



DEPARTMENT OF TRANSPORTATION

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National Highway Traffic Safety Administration

[Docket No. NHTSA-2023-0026]

Agency Information Collection Activities; Notice and Request for Comment; Examining Distraction and Driver Monitoring Systems to Improve Driver Safety

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Notice and request for comments on a request for approval of a new information collection.

SUMMARY: The National Highway Traffic Safety Administration (NHTSA) invites public comments about our intention to request approval from the Office of Management and Budget (OMB) for a new information collection. Before a Federal agency can collect certain information from the public, it must receive approval from OMB. Under procedures established by the Paperwork Reduction Act of 1995, before seeking OMB approval, Federal agencies must solicit public comment on proposed collections of information, including extensions and reinstatement of previously approved collections. This document describes a collection of information for which NHTSA intends to seek OMB approval titled “Examining Distraction and Driver Monitoring Systems to Improve Driver Safety.”

DATES: Comments must be submitted on or before [INSERT DATE 60 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments identified by the Docket No. NHTSA-2023-0026 through any of the following methods:

- Electronic submissions: Go to the Federal eRulemaking Portal at <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- Fax: (202) 493-2251.

- Mail or Hand Delivery: Docket Management, U.S. Department of Transportation, 1200 New Jersey Avenue SE, West Building, Room W12-140, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except on Federal holidays. To be sure someone is there to help you, please call (202) 366-9322 before coming.

Instructions: All submissions must include the agency name and docket number for this notice. Note that all comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided. Please see the Privacy Act heading below.

Privacy Act: Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the *Federal Register* published on April 11, 2000 (65 FR 19477-78) or you may visit <https://www.transportation.gov/privacy>.

Docket: For access to the docket to read background documents or comments received, go to <http://www.regulations.gov> or the street address listed above. Follow the online instructions for accessing the dockets via internet.

FOR FURTHER INFORMATION CONTACT:

For additional information or access to background documents, contact:

Thomas Fincannon, Office of Vehicle Safety Research, Human Factors/Engineering Integration Division NSR-310, West Building, W46-447, 1200 New Jersey Ave, SE, Washington, DC 20590; thomas.fincannon@dot.gov

SUPPLEMENTARY INFORMATION:

Under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.), before an agency submits a proposed collection of information to OMB for approval, it must first publish a document in the Federal Register providing a 60-day comment period and otherwise consult with members of the public and affected agencies concerning each proposed collection of

information. The OMB has promulgated regulations describing what must be included in such a document. Under OMB's regulation (at 5 CFR 1320.8(d)), an agency must ask for public comment on the following: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (c) how to enhance the quality, utility, and clarity of the information to be collected; and (d) how to minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses. In compliance with these requirements, NHTSA asks for public comments on the following proposed collection of information for which the agency is seeking approval from OMB.

Title: Examining Distraction and Driver Monitoring Systems to Improve Driver Safety

OMB Control Number: New

Form Number(s): NHTSA Form 1718: Online Eligibility Questionnaire; NHTSA Form 1719: Karolinska Sleepiness Scale; NHTSA Form 1720 Sleep Food Intake; and NHTSA Form 1721: End of Visit Release Statement.

Type of Request: New information collection

Type of Review: Requested: Regular

Requested Expiration Date of Approval: Three years from date of approval

Summary of the Collection of Information:

NHTSA proposes to collect information from the public as part of a study to improve NHTSA's understanding of the differences in approaches to driver state detection and the potential safety impacts of driver monitoring systems (DMS). DMS refers to in-vehicle technology that can detect driver state and interact with the driver through the human-machine

interface (the user interface that connects the driver to the vehicle). For example, a DMS that detects drowsiness may display an icon on the dashboard, such as a coffee cup, accompanied by a sound to alert the driver that drowsiness is present.

This study contains two tracks to assess DMS, and subjects may participate in Track A, Track B, or both. This allows for a balance between understanding how driver state detection changes within a diverse testing sample and within an individual across driver states. The overall sample will contain 80 data sets. To achieve this, 120 subjects are anticipated to be enrolled due to attrition across tracks. Each track will have 40 completed data sets. Thus, the total sample size is anticipated to be 68 subjects and will include subjects that completed Track A only ($n = 28$), Track B only ($n = 28$), and those that completed both tracks ($n = 12$). Track A will evaluate the ability of the DMS to assess distraction and Track B will evaluate the ability of the DMS to assess both drowsiness alone and distraction while drowsy.

NHTSA proposes to collect information from licensed drivers about their age, sex, driver license status, sleep and driving habits, and general health history to determine eligibility for the study. Those interested in participating will be asked about their ability to adhere to various requirements of the protocol (e.g., abstain from caffeine) and availability for a study appointment. Those who participate in the study will come to the University of Iowa Driving Safety Research Institute (DSRI), home of the National Advanced Driving Simulator (NADS). Both tracks involve a consent process, breath alcohol measurement, facial shape measurement, standing and seated height measurement, training presentation, a familiarization drive in the driving simulator, and sleepiness ratings before and after each study drive as well as approximately every 30 minutes during a waiting period. Both tracks also involve taking a digital image of the face so that researchers can obtain RGB values to assess skin tone variability. Track A only involves one study drive that occurs while the subject is alert and distracted. In Track B, subjects will be asked about their sleep and food intake (to confirm they have not consumed caffeine since 1:00 p.m., that they were awake by 7:00 a.m., and that they have consumed no

other substances that could influence driving) prior to an overnight driving session that involves three study drives. The first drive occurs while alert. The next two drives are counterbalanced and will occur while drowsy (at least 14 hours awake and having sleepiness ratings indicating drowsiness) and while drowsy and distracted. Simulator data will be used to evaluate the ability of the DMS to assess driver state.

