Testimony of
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U.S. Senate Committee on Commerce, Science, and Transportation Hearing
"The Road Ahead: Advanced Vehicle Technology and Its Implications"
May 15, 2013

Thank you Chairman Rockefeller, Ranking Member Thune and members of the Senate Commerce Committee for the opportunity to testify before you today on behalf of Delphi Automotive.

My name is Jeff Owens, and I am Chief Technology Officer and Executive Vice President for Delphi Automotive. I am responsible for Delphi's innovation strategies as well as leading development of the company's advanced technologies focused on Safe, Green, and Connected societal megatrends.

As a leading global supplier of electronics and technologies for automotive, commercial vehicle and other market segments, we invest approximately $1.6 billion annually into research and development initiatives. In the U.S., Delphi operates major manufacturing facilities, technical centers, and administrative facilities in Michigan, Mississippi, Indiana and New York that employ approximately 5,000 people. Delphi's technology portfolio places us at the center of vehicle evolution and innovation, making products smarter and safer as well as more powerful and efficient.

Given our proven expertise with market-leading original equipment manufacturers (OEMs) around the world and our broad automotive systems capabilities, we welcome the invitation to testify at this important hearing on Advanced Vehicle Technology and its Implications.

This is an amazing time to be in the automotive space. As a Tier 1 vehicle technology supplier, we work closely with our customers, automotive companies, to develop capabilities in vehicles demanded by consumers. This effort has linked Delphi with many mobile technology suppliers. In addition, Delphi works with thousands of suppliers, who provide raw materials and components for our increasingly complex and sophisticated components and systems. All of this is accomplished in a compressed timeframe from conception to market. Delphi and the automotive supply industry has adapted to this innovation challenge by focusing on our customers' needs by offering relevant solutions. It is becoming increasingly important, however, that consumers have ready access to the most current information on the attributes that make a vehicle safe.

Delphi identified the megatrends of ***Safe, Green and Connected*** as the issues that would be most relevant to today's drivers and particularly our OEM customers. Today's focus is narrowed to two of those three measures, ***Safe and Connected***. We would be happy to address global megatrends related to clean and efficient powertrain (Green) at a future time.

Right now, we are witnessing a convergence of issues. Consumers are increasingly demanding to be connected in their vehicle, while regulators are demanding that they connect safely. I would like to take time this morning to briefly outline for you how Delphi is developing advanced technologies to address these megatrends and what it means for the future of our roadways. I think you will see there are technologies that will virtually change the automotive landscape.

I'll begin with **Safe**.

