The MTC

A public/private R&D partnership that will lead a revolution in mobility and develop the foundations for a commercially viable ecosystem of connected and automated vehicles.
MTC AFFILIATES

- Auto Club Enterprises, an AAA affiliate
- AGC Automotive
- Allstate Insurance Co.
- Arada Systems, Inc.
- Autoliv
- Brandmotion LLC
- Calspan Corporation
- Changan Automobile
- Cohda Wireless
- Desjardins General Insurance Group, Inc.
- DURA Automotive Systems
- Faurecia
- Freescale Semiconductor, Inc.
- Harada Industry of America, Inc.
- Harman International Industries
- HERE, a Nokia company
- Hitachi, Ltd.
- IAV
- IDIADA
- LG Electronics
- Mechanical Simulation Corporation
- Miller, Canfield, Paddock and Stone, PLC
- MOBIS
- Munich Re
- New Eagle Consulting
- Nexteer Automotive
- OSIsoft, LLC
- PTC, Inc.
- Realtime Technologies, Inc.
- Renesas Electronics America Inc.
- Savari Inc.
- Subaru
- Sumitomo Electric Industries, Ltd.
- Suncorp Group
- TASS International, Inc.
- TRW Automotive
- Zip Car
The Three Living Laboratories of MTC Will Collect Data

1. **Connected Ann Arbor (2014+)**
   - 9,000 equipped vehicles (~1600 currently)
   - 60 intersections (19 currently)

2. **Connected Southeast Michigan (2015+)**
   - 20,000 equipped vehicles
   - 500 equipped nodes, including highways and intersections
   - 5000 devices including nomadic seed devices, extending to vulnerable road users including pedestrians

3. **Automated Ann Arbor (2016+)**
   - 2,000 connected and automated vehicles
UMTRI Data Collected (2013-)

- From more than 2,800 vehicles and 19 RSE (road-side equipment) units
- Data > 70 TB
- Trips > 5.0 Million
- Distance > 35 Million Miles
- Time > 1.2 Million Hours
- BSMs > 101.4 Billion records
What Can We Learn From the Data

- Trip needs (timing and locations)
- How and when congestions occurs
- Human-machine interaction (internal HMI)
- Interaction between vehicles (external HMI)
- How people drive, including how they make mistakes*
- How AV’s can drive like a human, but avoid their mistakes
- How ITS/CAV techniques improve safety and reduce congestion and fuel consumption*
How People Drive (example)

Data can be used to simulate Behavior of “other” vehicles for AV development

403,581 lane change events
Observed by SPMD light vehicles
8/2012~4/2015

Data can be used to simulate Behavior of “other” vehicles for AV development
How ITS/CAV techniques improve safety

I-94, West Michigan
Jan 9, 2015

temp = 16F
  0F (wind chill)

193 vehicles

1 death

21 hospitalized

reopen after 2 days
How ITS/CAV techniques reduce congestion and fuel consumption

Adaptive traffic signal control, eco-driving
MTC POTENTIAL COLLABORATION

- MTC can help identify proposal partners

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