# Illinois Department of Transportation

## *Drive to Automation*

### Benefits of Automation

- **Safety** 30K, 1K
- **Congestion**
- **Mobility**
- **Sustainability**
- **Productivity**
- **In-Vehicle Personal Time**

## *Drive to Automation*

### Enablers of Automation

- Technological Advancements
- Industry
- Government
- Media

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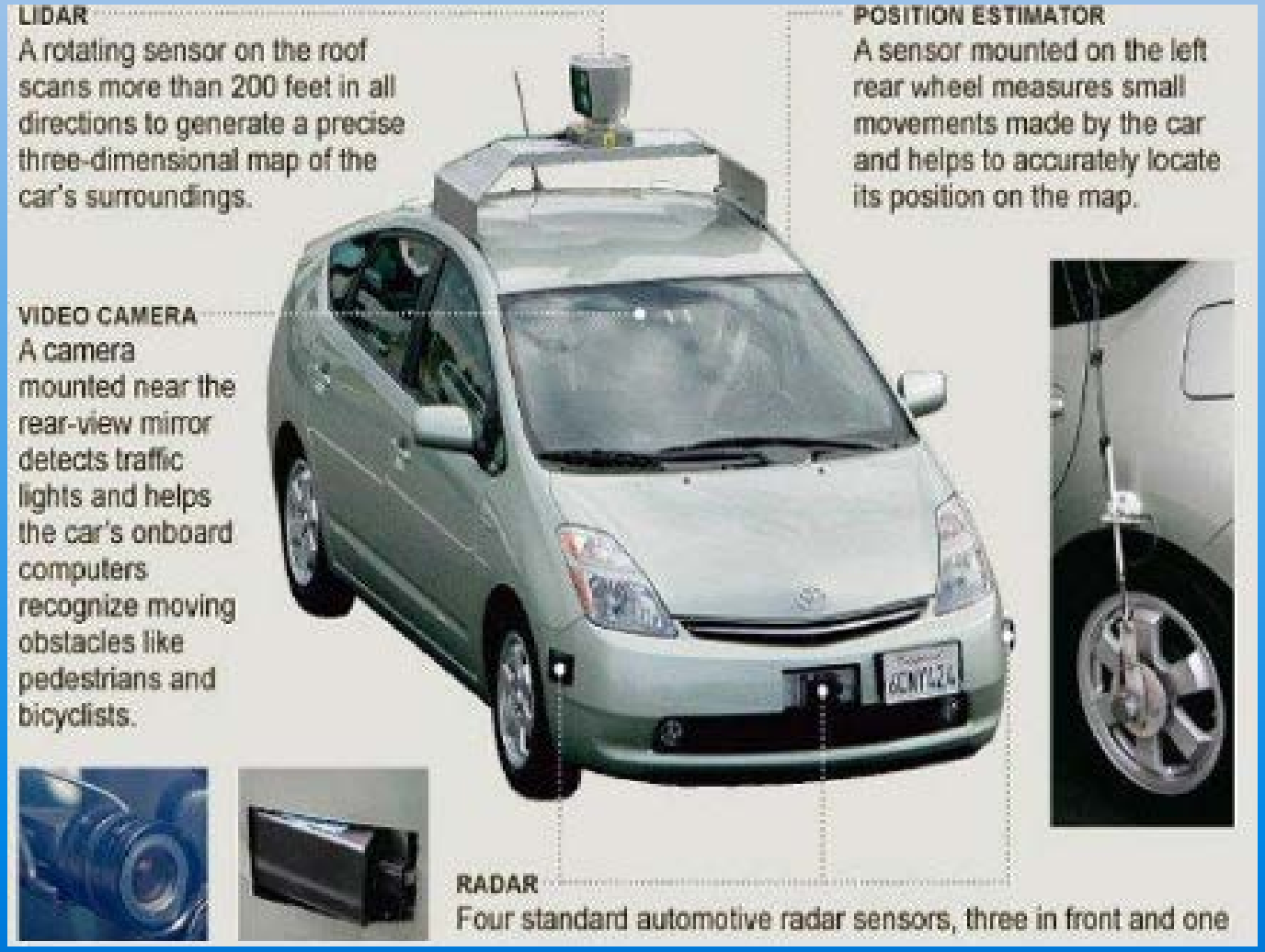


