Truck Automation Overview

Automated Vehicles Symposium, Truck AV Panel
July 12, 2017
Richard Bishop
What Factors Affect Trucking Today?

- Driver shortage
- Hours of Service
- Fuel cost
- Crashes
- Congestion
- Sustainability
- Trailer Length / Longer Combination Vehicles
- Increasing home-delivery parcel volumes
AV Use Cases for Heavy Trucks: Driven and Driverless

Open Road

- Fuel Economy
  - Truck Platooning
- Productivity
  - Traffic Jam Assist
  - Highway Pilot
  - Automated Trailer Backing
  - Parcel Delivery Automation

Constrained Environments

- Trailer Switching
- Mine Hauling
- Drayage
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Near Term: Driver Assistive Truck Platooning

- Two trucks following safely at close following distances
- Significant fuel savings due to aerodynamics
  - 5% for front truck and 10% for rear truck in two truck platoon are typical
- Combining vehicle-vehicle communications with radar
  - braking by front truck occurs simultaneously on follower truck
- Level One system: follower truck driver still responsible for steering
- Gaps variable in real-time based on conditions
Evolution of Truck Platooning

- Level One product introduction imminent
- Within Fleet >> Inter-fleet
- Longer platoons?
- Evolution of driver role in follower trucks to higher levels of automation
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Port of Palm Beach Gate Congestion
Start-Up Approaches

• Business case:
  – safety
  – fuel economy
  – enhancing driver’s job
  – reduced cost by replacing driver with automation

• Current concepts
  – highway driverless: Level 4 exit-to-exit
  – street driverless: remote control
  – private property driverless: distribution centers
Panelist Introductions
Our goal is to enable the safe operation of Highly Automated Commercial Vehicles on the nation’s transportation system to improve safety, prevent crashes, and efficiently move passengers and commerce.
Considerations for Automated Truck Policy

- **Technology is developing**
- **Flexibility for innovation**
- **Safety & Productivity**
- **Different business models**
- **What’s the ROI?**

*Excerpt from the document:*

**Federal Automated Vehicles Policy**

*Accelerating the Next Revolution in Roadway Safety*

September 2018

NHTSA

**States Partner for Testing, Research of Autonomous, Platooning Vehicles**

This story appears in the Feb. 6 print edition of Transport Topics.

Three states are joining forces to work on autonomous and connected vehicles research and testing.

After more than a year of discussion, the adjoining states of Michigan, Ohio and Pennsylvania announced Jan. 17 that they have formed the Smart Belt Coalition, which is made up of the departments of transportation in the three states: the University of Michigan; the Ohio State University and Carnegie Mellon University, as well as the Ohio Turnpike and Infrastructure Commission, the Pennsylvania Turnpike Commission and Ohio’s Transportation Research Center.*

*ATA’s Chris Spear Named to DOT Automation Committee* (January 11, 2017)
Connectivity and automated driving will allow for cleaner and safer megacities to grow and prosper.

There is no silver bullet. Technology choices should be addressed by business needs and may vary.
Panel Session: Trucking Automation Technology Developments

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