



Preventing Accidents
Saving Fuel
Connecting Trucks



California Transportation Commission
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Peloton Technology: Our Company



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DENSO



Background on Platooning

Platooning: Worldwide Activity



EU Platooning Challenge - 2016



ENERGY ITS – Japan 2009-12



SARTRE – EU (Sweden) 2009-Present



PIT – Canada 2009



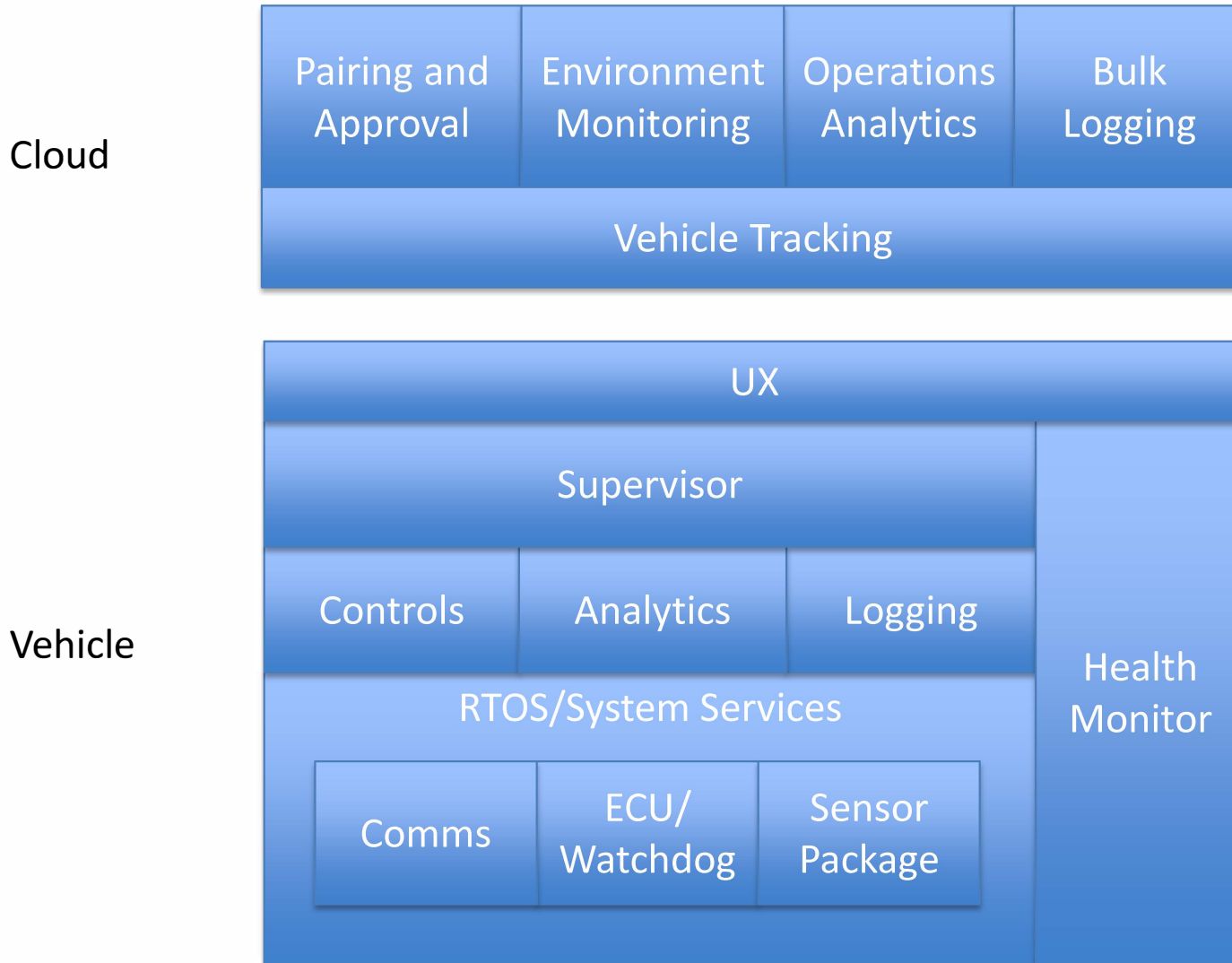
KONVOI – Germany 2005-09



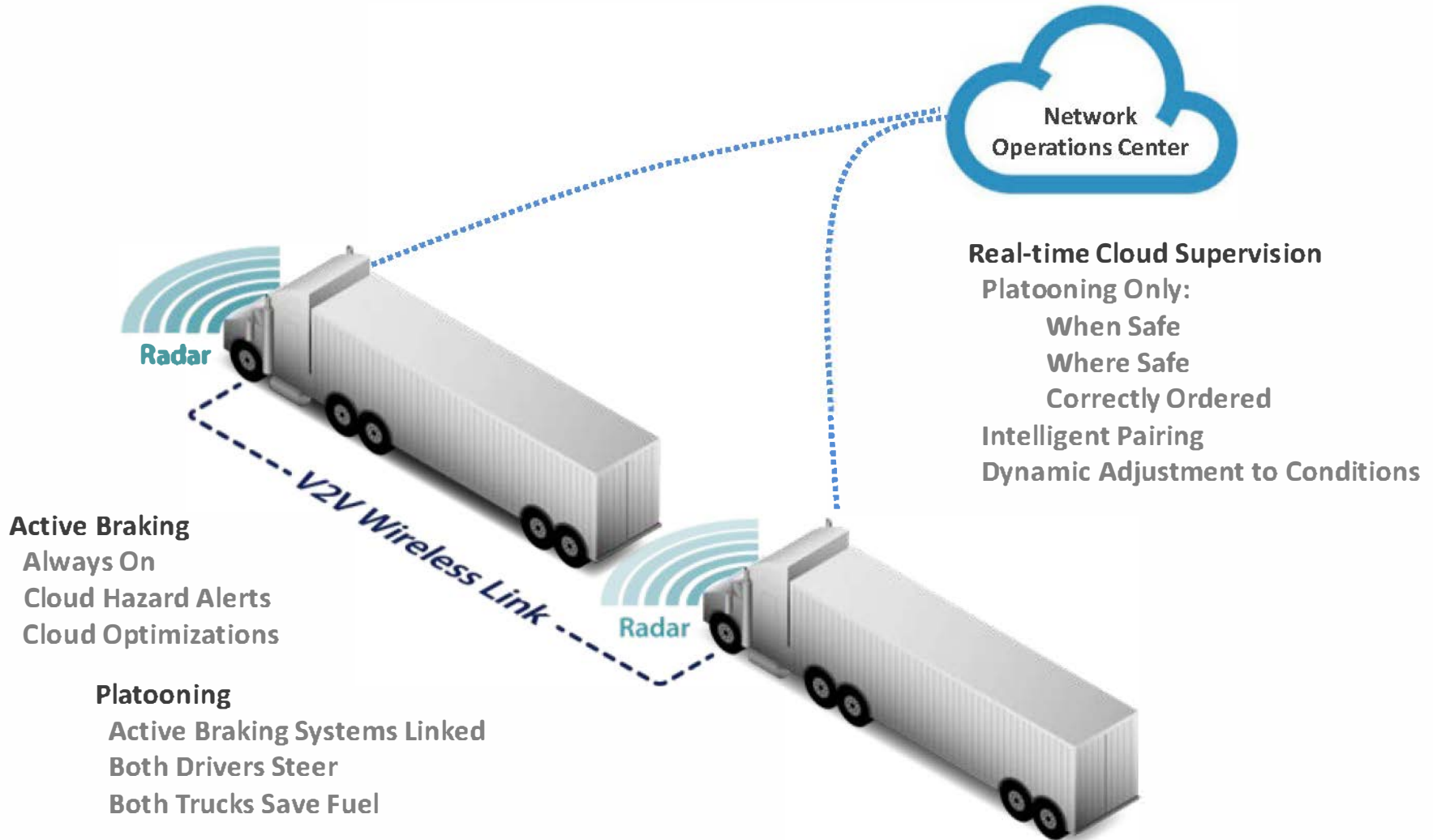
PATH – US '90s and ongoing

Technology of Truck Platooning

Peloton Core Technologies



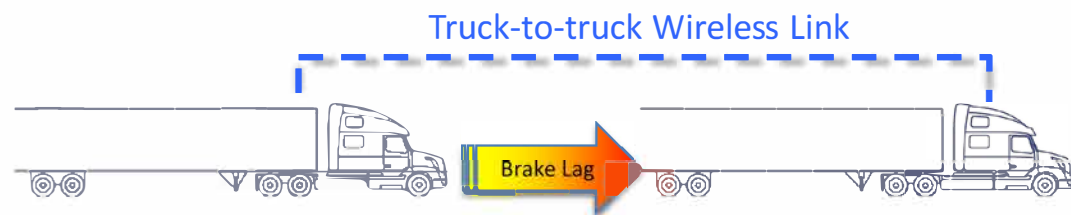
Connecting Trucks



The Platooning Experience



- Under ordinary conditions, proper following distance must allow for a following driver to perceive and react to the lead vehicle. This is in addition to the brake response lag in the braking system.
- With radar-based collision mitigation systems, driver perception and reaction are not necessary before the following truck brakes, but the following truck radar must detect the lead truck slowing before it can start to engage the following truck's brakes.
