Automated and Connected Vehicle Activities: Overview

AAMVA Workshop
March 9, 2016
Recent Announcements:

• Automated Vehicles:
  – $3.9 Billion/10 year proposal in President’s FY ‘17 budget
    • Accelerate development and adoption of safe vehicle automation through real world pilots

• Accelerate Vehicle Safety Innovations:
  – Deployment and Operational Guidance for Automated Vehicles
  – Model State Policy on Automated Vehicles
  – Encouragement of manufacturers to request exemptions to NHTSA to facilitate AV deployment
  – Develop new tools and seek new authorities as necessary to facilitate deployment of safety beneficial AV technologies

• DOT/NHTSA Policy Statement Update

• Smart Cities Initiative
Standards and Regulations

- Reviewing FMVSSs

- Recent Interpretations
  - BMW
    - Remote controlled parking system
    - Asked if it complies w/FMVSS 114
    - NHTSA response issued January 4, 2016
  
  - Google
    - Requested NHTSA interpret several FMVSS provisions as they apply to Google’s Self Driving Vehicle
    - NHTSA response issued Feb 4, 2016
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

*Managed by USDOT’s ITS Joint Program Office*
NHTSA Research: Need to Address the Building Blocks of Automation

- NHTSA programs include (but not limited to):
  - Electronic Stability Control
  - Automatic Emergency Braking
  - Pedestrian Crash Avoidance and Mitigation
  - Rear Backover - Automatic Braking
  - Lane Keeping/Centering
  - Blind Spot Intervention
  - Next Generation Test Targets – 3D Guided Soft Targets
  - Connected Vehicles - Vehicle to Vehicle Communications
Vehicle to Vehicle Communications

- **Notice of Proposed Rulemaking (NPRM) planned in 2016**
- Technology can address a large percentage of vehicle crashes
- Previous Actions:
  - Advance Notice of Proposed Rulemaking
  - V2V Report: Readiness of V2V Technology for Application
- [www.safercar.gov/v2v](http://www.safercar.gov/v2v)
Key Areas of NHTSA’s Highly Automated Vehicle Research

**Human Factors Research**
- Human factors evaluation of Level 2 and Level 3 automated driving concepts
- Initial human factors design principles for L2/L3

**Electronic Control Systems Safety (including Cybersecurity)**
- Functional safety of safety-critical automotive systems and extensions to L2-L4
- Cybersecurity threats, vulnerabilities, countermeasures assessment

**System Performance Requirements**
- System performance requirements framework
- Objective test procedures

**Benefits Assessment**
- Target crash population estimation for automated vehicles L2-L4
- Multi-modal benefits framework development

**Testing and Evaluation**
- Controlled test track studies
- Field operational tests (e.g. Level 2 Naturalistic Study)
For More Information

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NHTSA Public Website:
www.nhtsa.gov

USDOT Automation/Connected Vehicle Programs:
USDOT’s ITS Joint Program Office
www.its.dot.gov