INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PROGRAM OVERVIEW

The U.S. Department of Transportation’s (USDOT’s) ITS Joint Program Office (ITS JPO) is responsible for conducting research on behalf of the Department and all major modes to advance transportation safety, mobility, and environmental sustainability through electronic and information technology applications, known as ITS.

Mission

The USDOT’s ITS program focuses on intelligent vehicles, intelligent infrastructure, and the creation of an intelligent transportation system. The program supports the overall advancement of ITS through investments in major research initiatives, exploratory studies, and a deployment support program including technology transfer and training.

ITS Strategic Plan

The ITS Strategic Plan 2015-2019 outlines the direction and goals of the USDOT’s ITS program and provides a framework around which the ITS JPO and other Department agencies will conduct ITS research, development, and adoption activities to achieve the program’s outcomes and goals.

The ITS Strategic Plan’s framework is built around two key ITS program priorities—realizing connected vehicle implementation and advancing automation. The priorities reflect stakeholder feedback on the need for the ITS program not only to conduct research, but also to help with deployment and implementation of specific technologies related to connected vehicles and automation.

• **Realizing Connected Vehicle Implementation:** Builds on the substantial progress made in recent years around design, testing, and planning for deployment of connected vehicles across the nation.

• **Advancing Automation:** Shapes the ITS program around the research, development, and adoption of automation-related technologies as they emerge.

Learn more at: [www.its.dot.gov/landing/strategicplan2015.htm](http://www.its.dot.gov/landing/strategicplan2015.htm)
Connected Vehicle Research

The USDOT’s connected vehicle research is a multimodal initiative to enable safe, interoperable networked wireless communications among vehicles, infrastructure, and passengers’ personal communications devices. The USDOT and others are sponsoring connected vehicle research to leverage the potentially transformative capabilities of wireless technology to advance transportation safety, mobility, and environmental sustainability. USDOT research supports the development and testing of ITS connected vehicle technologies and applications, to determine their potential benefits and costs. If successfully deployed, connected vehicles will ultimately enhance the safety, mobility, and quality of life of all Americans, while helping to reduce the environmental impact of surface transportation.

Research Focus Areas

Safety

According to the National Highway Traffic Safety Administration (NHTSA), there were 5.6 million crashes in 2013. The number of fatalities from vehicle crashes is falling but still accounted for 32,719 deaths. Vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) wireless communications based safety applications enable vehicles to inform a driver of roadway hazards and dangerous situations that they can’t see.

These applications have the potential to reduce or eliminate crashes through:

- Driver Advisories
- Driver Warnings
- Vehicle and/or Infrastructure Controls.

Mobility

According to the Texas Transportation Institute, U.S. highway users wasted 5.5 billion hours stuck in traffic in 2011. Connected vehicle mobility applications will enable system users and system operators to make smart choices that reduce travel delay. The applications will provide a connected, data-rich travel environment using information transmitted anonymously from thousands of connected vehicles in the transportation system. This could help transportation managers monitor and manage transportation system performance taking actions like adjusting traffic signals and dispatching emergency services. This information could also help transportation agencies and fleet owners manage crews and use resources more efficiently.

Environment

According to the Texas Transportation Institute, the total amount of wasted fuel topped 2.9 billion gallons in 2011. Connected vehicle environmental applications can advise drivers on how to optimize their vehicle’s operation and maintenance for maximum fuel efficiency. Data from connected vehicle ITS systems can also provide traffic management centers with detailed, real-time information on traffic flow, speeds, and other vehicle conditions. This can be used to optimize system operation.

Technology and Distraction●

Safety technologies are designed to bring a driver’s attention to the road or other vehicles, rather than provide additional, potentially distracting information. The USDOT’s ITS program is engaged in human factors research to ensure that in-vehicle safety technologies and applications do not add to the distracted driving problem.

The Future of Connected Vehicle Safety

Based on data from the USDOT’s Connected Vehicle Safety Pilot and parallel research efforts, NHTSA made a decision to move forward with V2V communication technology for light vehicles. NHTSA will make an agency decision on the future of the technology for heavy trucks soon.

The U.S. Government’s Role

The USDOT’s ITS JPO fosters the development and future deployment of connected vehicle technologies. But connected vehicle research involves all agencies within the USDOT including NHTSA, the Federal Highway Administration, the Federal Motor Carrier Safety Administration, the Federal Transit Administration, and the Federal Railroad Administration. The USDOT and its public and private partners are working to address the technical, safety, and policy challenges and are helping to create the standards and the wireless architecture that will be the backbone of the system. Connected vehicle research will leverage the potentially transformative capabilities of wireless technology to make surface transportation safer, smarter, and greener. If successful, connected vehicles will ultimately enhance the mobility and quality of life of all Americans, while helping to reduce the environmental impact of surface transportation.

For more information, please contact:
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