



NHTSA's Distraction Research In Progress

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Vehicle and technological approaches to reduce distracted driving



In-vehicle Interface Design

Reduce driver workload and eyes off road time



Secondary Device Usage

Understand secondary device usage and ways to mitigate it



Driver Monitoring Systems

Detect distractions in real time and deploy intervention strategies



Partial Driving Automation Systems

Support appropriate driver engagement during L2 usage

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In-Vehicle Interface Design



Novel Human-Machine Interfaces (HMI), led by TTI

- Identifies HMI technologies and implementations that have emerged since the 2016 publication of *Human Factors Design Guidance For Driver-Vehicle Interfaces*.*
- Includes a literature review and gap analysis, on-road study, and analytical design criteria evaluation by HF experts and researchers to identify key knowledge and research gaps that have emerged since the release of the 2016 guidance.

*Campbell, J. L., Brown, J. L., Graving, J. S., Richard, C. M., Lichty, M. G., Sanquist, T., ... & Morgan, J. L. (2016). Human factors design guidance for driver-vehicle interfaces (Report No. DOT HS 812 360). National Highway Traffic Safety Administration.

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Secondary Device Usage



Secondary Device Use, Needs Analysis, and Prevention Strategies, Led by DSRI

- Identifies the ways in which drivers interact with secondary/personal devices while driving, and what prompts or information needs compel them to do so.
- Further explores the distracting effects of these interactions.
- Identifies hardware and software solutions to minimize or prevent some interactions.
- This effort involves a nationally representative survey and utilizes NHTSA's National Advanced Driving Simulator @ DSRI.

Drive Mode Design Best Practices, led by Exponent

- Reviews state of the art / state of the practice in drive mode implementations (and by that we mean the use of unpaired portable devices while driving), documenting research gaps.
- Collects data to generate a best practices document for design.
- Includes a technology scan and literature review, and the conduct of empirical research on a test track with an occlusion paradigm, and a cones course, to inform best practices.

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Driver Monitoring Systems



Updated Exploration of Eye Glance Metrics Associated with Crash Risk and Distraction State Detection Metrics, led by VTTI

- Reviews recent research literature of eye glance-based distraction metrics, with focus on the relation of those metrics to crash risk.
- Analyzes Naturalistic Driving Study data using a selection of these metrics.
- Uses that recent naturalistic driving study data to replicate prior research while also exploring and understanding associations of risk using new eyes-off-road metrics, or combinations of metrics.

Examining Distraction and Driver Monitoring Systems to Improve Driver Safety, led by Westat

- Documents the types of tasks available in modern vehicles.
- Explores alternatives to current common metrics of task-based eyes-on & eyes-off road time, which may include technology-based solutions like DMS.
- Assesses how differences in DMS impact the ability of a system to reliably assess different driver states, including distracted driving.

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Partial Driving Automation
Systems



Driver Monitoring System (DMS) in SAE L2 Driver Support Systems, Led by TTI

- Characterizes approaches to DMS in current SAE L2 equipped vehicles.
- Particular attention to how such DMS address potential misuse of advanced driver-assist systems.
- Also explores potential driver misuse of DMS.
- Explores relationships between the underlying SAE L2 automation technology, the supporting DMS technology, and the HMI.