**How does it Work?**

**Advance Driver Assist Systems (ADAS)**

**Google's Self-driving Car**

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## Connected Vehicles

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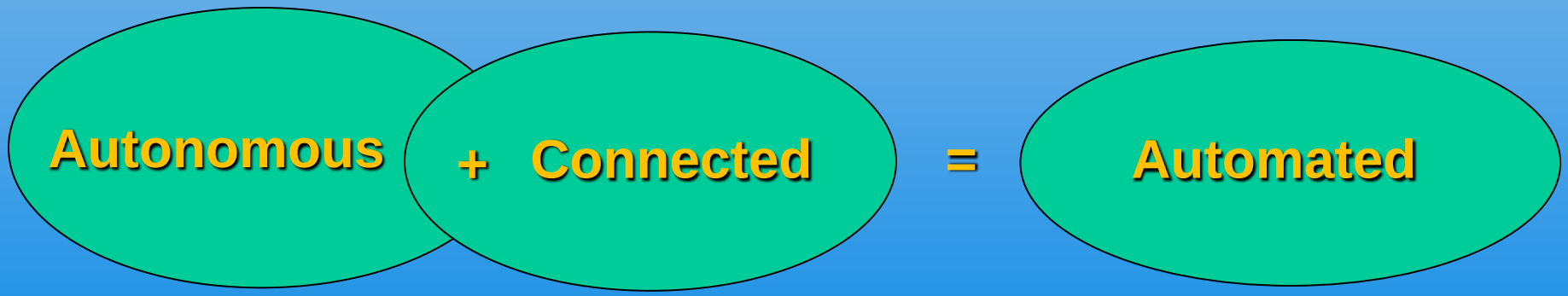
### Autonomous vs Connected Cars




