



Rethink the Safety Challenge for Highly Automated Vehicles

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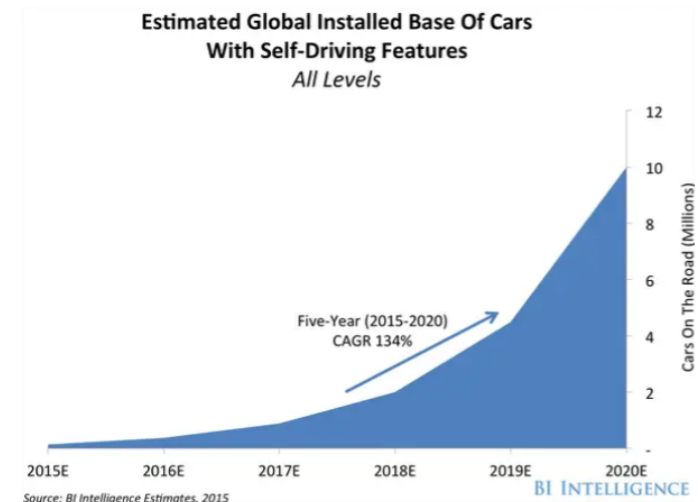
An Unrealized Promise on Automated Vehicles

HOME > TECH

10 million self-driving cars will be on the road by 2020

Insider Intelligence , BI Intelligence Updated Jun 15, 2016, 7:25 AM

Self-driving cars are no longer a futuristic idea. Companies like Mercedes, BMW, and Tesla have already released, or are soon to release, self-driving features that give the car some ability to drive itself.



BI Intelligence

Grand Technical Challenge for AV (1)