Respondents will volunteer for the study by responding to an internet ad or via solicitation for volunteers from the DSRI subject registry. Only potential subjects in the registry meeting inclusion criteria will be contacted. Respondents will be asked a series of questions to determine eligibility to participate in the study. The questionnaire covers both Track A and Track B so respondents don't have to complete the questionnaire more than once and so researchers can ensure a subset of respondents meet criteria for both tracks. Criteria for both studies are largely the same; differences are related to ability to attend visits of a specified length, willingness to adhere to different protocol elements, and sleep habits (needed only for Track B). A research team member will answer all questions the respondent may have and schedule eligible respondents who wish to participate for a session at the DSRI.

Description of the Need for the Information and Proposed Use of the Information:

NHTSA was established by the Highway Safety Act of 1970 (23 U.S.C. 101) to carry out a Congressional mandate to reduce deaths, injuries, and economic losses resulting from motor vehicle crashes on the Nation's highways. As part of this mandate, NHTSA is authorized to conduct research as a foundation for the development of traffic safety programs.

In 2013, NHTSA published the final version of the Visual-Manual NHTSA Driver Distraction Guidelines for In-Vehicle Electronic Devices. In the decade since, vehicle technologies and interfaces have evolved and a substantial amount of new research on the topic of driver distraction has been conducted. As a result, NHTSA requires a rigorous and thorough review to update the current state of knowledge on driver distraction, attention management, and distraction/risk assessment. DMS are currently deployed in many production vehicles. Current

production systems use different data sources, including driver-facing cameras, vehicle inputs (e.g., steering wheel torque), driving performance (e.g., lane departures), and other measures (e.g., time on task). Future production systems are also likely to use physiological sensors (e.g., heart rate) as tools to identify driver state more accurately.

DMS could play a variety of roles in vehicles, including detecting and alerting drivers to distraction, drowsiness, or impairment, and then adjusting the vehicle technology to meet the needs of the driver or providing support in particular situations. It is important for NHTSA to be able to discern the differences in approaches to state detection to understand the potential safety impacts of DMS. This requires a comparison of various sensor approaches to driver state monitoring and the development of a test protocol for different DMS methodologies. The overall objective is to develop and deliver a methodology that will assess the ability of DMS to accurately determine driver state by collecting data to support a full assessment of the factors associated with DMS and modeling driver state based on sensor data in a driving simulator.

Affected Public:

Individuals aged 18+ from Eastern Iowa and the surrounding areas who have volunteered to take part in driving studies will be contacted for participation. They will be randomized evenly by sex, though some imbalance will be permitted to be inclusive of individuals who do not identify on the binary. Efforts will be made to enroll a diverse age sample that broadly represents the age of the driving population and includes those at greater risk of crashing (e.g., less than 25 years of age and greater than 65 years of age). Additional efforts will be made to enroll individuals with diverse skin tones, oversampling those who rate themselves higher on the Fitzpatrick Skin Type Scale. Businesses are ineligible for the sample and will not be contacted.

Estimated Number of Respondents: 600

Study pre-screening is done via online questionnaire. It is estimated that 600 individuals may begin the pre-screening questionnaire. After pre-screening, it is estimated that 300 individuals could be potentially eligible and require contact to be scheduled or to confirm

eligibility requirements are met. It is estimated that 120 individuals will be enrolled to complete 80 total data sets (anticipated breakdown of Track A only = 28, Track B only = 28, both = 12).

Frequency: Once

This is a one-time collection of information. The initial pre-screening time is roughly 15 minutes and can be done at the respondents' convenience using a device of their choosing. The only requirement is an internet connection to access the online pre-screening. Not all who begin this pre-screening will complete the form in its entirety, and not everyone will meet study criteria. Those who meet study criteria could be scheduled for Track A, Track B, or both.

Estimated Total Annual Burden Hours: 700 hours

The total estimated burden for the study is 700 hours. Track A contributes 117 hours, and Track B contributes 473 hours. Online pre-screening and visit reminders contribute 110 hours.

Estimated Total Annual Burden Cost:

The respondents will not incur any reporting or recordkeeping cost from the information collection. Respondents will incur a one-time cost for local travel to and from DSRI, which is estimated not to exceed approximately \$39.30 (based on the standard mileage rate for business-related driving in 2023 and a round trip distance of 60 miles). These transportation costs are offset by subject compensation. For respondents in Track B, who will not be permitted to walk, bike, or drive when leaving DSRI, an additional \$70 will be provided to offset the costs of finding alternative transportation.

Public Comments Invited: You are asked to comment on any aspects of this information collection, including (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; (b) the accuracy of the Department's estimate of the burden of the proposed information collection; (c) ways to enhance the quality, utility and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information

on respondents, including the use of automated collection techniques or other forms of information technology.

Authority: The Paperwork Reduction Act of 1995; 44 U.S.C. Chapter 35, as amended; 49 CFR 1.49; and DOT Order 1351.29A.

Tim John Johnson,

Acting Associate Administrator, Vehicle Safety Research.

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