AV

CV = VxV & VxI

AV + CV

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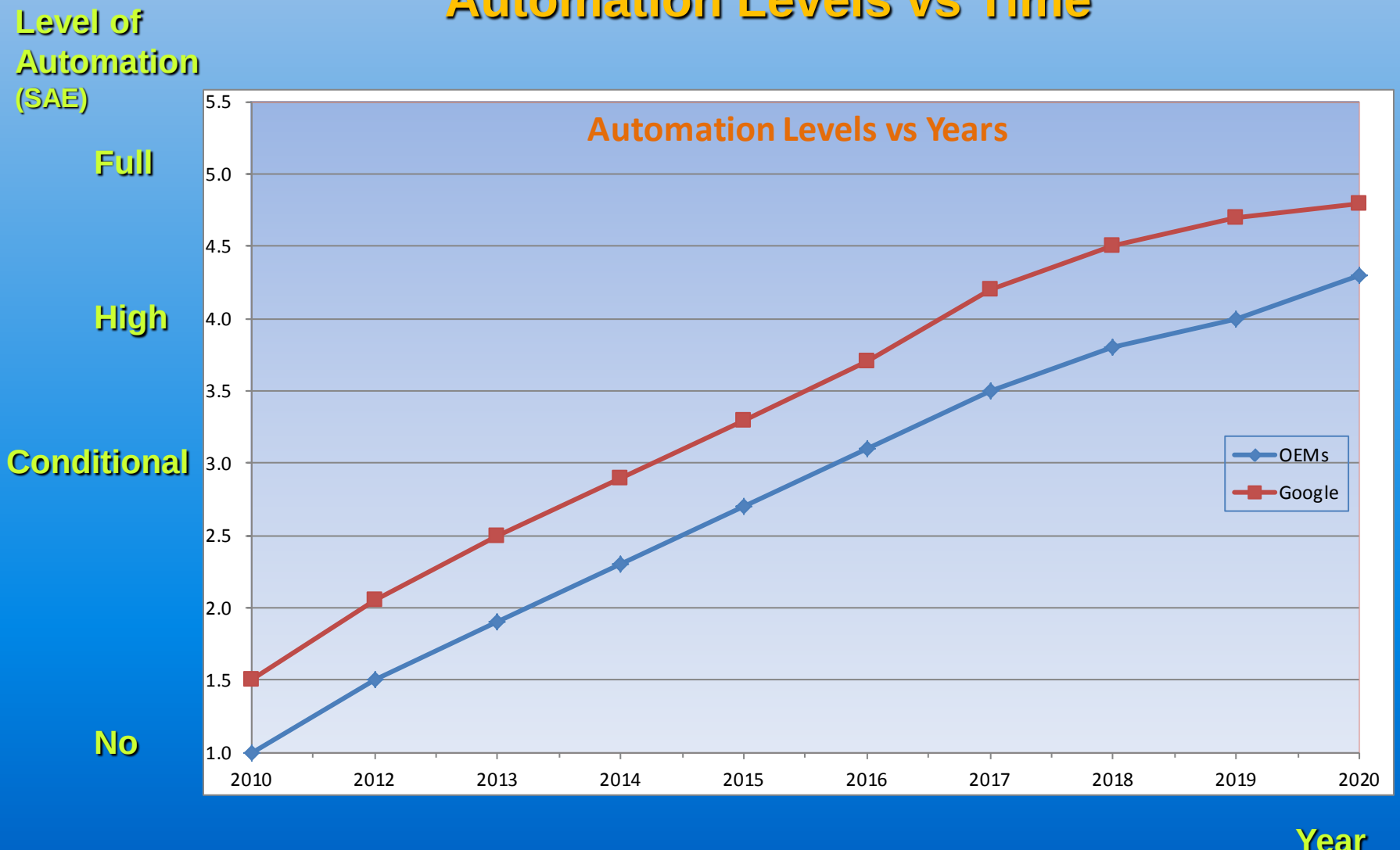
## Automation Levels vs Time



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## Challenges Facing Automation

- Cyber Infrastructure
- Product Liability
- Cyber Security
- Driver Acceptance
- Value Proposition

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## Recent Developments, 2010 - 2014

- **Automakers**
  - **NISSAN**
  - **VOLVO**
  - **Ford**
  - **German Luxury Automakers**
  - **TESLA**
  - **Tier 1 Parts Suppliers**
  - **Google**

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# Ford's ADAS cars – Focus and Mondeo

2014 Ford Focus


2014 Ford Mondeo

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### Recent Developments, 2010 - 2014

- **Google (Cont'd)**
  - **Influence**
  - **Public awareness of AV**
  - **Promises kept**
  - **Would it deliver near automatic car by 2018?**
  - **Formidable competitor to automakers**

