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Brandon Schoettle and Michael Sivak	SWT-2017-19

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16. 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

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