Overview of USDOT Truck Platooning Research

- Driver Assistive Truck Platooning Truck Platooning (2013-2019)
- Feasibility Study: Low-Speed Automated Truck Queue at Ports and Warehouses (2017-2019)
- Truck Platooning Human Factors Study (2017-2019)
- Truck Platooning Impacts on Bridges (2018-2020)
- Early Deployment Assessment (2019-2021)
- Truck Platooning Simulation Model Improvement (2019)
FHWA EAR Driver Assistive Truck Platooning (Level 1)

- **Caltrans/Volvo**
  - Three-truck platoon
  - Vehicles already equipped with production ACC
  - Lead truck either manually or automatically (ACC) driven
  - Gap is based on time headway – consistent with driver preference

- **Auburn U./Peterbilt**
  - Two-truck platoon
  - Business case analysis
  - Vehicle and aerodynamics simulation/analysis
  - Platoon formation modeling
  - Traffic modeling
Fuel Economy Testing Results

Caltrans/Volvo – 3-Truck Platoon

Auburn/Peterbilt – 2-Truck Platoon

[Graphs showing fuel consumption reduction and fuel savings as a function of vehicle spacing and following distance.]
MARAD/FMCSA: Feasibility Study: Low-Speed Automated Truck Queue at Ports and Warehouses

- Exploring application of automation to low-speed commercial vehicle operations at port terminals and warehouses
- Review of related studies and papers
- Surveys of industry and technology stakeholders (currently underway)
- Technology scan of existing or near-term enabling technologies
- Regulatory changes, cost estimation and safety benefits
Question: How will other road users respond to and navigate around a “wall of trucks” on the freeway?

Approach: Driving Simulator study with test subjects.

Focus areas, impacts on:
- Merging in between, ahead of, or behind platoon trucks.
- Visibility of road signs.

Variables:
- Number of trucks and spacing between trucks.
- Displays on trucks or roadside indicating truck platoon operation status.
Truck Platooning Impacts on Bridges
Phase I – Structural Safety

• Objective:
  – Recommend load models for bridge evaluation
  – Propose design specification modifications

• Interim reports
  – Parametric Analysis (Spring 2019)
  – Sample Bridge Analysis (Fall 2019)
  – Proposed Load Rating Methodology (Spring 2020)
  – Potential Impacts of Platooning on Design (Spring 2020)
Truck Platooning Early Deployment Assessments (Phase 1)

- **Goal** – To measure the safety and operational impacts of truck platooning on truck drivers, surrounding traffic and infrastructure on select public roadways.

- **Strategy** – Partner with industry, shippers, and state agencies and leverage planned early deployments of truck platooning.

- **Approach** – Issue a two-phase Broad Agency Announcement (BAA).
  - Phase 1 – Develop plans and proposal for evaluation of in-service truck platoons.
    - Up to 3 awards, 9-month period of performance.
  - Phase 2 – Conduct evaluation.
    - Number of awards TBD, only Phase 1 awardees eligible.
  - Independent Evaluator for Phases 1 and 2.
Automated Driving System Demonstration Grants

• Goals of the ADS Demonstration grants:
  – Safety: Test the safe integration of ADS into the nation’s on-road transportation system.
  – Data for Safety Analysis and Rulemaking: Ensure significant data gathering and sharing of project data with USDOT and the public throughout the project in near real time.
  – Collaboration: Work with innovative State and local governments and private partners to create collaborative environments that harness the collective expertise, ingenuity, and knowledge of multiple stakeholders

• [https://www.transportation.gov/av/grants](https://www.transportation.gov/av/grants)
For More Information

transportation.gov/av

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