



Program Overview

The Problem

- Each year in America, drunk driving claims approximately 10,000 lives and costs the U.S. approximately \$194 billion.¹
- Alcohol-impaired driving fatalities account for more than 1/3 of all motor vehicle traffic fatalities in the United States.²
- In 2013, of the fatalities among children age 14 and younger, 17 percent occurred in alcohol-impaired-driving crashes.³

Drunk driving remains a serious public health and safety issue. But what if we could invent a world without drunk driving?

A New Approach

The Driver Alcohol Detection System for Safety (DADSS) research program brings together the National Highway Traffic Safety Administration (NHTSA) and the Automotive Coalition for Traffic Safety (ACTS), which represents the world's leading automakers, in one of the most important government and private sector partnerships in recent years.

The program is researching a first-of-its-kind technology called the Alcohol Detection System that will detect when a driver is intoxicated with a blood alcohol concentration (BAC) at or above 0.08 – the legal limit in all 50 states – and prevent the car from moving. The system will be made available as a safety option in new vehicles, much like automatic braking, lane departure warning and other advanced driver assist vehicle technologies.

Combining the sharpest minds in transportation innovation with the world's leading experts in non-invasive alcohol sensing, the technology will be fast, accurate, reliable and affordable. And unlike existing alcohol detection technologies, it will be seamlessly integrated into vehicles and will not affect normal driving behavior.

¹ National Highway Traffic Safety Administration (NHTSA). "The Economic and Societal Impact Of Motor Vehicle Crashes, 2010." Washington (DC), December 2015, DOT HS 812 231. Available at URL: <http://www-nrd.nhtsa.dot.gov/Pubs/812231.pdf>

² National Highway Traffic Safety Administration (NHTSA). "Traffic Safety Facts 2013 Data: Alcohol-Impaired Driving." Washington (DC), December 2014, DOT HS 812 102. Available at URL: <http://www-nrd.nhtsa.dot.gov/Pubs/812102.pdf>

³ Ibid.



Technologies Under Exploration

Congress recognized the life-saving potential of the DADSS program and has made it part of a multi-faceted national commitment to reduce and eventually eliminate drunk driving. With support from safety advocates and the auto industry, NHTSA and ACTS entered into a cooperative agreement in 2008 to research and test proof-of-concept prototypes and determine which technologies were most promising for vehicle integration. After extensive research, it was determined that two options would be explored for vehicle integration:

- **A breath-based system**, which measures the alcohol level in a driver's naturally exhaled breath unobtrusively. It will be designed to take instantaneous readings as the driver breathes normally and to accurately distinguish between the driver's breath and that of any passengers.
- **A touch-based system**, which measures blood alcohol levels under the skin's surface by shining an infrared-light through the fingertip. It will be integrated into current vehicle controls, such as the start button or steering wheel, and take multiple, accurate readings in less than a second.

In 2013, NHTSA and ACTS extended their agreement, and the program entered a new phase to reduce the size of the systems and ensure strict performance specifications are met relating to speed, accuracy, precision and reliability. As part of the ongoing research, the prototypes will be integrated in vehicles for a series of field tests, which will allow engineers to observe driver behavior in natural settings and thoroughly test the systems in real-world scenarios. Once completed, auto manufacturers will be able to offer the system as a safety option in new vehicles. It will take time for the technology to be made available, but developing a system that is seamless, accurate and reliable is the first step.

An analysis by the Insurance Institute for Highway Safety indicates that if driver BACs can be limited to no more than 0.08 percent – the legal limit in all 50 states – approximately 7,000 lives could be saved annually⁴.

DADSS Research Program: Inventing a World Without Drunk Driving

www.DADSS.org

⁴ Insurance Institute for Highway Safety Highway Loss Data Institute. *Status Report*, Vol. 48, No. 10. December 30, 2013. Insurance Institute for Highway Safety. Available at URL: <http://www.iihs.org/iihs/news/statusreport/article/48/10/1>