

TRUCK PLATOONING 101

Freight Movement Task Force Meeting



3/29/2018

TRUCK PLATOONING 101

- What?
- Why?
- How?
- Who?
- Where?



WHAT IS PLATOONING?

Several trucks form an automated convoy – with the lead truck sending out acceleration, braking and steering signals in order for the following trucks to react accordingly.



HOW DOES PLATOONING WORK?

Trucks communicate directly with each other using wireless technology. The following vehicles autonomously measure distance, speed and direction and adjust to the vehicles in front.



WHY? WHAT ARE THE BENEFITS?

Safety; Fuel Savings;
Increased Traffic Capacity / Reduced Congestion;
Convenience; Labor Implications



WHO ARE THE PLAYERS IN TRUCK PLATOONING?

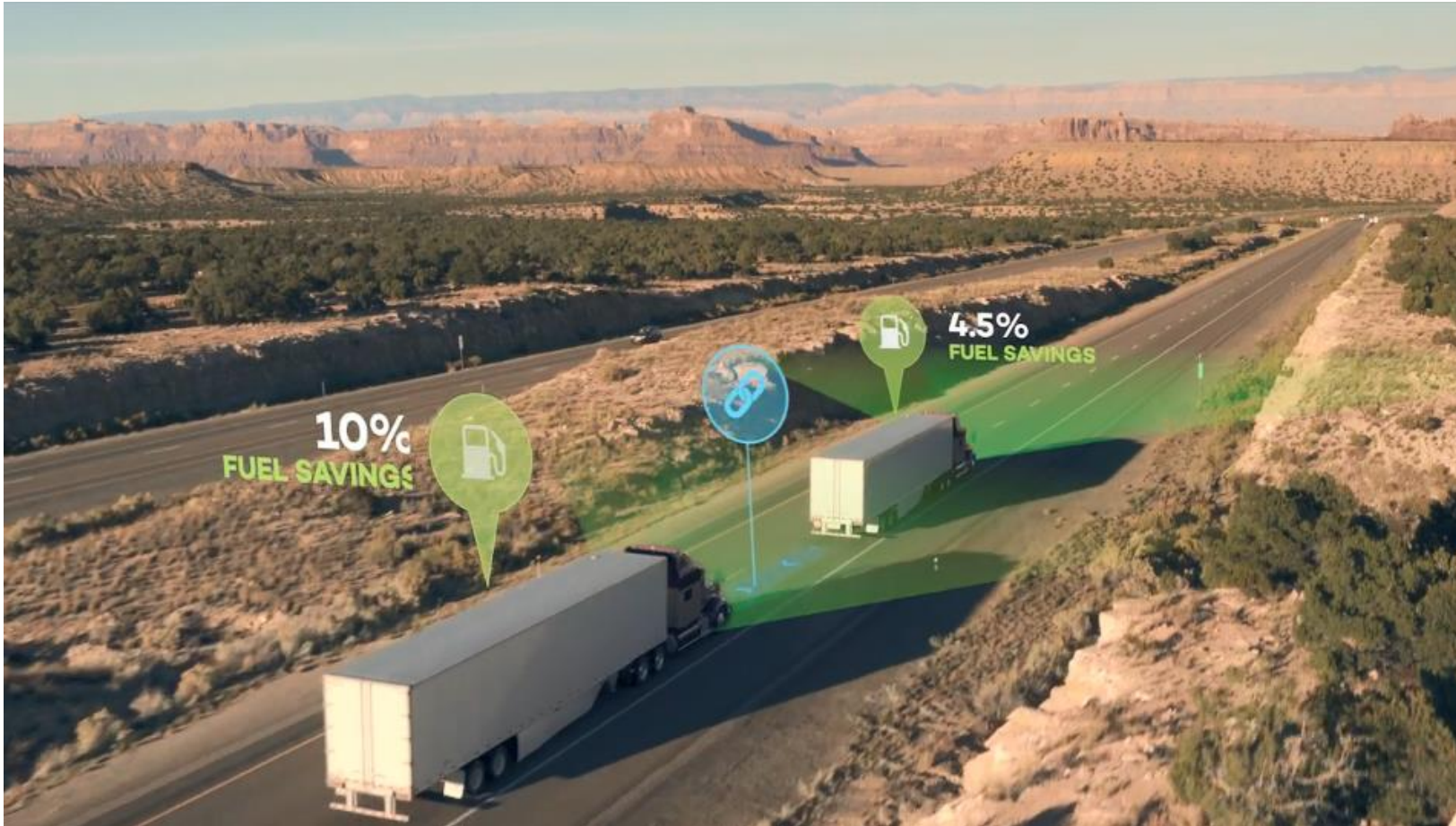
Daimler (Inspiration), Volvo (partnering with Peloton), Tesla (Tesla Semi), Uber (Otto), General Motors (GM SURUS), U.S. Military, U.S. Postal Service,



WHERE IS PLATOONING HAPPENING?

