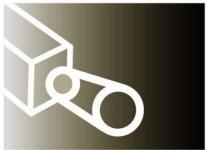
EXPLORATORY ADVANCED RESEARCH









Vision for x2l Systems

Presentation for

Developing Dependable and Secure Automotive Cyber-Physical Systems from Components

Troy, Michigan on March 17, 2011



Presentation Objectives

- Federal goals
 - Safety
 - Economy
 - Energy and Environment
- Current research, programs
- Moving forward





Safety

- Current capabilities
 - Collision, lane departure warnings
 - Pedestrian collision avoidance
- Vision: Connected vehicles
- Research
 - New simulation platforms
 - Human factors
 - Positioning and navigation





Economic

- Current Capabilities
 - Traveler information
 - Dynamic traffic operations
- Vision: Reliable mobility; network value, utilization
- Research
 - Complexity: systems of systems, humans in systems
 - Adaptability





Energy and Environment

- Current capabilities
 - Hybrid systems
 - Dynamic rideshare
- Vision
 - Dynamic vehicle routing; energy savings in vehicles, networks' scale
- Research
 - Multi-scale modeling
 - Emergent behavior





Moving Forward

- Encouraging original ideas
- Connecting with new partners
- Growing scientific capacity and pushing disciplinary frontiers
 - Building tools that accelerate discovery, allow for new concepts
- Pointing the way to new technology, applications

