold in America. In addition to these systems,

new technologies are being introduced to assist drivers to avoid or mitigate crashes in emergency situations, such as crash imminent braking and dynamic brake support. According to recent data compiled by the Highway Loss Data Institute, vehicles that brake automatically may offer significant safety benefits. Their drivers file 15% fewer property damage claims. They are 16% less likely to file claims for accidents involving property damage. And, their owners are 33% less likely to file claims for crash injuries than the average owners of similar vehicles.

Warning technologies provide alerts to assist the driver, such as blind spot warnings, lane departure warnings, cross traffic alerts, and forward collision warnings. All of these systems provide drivers with additional information to help them take corrective action to avoid the risk of a crash. However, the driver has the means to operate the vehicle safely without these features.

Driver Assistance technologies include lane keeping systems, adaptive cruise control, and automatic high beams. Drivers decide when to activate these systems, which then may assist the driver during routine driving tasks, provided road and environmental conditions permit.

This year, consumers will be able to visit dealer showrooms to see "gee whiz" technologies such as adaptive cruise control with automatic braking and lane centering. This illustrates a beginning stage in the development of future automated vehicles, which can actively control or position their distance from other surrounding vehicles.

As we move into the future, developing infrastructure and vehicles that communicate with each other has the potential to be a game changer for road safety. According to NHTSA, connected vehicle technology could potentially benefit approximately 80% of crash scenarios involving non–impaired drivers. That is why both automakers and the government are investing hundreds of millions of dollars in research, development and testing of connected vehicle technology. Connected vehicles may help to enhance or enable a host of critical crash-avoidance technologies.

The phrase "connected car" has become a bit of a catchall and means different things to different people.

For some, connectivity in the car is about eliminating the gap in access to people or information that occurs when commuting between point A and point B. In our digital world today, drivers and their passengers want to be seamlessly connected to the web and all its functionality, including social media, communications, music, navigation and a range of transportation-related content. They want to be as connected in the car as they are everywhere else.

For others, connectivity in the car is about reducing the potential of crashes by getting information on real-time risk factors outside the vision of the driver – or the electronic eyes of the car. This connectivity refers to the exchange of information either among vehicles – called V to V – or information between vehicles and infrastructure – commonly referred to as V to I.

Automakers view safety, mobility, environment, and road travel convenience applications and functions to be within the connected vehicle scope. Automakers consider other applications connecting people to people and people to businesses as telematics functions.

Whether among cars or with infrastructure, the potential of connected vehicles is mind-boggling. Cars may have the potential to sense if black ice is on the road, if bridges are iced over, or if a crash has occurred on the road ahead – all before the driver can detect the impending challenge. With connectivity, the driver can be alerted to take precautionary measures – and the car itself may be able to use connected vehicle data, in combination with other vehicle sensor data, to perform a range of anticipatory countermeasures like precautionary braking or seat belt tensioning to address the looming risk. Or the car may be able to direct the driver to an alternate roadway to avoid the situation entirely.

The future of driving safety is very bright, and with the right public policies put in place to support connectivity and the replacement cycle, working together industry and government can support the goal of increasingly safe mobility. Getting there will require many pieces of a large puzzle to fit together in addition to technological advancements: consumer acceptance, achieving critical mass to enable the "network effect," and establishment of the necessary legal, regulatory framework and other policy issues. We can get there from here.

Surveys of consumers' attitudes involving advanced technologies and automated vehicles conducted for the Alliance indicate that a majority (59%) believe that technological innovations such as driver assist technologies are making cars safer. However, consumers are currently dubious of "self driving" cars with only 33% indicating that such cars are a good idea, 42% responding they are a bad idea, and 24% unsure. Building consumer trust is critical. Drivers are unlikely to cede control of their cars unless they are convinced that automated technology is safe and reliable.

To realize the benefits of connected vehicle technologies, a large network of vehicles equipped with these technologies, or at least capable of working within this network, is needed. An aftermarket system that consumers value, could help to speed establishment of a critical mass of connected vehicles. Establishment of corridors of connected operation may be another means for achieving critical mass where it is most needed, in densely populated urban areas. Finally, greater autonomy of operation dictates greater cooperation among vehicles.

Consideration needs to be given to the needed legislative and regulatory framework needed to spur development and adoption of advanced technologies. A patchwork of state laws will negatively impact the speed and trajectory of the technologies adopted. Federal leadership is needed to establish a single, long–term national vision for personal transportation in the future. However, care must be exercised to ensure that development is facilitated – not frustrated – while also ensuring that the appropriate performance criteria are established.

Finally, perhaps the most challenging is the resolution of a litany of complex legal issues that are associated with cars and trucks capable of operating with increasing levels of automation. These include insurance underwriting and liability issues. A greater portion of liability may shift from individual vehicle operators and actors to manufacturers and

infrastructure providers (federal and state). The question of who is responsible when, for what, will need to be addressed.

We are pleased with the great vision of this Committee in focusing today on the future. Like you, we share the goal of ensuring the public policy pillars necessary to achieve the full safety value of connectivity and other technological advances be identified and protected.

We believe five pillars of policy are central to maximizing safety through technology in the future are: 1) protect the spectrum; 2) invest in infrastructure; 3) ensure consumer acceptance; 4) maintain vehicle affordability; and 5) preserve technology neutrality.