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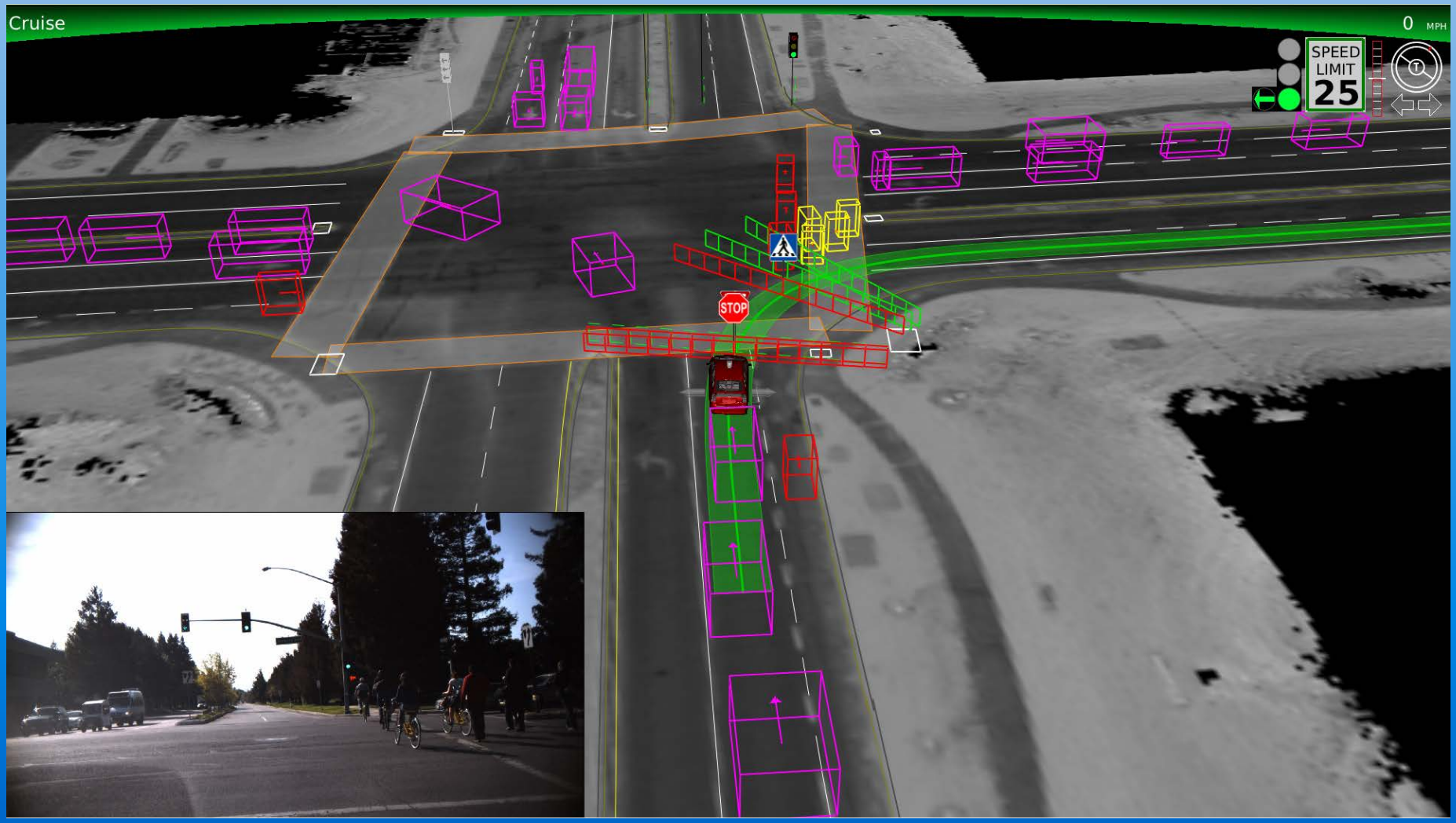
## What Google's Self-Driving Car Sees



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# Autonomous Vehicles

Google's prototype self-driving car

V3

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## Recent Developments, 2010 - 2014

- Government and Academia
- Government
  - US DOT
    - FHWA , ITS JPO
    - NHTSA
  - States
    - DOTs
    - Legislators
    - DMVs

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## Recent Developments, 2010 – 2014 (Cont'd)

- Government and Academia
  - Academia
    - Industry Partnerships (UMTRI, MTC)
    - Applied Research (Artificial Intelligence)

