Car to driver: We're not moving with that blood alcohol

June 9 2015, by Nancy Owano

Inventing a world without drunk driving would make life safer for everyone. A path leading to better driver safety is under way. An alcohol detection system for driver safety comes by way of a research program. The Driver Alcohol Detection System for Safety (DADSS) has been on a mission to advance alcohol detection technology in vehicles.

They have been at work on a safety feature to protect against drunk driving. Their system is designed to measure the alcohol in a driver's blood in less than a second. If it is above .08, the legal limit in all 50 states, the car simply won't move. For drivers under 21, for whom any amount of blood alcohol is illegal, the system can be programmed for a zero-tolerance policy.

To get an accurate, reliable reading, the creators are exploring two technologies: a breath-based system and a touch-based system.

Earlier this month, reports *The Detroit News*, The National Highway Traffic Safety Administration unveiled a first-ever prototype vehicle carrying the advanced alcohol detection technology.

How it works: The breath-based system pulls a driver's breath into a sensor. The sensor could be placed in the driver's side door or in the steering column as the driver breathes normally. A beam of infra-red light is directed at the breath's molecules. Carbon dioxide and alcohol molecules absorb different amounts of light. The sensor compares the two. Alcohol levels can be measured precisely, even in small concentrations. If the proportion of alcohol molecules to carbon dioxide molecules is over a certain range, it indicates an illegal blood alcohol level. The system captures only the drivers' breath.

The touch base technology reads alcohol below the skin's surface. Sensors in the car's ignition button or in the gear shift shine a beam of light on to a finger. Alcohol absorbs specific wave lengths of light— by measuring the light's intensity, the system can pinpoint the blood alcohol level.

When this detection system is ready for commercialization, according to a promotional video, people will be able to buy the alcohol detection system as a safety option, just like Emergency Brake Assist or Lane

Departure Warning.

NHTSA Administrator Mark Rosekind said in *The Detroit News* that "making it an option available to vehicle owners would provide a powerful new tool in the battle against drunk driving deaths."

Who is involved in the DADSS program? Groups include the National Highway Traffic Safety Administration (NHTSA) and Automotive Coalition for Traffic Safety (ACTS). The latter represents automakers; research and testing is overseen by independent engineers and scientists.

The DADSS said the program is also supported by "members of the alcohol industry, including the Distilled Spirits Council of the United States, the National Beer Wholesalers Association and the Wine and Spirits Wholesalers of America."

Obviously, a system of this nature requires accuracy, precision and reliability. Research continues and the prototypes will be integrated into vehicles for field tests. Engineers will be able to observe driver behavior in natural settings; real-world scenarios will be used. According to *The Detroit News*, Rosekind said he hoped the technology could be tested in a few years, in a commercial or government fleet to start.

More information: dadss.org/

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