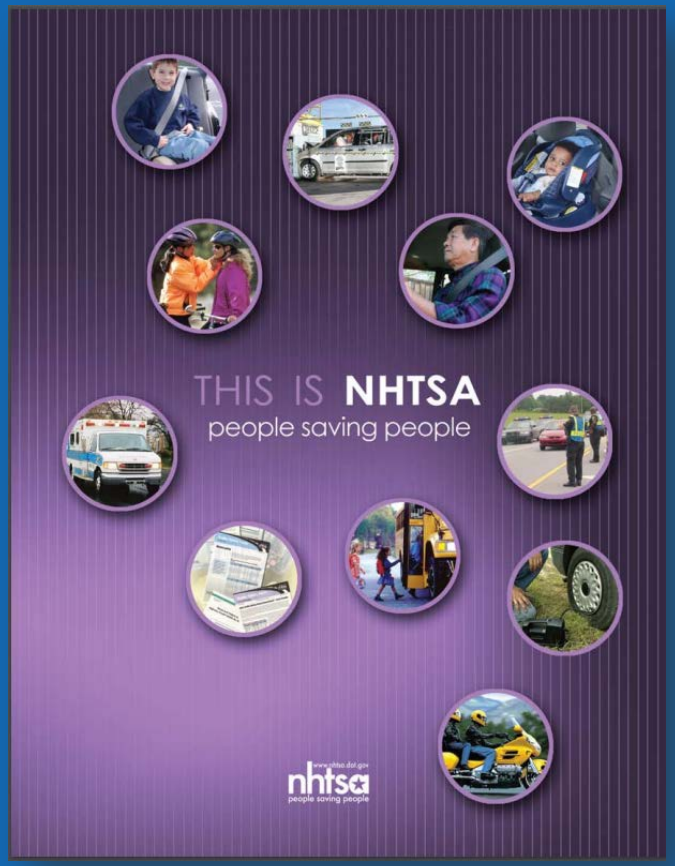
Automated Vehicles Research

Chris Monk, PhD
Chief, Human Factors Research

NHTSA
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

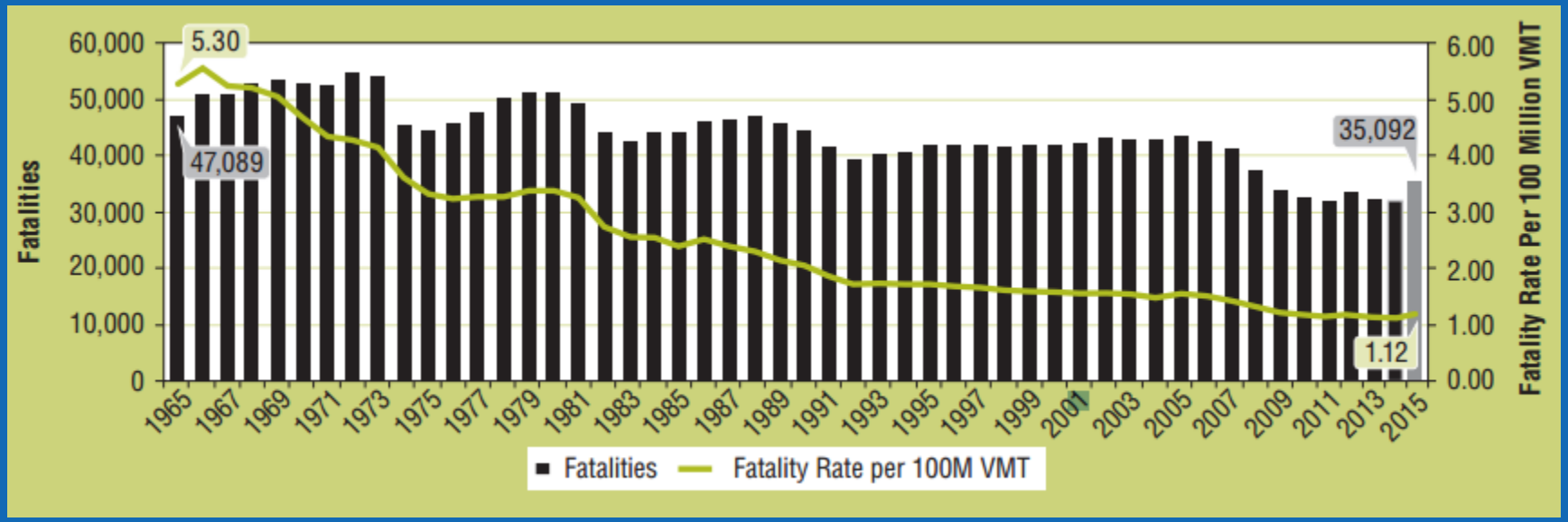
NHTSA's Mission

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



Safety Opportunity for Automated Vehicles

- 35,092 people died in motor vehicle crashes in 2015
- 7.2% increase over 2014
- Fatalities estimated to rise again in 2016
- 94% of tow-away crashes are caused by human choice or error



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How can Vehicle-to-Vehicle (V2V) Systems and Automated Vehicles help?

