

# First Generation Truck Platooning: Commercial Deployment in USA

Transforming Freight Movement Through ITS

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# Truck Platooning in USA

- Commercial systems available from multiple providers in 2019
  - Freightliner
  - Peloton Technology via multiple OEMs

# Platooning Seeing Extensive Validation of 1<sup>st</sup> Gen Products, Evaluation of Advanced Capabilities

Commercial/ Research	Country	Organization	Automation Level Leader	Automation Level Follower	Number of Trucks	Year of Operations
Commercial	USA	Peloton	L1	L1	2	2018
Commercial	USA	Freightliner	L1	L1	2	2018
Research	Austria	ConnectingAustria	L1	L1	2	2019
Research	USA	Texas Transp. Inst	L1	L2	2	2019
Commercial	Germany	MAN	L1	L2	2	2018
Research	UK	Transp. Research Lab	L1	L2	3	2018
Research	NL	Rijkswaterstaat	L1	L1	2	2019
Research	Sweden	Volvo/Scania	L1	L2	2	2019
Commercial	Finland	Scania	L1	L2	3	2019
Research	Europe	ENSEMBLE, EC	L1	L2	2	2019
Research	Singapore	Port of Singapore	L1	L4 Driverless	2	2019
Research	Japan	METI	L1	L4 Driverless	3	2019

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**The future is defined by what commercial companies are doing!**

# First Generation: Level 1 Driver Assistive Truck Platooning

- Trucks safely follow at close distances to save fuel
- First generation systems are **two trucks only**.
- Cloud connection adds security and robustness.
  
- Not driverless!!
  - Lead driver drives normally
  - Follower truck driver still responsible for steering and adjusting to road conditions in real-time (cut-ins, traffic, weather)
  - Drivers in direct radio contact.

# “Driver Assistive” Truck Platooning Coming to Market in 2018



# Peloton Technology – Overview

**REGULATORY** 17 US states have changed laws; 21 allow full or limited deployment; More on the way

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**FUEL SAVINGS** Verified 4.5% front truck, 10% rear truck, 7.25% combined

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**INDUSTRY** Joint development with 3 out of 4 US OEM's and both major brake suppliers

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**FLEETS** Large pre-order in place and in negotiations with 10 of top 25 fleets

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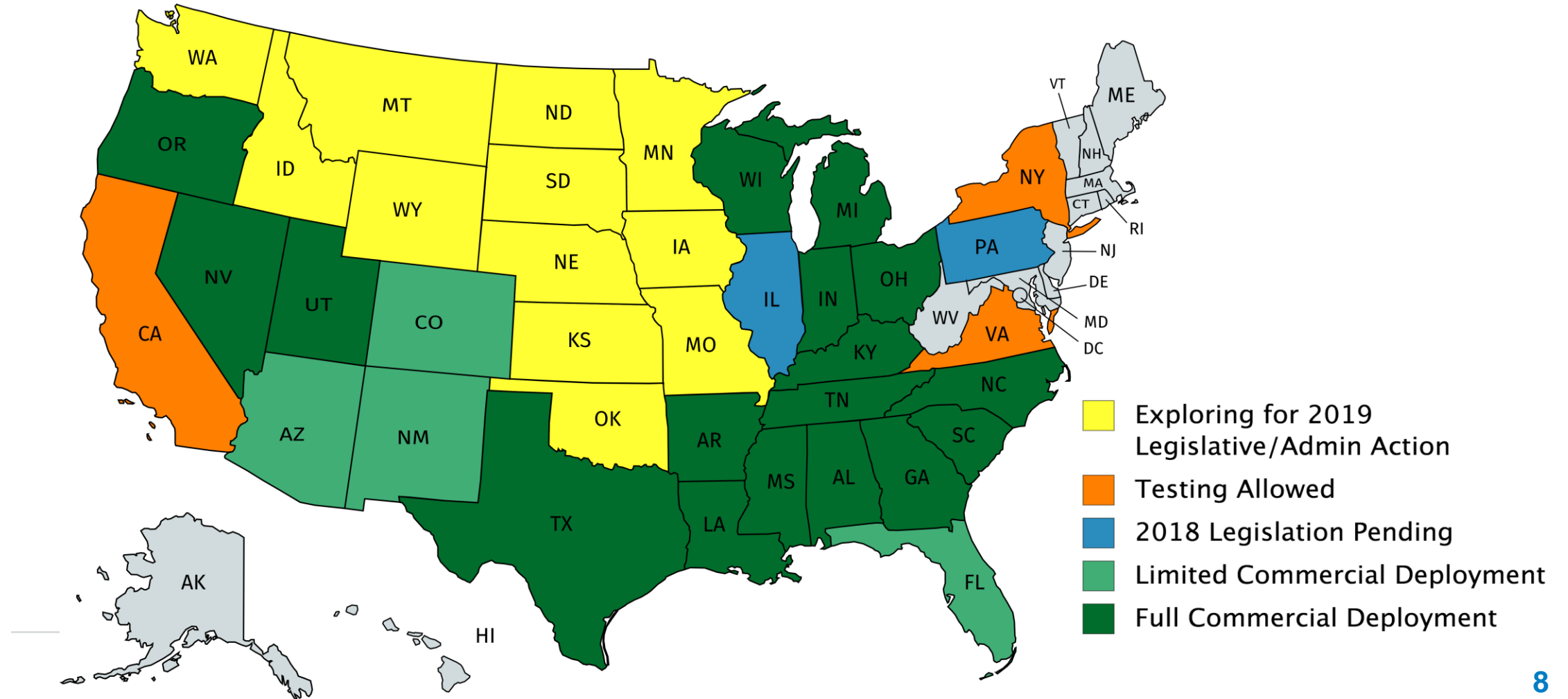
**INVESTORS** 11 investors in the Global Fortune 500

