



Flash Memory Summit

# How Could Infrastructure Operators better Support Autonomous Cars?

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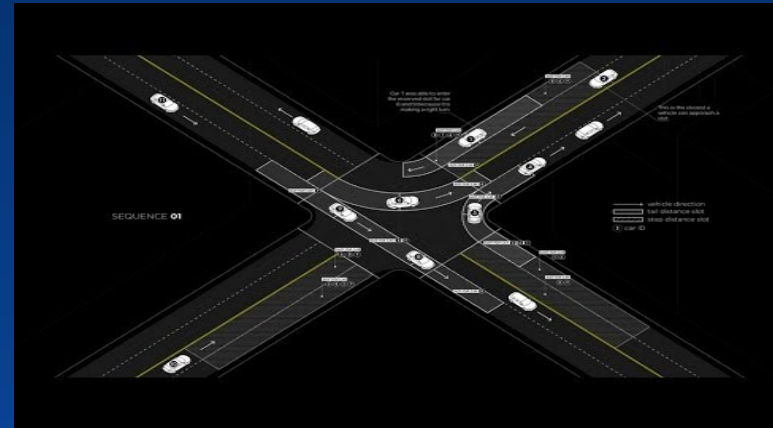
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# Could Self-Driving Cars Eliminate Traffic Lights?

- What about pedestrians and cyclists?
- What about people enjoy driving?
- Autonomous cars will have to coexist with human-controlled vehicles and other road users





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## What if Something Went Wrong?

- Missed seeing a traffic light or failed to detect its state
- Obstructed lines of sight
- Work zones
- ...
- Connectivity and data sharing between vehicles and infrastructure (CAVs)



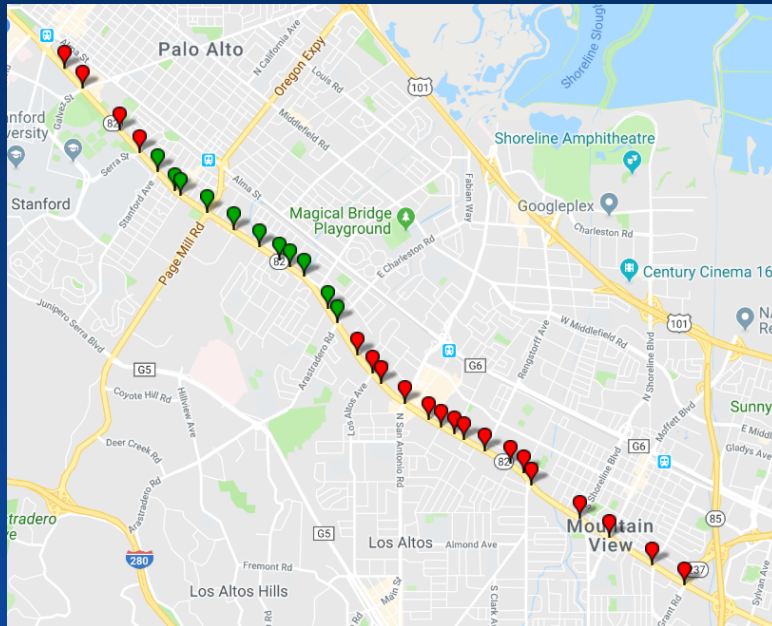
# What Types of Data to Share and How?

- Infrastructure Owners and Operators (IOOs) are looking at
  - Vehicle data and obstacle detection data for traffic signal control
  - Vehicle on-board sensor data for infrastructure maintenance
- What about OEMs?
  - HD MAP
  - Work zones
  - SPaT (Signal Phase and Timing)
  - Security certificates (SCMS)
  - ...
- Raising public awareness and acceptance of CAVs through prototyping and pilot testing



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# California Connected Vehicle Test Bed



- Green pins: 11 existing intersections
- Red pins: 20 expansion intersections
- Total length is about 7 miles long
- Signal Control Applications
  - Priority for special modes of vehicles
    - Transit, Freight, CAVs
  - Adaptive control utilizing CV data
- Intersection broadcasting messages
  - SPaT – Signal Phase and Timing
  - MAP – Intersection Geographic Description
  - RTCM – GPS position corrections

Website: <http://caconnectedvehicletestbed.org>