Automated Vehicles: FAV Policy Overview

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TIA Panel Session:
Autonomy at Scale: The Policy, Technology and Business of Autonomous Vehicles

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National Highway Traffic Safety Administration’s (NHTSA’s) mission is:

to save lives, prevent injuries, and reduce economic costs due to road traffic crashes through education, research, safety standards, and enforcement activity.

http://www.nhtsa.gov/
Motor vehicle crashes cost nearly $836 billion
Advanced Driver Assist Systems: What’s Motivating Implementation?

• 94% of police-reported crashes involve driver error
• Data indicates safety benefits for driver assistance systems, i.e. “smart” technologies
• Government perspective
  – Vehicle crashes continue to be a leading cause of fatalities and injuries — new technologies have potential to greatly improve safety
• Industry:
  – Integration of functions, cost reduction, and tech savvy drivers will make it attractive for OEMs to say “yes” to advanced technologies
Levels of Automated Vehicle Systems (SAE J3016)

**Level 0**
- No sustained lateral or longitudinal control
- Examples: Crash warning systems, ESC, AEB

**Level 1**
- Sustained lateral or longitudinal control, but not both
- Examples: Adaptive Cruise Control (ACC), Truck Platooning

**Level 2**
- Sustained lateral and longitudinal control
- Driver responsible for monitoring driving environment and retaking control immediately
- L2 systems on the market

**Level 3**
- Sustained lateral and longitudinal control
- Driver expected for occasional control
- Driver can cede full monitoring and control authority

**Level 4**
- Sustained lateral and longitudinal control
- Driver NOT expected for control
- Responsibility for safe operation solely with the vehicle
- Restricted to certain operating domains

**Level 5**
- Same as L4 but operates EVERYWHERE
Automated Vehicles - Policy

- Federal Automated Vehicles (FAV) Policy
  - Released September 2016

www.transportation.gov/av
FAV Policy - Main Sections

• Vehicle Performance Guidance for Automated Vehicles
• Model State Policy
• NHTSA’s Current Regulatory Tools
• New Tools and Authorities

Levels of Automation

• Adopts SAE International definitions (SAE J3016)
FAV Policy: Vehicle Guidance - 15 Safety Areas

- Data Recording and Sharing
- Privacy
- System Safety
- Vehicle Cybersecurity
- Human-Machine Interface
- Crashworthiness
- Consumer Education and Training
- Registration and certification
- Post-Crash Behavior
- Federal, State, and Local Laws
- Ethical Considerations
- Operational Design Domain (ODD)
- Object and Event Detection and Response (OEDR)
- Fall Back Minimum Risk Condition
- Validation Methods

Crosscutting Areas

- Safety Assessment Letter (voluntary)

System Specific Areas
FAV – Next Steps

• FAV Policy Document is a first step, significant additional public input and work tasks ahead!

• Many next steps envisioned, including:
  – Request for Comments
  – Public meetings/other stakeholder engagement
  – Work plans for certain areas in vehicle guidance and state model policy sections
  – Education
  – Notice and Comment on potential changes to regulatory tools and authorities
FAV – Next Steps Implementation Underway:

- Request for comments (RFC)
  - Comment period closed Nov. 22, Docket No. NHTSA-2016-0090

- Public meeting November 10, 2016, Washington DC
  - Morning session - Public comment on the four sections of the Policy
  - Afternoon session - Public comment on the Safety Assessment Letter

- Additional public meetings/stakeholder engagement planned
Thanks for your Attention!

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