Curse of dimensionality Caused by the complex driving environment

Weather



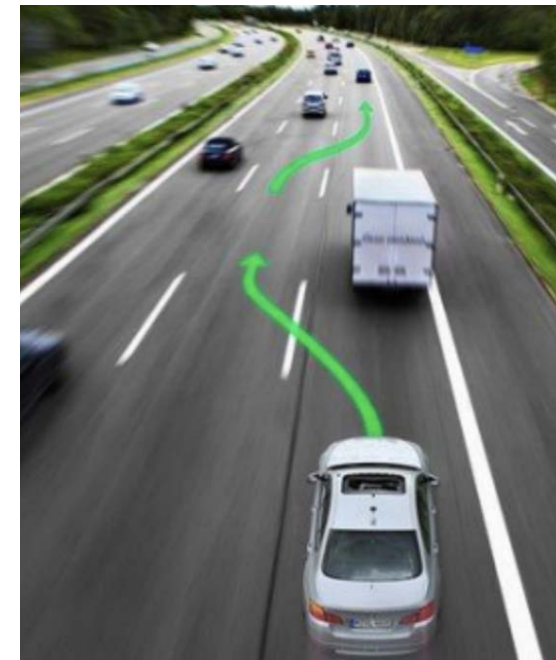
Road Infrastructure



Road Users



Maneuvers

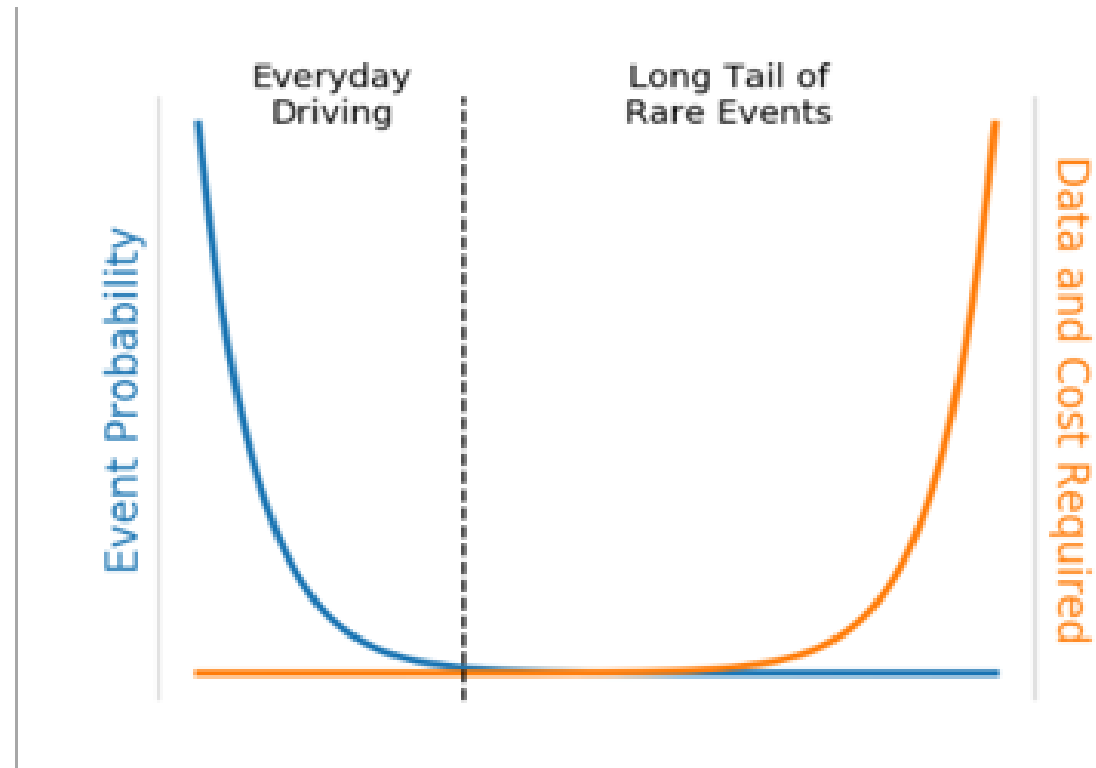


Grand Technical Challenge for AV (2)

Long-tail problem caused by the rareness of safety-critical events (corner cases)

HUMAN DRIVERS

1
fatal
accident
every
100 million
miles driven

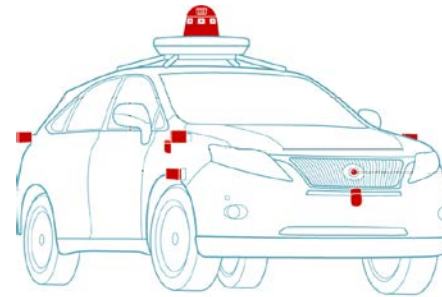


Automated Vehicles are AI-driven safety-critical cyber-physical systems

- Need to deal with these two challenges simultaneously.
- Expected to have better safety performance than human drivers

