Introducing CHAPTA
Collaborative Human – Automated Platooned Truck Alliance

WE can follow...
Asia is operating collaborative human – automated truck platoons.
Europe is moving truck platoons, from multiple manufacturers, across borders.

...WE can innovate and lead...
U.S.A. can take the lead by integrating fully autonomous trucks with human-driven or human-supervised trucks in a collaborative platoon on conventional roadways: save $17.2B annually with 60% platooning duty cycle.

...or WE can be left behind.
- Fleets late to operate in a collaborative platoon face a HUGE competitive disadvantage.
- Collaborative savings achieved are 486% higher than aero savings alone.

Economic Savings

<table>
<thead>
<tr>
<th>Cooperative Human - Truck Platooning: 5 Vehicle Platoon</th>
<th>Assumed Aerodynamic Savings</th>
<th>Number of Human Driven/Supervised Trucks in the Platoon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lead Truck</td>
<td>Followers</td>
</tr>
<tr>
<td>Percentage of total operating costs saved: aerodynamics + driverless trucks</td>
<td>5%</td>
<td>10% - 20%</td>
</tr>
</tbody>
</table>

Truck Driver Shortage
Collaborative human – automated truck platoons begin to address the 50% nationwide driver shortage.

What is CHAPTA?
CHAPTA is a pre-competitive research effort led by the Western Transportation Institute at Montana State University to unite stakeholders to cooperatively and intelligently introduce driverless technology to long-haul truck fleets.

CHAPTA Goals
Promote: U.S. Competitiveness.
Ensure: Compatibility with existing highway traffic.
Focus: Human factors, safety and operations, and workforce development.
Address: Institutional issues affecting deployment.

Stakeholders Include
- Fleet operators
- Truck OEMs
- Tiered suppliers
- Technology providers
- Insurance companies
- Economists and financiers
- Standards organizations
- FMCSA –US DOT
- State DOTs
- Warehousers
- Retailers
- Enforcement
Join CHAPTA and be part of the innovation and evolution of long haul trucking.

**CHAPTA Research will focus on:**

### Human Factors
- What personality types are suited for platooning, how to recruit, how to screen?
- How should autonomous truck platoons behave to instill trust and ensure comfort?
- What platoon information, how much, frequency, and mode (audible, tactile, graphical) should be provided to each driver?

### Operations
- What is the maximum size of a workable platoon considering human workload, economics, and safety?
- How does the size of the platoon affect non-platooned traffic with respect to efficiency, and safety?
- Insurance and liability.
- Specific behavior at entrance and exit ramps.

### Workforce Development

- **Drivers**
  - Retraining existing drivers/operators.
  - Attracting new drivers/operators.
- **Dispatch and Control**
  - Formation of platoons: timing and destination.
  - Transition from interstate to “last mile” travel to the destination.

### Research Resources

- Driving simulator
  - Personality evaluation.
  - Trust and comfort.
  - Information Studies: content, modes and rates.
- Full-scale road testing and validation site
  - Braking and acceleration.
  - High speeds.
  - Machines to produce rain, snow, mist and ice for adverse conditions.

### Can you afford to be left behind?

Autonomy WILL happen – join CHAPTA and stay ahead of the curve.

<table>
<thead>
<tr>
<th>Levels of participation</th>
<th>Annual Cost</th>
<th>Governance Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum</td>
<td>$50K</td>
<td>4</td>
</tr>
<tr>
<td>Gold</td>
<td>$40K</td>
<td>3</td>
</tr>
<tr>
<td>Silver</td>
<td>$30K</td>
<td>2</td>
</tr>
<tr>
<td>Bronze</td>
<td>$20K</td>
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</tbody>
</table>

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