



## Frequently-Asked Questions

These frequently asked questions and suggested responses provide public-facing language to some of the most common inquiries about the DADSS Program. Answers can be tailored to the specific audience or request.

### What is the Driver Alcohol Detection System for Safety (DADSS) Research Program?

The Driver Alcohol Detection System for Safety (DADSS) Research Program is developing a first-of-its-kind alcohol detection technology that can detect when a driver is impaired with a blood alcohol content (BAC) at or above the legal limit of 0.08% and will prevent the car from moving. Once DADSS technology has met vigorous performance standards, it will be voluntarily offered to vehicle owners as a safety option, similar to other driver assist systems like automatic braking or lane departure warning.

The Program brings together the Automotive Coalition for Traffic Safety (ACTS), which represents the world's leading automakers, and the National Highway Traffic Safety Administration (NHTSA), in one of the most important government and private sector partnerships in recent years. Public-private partnerships like DADSS have led to innovations that enhance our everyday lives, such as the internet, GPS and the microchip.

### What is the overall goal of the Program?

DADSS is a collaborative research program dedicated to advancing the state of alcohol detection systems for vehicles. Despite progress over the past three decades, drunk driving in the U.S. claims approximately 10,000 lives and costs the U.S. \$194 billion every year. The DADSS Program is developing a first-of-its-kind technology that holds the greatest promise we have seen to reverse this trend. With support from safety advocates and the auto industry, Congress has recognized the Program's life-saving potential and made it part of a multi-faceted national commitment to reduce and help eliminate drunk driving.

### When did this Program begin and where is it now?

When the Program began in 2008, DADSS focused on research and creation of proof-of-concept prototypes to determine which technological approaches were most promising for vehicle integration. After extensive research, it was determined that two technology options were most viable: a breath-based system and a touch-based system.



In 2013, ACTS and NHTSA 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 this pioneering technology to be available commercially, but developing a system that is seamless, accurate and reliable is the first step and a top priority.

### **Who is involved in this Program?**

The Automotive Coalition for Traffic Safety (ACTS) and the National Highway Traffic Safety Administration (NHTSA) are working together in collaborative research to develop the DADSS technology. ACTS is a nonprofit organization wholly funded by the world's leading auto makers, including BMW, Fiat Chrysler Automobiles, Ford, General Motors, Honda, Hyundai, Jaguar Land Rover, Kia, Mazda, Mercedes-Benz, Mitsubishi, Nissan, Porsche, Subaru, Toyota, Volkswagen and Volvo.

Two technology developers have received grants to develop and refine prototypes: the Swedish-based sensor company, SenseAir, and their Tier One Auto Supplier, Autoliv Development, are working on a breath-based system and TruTouch Technologies is developing a touch-based system.

### **How might the technology work?**

Two technologies are being researched: a touch-based and a breath-based system. The breath-based system measures alcohol as a driver breathes normally, when in the driver's seat. It will be designed to take instantaneous readings as the driver breathes normally and to accurately and reliably distinguish between the driver's breath and that of any passengers. The touch-based system measures blood alcohol levels under the skin's surface by shining an infrared-light through the fingertip of the driver. It will be integrated into current vehicle controls, such as the start button or steering wheel, and take multiple, accurate readings.

### **Will the technology be sufficiently reliable?**

A significant part of the DADSS Research Program has been the establishment of DADSS Performance Specifications related to speed, accuracy, precision and reliability. These rigorous standards are based on the Department of Defense's technology and manufacturing readiness levels, and they are in addition to manufacturers' six-sigma quality requirements, which demand that every piece of safety equipment installed in passenger vehicles as original equipment performs correctly 99.9997% of the time.



With this combination, the DADSS technology will be held to unprecedented standards to ensure BAC levels are measured quickly and reliably. Not even medical instruments are engineered to have such strict specifications. The DADSS Program is being overseen by a team of engineers and scientists, and will be further tested in real-world operating conditions and by independent third parties before being made available as a consumer option.

### **How is DADSS technology different from interlocks and existing alcohol sensing technology?**

The DADSS technology is not an ignition interlock but rather a driver assistance system. First, the system is being designed to take accurate, unobtrusive readings in less than a second while the driver interacts with the vehicle as they would otherwise. Second, the system will be offered as a voluntary safety option in new vehicles much like automatic braking, lane departure warning and other advanced driver-assist vehicle technologies. Third, the system will meet strict performance standards related to speed, accuracy, precision and reliability that are higher than any other alcohol detection technology available today. And finally, the alcohol detection will be set at 0.08%, the legal limit for every state except Utah.

### **How is this going to stop people who are most likely to drink and drive?**

The DADSS technology is designed to take the guesswork out of BAC measurement and give drivers the certainty they will never put themselves or others in danger by driving over the legal limit. The system can also give parents an extra layer of protection and additional peace of mind knowing that if their children have been drinking, they won't be able to drive.

For the first time, all drivers will be able to take advantage of a system that is seamless and nonintrusive, representing a breakthrough in technology and vehicle safety. We believe that consumers will want to purchase the technology as a safety option once they learn more about its life-saving potential.