- A platooning system creates a near-instantaneous link, allowing a following truck's brakes to engage even *before* the lead truck begins to slow. This allows for a safe platooning following distance to be smaller than under ordinary conditions. The truck with the longer stopping distance is always put in the front position.

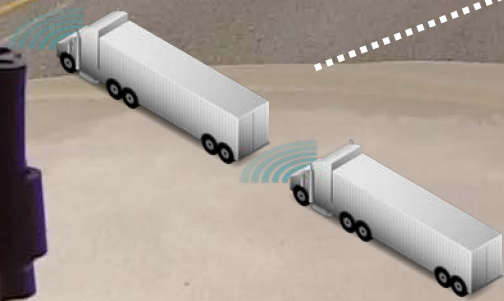


The Network Operations Center (NOC) provides drivers with over-the-horizon alerts to dangerous conditions, preventive maintenance warnings, and other data to enhance the driver's awareness.

Fleet Operations



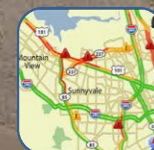
Platooning



Hazards



Weather



Traffic



Platooning Benefits



- US Freight Trucking: **\$700 Billion in Revenues**
 - Fuel Cost: **\$100+ Billion**
 - **33%+** Operating Costs
 - Accident Cost: **\$90+ Billion**
 - Industry Net Profit: **3%**

- Preventing Accidents
- Saving Fuel
- Improving Decisions

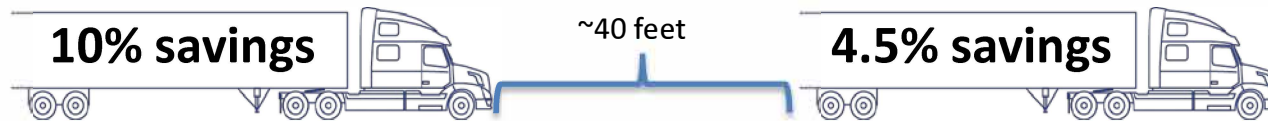


Enhanced
Fleet Economics
& Safety

Platooning accelerates the payback period for collision mitigation and advanced safety technology



In addition to **improving individual and paired truck safety all the time**, public benefits of platooning include:



- **Fuel savings/Range Extension** (Independent test, 7.5% avg for both trucks)
- **Emissions reduction** (Corresponding GHG & Criteria Pollutants)
- **High quality data generation** (for fleets and govt)