Las Vegas, Colorado, California, Texas, Wyoming, Michigan, Florida, Virginia

WHAT IS PLATOONING?

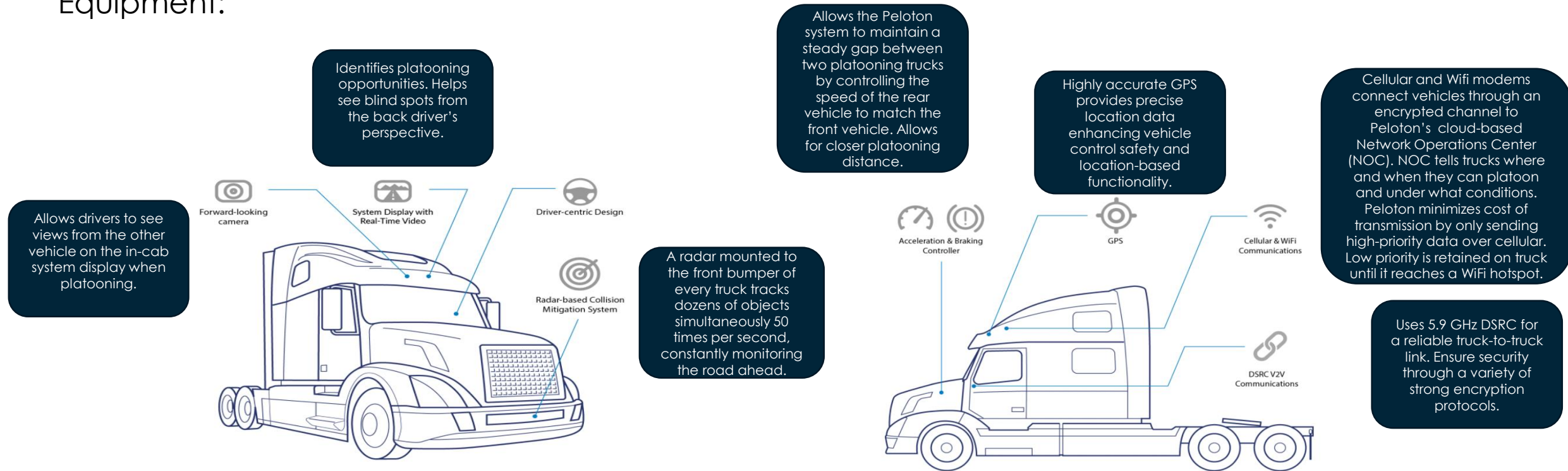


Video: <https://vimeo.com/155164547>

Source: <http://peloton-tech.com>

HOW DOES IT WORK?

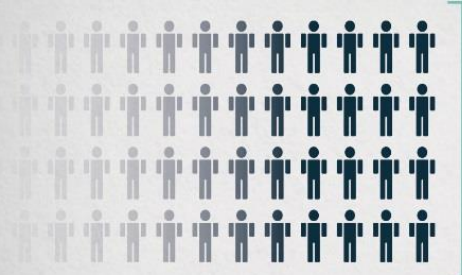
Equipment:



<http://peloton-tech.com>

WHY PLATOON? WHAT ARE THE BENEFITS?

PLATOONING BENEFIT #1: SAFETY*



≈ 4000

PEOPLE DIE in trucking accidents **EACH YEAR** in the USA alone

*Almost 4,000 PEOPLE die in trucking accidents each year in the USA alone. Accidents **CAUSED BY DRIVER ACTION** and **DRIVER FATIGUE** could be greatly reduced by platooning.

PLATOONING see the full infographic on 2025AD.com

2025 AD
THE YEAR OF AUTOMATED DRIVING



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PLATOONING BENEFIT #2: FUEL SAVINGS*



REDUCTION IN AIR DRAG &
CONSTANT DRIVING SPEED

*With **REDUCED SAFETY DISTANCE** and a more constant driving speed, air drag decreases for the following trucks - **LOWERING FUEL CONSUMPTION** and **CO₂ EMISSIONS** by up to 15 percent.

PLATOONING see the full infographic on 2025AD.com

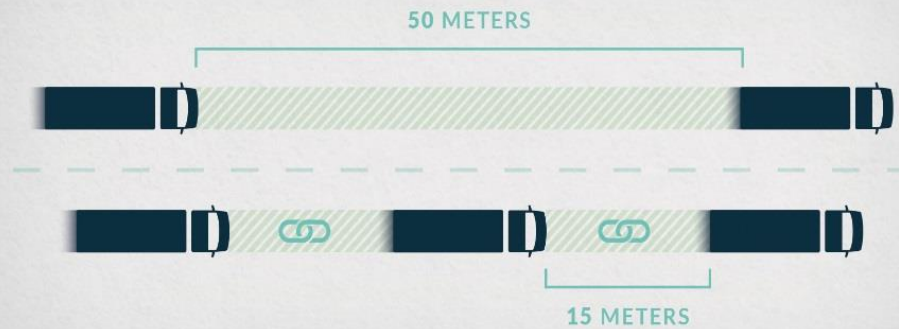
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WHY PLATOON? WHAT ARE THE BENEFITS?

