ITS AMERICA

Testimony of

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The Future of Surface Transportation

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Chairman Bucshon, Ranking Member Lipinski, and members of this Subcommittee, thank you for inviting me to testify about the future of surface transportation and the R&D efforts underway that will drive this nation to developing a fully modernized, 21st century transportation system.

The Intelligent Transportation Society of America (ITS America) is the nation's largest association bringing together the transportation, technology and research communities to advance solutions to our nation's infrastructure, safety and mobility challenges. About half of our nearly 500 members are public agencies, universities and research labs. The other half are private sector companies, from the major automakers, high-tech, telecom, tolling and infrastructure firms to small businesses, start-ups and entrepreneurs.

Intelligent Transportation Systems (ITS) represent the future of surface transportation, encompassing a broad range of information and communications technologies that are and will

continue improving transportation safety, efficiency, convenience and system performance. When integrated into the nation's roadways, vehicles, and public transit networks, ITS reduces congestion, improves mobility, saves lives and optimizes existing infrastructure. Examples of ITS include advanced traffic, freight, and incident management systems; synchronized and adaptive traffic signals; electronic tolling and payment systems; real-time traffic, transit, routing and parking information; collision avoidance and response technologies; vehicle-to-vehicle communications, automated vehicle systems, high-occupancy toll (HOT) lanes; dynamic carsharing and ridesharing; infrastructure condition assessment technologies; and many other high-tech solutions.

It is widely accepted that a transportation system which enables the efficient movement of goods and people is necessary for economic growth. Inventory deliveries, shipments to customers and a ready workforce all benefit from a predictable and free-flowing transportation system. In the future, ITS will build upon these efficiencies using real-time traffic data to reduce congestion via integrated corridor management, real-time incident and emergency response systems, traveler information systems, traffic signal optimization, electronic truck inspections, and even simple things like ramp meters. In addition, this same real-time data is being used by private sector innovators to give today's commuters better information about current traffic conditions, more efficient routing alternatives, public transportation options and even available car and truck parking spaces.

Moreover, researchers from the Information Technology and Innovation Foundation (ITIF) and the London School of Economics have found that investing in ITS creates a network effect throughout the economy and stimulates job creation across multiple sectors, including the high-tech, automotive, information technology, consumer electronics, and related industries. The use of ITS

technologies is estimated to provide a 9-to-1 benefit-cost ratio on average as compared to an estimated 2.7-to-1 benefit-cost ratio for the addition of conventional highway capacity.

Connected Vehicle Technology and the Importance of R&D

You may have seen the U.S. Department of Transportation's announcement in February about moving ahead toward deployment of vehicle-to-vehicle (V2V) communications technology which is expected to prevent or reduce the impact of up to 80 percent of unimpaired crash scenarios. This was a major milestone in the future of vehicular safety and traffic congestion relief that was a direct result from the years of research and testing of V2V technology by the ITS Joint Program Office (ITS JPO) within the U.S. Department of Transportation. The data resulting from field operational testing of connected vehicle technology in Ann Arbor, Michigan, which was performed through a joint collaboration by the ITS JPO, the University of Michigan Transportation Research Institute (UMTRI) and major automakers, underpinned the National Highway Transportation Safety Administration's (NHTSA) decision to move ahead towardV2V technology deployment.

Connected vehicle technology truly represents the next giant leap for vehicle and highway safety. Historically, the auto industry has focused its safety efforts on mitigating the impacts of a crash after it happens. V2V technologies will sharply reduce the number of fatalities and injuries on our nation's roads by preventing crashes before they happen. A recent NHTSA study found the estimated impact from vehicle crashes to be $871 billion, reflecting $277 billion in economic costs and $594 billion from the fatalities and injuries caused by crashes.

3

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V2V communications will also have a direct impact on reducing congestion on our roadways. According to the Texas A&M Transportation Institute's latest Urban Mobility Report, the financial cost of congestion is more than $120 billion each year, wasting nearly 5.5 billion hours and $3 billion gallons of gasoline, causing the average commuter to spend almost a full work week stuck in traffic, and putting more than 56 billion additional pounds of emissions into our communities.

V2V communications technology operates via Dedicated Short Range Communications (DSRC) within the 5.9 GHz band of spectrum, which was set aside by the Federal Communications Commission (FCC) to ensure high-speed, accurate, secure and reliable communications which are critical for connected vehicle safety systems. It is essential that the availability and performance of this spectrum is protected for safety purposes, while also freeing up additional spectrum where it makes sense and where it can be done without jeopardizing safety for expanded WiFi applications.

Other companies are working to integrate DSCR into smart phones, aftermarket devices and traffic infrastructure so these groundbreaking safety benefits can be extended to all transportation users including pedestrians, motorcyclists and bicyclists. This promises to further reduce the number of deaths and injuries on our nation's roads while unleashing a new wave of innovation, from advanced traffic management systems to real-time traffic, transit, road weather and parking information.

Even before we achieve a fully-deployed connected vehicle network, the explosion of real-time transportation information, location data, wireless billing and smart phone platforms made possible by the continued advancement of V2V technologies, will have dramatically transformed mobility,

providing commuters with a plethora of new options from car-sharing, ride-sharing and on-demand services to smart parking and navigation apps. Already, small businesses like Uber, Lyft, WAZE, RideScout, Car2Go, Streetline, ParkMobile, Parkopedia, Getaround, and many other companies, which didn't exist five years ago, are fast becoming household names using wireless technology and transportation data to provide more efficient and convenient services to the public.

Connected Vehicle Technology: Ensuring Security and Anonymity

Today's market is enchanted by driverless vehicles, which is creating even greater excitement around the ITS industry. However, autonomous and connected transportation produces incredible amounts of data which needs to be collected, analyzed, secured and in some cases made available. While this provides tremendous opportunity for innovation, our future transportation network faces the potential for cyber-attacks and concerns regarding driver anonymity. Sustained R&D will be critical toward ensuring uncompromised security for the V2V system. Though a final security system design has been developed, it still requires testing and verification and will continually need to be monitored and tested as we advance the deployment of connected vehicle technologies. Ensuring anonymity on the other hand, is already possible through the DSRC protocols which only allows for beaconing between vehicles as well as between vehicles and infrastructure on the 5.9 GHz band of spectrum. Such communications create an immediate awareness for the driver about the vehicles surroundings but cannot enable the recognition of other vehicles and/or drivers.

In summation, V2V technologies represent the future of surface transportation safety, mobility and traffic congestion mitigation. This nation is poised to leap into this new world of vehicle

5

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communications with vastly improved throughput, expanded mobility and, most importantly, a reduction in car crashes by as much as 80 percent. With more than 33,000 fatalities annually on our nation's roadways, continued full funding of the ITS Research Program will be critical for reducing these preventable tragedies and for enabling the more efficient movement of goods and people to drive our nation's economy forward.

Finally, the innovations described here will be showcased from September 7 – 11, 2014 at the 21st World Congress on Intelligent Transportation Systems which will be held in the birthplace of America's auto industry in Detroit, Michigan. I invite each of you to visit Detroit and ride in a connected or automated vehicle or check out the latest transportation innovations on display.
I thank you for the opportunity to testify, and look forward to answering your questions.

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