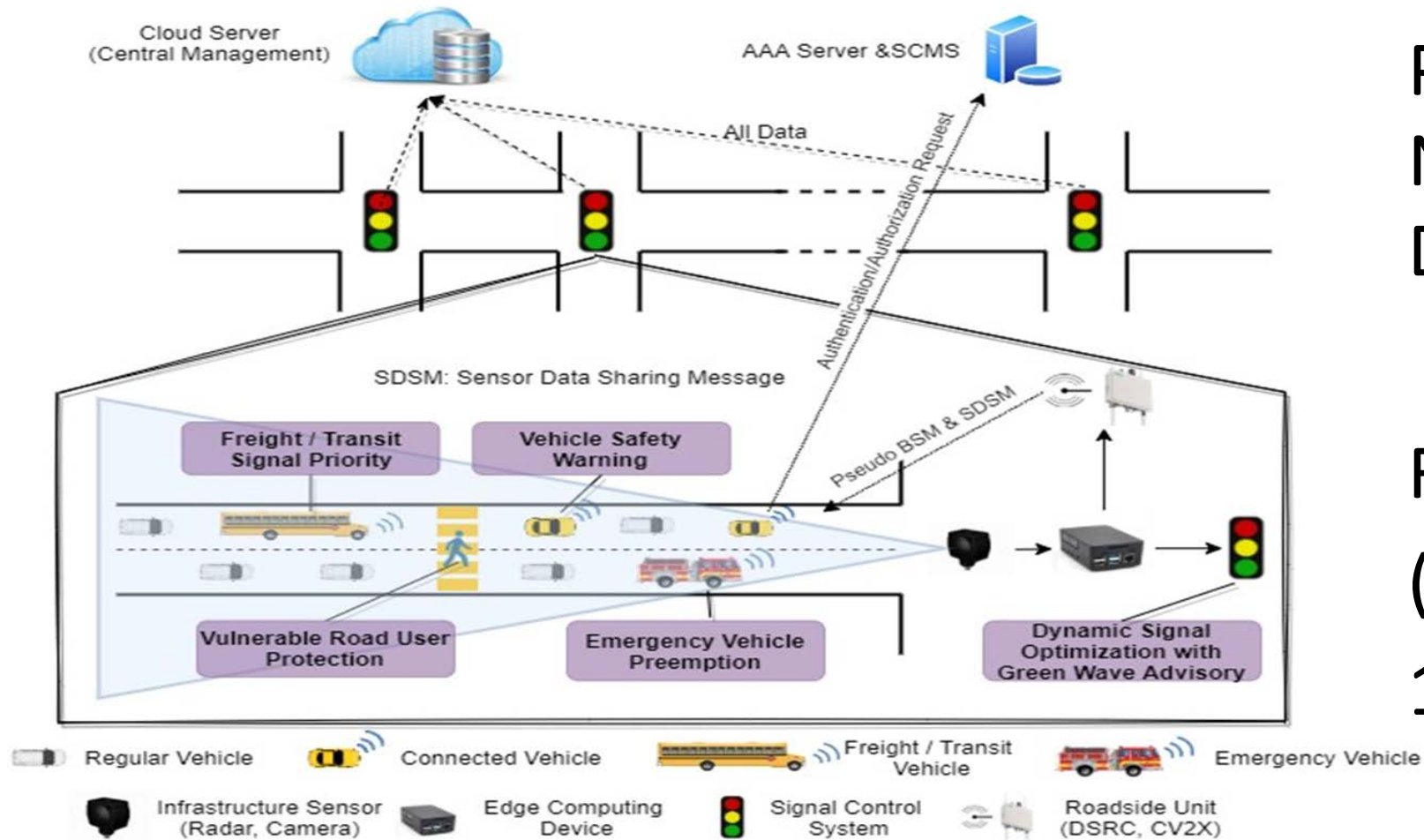


V.S.



Automated
Driving System

Smart Intersections Project



Paving the Way for a National CAV Deployment

Funded by USDOT (2021 -24) ~\$10M with 1:1 Industry Match

Ann Arbor Connected Automated Vehicle Living Lab



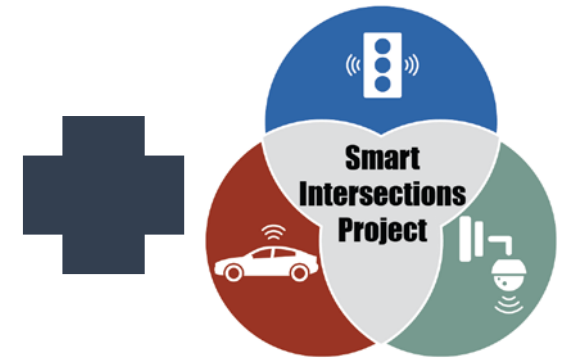
SPMD Launched
August 21, 2012
\$30M



Ann Arbor Connected
Vehicle Test Environment
(AACVTE), Completed
March 31, 2019
\$15.2M



Ann Arbor Connected
Environment, Operations
and Maintenance
\$4.4M



Smart Intersection
Project
\$19.9M