PLATOONING BENEFIT #3: TRAFFIC CAPACITY *



*High tech sensors enable the trucks to react within 0.1 seconds - **1.3 SECONDS (OR OVER 90%) FASTER THAN HUMANS.** The safety distance between two trucks can be lowered from 50 METERS TO 15 METERS - thus reducing traffic congestion.

PLATOONING BENEFIT #4: CONVENIENCE *

PLATOONING MAKES
THE TRUCK DRIVER'S JOURNEY ...



*Shorter and more predictable journey times make the truck driver's work **LESS STRESSFUL** and **MORE CONVENIENT**.

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WORKFORCE IMPLICATIONS

Trucks carry 70% goods shipped around US, but truckers are scarce

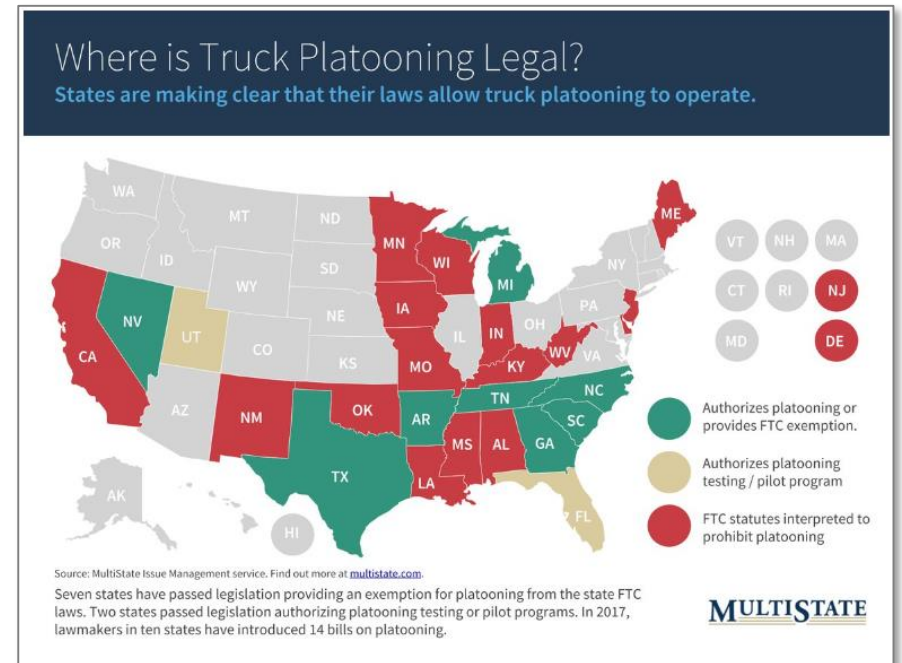
- Driver Shortage near 50,000 by end of 2017;
- Driver Shortage could exceed 174,000 by 2026 (American Trucking Association)

WHO ARE THE MAJOR PLAYERS AND WHERE?

- Daimler (Inspiration)
 - [First autonomous truck licensed to operate](#) on a US highway in Nevada in 2015
 - Tested at a private facility in Oregon, and will now start platooning down certain highways in Oregon and Nevada
- Uber (Otto)
 - Traveled 120 miles in Colorado hauling Budweiser beer with no driver at the wheel in 2016
 - Retrofitting existing trucks with AV technology;
- Tesla Semi – debuted in November 2017
 - All-electric freight truck with autonomous vehicle (lane keeping, automatic emergency braking, and forward collision warning)
- Volvo (Partnering with Peloton)
 - 9 states confirmed allowance of commercial deployment of platooning technology (AK, GA, MI, NV, NC, OH, SC, TN, TX)
 - Demonstration in Virginia in 2017
 - Logged over [1,000 test miles in Florida](#) in December 2017
- Embark
 - Using automated trucks to haul refrigerators from warehouse in El Paso, TX to distribution center in Palm Springs, CA since October 2017
 - Made a coast to coast trip from LA to Jacksonville FL in February 2018
- Other key players: US Military, US Postal Service

WHERE?- SAMPLE OF ACTIVITY ACROSS THE COUNTRY

- Wyoming DOT CV Pilot Program
 - Along I-80 - major freight corridor with challenging mix of weather and road conditions
 - Deploying ITS infrastructure and developing applications geared towards commercial vehicles
- I-10 Corridor Coalition
 - Arizona, California, New Mexico and Texas
 - TTI "Concept of Operations Report" - Platooning, Permitting, Parking
- Virginia
 - 3-truck platooning on I-66 in conjunction with FHWA
- Maryland
 - Truck platoon testing at Aberdeen Proving Ground
 - MDOT CAV Freight Sub-Group



QUESTIONS?



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