DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA–00–8064]

Drowsy Driver Detection Device Laboratory Validation

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

ACTION: Notice of Research Activity.

SUMMARY: The U.S. Department of Transportation (US DOT) is seeking partners who have the potential of providing non-contact eye closure monitoring sensors that can be used in a drowsy driver detection system field operational test. This notice describes criteria and tests that will be applied to each candidate sensor as part of the determination of fitness for inclusion in a field operational test. Manufacturers of devices that may meet these criteria are invited to submit a description of their device and detailed instructions on operations of the device to the US DOT.

Each device must satisfy the following criteria: (1) The device must measure the percentage of eyelid closure over time (PERCLOS) and calculate PERCLOS 1 and/or PERCLOS 3 (one-minute and three-minute running averages of PERCLOS, respectively); (2) this measurement must occur in real time; (3) the device shall be unobtrusive and have no physical contact with the driver; (4) the device shall cause no harmful emissions of any type over the duration of the experiment; and (5) the device operation shall include no moving parts that could easily fail or that would require replacement, service, or routine maintenance by the driver.

Any device that meets the above criteria may be included in a US DOT sponsored laboratory research study to evaluate the validity and reliability of its real-time drowsiness detection capability. Previous research has demonstrated the feasibility of implementing a drowsiness detection system with physical eyelid closure as a continuous input. A successful device should demonstrate that it can provide a valid measure of alertness during a vigilance task and that this detection is repeatable (reliability). In addition to being valid and reliable, this device needs to be practical, and must meet additional standards of high sensitivity and high specificity. Thus the device must detect all (or nearly all) fatigue events and fatigued vehicle operators (high sensitivity), without false alarms (high specificity.)

The offeror understands that the device, if selected to participate in the laboratory validation study, will be provided on an as-is basis, requiring no further engineering or development and should be operationally ready. Second, the analysis that is derived from this laboratory research will be made publicly available and the device returned to the submittor, and third, the offeror shall in no way interfere with the procedures or personnel involved in conducting or managing the study. Furthermore:

1. Previous studies and research involving the device may be disclosed and provided to the government to assist in evaluating the ''fitness'' of the device for evaluation.

2. Selection to participate in the laboratory validation study will NOT constitute an endorsement of the device by the federal government.

3. A small budget shall exist to ensure the appropriate hookup of the device to the experimental apparatus.

4. Involvement does not constitute a promise of future relations with the federal government.

The devices will be tested in a laboratory in a double blind testing methodology. Results will be sent back to manufacturer for interpretation. The US DOT is only interested in testing devices that are operationally ready, not devices under development.

DATES: Submit device descriptions on or before November 27, 2000.

ADDRESSES: All proposals should refer to Docket No. NHTSA–00–8064 and be submitted to Docket Management, Room PL–401, 400 7th Street, SW, Washington, D.C. 20590. Docket hours are from 10 a.m. to 5 p.m. Monday through Friday. Proposals may also be sent by electronic submission. The electronic submission procedure is described in the Docket Management section of the DOT's web site: http://www.dot.gov.

FOR FURTHER INFORMATION CONTACT: Paul Rau, Office of Vehicle Safety Research, NHTSA, (202) 366–0418; or Mr. Robert Carroll, Office of Research and Technology, FMCSA, (202) 366–9109, 400 Seventh Street, SW., Washington, DC 20590–0001.

SUPPLEMENTARY INFORMATION:

Background

The DOT has created a program titled the Intelligent Vehicle Initiative (IVI). The goal of the IVI program is to increase safety on the nation's highways through the acceleration of the deployment of on-vehicle safety devices. One of the primary focus areas of the IVI is (commercial) motor vehicle driver fatigue. Further information on the IVI program may be found on: www.its.dot.gov/ivi. Additionally, the DOT has the goal of reducing truck involved fatalities by 50% by the year 2010. Additional information concerning DOT and commercial motor vehicle safety goals may be found on: *www.fmcsa.dot.gov* and *www.nhtsa.dot.gov.*

Further, technical conferences were held in 1997 and 1999, to discuss scientific validation findings regarding PERCLOS and other eye activity measures of alertness, and the status of efforts to develop in-vehicle sensors to continuously measure PERCLOS. The conferences were the primary focus of U.S. DOT-sponsored research over the past decade demonstrating the validity of PERCLOS as a measure of driver vigilance performance and also explored related psycho physiological alertness measures and alertness monitoring-related issues. The conferences reviewed potential and appropriate uses of PERCLOS data and ways to ensure the active participation and acceptance of drivers and management. The 1999 conference report, Ocular Measures of Driver Alertness: Technical Conference Proceedings (FHWA–MC–99–136) is available from National Technical Information Service (NTIS) (PB2000–101412), telephone: (703) 605–6000.

