## Abstract

The primary focus of this white paper was to analyze and compare the relative advantages and disadvantages for autonomous large trucks versus autonomous light-duty vehicles. The examined topics are as follows:

- Overview of the U.S. trucking fleet
- Current safety status of large trucks in the U.S.
- Overview of autonomous and connected large-truck technologies
- Safety improvements for autonomous large trucks, including sensor placement considerations relative to light-duty vehicles, blind-spot and sensor-coverage improvements, additional sensor considerations, and the effects of autonomous and connected operation on nighttime crash risk
- Financial costs of large-truck crashes and the associated financial incentive to transition to autonomous and connected trucking
- Efficiency improvements for large trucks, including eco-driving and powertrain management, platooning and cost savings (and platooning’s potential role in the introduction of alternative-fuel large trucks), changes in driver tasks and efficiency, and motion sickness considerations for large-truck drivers

## Key Words

- self-driving
- autonomous vehicle
- sensing
- sensors
- radar
- lidar
- connected vehicle
- connected autonomous vehicle
- large trucks
- tractor trailers
- heavy duty
- medium duty

## Distribution Statement

Unlimited