

## DADSS Technology: Inventing a World Without Drunk Driving

The **Driver Alcohol Detection System for Safety (DADSS) Program** is a collaborative research effort to invent, test, commercialize and deploy new alcohol detection technologies in vehicles. The program brings together the world's leading automakers, private companies and government agencies in one of the most important public-private partnerships in transportation history.

Drunk driving remains the **#1 cause of fatalities on U.S. roadways**, claiming more than **10,000 lives** and costing the U.S. approximately **\$194 billion** every year. Today, the world's leading automakers continue to agree DADSS technology offers the most promising and expedient way to precisely measure alcohol concentrations in consumer vehicles and to prevent drunk driving fatalities on a large scale.

### Progress to Date

Since the program began, the following milestones have been achieved:

- **Invented 2 cutting-edge viable technologies:** a breath system and a touch system
- **Evolved 5 new generations** of the touch system and **6 generations** of the breath system
- **Increased breath sensor sensitivity** to alcohol by **99.79%**
- **Reduced the size** of the breath technology by **85%** and the touch technology by **89%**
- **Integrated 40 vehicles** with test sensors, driving **65,866 miles** and clocking **9,783 sensor hours** over **1,600 days**, which is equal to almost **4.5 years**
- **Began testing** the technology with everyday people on the road in specially built vehicles and in controlled, dosed experiments in a hospital setting
- **Collected 136,678 breath, blood and touch** samples from **338 individuals** in **443 human subject and driving testing** with the Harvard-affiliated McLean Hospital
- **Filed or secured 63** global patents to ensure all intellectual property is open-sourced
- **Built relationships with Tier 1 automotive suppliers** to ensure the technology will be manufactured at a scale and cost that makes it a viable consumer option
- **Developed partnerships** with state motor vehicle departments to support testing and deployment
- **Began negotiations** with fleet providers and electric vehicle companies on additional deployment
- **Building consumer demand** by demonstrating the technology at 86 local, national and international events so that when available, the technology will have consumer demand



Our work has not only brought us closer to having an advanced, in-vehicle alcohol detection system, it is:

- Inspiring derivative technologies for use in other settings such as workplaces and mass transit systems
- Leading to new discoveries in laser technology
- Expanding scientific understanding of alcohol in the body

## Out of the Lab & Onto the Road

DADSS continues to form key partnerships to test the technology for commercial deployment. Beginning in Virginia, breath sensors have been integrated into vehicles for **on-road tests**, allowing engineers to collect data from **sober drivers** and observe driver behavior in natural settings. On-road testing has been expanded to include controlled, **in-vehicle tests with drinking passengers** to determine how the sensors respond to real-world conditions.

## Timeline: Nearing the Finish Line

Today, teams of engineers, chemists and data scientists continue to evolve the technology to meet **strict performance specifications**, ensuring the systems are fast, accurate and reliable so sober drivers are not inconvenienced and **so drunk drivers are never allowed to operate the vehicle**. They are also working to reduce the size of the sensors, so they are small enough to fit into passenger vehicles. Previous transportation safety innovations like airbags take a minimum of 20 years to be tested and approved for the public's use. The DADSS Program is on track to be completed in less time and is currently on schedule with the following timeline for commercialization:



- **2021:** Zero-tolerance (.02 BAC) **directed breath sensors** available for purchase by **fleet operators**
- **2023:** Zero-tolerance (.02 BAC) **touch fleet sensors** available for purchase by **fleet operators**
- **2024:** Fully **passive breath sensors** that can be installed in consumer vehicles & set at the legal limit
- **2025:** Fully **passive touch sensors** that can be installed in consumer vehicles & set at the legal limit

## DADSS Vs. Other Technologies



**The DADSS technology coming out of the lab is a completely new innovation and unlike any other alcohol detection technology on the market or under research today.** While driver monitoring systems found in luxury cars and newer vehicles can potentially *detect* and *infer* certain behavior, no technology exists or is under research with the same level of sophistication as the systems being developed by DADSS to *measure* and *quantify* precise alcohol concentrations in drivers and render a vehicle inoperable. This is a key distinction, because if we are to reach the goal of saving **9,400 lives annually** that the **Insurance Institute for Highway Safety (IIHS)** estimates is possible, we must put in place technology that stops drunk drivers from driving even one mile, which driver monitoring systems cannot do.<sup>1</sup> Today, the world's leading automakers continue to agree DADSS technology offers the most promising and expedient way to prevent drunk driving fatalities on a large scale.

## Bipartisan Support in Congress, With a Sizable Return on Investment

Congress and the U.S. Department of Transportation continue to recognize DADSS's life-saving potential as a key part of our nation's commitment to eliminating drunk driving. Support for DADSS has always been bipartisan and is sustained by a broad coalition that includes members of the alcohol industry. Since it was first funded, the Program has stayed on budget, operating under a significantly lower cost than the \$150 million first estimated and requested by safety advocates. With drunk driving costing \$194 billion in societal costs to the U.S. each year, and unquantifiable grief to families and communities, the DADSS Program continues to offer a significant return on investment.

**Today, DADSS technologies remain the most promising and expedient way to prevent drunk driving fatalities in the U.S. on a large scale.**

Now more than ever, Americans understand how scientific research can help save lives and improve public health. Public-private partnerships like DADSS have led to innovations that enhance our everyday lives, such as the Internet, GPS and the microchip. With continued support, DADSS technology has the potential to be equally historic by helping put an end to drunk driving once and for all.

<sup>1</sup>[IIHS, July 23, 2020](#)