Mobility > Transportation

The ability to move or be moved freely and easily.
USA Today, 2/20/2017: “Cheap gas and a surging economy are taxing the nation’s roads and contributing to congestion that cost U.S. motorists almost $300 billion last year in wasted time and fuel ... Los Angeles had the worst traffic in the world ... INRIX.”
ARPA-e NEXTCARS: Connected and Automated Control for Vehicle Dynamics and Powertrain Operation (GM Partnership)

**GM Volt2**
L2 Autonomous vehicles controls with V2X
5 Modes: Conventional – HEV – PHEV – EREV - EV

Bo Chen: Model based Controls
Darrell Robinette: Powertrain and Optimization
Mahdi Shahbakhti: Dynamic Models & Controls
Kuilin Zhang: Traffic Theory and Simulation
Chris Morgan / Chris Pinnow: Vehicle Instr. & Testing
Jeremy Worm / Chris Morgan: Training and outreach

Vehicle Platooning and Eco-Routing

Houghton/Hancock
Detroit, Chicago, M-City

Large databases of single and multiple vehicles.
Traffic Theory and Simulation

- Optimal Routing and Velocity Bounds
  - Connected and Automated Vehicle Traffic Simulation Platform
  - Real-time and Simulated Traffic with Optimal Routing and Velocity Bounds
- Integrated vehicle and traffic simulation for technology assessment

Figure 1. A Connected and Automated Vehicle Driving Scenario

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Technical Training and Outreach

High Impact, Hands-On training and outreach

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Contacts

Centers and Institutes:

MTTI (Pasi Lautala) – Transportation and Traffic
MTRI (Joseph Burns) – Sensors and Signal Processing
KRC (Jay Meldrum) – Vehicle mobility and testing in unstructured environments
ICC (Ming Song) - Computing and cyber-systems
GLRC (Guy Meadows) – On and In Sea
APS LABS (Jeff Naber) – Vehicle technologies
AIM (Wayne Weaver) – Robotics, connected vehicles, cyber security

www.mtu.edu/research/about/centers-institutes

Educational programs
ACIA (ECE, CS, ST) – Cyber Security
ME / ECE – Automotive Systems and Controls

Coordination
Brent Burns – Director of Federal & Industry Relations
Discuss and Engage with the Panel Members and Others