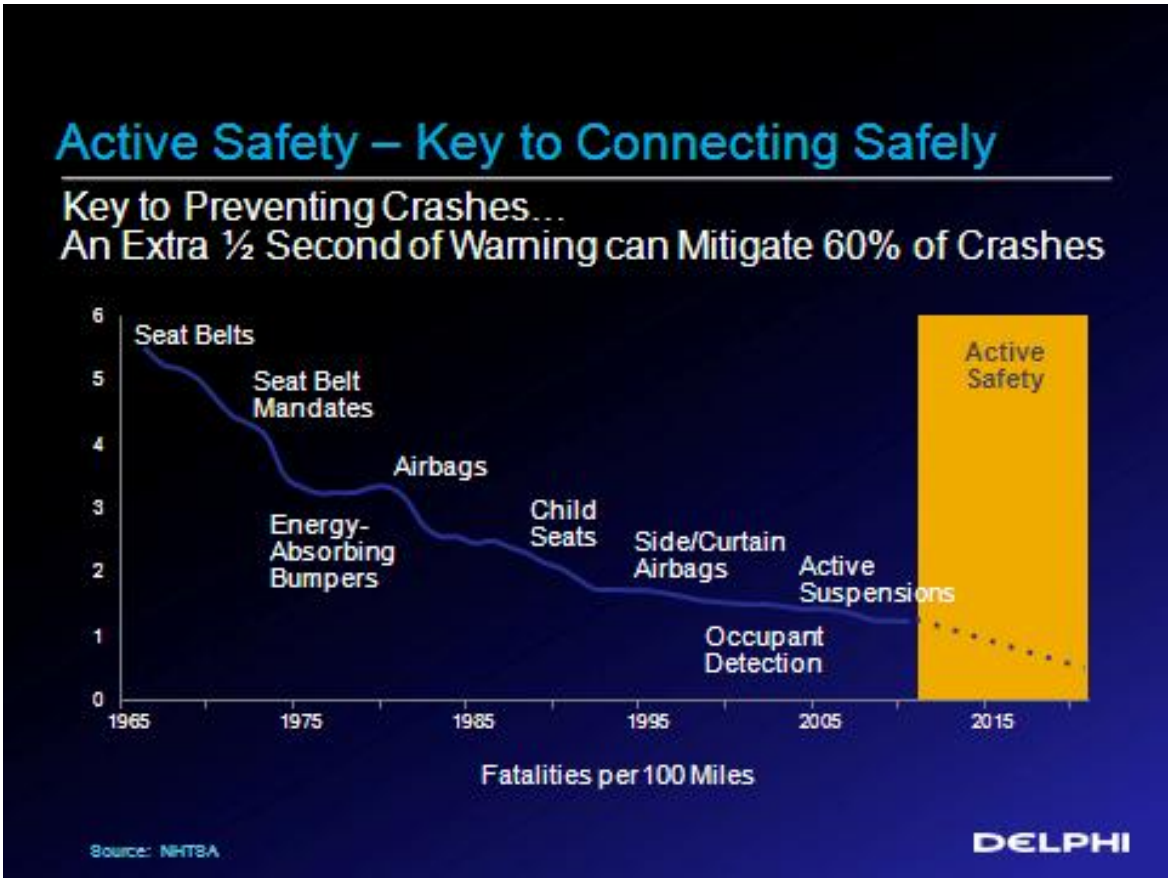
Every 30 seconds, there is a vehicular fatality somewhere in the world. That equates to 1.2 million people who die worldwide each year. It's a tragedy, and can be prevented. According to the World Health Organization, traffic injuries are projected to be the fifth leading cause of death worldwide by 2030 – surpassing HIV/AIDS, cancer, violence and diabetes. The impact is not just on lives lost, but on our global

economy. Here in the United States, vehicle fatalities have declined with the use and widespread adoption of passive safety technologies such as seatbelts and airbags. However, progress toward further fatality and injury reduction has stalled, allowing over 33,000 fatalities annually in the US, and more than 200,000 serious injuries each year on our roadways. Additionally, vehicular crashes continue to be the number one cause of fatalities for people ages 4 to 34, with over 90 percent of accidents caused by driver error. The financial impact is also staggering, with one study estimating the total annual cost of road crashes in the United States alone to be over $231 billion.

Although passive safety technologies like seat belts have helped more people survive crashes, we firmly believe that the new frontier of safety is to prevent accidents before they happen with Active Safety technologies, and we have worked hard to lead the way in this area.

Passive and Active Safety

Delphi is a leading global supplier of passive safety equipment as well as Active Safety technologies that can sense the environment outside the vehicle and inform the driver of imminent threats. Passive safety has resulted in significant reductions in injuries and death on U.S. roads. Delphi is proud to have been a pioneer in these products, including seat belts, airbags, energy absorbing bumpers, active suspension and occupant detection systems, to name a few.



The devices on today's vehicles, however, include radars, cameras, and other sensors that can provide a full 360 degrees of sensing coverage around the vehicle. In addition to warning the driver of potential accidents, Active Safety systems can also react when drivers cannot, applying vehicle braking or steering automatically to help avoid or reduce the severity of accidents.

Active Safety technologies are the key to reducing accidents, injuries, and fatalities on our roadways. Government and industry groups have studied the benefit potential for these technologies for well over a

decade. In particular, a recent study by the Insurance Institute for Highway Safety (IIHS) states a 31 percent reduction in fatalities is possible with full deployment of Active Safety systems across the vehicle fleet, namely, Forward Collision Warning with Collision Imminent Braking, Lane Departure Warning, and Blind Spot Detection. This reduction amounts to a potential savings of over 11,000 U.S. lives per year.

