U.S. DOT and Automation
Cross-cutting Activities
USDOT Recent Automation Activities

• *Preparing for the Future of Transportation: Automated Vehicles 3.0*

• FHWA National Dialogue on Highway Automation Series

• ANPRM for NHTSA Pilot Program for Collaborative Research on Motor Vehicles With High or Full Driving Automation

• Request for Comment (RFC) on Vehicle-to-Everything (V2X) Communications

• Automated Driving System Demonstration Grants
Preparing for the Future of Transportation: Automated Vehicles 3.0

https://www.transportation.gov/av/3
Automated Vehicles 3.0: Principles

U.S. DOT has established a clear and consistent Federal approach to shaping policy for automated vehicles, based on the following six principles.

1. We will prioritize safety.
2. We will remain technology neutral.
3. We will modernize regulations.
4. We will encourage a consistent regulatory and operational environment.
5. We will prepare proactively for automation.
6. We will protect and enhance the freedoms enjoyed by Americans.
Federal Highway Administration National Dialogue on Highway Automation

**FHWA** National Dialogue is a series of meetings held across the country to facilitate information sharing, identify key issues, and support the transportation community to safely and efficiently integrate automated vehicles into the road network. Input received during the National Dialogue will help inform FHWA research, policies, and programs.

**Key Outcomes**

1. Assess national issues and priorities.
2. Develop guidance, best practices, standards.
3. Support necessary research.
4. Adapt programs and policies.
5. Create a national community or coalition.

https://ops.fhwa.dot.gov/automationdialogue/
Consolidated Appropriations Act, 2018

• Signed into law on March 23, 2018
• Funds highly automated vehicle research and development
• Reallocates a total of $100 million for automation activities, including:
  – Up to $38 million for direct research
  – Up to $60 million for demonstration grants
  – Up to $1.5 million for analysis of impacts on drivers and operators of commercial motor vehicles, in consultation with Department of Labor
• Additional funding for NHTSA and OST
• [Link](https://www.congress.gov/bill/115th-congress/house-bill/1625)
Automated Driving System Demonstration Grants

• Goals of the ADS Demonstration grants:
  – Safety: Test the safe integration of ADS into the nation’s on-road transportation system.
  – Data for Safety Analysis and Rulemaking: Ensure significant data gathering and sharing of project data with USDOT and the public throughout the project in near real time.
  – Collaboration: Work with innovative State and local governments and private partners to create collaborative environments that harness the collective expertise, ingenuity, and knowledge of multiple stakeholders

• [https://www.transportation.gov/av/grants](https://www.transportation.gov/av/grants)
• Webinar on January 24, 2019
Research Highlights
Exploring how to ensure safe, accessible, and efficient integration of automation
• FAST Act requires Annual Modal Research Plan (AMRP) from each modal administration and joint
• Automation closely coordinated across the Department
• JPO automation research scope for FY19:
  – Safety assurance
  – Infrastructure and interoperability
  – Policy analysis
USDOT Multi-Modal Partnership

U.S. Department of Transportation

Federal Highway Administration
Office of Operations
Office of Operations R&D
Office of Safety R&D

Federal Motor Carrier Safety Administration (FMCSA)
Technology Division
Research Division

Intelligent Transportation Systems Joint Program Office (ITSJPO)
Vehicle Safety and Automation
Data Program

Volpe National Transportation Systems Center
Advanced Vehicle Technology Division

Source: FHWA.
Traffic Optimization for Signalized Corridors (TOSCo)

- Enables vehicles traveling through a connected corridor to optimize movements for improved fuel economy, emissions reduction, and overall traffic mobility
- Employs data from Roadside Units (RSUs): SPaT (Signal Phase and Timing); MAP; RSM (Road Safety Message); RTCM (GPS corrections)

Traffic scenarios related to TOSCo

- Uses data from V2I and V2V communications
- Upon receiving messages, the on-board application performs calculations to determine optimal:
  - Vehicle speed to pass through one or more traffic signals on a green light
  - Deceleration to a stop
  - Acceleration for launch in the most performance-optimized manner
- Information is then sent to longitudinal vehicle control capabilities in the host vehicle to support partial automation
- Automatically stops at red lights and requires driver acknowledgment to launch or creep forward
• **Goal** – To measure the safety and operational impacts of truck platooning on truck drivers, surrounding traffic and infrastructure on select public roadways.

• **Strategy** – Partner with industry, shippers, and state agencies and leverage planned early deployments of truck platooning.

• **Approach** – Issue a two-phase Broad Agency Announcement (BAA).
  - Phase 1 – Develop plans and proposal for evaluation of in-service truck platoons.
    - Up to 3 awards, 9-month period of performance.
  - Phase 2 – Conduct evaluation.
    - Number of awards TBD, only Phase 1 awardees eligible.
  - Independent Evaluator for Phases 1 and 2.
Automated Low-Speed Shuttles

- **Monitor** development and deployment activity
- **Convene** working group of early deployer communities and other organizations interested in small, automated shuttles.
- **Document Emerging Findings** – including best practices, barriers, and lessons learned from early deployers and technology suppliers

State of the Practice Report: [https://rosap.ntl.bts.gov/view/dot/37060](https://rosap.ntl.bts.gov/view/dot/37060)
Work Zone Data Exchange (WZDX) Project

Purpose

• To jumpstart voluntary adoption of a basic work zone data specification
• To enable collaborative maintenance and expansion of the specification

Outcomes within 6 months

• Data producers make available an active work zone data feed using a common, non-proprietary specification
• Non-government developers use that data in a meaningful way – thus establishing a minimum viable product of voluntary data exchange for work zone data

Big Picture Outcome

• Repeatable approach to accelerate harmonization of local data sources

transportation.gov/av/data
transportation.gov/av