The vigilance task testing will be conducted in a controlled laboratory environment, similar to the previous work sponsored by NHTSA and FMCSA. A detailed description of this previous research, as well as the findings, can be obtained from the report entitled ''Evaluation of Techniques for Ocular Measurement as an Index of Fatigue and the Basis for Alertness Management'' published by the US DOT/NHTSA Report #DOT HS 808–762 is also available from NTIS. A summary in the form of an FMCSA Technical Analysis Brief may be found on http://www.fmcsa.dot.gov/safetyprogs/research/researchpubs.htm.

Each device will be tested on sleep deprived subjects who will remain awake for 42 hours, while working on a computerized test battery every two hours. The tests include a 20 minute psychomotor vigilance task (PVT) each two hours. PVT performance lapses refer to the times when a subject fails to respond to a task in a timely manner (*i.e.* <500 msec.); lapses will be recorded for each minute for the entire 20 minutes.

PVT lapses will be used as the validation criteria variable because driving is a vigilance task requiring psychomotor reactions, and psychomotor vigilance has been previously validated in medical research to be very sensitive to fatigue

from night work and sleep loss. Thus, PVT lapses are a valid index for evaluating candidate technologies.

Additionally: (1) Each device will be time locked in real-time to PVT performance to permit coherence estimates for minute-to-minute fluctuations and bout-to-bout fluctuations in alertness-drowsiness across the entire 42 hour period of wakefulness; (2) suppliers of devices will have no knowledge of PVT lapse data during the course of their extracting drowsiness/alertness scores from their devices, while the researchers will have no knowledge of the device's scoring algorithm. This double blind procedure will be maintained throughout data acquisition and analysis; (3) to further optimize the reliability of coherence estimates, technology suppliers will also be unaware of the timing of data acquisition; and (4) processed data (drowsiness scores) received from device manufacturers and PVT lapse data (criterion vigilance performance scores) from the researcher will be electronically forwarded to an independent professional statistician for calculation of coherence results.

The independent coherence results will be used as the basis for assessing the validity of the submitted device. The non-obtrusiveness and ease of use by the subject driver of the device will be assessed by the researchers during the laboratory phase of this research and be noted. Additionally, the device must be ''ready-to-use'' with clear instructions on how to operate the device. This means that the laboratory researchers will not have to do any engineering or re-configuring of the devices in order to use them in the laboratory validation.

Results from this program will be important criteria in the selection of devices eligible to participate in the planned IVI Operational Field Test of Drowsy Driver Technology planned to begin in late FY 2001.

Technology Submission Instructions

Submit proposed device descriptions to the U.S. Department of Transportation's Public Docket Management Room at the address listed above. The submission should include the following:

1. A detailed description of the device, along with operating instructions.
2. It should be no more than 10 pages in length.
3. Any existing evidence of objective validity, reliability, sensitivity, or specificity is encouraged to be submitted. This information DOES NOT count toward the 10 page length limit.
4. Three copies of your submission.
5. Your name, address, phone number and e-mail address.
6. DO NOT submit your device at this time.
7. Applications, once submitted, become the property of the US DOT.

Joseph N. Kanianthra,

Acting Associate Administrator for Research and Development, National Highway Traffic Safety Administration.

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DEPARTMENT OF THE TREASURY

Customs Service

[T.D. 00–69]

Annual User Fee for Customs Broker Permit and National Permit; General Notice

AGENCY: Customs Service, Department of the Treasury.

ACTION: Notice of due date for broker user fee.

SUMMARY: This is to advise Customs brokers that for 2001 the annual user fee of $125 that is assessed for each permit held by an individual, partnership, association or corporate broker is due by January 19, 2001. This announcement is being published to comply with the Tax Reform Act of 1986.

DATES: Due date for fee: January 19, 2001.

FOR FURTHER INFORMATION CONTACT: Michael S. Craig, Broker Management (202) 927–0380.

SUPPLEMENTARY INFORMATION: Section 13031 of the Consolidated Omnibus Budget Reconciliation Act of 1985 (Pub. L. 99–272) established that an annual user fee of $125 is to be assessed for each Customs broker permit and National permit held by an individual, partnership, association, or corporation. This fee is set forth in the Customs Regulations in section 111.96 (19 CFR 111.96).

Customs Regulations provides that this fee is payable for each calendar year in each broker district where the broker was issued a permit to do business by the due date which will be published in the **Federal Register** annually. Broker districts are defined in the General Notice published in the **Federal Register**, Volume 60, No.187, September 27, 1995.

Section 1893 of the Tax Reform Act of 1986 (Pub. L. 99–514), provides that notices of the date on which a payment is due of the user fee for each broker permit shall be published by the Secretary of Treasury in the **Federal Register** by no later than 60 days before such due date.

This document notifies brokers that for 2001, the due date for payment of the user fee is January 19, 2001. It is expected that annual user fees for brokers for subsequent years will be due on or about the twentieth of January of each year.

Dated: October 4, 2000.

Bonni G. Tischler,

Assistant Commissioner, Office of Field Operations.

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