U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

Advanced Impaired Driving Prevention Technology

Advanced Impaired Driving Prevention Technology

Section 24220, "ADVANCED IMPAIRED DRIVING TECHNOLOGY," of the Bipartisan Infrastructure Law (BIL), enacted as the Infrastructure Investment and Jobs Act (IIJA), directed that "not later than 3 years after the date of enactment of this Act, the Secretary shall issue a final rule prescribing a Federal motor vehicle safety standard (FMVSS) under section 30111 of title 49, United States Code, that requires passenger motor vehicles manufactured after the effective date of that standard to be equipped with advanced drunk and impaired driving prevention technology." Further, the issuance of the final rule is subject to subsection (e) "Timing," which provides for an extension of the deadline if the FMVSS cannot meet the requirements of 49 USC 30111.

The Joint Explanatory Statement (the agreement) accompanying the Consolidated Appropriations Act, 2023[1] included the following:

> [The agreement] directs the NHTSA to emphasize its research on driver monitoring and to identify promising technologies that will reduce or eliminate impaired and distracted driving. The agreement expects the NHTSA to prioritize resources to meet the rulemaking requirements of section 24220 of the IIJA and to issue the final rule within the timelines set forth in such section. The agreement also expects the NHTSA to notify the House and Senate Committees on Appropriations if funding, staffing, or other resource constraints are delaying or hindering this rulemaking.
>
> The agreement directs that within 90 days of enactment of this act, and annually thereafter, the Secretary shall post on a publicly available website a report that includes: (1) the current status of the rulemaking required by section 24220 of the IIJA, including an anticipated timeline for finalizing the rulemaking as set forth in section 24220 of the IIJA; (2) any issues that could lead to delays in the Secretary not issuing the rulemaking by November 2024, as is permissible under section 24220 of the IIJA; (3) a list or summary of products that are currently available for installation in passenger motor vehicles to prevent drunk and impaired driving; and (4) a summary of the progress made in carrying out the collaborative research efforts through the driver alcohol detection system for safety program (DADSS), including an accounting of the use of Federal funds and matching funds from the private sector.

To meet this request, NHTSA submits the following.

[1] https://www.congress.gov/117/crec/2022/12/20/168/198/CREC-2022-12-20-pt3-PgS9325-2.pdf.

Current Status and Anticipated Timeline

NHTSA is working to publish an Advance Notice of Proposed Rulemaking (ANPRM) by the end of 2023. Additional information regarding this rulemaking (RIN: 2127-AM50) is available on www.reginfo.gov. As NHTSA continues to research potential technologies and solutions, the agency plans to determine next steps after reviewing the public comments received to the ANPRM.

Issues that Could Lead to Delays

NHTSA is proceeding expeditiously to gather data and information related to the mandated requirement in section 24220 of BIL and will rely on robust public input and close stakeholder engagement to identify and/or validate the underlying factors associated with open questions. Based on such feedback, the agency will be able to estimate whether there are issues that may lead to delays with respect to the timelines set forth in BIL. The complex topics that the agency continues to explore include:

1) The research for an objective test tool and procedure that can accurately and reliably measure the BIL required performance in any new light vehicle.

NHTSA is working on the development of objective test method(s) to demonstrate the ability to measure a driver's blood alcohol concentration (BAC) level passively and accurately. This area includes the development of proxy test tool(s) that could replicate the behavior of a typical person's actions (breathing, touching, eye glaze etc.) in a repeatable and reproducible manner. Test methods also need to consider false-positive cases.

2) Determining the safe state of a vehicle when a driver monitoring technology detects driver impairment.

NHTSA is seeking information and researching on-road countermeasures that respond to driver impairment detections. These could include, but are not limited to, visual/auditory/haptic warnings, vehicle control interventions (i.e., speed reduction, stop in lane, stop on the shoulder, etc.), and ignition/transmission interlocks. NHTSA also seeks data and information about the effectiveness of such countermeasures, consumer acceptance, and the identification and evaluation of potential unintended consequences.

Summary of Products to Prevent Drunk and Impaired Driving

On November 12, 2020, NHTSA published a Request for Information (RFI) notice in the Federal Register (85 FR 71987). The RFI sought information to help inform the agency on available or late-stage technology under development for impaired driving detection and mitigation. NHTSA received 12 comments in Docket No. NHTSA-2020-102 (www.regulations.gov) from multiple suppliers and the Alliance for Automotive Innovation. References on eye tracking were received

from the American National Standards Institute, Inc., and a list of patents/technologies from Mothers Against Drunk Driving.

NHTSA has also been conducting its own assessment of driver monitoring technologies with a key focus on systems with the potential to detect alcohol-based driving impairment. The review focused on hundreds of driver monitoring systems that were explicitly mentioned or indicated on manufacturers' websites, patents, device manuals, publications, or reports. At the time of its review (draft completed at the end of 2022), NHTSA noted that camera-based driver monitoring systems have been in vehicles since 2018 for monitoring driver inattention to the forward roadway for SAE International Level 2 driving automation systems[2], as well as other vehicle-based sensors (e.g., hands on wheel, steering wheel torque, lane keeping). Many other camera-based driver monitoring systems are used for driver inattention and drowsiness detection. However, the draft study found that systems specifically targeting passive and accurate alcohol-impairment detection and prevention are still primarily in the research stage.

With respect to technologies that target measuring BAC levels, there have been reported improvements in capability, packaging, and availability for aftermarket testing over time. However, passive versions targeting a BAC of .08 g/dL or other legal limit as directed in BIL section 24220 are not yet available in the market.[3]

Summary of DADSS Progress and Accounting Update

In 2008, a public/private partnership began between NHTSA and the Automotive Coalition for Traffic Safety (ACTS) to develop a technological solution or solutions to significantly reduce and ultimately end alcohol-impaired driving. DADSS is developing non-intrusive technologies that could detect that the driver's BAC meets or exceeds the legal limit and prevent the car from moving. The DADSS program has progressed far enough to meet the following expected goals for availability of design specifications: a breath-based sensor that can be integrated into passenger vehicles during mass production that is capable of accurately measuring $\geq$.08[4] g/dL BAC by 2024; a touch-based sensor that can be retrofitted into fleet vehicles capable of accurately measuring $\geq$.02 g/dL BAC by 2023; and a touch-based sensor that can be integrated into passenger vehicles during mass production capable of accurately measuring $\geq$.08 g/dL BAC by 2025.

NHTSA has been preparing reports to Congress on in-vehicle alcohol detection research in response to Section 403(h) of Title 23, United States Code since 2013. The annual report describes the progress made in carrying out the collaborative research effort on in-vehicle technology to detect alcohol impaired driving and prevent the car from moving, including an accounting of the use of Federal funds obligated or expended in carrying out this effort. A more

[2] https://www.sae.org/standards/content/j3016_202104/
[3] 2020 DADSS Report (nhtsa.gov)
[4] As of May 2023, one State, Utah, has a BAC per se level of. 05.

detailed account of the program's progress can be found in these reports. Upon completion, these reports are posted to the agency's website: https://www.nhtsa.gov/reports-to-congress.

Through ACTS, the private sector (i.e., automotive manufacturers) continues to provide financial support to the development of the DADSS technology. As of the end of FY 2022, the private sector provided $14.9 million of the $70.2 million in total outlays on the effort.