ITS: State of the Industry 2017

Transportation Research Board Annual Meeting 2017

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Kenneth Leonard, Director
ITS Joint Program Office, OST-R
U.S. Department of Transportation
Presentation Overview

• Our Transportation Challenges
• USDOT Multimodal Collaboration
• Where We’re Headed – the ITS Strategic Plan
  • Connected Vehicles
  • NHTSA Rule
  • V2I Guidance
  • Connected Vehicle Pilots
  • Automated Vehicles
• Smart Cities
Today’s Transportation Challenges

**Safety**
- 35,092 highway deaths in 2015
- 6.3 million crashes in 2015
- Leading cause of death for ages 5-24

**Mobility**
- 6.9 billion hours of travel delay
- $160 billion cost of urban congestion

**Environment**
- 3.1 billion gallons of wasted fuel
- 56 billion lbs of additional CO₂

*Data Sources:*
USDOT Modal Collaboration and Partnership
Strategic Plan
Program Categories

http://its.dot.gov/strategicplan/index.html
Imagine a Transportation System in which VEHICLES CAN SENSE & COMMUNICATE Things That You Can’t.
On Dec. 12, 2016, NHTSA issued a proposed rule that would advance the deployment of connected vehicle technologies throughout the U.S. light vehicle fleet.

Rule would require:

- Automakers to include V2V technologies in all new light-duty vehicles
- V2V devices to “speak the same language” through standardized messaging developed with industry
- Privacy and security measures are employed in any V2V device
NHTSA Seeks Comments on Proposed V2V Rule

To submit comments on the ANPRM and research report, visit:

- [www.regulations.gov](http://www.regulations.gov) and enter Docket No. NHTSA-2016-0126
  
  or

- [www.safercar.gov/v2v](http://www.safercar.gov/v2v)

Comments will be accepted for 90 days; late comments will be considered to the extent practicable
FHWA V2I Deployment Guidance: *Helping Prepare for Connected Vehicles*

- Guidance includes policy positions, guidance, guidelines, whitepapers, and practitioner tools
- Assists in planning for future investments and deployment of V2I systems
- Does not impose any new requirements on local governments
- Work will be harmonized with related efforts by other USDOT modal agencies
- Subsequent guidance updates will also incorporate ITS research findings
Connected Vehicle Pilot Deployment Program

![Diagram of Connected Vehicle Pilot Deployment]

- **PHASE 1** (up to 12 months)
  - Concept Dev.
  - Progress Gate

- **PHASE 2** (up to 20 months)
  - Design/Deploy/Test
  - Progress Gate

- **PHASE 3** (minimum 18 months)
  - Maintain/Operate Pilot
  - Transition

- Routine Operations (ongoing)
- Post-Pilot Operations

**Follow-On Cooperative Agreement**

**PILOT SITES**
- New York City
- ICF/Wyoming
- Tampa (THEA)
Additional ITS JPO Resources to Assist in Deployment

- Research Data Exchange
- Connected Vehicle Test Beds
- Professional Capacity Building ITS Training
- Open Source Data Applications Portal (OSADP)
- Operational Data Environment
Connectivity Unleashes the Full Potential of Automated Vehicles

**Connected Vehicle**
Communicates with nearby vehicles and infrastructure; Not automated

**Connected Automated Vehicle**
Leverages autonomous automated and connected vehicles

**Autonomous Vehicle**
Operates in isolation from other vehicles using internal sensors
USDOT Automation Policy and Deployment Initiatives

- Smart City Challenge
- FAST Act: Advanced Transportation and Congestion Management Technologies Deployment Initiative
- Guidance on the safe deployment and operation of automated vehicles


#BeyondTraffic
Advanced Technologies and Smart Cities

Technology convergence will revolutionize transportation, dramatically improving safety and mobility while reducing costs and environmental impacts.

Benefits
- Order of magnitude safety improvements
- Reduced congestion
- Reduced emissions and use of fossil fuels
- Improved access to jobs and services
- Reduced transportation costs for gov’t and users
- Improved accessibility and mobility

Connected Vehicles
Vehicle Automation
Internet of Things
Machine Learning
Big Data
Sharing Economy

Connected-Automated Vehicles

Smart Cities
Example Deployment in a Smart City

Data collected from connected vehicles provide insights into the performance of the city.

Handheld and infrastructure devices support pedestrian safety.

Traffic signal support vehicle automation applications (Eco-Glide Path).

Transit vehicles leverage connected vehicle technologies for transit signal priority.
SMARTCOLUMBUS

Vision:
- Access to Jobs
- Smart Logistics
- Connected Residents
- Connected Visitors
- Sustainable Transportation

Enabling Technologies:
- Columbus Connected Transportation Network (CCTN)
- Integrated Data Exchange
- Enhanced Human Services
- Electric Vehicle Infrastructure

Outcomes Deployment:
- Residential District
- Commercial District
- Downtown District
- Logistics District

Source: The City of Columbus
For More Information

Kenneth Leonard
USDOT / ITS JPO
ken.leonard@dot.gov

Twitter: @ITSJPODirector
Facebook: www.facebook.com/DOTRITA
Website: http://www.its.dot.gov