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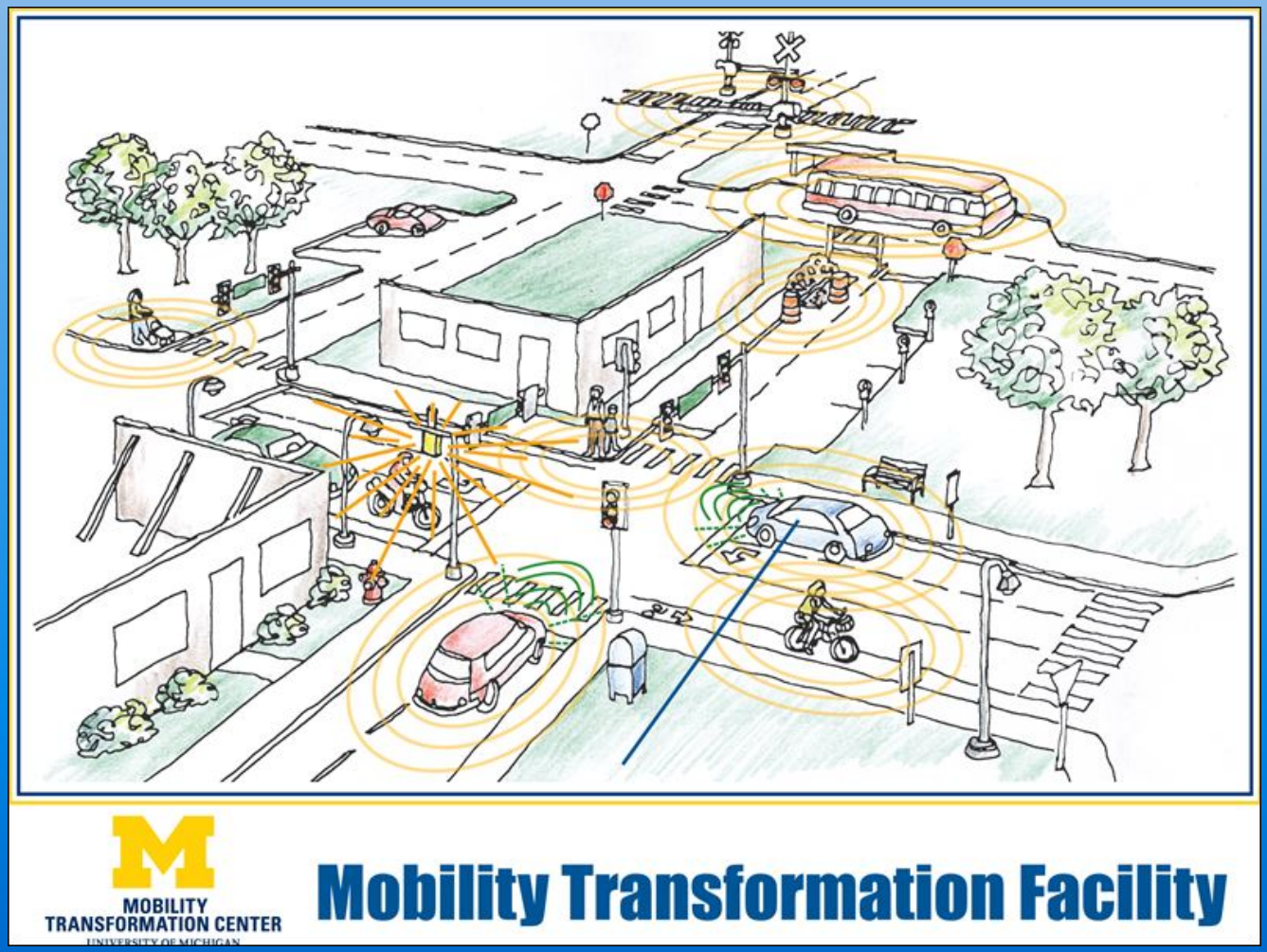
## Industry partnerships



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### External Accelerators

- EV - AV
- AV - CV
- AV - IN
- AV - RS

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**In closing…**

- **Work in progress**
- **Lots of Challenges Ahead – uncharted territory**
- **Champions**
- **Will we see near Autonomous Cars in 2018?**

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# The End