0-6836 Commercial Truck Platooning: Level 2 Automation

2016 Transportation Short Course
Traffic Operations
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The Project Goal

Position TxDOT as a leader in this research area and the overall TSM&O and CV/AV initiatives.

– Comprehensive truck platooning demonstration in Texas.

– Proactive effort in assessing innovative operational strategies.
Project Focus

• Assess feasibility of deploying 2-vehicle truck platoons on specific corridors in Texas in 5 to 10 years.

• Bring together major partners who have committed in-kind resources
  – Equipment
  – Engineering services, and
  – Intellectual property.
## Project Partners

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<tr>
<th>Project Partners</th>
<th>Contribution</th>
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<tbody>
<tr>
<td>Ricardo</td>
<td>Software Engineering + Integration</td>
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<tr>
<td>Navistar</td>
<td>2x Sleeper cab trucks + Maintenance + Engineering + Graphic Design</td>
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<tr>
<td>TRW</td>
<td>2x ColumnDrive + Engineering</td>
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<tr>
<td>Denso</td>
<td>2x DSRC Radios/Antennas + Engineering</td>
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<tr>
<td>Bendix</td>
<td>2x Wingman Fusion + Engineering</td>
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<td>GreatDane Trailer</td>
<td>2x 48ft Trailers + Maintenance + Engineering</td>
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<td>Lytx</td>
<td>2x DriveCam Solutions + Engineering</td>
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<td>Argonne National Lab</td>
<td>2x Fuel &amp; Engine Temp Data Acquisition, Testing Support and Analysis</td>
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<td>US Army TARDEC</td>
<td>Engineering consulting to the project</td>
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# Phase I

## Foundational Studies
- Literature Review
- Legislative Impacts
- Liability Issues

## Platooning
- Develop alternative scenarios and corridors
- Validate scenarios

## System Development
- Operational requirements
- Safety analyses
- Specifications

## Demonstration
- Design and Implementation
- Integration
- Demonstration
What is Truck Platooning?

- Extension of cooperative adaptive cruise control
- Automated lateral and longitudinal vehicle control.
- Tight formation with short following distances.
- Lead truck: manually driven.
- Following truck(s): driver disengaged
Why Truck Platooning?

• Fuels savings.
• Emission reductions.
• Vehicle safety features.
• Increased highway throughput.
• Other benefits.
Vehicle Build
Engine Heat Mapping Instr.
Demo

Workshop

Tent

Demo
Demo Site

Texas A&M University Riverside Campus

Platooning Demo Route

Tent/Demo Observation Area

300 ft. x 5000 ft. Runway
Static Demo
Demo

Join & Figure-8

V=20mph
d=15m
Demo

Left Lane Change

V=40mph
d=15m
Demo

Right Lane Change

V=40mph
d=15m
Demo

Gap Increase (50m)

V=30mph
d=50m
Demo

Stop in Formation

V=40mph
d=15m
Platooning Scenario Video

Commercial Truck Platooning

TxDOT Project 0-6836
Phase 1 Demonstration
Final Questions
# Contact Information

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