### **Will the technology be set at a limit other than 0.08%?**

The national Program was authorized and funded under strict performance specifications based on a blood alcohol concentration (BAC) level of 0.08% – the legal limit in every state except Utah. While the DADSS Program is aware of the developments in Utah, they do not affect the research being conducted, and the Program will continue its direction based on the national standard of 0.08%. The exception is for underage drivers. Since no level of alcohol is legal for drivers under 21, parents can have the system programmed for a zero-tolerance policy.

### **When do you expect the system to be in U.S. cars and trucks?**



Based on the latest results from the lab, we are nearing the date when we're ready to move out of the lab and onto the roads for the first in-vehicle tests. These Pilot Field Operation Tests (PFOTs) are an early assessment of the DADSS technology designed to test the prototypes in regular driving conditions and to better understand how drivers interact with the sensors. Pilot manufacturing, vehicle installations and field operation tests will take place beginning in 2018. The DADSS Research Program will use the information gathered in these tests to narrow gaps between actual performance and the performance specifications that need to be met to allow widespread use, make improvements to the technology for long-term installation in cars and trucks and bring us one step closer to the day when the technology is ready to be offered to both automakers and consumers as an optional safety system.

### **Will DADSS technology be installed in every new car and truck?**

The national Program was authorized and funded as a research program to advance the state of alcohol detection technology. Congress did not mandate the use of any technology in the authorization. When the Program is complete, automakers can further develop and install the technology into cars and trucks. They will be able to offer the system voluntarily in new cars the way they do for other advanced vehicle technology features, such as lane departure warning or automatic braking, and consumers will have the choice whether they want to purchase it as a safety option.

### **What happens when a driver is over the legal limit?**

With the alcohol detection technology, when a driver has a blood alcohol concentration (BAC) above the legal limit of 0.08%, the vehicle will start, but not move. This allows the driver to remain warm (or cool) and safe in the vehicle, make a call for help or charge a phone. The system will reset and be ready for another test less than a second after each reading, and will move only when the driver's BAC is below the legal limit.

### **How will the technology be able to tell the difference between drivers and passengers?**

The alcohol detection technology is being designed to accurately distinguish between the driver and other passengers. The touch-based technology could, for example, be based on a touchpoint programmed by the driver, similar to today's smart phones, which could also serve as an anti-theft measure. The breath-based technology is testing sensors near the driver's seat to best isolate the driver's breath. Either system will require a retest if the person in the driver's seat gets out of the seat and another person sits down.

### **How will the technology prevent tampering?**

Because the technology will be seamless and integrated into the vehicle's cabin, it will not contain large pieces of physical equipment that could be tampered with from inside the vehicle.



### **Will DADSS technology add to the price of a new vehicle?**

Yes, the technology will be an additional cost for those who choose to purchase it as a safety option for their new vehicle. While the exact cost per vehicle has not yet been established, it will be in line with other voluntary safety systems like automatic braking or lane departure warning. As with any new technology, the more vehicles are equipped with the system, the lower the price will be.

### **Will data on tests be recorded or shared with law enforcement?**

Maintaining data privacy has been considered from the early stages of the DADSS Program and remains an important priority for all those involved. Both the legislation authorizing the Program and the cooperative agreement ACTS and NHTSA are operating under state specifically that security measures and operating procedures must be put in place to protect data from the inadvertent release or disclosure to unauthorized parties.

Today, all automakers have security measures in place to protect customer data from being accessed by unauthorized parties, and DADSS will be no different. In the meantime, the leading automakers involved in the DADSS Program have joined with consumer advocacy groups to establish voluntary privacy principles and to provide standards and guidance on future in-vehicle technologies. For more about these principles, [click here](#).

### **Will the system test for drugs such as marijuana?**

The sole focus of the DADSS Program is on developing a system that detects a driver's alcohol concentration. In theory, a similar system can be developed that might detect when drivers are under the influence of THC but the development of such a system would present additional challenges beyond those faced by an alcohol detection technology. For example, drugs like marijuana linger in the system longer than alcohol, and researchers have not yet determined where the legal limit should be set. These challenges, and more, face researchers as they look at the different types of drugs that could affect safe driving behavior, whether over-the-counter, prescription or illegal.

### **Why would an alcohol detection technology be necessary if we are eventually going to have self-driving cars?**

Self-driving cars are a key part of the future of vehicle technology and vehicle safety. However, the same questions of reliability, policy and liability that face the alcohol detection system face self-driving cars, but on a larger scale. While it may be technically possible to have a self-driving vehicle in the next decade, these early models will rely heavily on the ability of an unimpaired driver to take control of the wheel as a precaution. Self-driving car technology is still decades away from completely removing the need for an unimpaired driver.





## **There are so many safety features being made available in vehicles today – how does the alcohol detection technology fit in to this trend?**

We're living in an exciting time for vehicle safety. Technologies that help drivers better perform their task – like the ones we see being offered as consumer options today – are helping to warn of driver drowsiness or an approaching vehicle, but none are able to accurately and precisely measure blood alcohol concentration (BAC). The DADSS technology is a much more sophisticated piece of vehicle safety – taking a biomedical reading of someone's BAC level to prevent a car from moving. To date, no technology has ever been developed that can passively and unobtrusively measure BAC with the necessary high levels of precision and accuracy while fitting into vehicles with a seamless operation. Additional research is required to meet the high standards we have set for measurement speed, accuracy, precision and reliability. While we have made great strides in the Program, there is more work to be done before it can be introduced as a consumer option like the driver-assist technologies we are seeing today.