UNITED STATES
DEPARTMENT OF TRANSPORTATION

Connected Vehicle Implementation Scenarios

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Implementation Models

- What is necessary to get started?
- How to handle possible transitions?
- Where is the value to the private sector?
- What kind of partnership models might be possible?

Keep in Mind…

- DOT's first priority is to enable crash avoidance safety applications
- Under a mandated system…
  - Not opt in
  - No user choice or ability to disable
  - No optional subscription fees (for core safety features)
  - Need adequate protections for privacy, non-traceability for trips
- Controlled environment necessary for systems that interface with vehicle electronics
- Message validity important for safety applications – requires "security system" – network and back end processes
- Security network may be based on DSRC, cellular networks, or hybrids of DSRC, cellular and WiFi

U.S. DOT Authority

- USDOT **has sufficient *current* legal authority** to regulate or support implementation of many critical aspects of a connected vehicle environment, including:
  - Equipment in new vehicles
  - Aftermarket devices
  - Security system
- USDOT **does *not* have legal authority** to require States (or others) to install infrastructure

Business Models

- Private
- Public/private
- Fully public – *unlikely* given current funding constraints and trends toward more private sector transportation funding

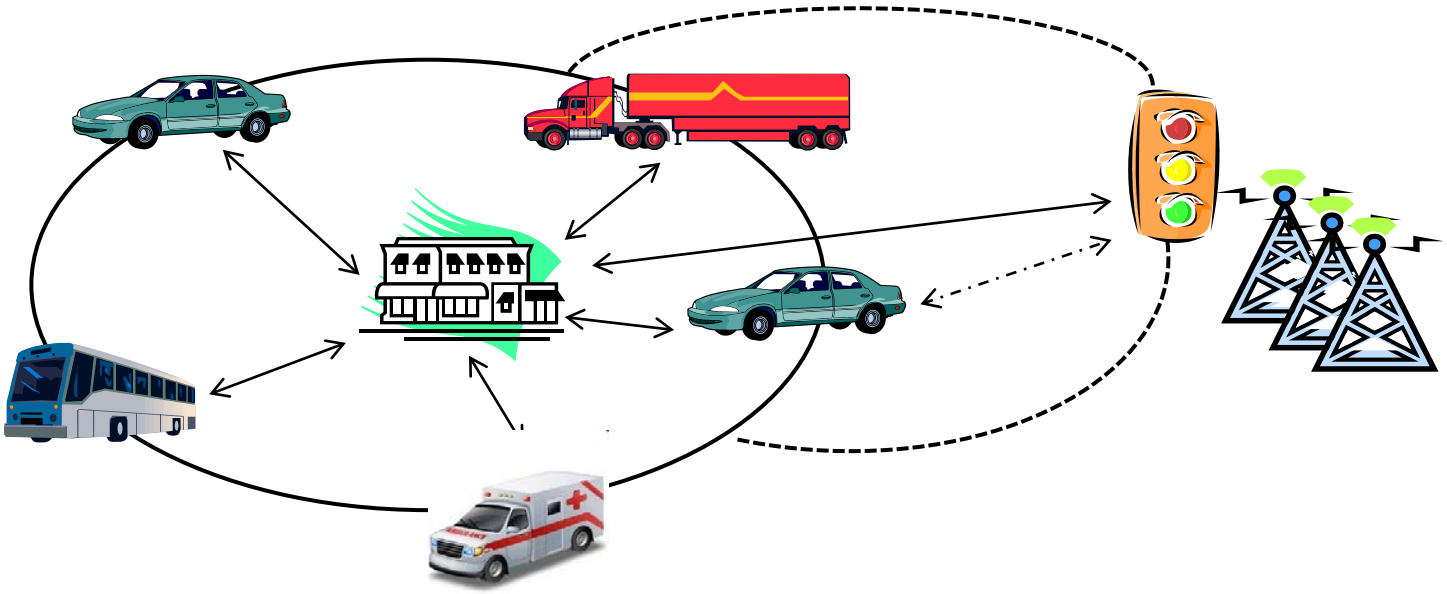
Getting Started

Considerations to Support Initial Deployment (from the Light Vehicle Manufacturers)…

- A central certificate management entity (CME) is required to support security credentials management
- Structure of the CME…
  - Should be planned to allow graceful evolution from initial deployment to full deployment system
  - At initial deployment, size and complexity of SCMS expected to be reasonable due to relatively small number of equipped vehicles
- On-board security functions (SW, HW, Processing, Memory, etc.)
  - Should be planned for long lifetime of vehicles right from initial deployment
- Interaction between the on-board security and the CME
  - Should be supported with limited DSRC security communication at strategic locations for initial deployment
  - (Opt-in) Alternate communications to supplement increased level of interaction between the on-board security and the CME

Transition

- How does transition from initial model to end state happen?
- What does the end state look like?
  - What is the role (if any) of public infrastructure (e.g. DSRC)



Partnership Opportunities

- What partnership opportunities exist?
  - Need to consider support for both network transaction and back end system needs for security
- What should DOT consider in assessing this issue?