As we discussed, the driving public is very interested in buying cars with improved safety features. There are numerous technologies currently available, but it is relatively difficult for consumers to decipher the value of various safety technologies. One of the best consumer tools is the New Car Assessment Program, or NCAP – which includes the star rating system on all new vehicle window stickers.

Unfortunately, NCAP is currently not structured to accommodate active safety vehicle options. That is why Delphi is recommending to the Committee and to NHTSA that the U.S. amend the NCAP to require star ratings for active safety collision avoidance technology to be incorporated into the window sticker in the future. These are mature technologies that have been on the road since 1999 and are ready to deploy in high volume, resulting in greater consumer awareness and choice, and a reduction in accidents and fatalities. Many of these technologies are commercially available, but relatively few vehicles are equipped with the technology. At the current rate of acceptance, it is estimated that active safety technologies will not significantly impact crash statistics for 20 years.

Enacting an NCAP star rating for active safety by 2015 would help save lives on the nation's roadways. Focusing on Collision Imminent Braking (CIB) and Lane Departure Warning (LDW), at least for initial ratings will help drive consumer awareness and choice as well as enable technology for future autonomous vehicles. Accelerating the development and deployment of these technologies is key to preventing accidents, reducing injuries, reducing health care costs, addressing driver distraction and ultimately saving lives. I don't envy the job that NHTSA has to keep pace with this dynamic marketplace. But it's critical that they focus on the active safety technologies that have the most potential to reduce fatalities on our nation's roadways, including forward collision warning with collision imminent braking, lane departure warning, and blind spot detection.

There is no need to mandate measures or choose technology winners and losers. The best path is to provide consumers with information in a form that they can use and to which the market will respond. And the sooner we provide these choices, the sooner we experience lower fatality rates on our nation's roadways.

Connected

Today, there are one billion smartphone users globally. That translates into more consumers demanding to stay connected, even in their vehicles. Not only are consumers buying more smartphones, they are also accessing more content – via Twitter, Facebook, Instagram. Consider this: Facebook hit 1 billion users last year – 70 percent of whom access their account from a mobile device!

Certainly there are situations where connectivity has been proven to save lives. Emergency alerts, automatic 911, even global positioning systems (or GPS) make driving and drivers safer. This trend will likely continue as technology becomes more mainstream, allowing motorists to communicate with roads to improve traffic flow and navigation.

But with opportunities for distraction increasing, the convergence of connectivity and Active Safety technology is critical to allow safe connectivity, keeping drivers'

- Eyes on the road
- Hands on the wheel, and
- Mind on the mission - the mission of driving safely

Delphi's industry-first, integrated Radar and Camera System (or RACam) combines radar sensing, vision sensing and data fusion in a single sophisticated module. Similarly, Delphi's Rear and Side Detection System (RSDS) helps make drivers aware of approaching vehicles when changing lanes or making turns. By providing an alert when a vehicle has entered a blind spot to the rear or side of the vehicle, RSDS helps give drivers more time to react to obstacles that may be difficult to see in the side mirror. Our

Active Safety human-machine interface (HMI) helps keep drivers connected to the information they consider important while helping to mitigate driver distraction.

In conclusion, we are at a critical point in the vehicle technology industry. 24/7 connectivity is prominent and happening all around us. Market studies indicate that consumers will pay for connectivity – and will pay to use it safely. These dynamics have significant potential to impact the way we move about on America's roads every day. At Delphi, we firmly believe that first step, the foundation for safe connectivity, is the robust deployment of active safety technologies.

Delphi believes that Active Safety technologies hold great promise. And that's why we have invested heavily in engineering and technology research. We stand ready to assist this Committee as you forge the road ahead in advanced transportation technology, and I'll be happy to answer your questions.

Again, thank you for the opportunity to address the committee.

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