

# Memorandum



U.S. Department of Transportation  
**National Highway Traffic Safety  
Administration**



**Subject:** Docket Submission of Meeting with University of Michigan, ST Microelectronics, ams-OSRAM, Denso and Protomatic: On Potential Application of Physiological Monitoring Cameras and Algorithms to Impairment Detection

**Date:** August 23, 2023

**From:** Frank Barickman  
Division Chief, Applied Crash Avoidance Division  
Office of Vehicle Safety Research

**To:** Docket Number: NHTSA-2022-0079  
Advanced Impaired Driving Technology

**Through:** Terrence Sommers  
Assistant Chief Counsel  
Vehicle Safety Standards and Harmonization

On August 23, 2023, staff from the National Highway Traffic Safety Administration (NHTSA) met with researchers from the University of Michigan, ST Microelectronics, ams-OSRAM, Denso and Protomatic. The topic of the meeting was the potential application of physiological monitoring cameras and algorithms to impairment detection.

The meeting included demonstrations of advanced camera sensors with a variety of depth sensing technologies. The demonstrations included sensor data processing algorithms that could isolate image regions of interest that included portions of a subject's head, face and chest. The algorithms then used this information to find physiological information such as heart and respiratory rate.

The researchers suggested that similar techniques could be used to find metrics that correlated with alcohol impairment, but further research is necessary.

Please submit this memorandum to Docket No. NHTSA-2022-0079.

Attendees included:

## NHTSA

- **Tim Johnson**
- **Frank Barickman**
- **Eli Wachtel**
- **Eric Traube**

- **Jeremiah Singer**
- **Alexandria Rossi-Alvarez**
- **Elizabeth Mazzae**
- **John Martin**

**TRC (under NHTSA contract)**

- **Sughosh Rao**
- **Yuhao Chen**

**University of Michigan**

- **Mohammed Islam**
- **Thaddeus Koehler**
- **Isiah Bauzon**
- **Aiyu Tang**
- **Aarnav Unadkat**
- **Muhsinun Chowdury**
- **George Rabadi**
- **Lauren Terry**
- **Syeda Reza**

**ST Microelectronics**

- **Chris Varlamos**
- **Charles Kingston**

**Ams-OSRAM**

- **Michael Godwin**
- **Bart Terburg**

**Denso**

- **Dave Cook**

**Protomatic**

- **Doug Wetzel**