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# State Allowance of Truck Platooning as of 27 Aug 2018





# Safety: Only Enabled for Suitable Roads & Conditions

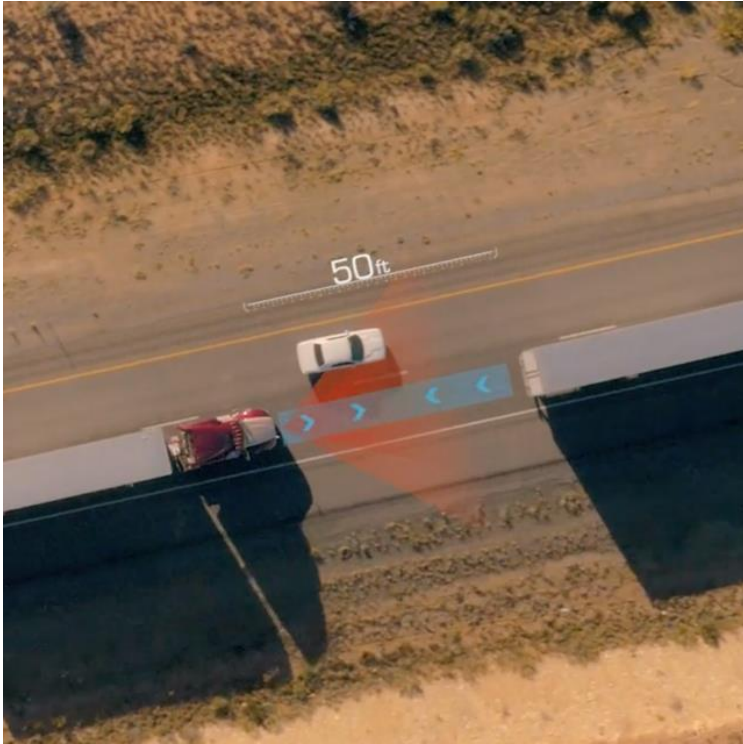
Peloton Network Operations Cloud (NOC) limits platooning to:

- Multi-lane, divided, limited access highways
- Moderate or low traffic conditions
- Good traction conditions (no heavy rain, sleet, ice or snow)
- Appropriate topography (no steep grades)
- Geofencing out of construction areas, bridges or other special areas

NOC provides Over-the-Horizon alerts to drivers on roadway conditions ahead



# Safety: Handling Vehicle Cut-ins



Driver sees car cutting in and backs off  
OR



If driver does not respond, system radar  
detects cut-in vehicle and automatically  
begins to back off follow truck

