

## ABOUT ASAM

### Accelerate engineering for mobility

(ASAM vision)

ASAM e.V. (Association for Standardization of Automation and Measuring Systems) is a non-profit organization dedicated to promoting standardization of tool chains in mobility development, testing, validation and diagnostics. Our members are international manufacturers, suppliers, tool vendors, engineering service providers, and research institutes.

Our globally active community of experts creates and establishes standards. ASAM standards enable interoperability and seamless exchange of information across toolchains in the mobility industry. The ASAM organization drives initiatives from ideation to release with well-proven, efficient processes and expertise. Collaboration and networking across the entire ecosystem ensure that ASAM's standards are well-established.

“ASAM and its community are leading the conversation worldwide when it comes to standards for future mobility, be this for testing or for facilitating data exchange. We are best positioned to bring this expertise to standards for DMS to help ensure their reliability and interoperability.”

Ben Engel  
CTO, ASAM e.V.



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## DMS - STANDARDIZING DRIVER MONITORING SYSTEMS



Association for Standardization of  
Automation and Measuring Systems



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## DMS - CRITICAL SYSTEMS FOR ROAD SAFETY

Driver Monitoring Systems (DMS) are critical components of modern vehicles, helping prevent accidents caused by driver fatigue, distraction, and other forms of impaired driving. With the increasing adoption of autonomous and semi-autonomous vehicles, the need for a standardized framework for DMS is crucial for safety and interoperability.

### Quality Assurance of Driver Monitoring Systems

DMS have a direct impact on road safety: An estimated 20% of road accidents are caused by driver fatigue, 70% involve some form of observable distraction. Therefore, quality assurance of DMS is critical.

ASAM aims to initiate a project

1. **to develop a testing methodology** to ensure quality of Driver Monitoring Systems.
2. **to develop a concept for an application interface** for Driver Monitoring Systems.

## NEXT STEPS...

ASAM has a proven, well-defined and efficient standardization process that enables fast development of standards.

The next steps are:



## 1. VALIDATION PROCEDURES

Several aspects of DMS require comprehensive validation and standardization to ensure consistent performance across different vehicle types and driver demographics. The following areas need to be addressed:

- **Validation procedures:** Standardized methods for detecting drowsiness and distraction, verifying factors like eye openness, blink rate, yawning
- **Thresholds for warnings:** Strictly defined scientific thresholds for warning drivers about unsafe behaviors
- **Reference dataset requirements:** Effective operation across different demographics (ethnicity, gender, age)
- **Standard key performance indicators (KPIs):** Standardized metrics like response time, detection accuracy, memory usage, and latency
- **Environmental conditions:** Testing of various conditions (lighting, weather)
- **Vehicle categories:** Testing across different vehicle types

A standardized rating system (e.g., a 5-star rating system) can help manufacturers evaluate the overall performance and reliability of a Driver Monitoring System.

## 2. STANDARDIZED APPLICATION INTERFACE

Without a standardized interface, integrating DMS into vehicles becomes more complex, costly, and time-consuming. A shared application interface simplifies the integration process for OEMs and Tier 1 suppliers, enabling faster development cycles and ensuring consistent performance across different platforms. The standardization of the application interface is an enabler for DMS supplier diversification without leading to a significant increase in costs.

- **Logical data model:** Standardized core entities (e.g., driver head position), measurement units, precision
- **Functionality:** Interface to support features like drowsiness, distraction detection, and driver health monitoring
- **Physical representation:** Standard formats for communication (XML, JSON, binary)

