Green Cross for Safety® Awards 2023 Finalist | Advocate

Schneider

Overview
Alcohol-impaired driving remains the nation's most pervasive and significant traffic safety problem, resulting in the preventable deaths of 1.4 times more American road users than all other forms of impaired driving (distracted, drowsy, drugged, etc.) combined. Each year, drunk driving claims around 10,000 lives.

To address the problem and eliminate alcohol-impaired deaths, the Driver Alcohol Detection System for Safety (DADSS) program was created to develop and research a first-of-its-kind technology holding the greatest potential to reverse this deadly trend. To help test the program and technology in real-life settings, Schneider partnered with DADSS to incorporate the technology into their fleet, track the efficacy and user experience, and provide feedback so this valuable tool can be rolled out to the full motoring public.

Project Summary
Recognizing the severe burden of alcohol-impaired deaths, the Automotive Coalition for Traffic Safety (ACTS), the National Highway Traffic Safety Administration (NHTSA) and the Commonwealth of Virginia's Department of Motor Vehicles' Highway Safety Office (DMV) partnered to research and build a solution that could intervene and potentially reverse the trend. The public-private partnership produced the DADSS program. Created in 2020, this alcohol detection technology automatically detects when a driver is intoxicated with a blood alcohol concentration (BAC) at or above 0.08% and prevents the car from moving.

To test the technology in real-life settings, the DADSS program sought to identify an organization that could provide access to a large number of reliable drivers over a significant period of time that ideally shared a passion for roadway safety. DADSS was highly interested in working with Schneider given the carrier's widely known reputation for safety in the trucking industry alongside the ability to provide a large volume of data on the technology in several different driving conditions, something the program had been unable to conduct up until this point. In 2021, Schneider became the first truckload carrier to conduct a pilot of this lifesaving alcohol detection technology. Schneider's commitment to safety begins with its trucks and drivers but extends to the full motoring public. The partnership with DADSS marked a new milestone toward widespread deployment of in-vehicle alcohol detection technology that would be commercially available.

Schneider launched an internal campaign to identify volunteer drivers to take part in testing DADSS. Having volunteers take part in the program was critical in the carrier's approach to build positive sentiment around the pilot and position the testing as an opportunity to widely contribute to on-road safety. Additionally, Schneider developed a strategic communications approach to ensure the pilot was properly positioned and understood within the company and beyond.

Following the public announcement of the partnership, between September 2021 and May 2022, the first Schneider trucks were installed with the DADSS technology device and drivers began stress testing the system on the road for five months. The DADSS technology installed on Schneider trucks was intended to detect if alcohol was present upon vehicle start-up. Through testing of the system, the drivers were able to be the first to identify problems with the device and report it to Schneider management or the ACTS team directly. These observations were critical to the success of the program.

Schneider's participation allowed the technology to be tested beyond the expected performance parameters under a variety of operating conditions, over hours and hours of service. Schneider's volunteer drivers provided breath samples each time they started their trucks and followed a test plan that enabled data analysts to align driver actions with sensor data remotely (removing the need for an analyst to be present and directly observe the testing). While this may seem simple and easy, drivers have several critical tasks to complete in a safe, timely and efficient manner, and any additional, seemingly small, tasks requested of the driver can be challenging.

The pilot program surfaced an interesting result: interferences in breath sample detection which required additional investigation. In one case, the system recorded false positive results. An analysis revealed certain external inputs or factors induced false positives. The specific external substances that lead to a false positive were linked to vaping and eating Keto protein bars which contain an alcohol-based ingredient, an inconsistency that has since been updated in the technology.

Data generated by Schneider drivers allowed the device to be optimized and validated the device's speed, accuracy and reliability, and assured designers that DADSS technology adheres to stringent performance standards, superior to alcohol detection technology currently available. The Schneider pilot data also indicated this technology has the potential to be twice as effective in preventing alcohol-related roadway deaths than the current most effective safety technology, the three-point safety belt. Now, DADSS is slated to become a feature in new cars once it has completed a performance protocol review.

Challenges

While the collaboration was successful, it was not without hurdles. Program engineers had to support the development of coding specific to Schneider trucks and needed to mitigate the likelihood of a false positive. They also needed to ensure that positives shared via an alert to the ACTS team and Schneider's regulatory team overseeing employees' fitness for duty were accurate. An additional safety measure should a 'positive' be detected was a display that prompts the driver to contact their immediate supervisor or manager via on-screen messaging.

Some concerns that implementing an alcohol-monitoring-related technology would contribute to driver turnover also existed. Changes, especially those perceived as invasive, can prompt a negative reaction. However, the Schneider pilot did not result in driver turnover as the carrier

worked with volunteer drivers and deployed clear internal messaging about the pilot program as well as company and driver roles.

Schneider also had to manage outside social media commentary attempting to create controversy around the implementation of DADSS. To head this off and set the record straight, Schneider communications focused on reinforcing the connection between working with DADSS and the company's commitment to on-road safety technology. This surround sound support helped drivers feel comfortable and allowed them to provide active feedback without concern.

Outcomes

Schneider demonstrated the crucial role of reliable drivers during the testing and development phase. Its breath samples and personal feedback yielded tangible results for improving and validating the DADSS device. Driver feedback led to some of the most profound findings of the program: the location of sensors relative to the position of the driver and the products (energy bars and vaping products) responsible for false positive alcohol readings. Before Schneider's involvement in the program, none of these were learned from previous DADSS testing activities.

Schneider has also been able to provide accelerated testing of the sensor technology with other factors including dust, extreme weather, significant mileage, many systems start/stop cycles, shock and vibration.

Since the launch, Schneider has outfitted seven trucks, operated by 10 different drivers, with the latest breath sensors. Through May 1, 2023, Schneider drove more than 206,634 miles, producing a total of 89,689 samples and 21,784 total sensor operation hours.

The DADSS technology continues to be refined with input from Schneider drivers, creating a valuable tool for on-road safety. According to a study from the Insurance Institute of Highway Safety (IIHS), when this life-saving technology is widely deployed in all vehicles, more than 9,000 lives can be saved each year.

Schneider is the first truckload carrier to test these prototypes, marking a milestone for the widespread deployment of the technology in the future. The company remains committed to supporting the testing and development of new generations of sensors.

The DADSS technology suite remains widely accepted as the most promising and expedient pathway to prevent drunk driving fatalities on a large scale. All these aspects are key to the DADSS program's goal of fully commercializing the passive vehicle-integrated breath technology for all types of vehicles, not just commercial vehicles.


Display
Sensor


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