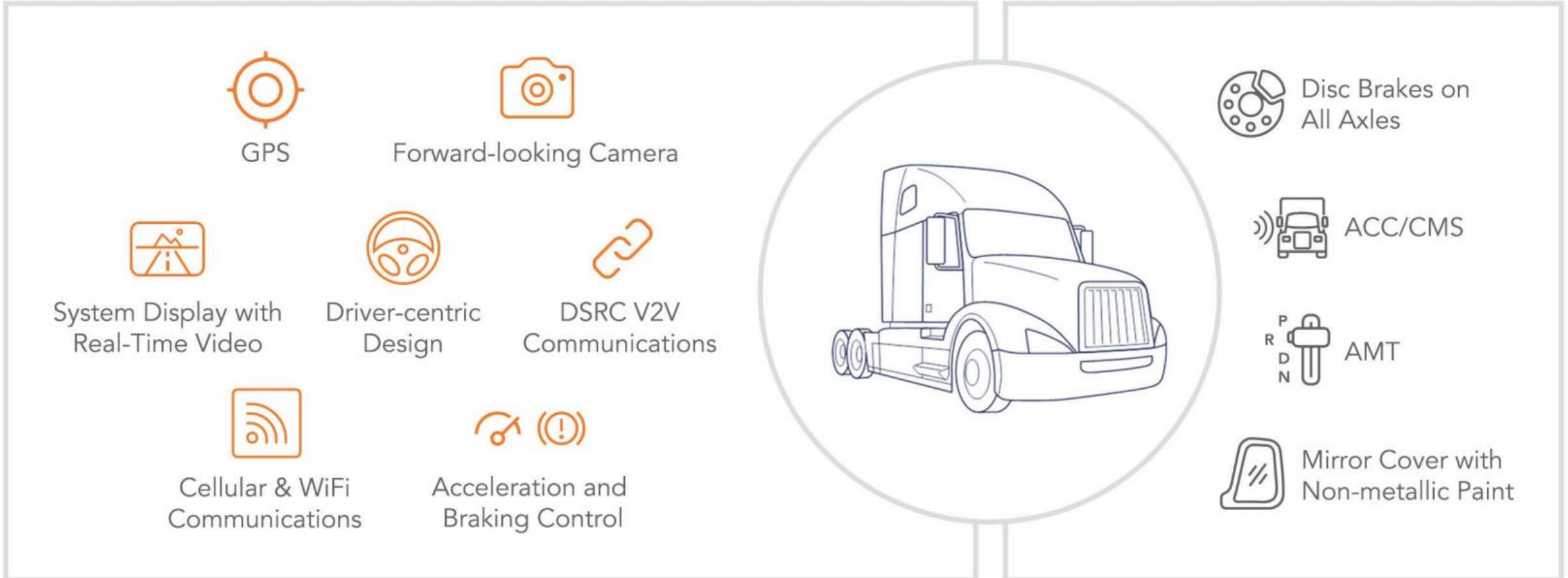


Follow truck will continue to back off to  
safe manual following distance  
(100+ ft) and then give full manual  
control back to follow driver

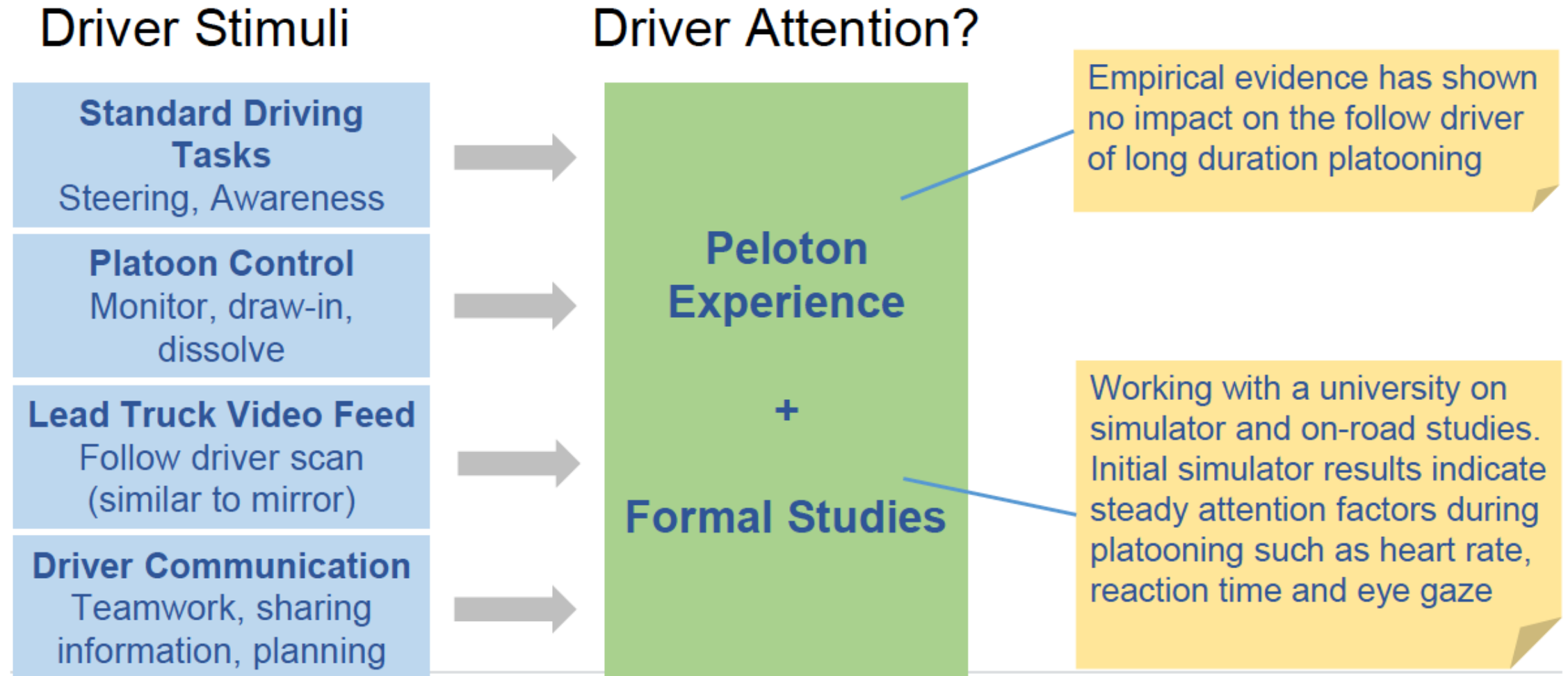
# PELTON TECHNOLOGY

## PELTON PLATOONPRO

## BASE TRUCK CONFIGURATION



# Impact of platooning on drivers' attention





# Use Case: Single-Fleet, Hub-to-Hub Routes

- 50+ “return-to-hub” runs per week
- Fleet drivers
- Scheduled and manual NOC pairing
- Homogenous tractor configurations



# Solid Demand From Top Fleets



# Thank You

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