- **Increased infrastructure efficiency**
- **Economically viable** (Fleet Payback Period <1 year)
- **Potential low-speed applications** (Platoon Signal Priority)

Partners & Engagement



Federal (USDOT: NHTSA, FMCSA)

- No federal limitations to platooning
- Two USDOT projects (Auburn Univ. & CalTrans/PATH) to demonstrate platooning, establish best practices, and create pathway to deployment
- More projects coming → encouraging progress

States (State DOTs)

- No numeric following distance limitation in majority of States: “reasonable and prudent” standard
- Working with growing number of States to hold trials via administrative approval or legislation

Funded Projects with:



- **Industry Standards & Best Practices:** ATA/TMC, SAE, etc.
- **AASHTO and CVSA:** dialogue, best practices, harmonization
- **Collaboration on Demonstrations**
 - UT (Nov'13), NV (May'14), MI (Sept'14), FL (private test) (Apr'15), CA (Nov'15), UT (Nov'15), TX (Dec'15)
 - Potential upcoming California demos
- **Setting stage for Fleet Trials in 2016**
 - Administrative approval: TX, NV, MI, AL, NM
 - Legislation passed or in process: UT, CA, FL, MO
 - High interest & discussions: AZ, IA, WI, AR, TN, OK, OR, WA, others

Thank You



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