

Research in Progress

Impact of Advanced Driver Assistance Systems (ADAS) on Road Safety

Research Need

Drivers can misunderstand functionalities of complex ADAS functions, and over-attribute capability to such vehicle systems. This can increase potential for misuse thus affecting driver behavior and transportation safety. There exists a critical gap in our understanding of the potential impacts of the deployment and proliferation of ADAS in vehicles.

Goals/Objectives

- Conduct a literature and market review of the current state of commercially-available ADAS technologies, including driver monitoring systems as applicable, to document manufacturers' offerings, and potentially develop an understanding of the distribution of ADAS-equipped motor vehicles in the State via RMV vehicle registration data.
- Examine drivers' knowledge of ADAS systems, types of driver errors associated with the use of ADAS, and potential for ADAS misuse and circumvention of driver monitoring systems. Study the impact of drivers' knowledge of ADAS on its use/misuse.
- Develop and evaluate mitigation approaches to improve drivers' understanding of ADAS technologies and the commensurate role and responsibilities of the driver.

Project Information

This project is being conducted as part of the Massachusetts Department of Transportation (MassDOT) Research Program with funding from Federal Highway Administration (FHWA) State Planning and Research (SPR) funds.

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Project Start Date:

Jun 1, 2020

Expected Project Completion Date:

Nov 30, 2021

Methodology

The methods for this project will include:

- Systematic review of scientific literature and trade reports and ADAS deployment by vehicle manufacturers.
- Analysis of distribution of ADAS equipped systems in MA via Registry of Motor Vehicle data.
- Development and deployment of survey to examine drivers' knowledge, use, perception, and attitudes towards vehicle ADAS.
- Design, and development of training approach to accelerate drivers' understanding of ADAS.
- Evaluation of training using human subjects in an experimental context using driving simulation.

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