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Views Statement on Implementing Driver Impairment Prevention Technology

The following viewpoints are offered by the Technical Working Group on Advanced Impaired Driving Prevention Technology (TWG) as a contribution toward identifying efficient and effective approaches for implementing driver impairment prevention technology in new cars and realizing the predicted benefits of saving more than 9,000 lives per year when fully deployed.

The TWG was established in June 2022 to facilitate implementation of advanced impaired driving prevention technology as mandated by Congress in the Infrastructure Investment and Jobs Act (IIJA) that was signed into law in November 2021. The TWG is an independent body that brings together experts with extensive knowledge of vehicle safety technologies, the Federal Motor Vehicle Safety Standards (FMVSS) regulatory process, and public health initiatives. The Group offers the following principles and pathways to facilitate implementation of the Congressional mandate.

Principles for Implementing Driver Impairment Detection and Prevention Systems

1. **Deliberate Progress is Essential**. It is critically important that the mandate in Section 24220 of the IIJA result in a significant step toward comprehensive deployment of impaired driving prevention technology within the defined timeframe. The resulting Federal Motor Vehicle Safety Standard must fully achieve the requirements specified in the legislation and also incentivize further development and deployment of impaired driving prevention technology.

2. **Comprehensive Function is Our Target.** The technology required and incentivized by federal policy should address impairment due to different causes and driving situations. However, coverage of all potential impairment scenarios may not be feasible in the short term and a policy solution that mandates incremental progress could start saving lives and preventing injuries immediately while providing for expanded coverage in the future. The long-term objective of this technology is to address driver impairment from all potential causes including alcohol, other drugs, fatigue, distraction, and inattention, and to respond to impairment that may be detected in any driving situation, including pre-start and during the driving process. Each step of implementation, including the initial rulemaking mandated by the IIJA, should be as comprehensive as possible, but incremental policy steps should be taken toward comprehensive function as they become technologically feasible rather than waiting for a perfect solution.

3. **Public Benefit and Public Support is Integral to Design.** The prevention technology should address our impaired driving crisis without introducing new concerns. The safety standard must protect privacy and enhance equity to ensure public support and adoption. The objective of the technology is to prevent impaired driving crashes, deaths, and injuries. Tangential or harmful objectives beyond preventing dangerous driving should be avoided.

Pathways to Implementation

Based on a review of current technologies and consideration of performance prerequisites for driver impairment prevention, the TWG concludes that there are viable pathways to fulfill the requirements of the IIJA mandate today and prevent more than 9,000 deaths each year when fully implemented. Key provisions and rationale for one such strategy:

Recommendations:

- Require that by the implementation date specified in the IIJA, all new cars be equipped with technology that can measure driver blood alcohol content (BAC) before starting a trip, either directly or by equivalence, and prevent the car from being operated if the driver BAC is at or above 0.08 percent.
- In addition, require that by the IIJA implementation date new cars be capable of monitoring one or more driver impairment indicators other than BAC (such as fatigue detection) and providing an audible, visible, or haptic driver warning if the measure indicates that the driver is not fit to drive.
- Also, encourage incorporation of features that would assess driver impairment during a trip and, if a driver is determined to be at or above 0.08 BAC or equivalent, respond by engaging an approach to preventing or limiting vehicle operation that is safe for all both inside and outside of the vehicle.

Rationale:

- The validity of direct measures of BAC (using breath or blood) as an indicator of legal compliance is well established in science. Such measures are accurate, reliable, and repeatable. A synthesis of information gathered by the TWG indicates that BAC measurement technologies will be production-ready in time for the implementation date allowances specified in the IIJA.
- Allowing use of a BAC equivalence encourages technology advancement and allows other driver monitoring technologies to be implemented without need for further regulatory change. Manufacturers could be required to provide data to validate the BAC equivalence of their driver monitoring measure in an approach similar to that used in FMVSS 126 (Electronic Stability Control) for technologies required for understeer prevention. Alternatively, manufacturers choosing a BAC equivalence technology could be permitted to petition the government to adopt a specified test procedure, an approach that was used in FMVSS 208 (Occupant Crash Protection) for technologies required for detecting out-of-position occupants.
- Requiring a driver warning system using measures other than BAC (in addition to a system based on BAC or equivalent that prevents vehicle operation) and encouraging incorporation of features that provide rolling tests for driver impairment advances industry experience with other driver monitoring systems that have the potential for extending the benefits of impairment detection to all driving situations and to address impairment by drugs, fatigue, or other causes.

The TWG believes that an approach such as the example outlined above would meet the principles previously described, satisfy the IIJA mandate, and provide a pathway that could accelerate deployment of life-saving driver impairment prevention systems.

The best driver impairment detection system will be capable of detecting a wide range of impairment types and reacting in a way that limits risk to everyone on the road, including the driver. Because such comprehensive function will take time to develop and test, the approach outlined above aims at solving the most critical issue – driver alcohol impairment – in the short term and incentivizing further development to reach more comprehensive function in subsequent years. With this approach, prevention of drug-, distraction-, or fatigue-related driver impairment would not need to be required in initial years of a mandate, nor would intervening in the operation of a moving vehicle. While a comprehensive system is the target, the TWG believes that the benefits of early deployment vastly exceed the value of waiting for a perfect system.

The TWG developed these views after deliberating over the past several months and gathering input from stakeholders ranging from technology firms to EuroNCAP and principals from the Driver Alcohol Detection System for Safety (DADSS) program. The Group invites comments or response to these ideas

and encourages constructive dialog toward achieving this historic road safety opportunity. The TWG can be contacted through co-chairs, stephanie.manning@madd.org or Jeff Michael at jmicha30@jhu.edu.