Protect the spectrum: The first pillar is ensuring that the radio frequency spectrum now dedicated to V-to-V and V-to-I – the 5.9 GHz band – remains solely dedicated to auto communications technologies. When vehicles are driving at highway speeds, communications must occur virtually instantaneously, without delay and without interference. The FCC is now considering whether to open this portion of the spectrum for use by unlicensed wireless devices. While we understand the potential benefits of expanding wireless access, regulators must be certain that unlicensed users would not compromise the integrity of this vital safety initiative. The FCC should maintain the spectrum for safety critical systems until thorough testing is completed and all parties are certain that the spectrum remains reliable and secure for its primary V-to-V and V-to-I purpose, and can be shared without interference.

Invest in infrastructure: The second pillar is building out the infrastructure for the V-to-I component of connectivity. Surely this will be a gradual process, but we need the vision and motivation to begin planning today. As is the case with a range of technologies, such as alternative powertrains for environmental gains, infrastructure investment is essential to achieving the maximum safety benefit and inducing buyers to purchase the V-to-I communications functionality.

Ensure consumer acceptance: The third pillar is proactively addressing consumer acceptance by addressing in advance of deployment potential public concerns. If the advent of connected vehicle technology exposes drivers and owners of equipped vehicles to loss of privacy, security breaches, and/or increased legal liability in the form of automated law enforcement, we will not realize the many benefits that might otherwise be gained by its widespread deployment. Similarly, connected and automated vehicle systems entail interactive technologies for which successful outcomes depend not only on drivers' correct response to alerts and information, but on multiple entities in both the public and private sectors correctly and consistently performing their respective portions of the connected enterprise. This creates new and unprecedented challenges that will need up-front policy consideration.

Maintain vehicle affordability: The fourth pillar is keeping cars and light trucks as affordable as possible by leveraging market forces and utilizing a data-driven approach to regulation if and when needed. The best technology in the world can only help if families are able to replace their old cars with new vehicles. Today, the average age of a car is 11 years old, and we only replace about 6% of the U.S. car park every year. When the safety (and environmental) benefits of new cars relative to old cars are sizeable, the public policy imperative

must be to avoid the temptation to mandate and instead facilitate choices by families in the marketplace. Policies that discourage the purchase of new technologies should be avoided – as a matter of public policy, we need to encourage the "virtuous cycle of new car ownership."

Preserve technology neutrality: The fifth pillar is supporting a comprehensive approach to in-vehicle technologies. Decisions made today can produce dramatic repercussions tomorrow. We all recognize the challenge of distracted driving and how that challenge has grown as connectivity has found its way into cars, primarily through smartphones. The recently issued NHTSA guidelines on distraction are a case in point. In this instance, government policy calls for restrictions in functionality of in-vehicle systems without corresponding functionality limitations in portable devices. As a result, government policy will likely chill innovation and bias drivers toward the use of handheld devices, rather than integrating devices with in-vehicle systems. So, if a driver looking for live NAV guidance is blocked from doing so while his car is in motion, he may predictably pull out his smartphone, fiddle with the keys while looking down, and retrieve the desired mapping guidance. That's the real world and as much as we might want to wish that away, a policy that isn't comprehensive across technologies and devices and responsive to consumer needs is a policy that will produce unintended and undesirable consequences.

Successful policy will recognize behavioral realities. We have studied smartphone utilization in cars and found younger drivers are especially resistant to abandoning connectivity while driving. Attempts to modify behavior are unlikely to succeed. Rather, NHTSA has it right when it says that the number one goal in distraction policy should be to encourage drivers to connect their phones to the built-in systems which can be controlled by voice and help drivers keep their eyes on the road and their hands on the wheel.

The issues before us are complex. Even the Department of Transportation (DOT) is struggling with information in cars. Under the 511 program funded by DOT and administered by the states, real-time traffic video and tweets are available to drivers to avoid road congestion. That's a good thing. But it also threatens to violate the new distraction guidelines by urging drivers to use smartphones on the road. So, the government is literally driving smartphone use in cars in one program, while castigating their use in another.

The point is not to criticize government. The disconnect within the DOT reveals the complexity of the challenge of managing information in the driving context. As the connected car becomes a reality, we should view information not as a distraction but as a critical foundation to safety technology, especially as driver-assist technologies mature.

NHTSA has regulatory authority over OEMs. The agency believes it has regulatory authority over personal electronic device (PED) manufacturers, software developers and carriers when their technologies are used in cars, although this authority has not been tested. Regardless of the scope of its regulatory authority, it makes sense for NHTSA to bring all the stakeholders together to forge a new set of voluntary guidelines that are neutral across technologies, provide consumers with the functionality they demand and move behavior away from PEDs and to in-vehicle systems that help keep the driver's eyes on the road and hands on the wheel.

We are living in an extraordinary moment in the history of mobility. Over the next decade, automakers will put about a billion new cars on the roads around the world – about 150 million of them in the U.S. However, it is important to understand that, given the size of the in-use fleet and the longer life cycles of today's vehicles, roughly half of the cars that will be on the road in 2025 have already been sold and put into service. Thus, deployment throughout the fleet will be relatively gradual even though technology improvements may be rapid. And that suggests that the fleet mix of the in-use fleet will reflect a wide range of driver-assist technologies and connectivity for years to come.

Now, just for a second, ponder the implications of cars that rarely crash. More lives will be saved. Congestion caused by crashes will become far less frequent. Fuel requirements will drop as traffic flows more quickly – and cars become lighter. Additionally, insurance rates will fall with the reduced incidence of fender benders and crashes. Working together, we can make this vision reality.

Many thanks for this chance to share our perspective.