Automated Vehicles:
How do drivers react when told they need to take control?

Time to Regain Control

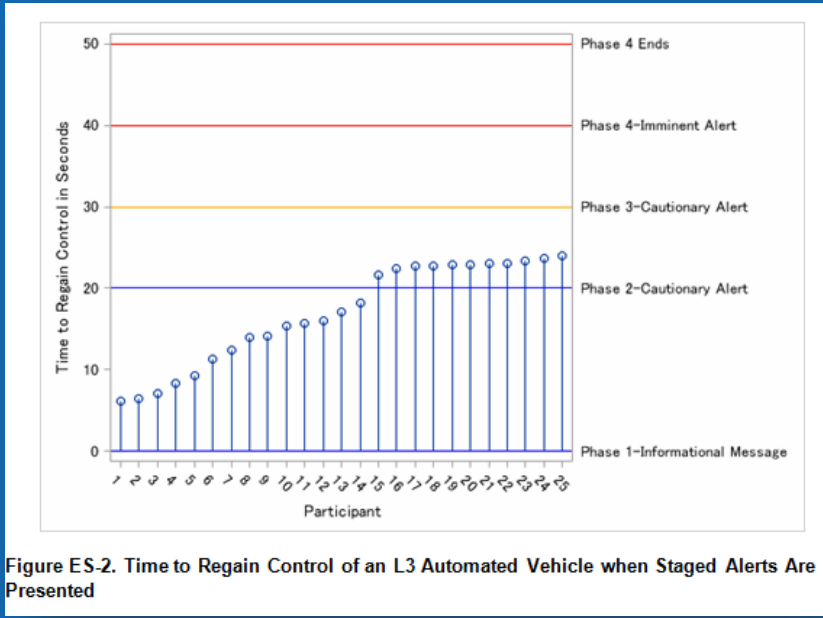
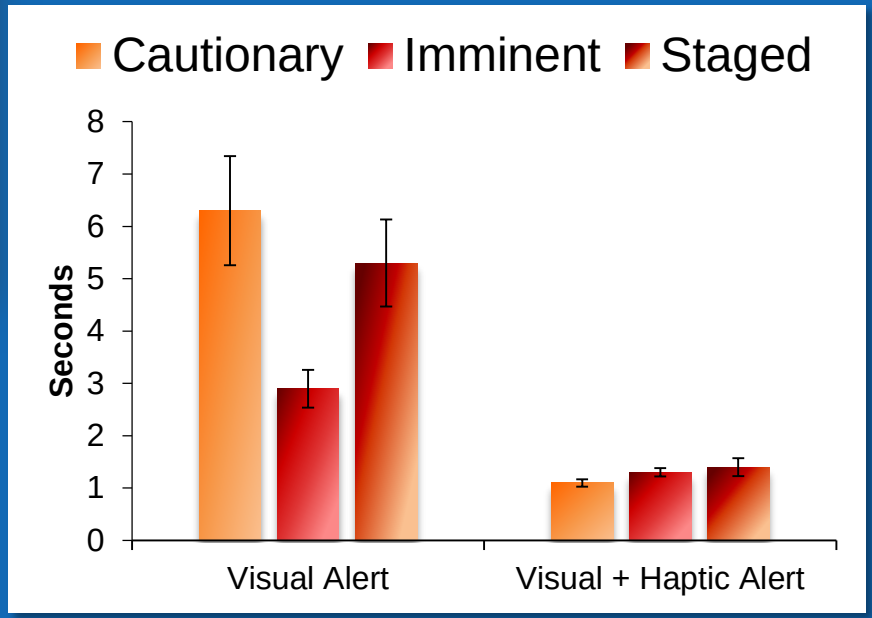


Figure ES-2. Time to Regain Control of an L3 Automated Vehicle when Staged Alerts Are Presented

Blanco, M., Atwood, J., Vasquez, H. M., Trimble, T. E., Fitchett, V. L., Radlbeck, J., ... & Morgan, J. F. (2015, August). Human factors evaluation of level 2 and level 3 automated driving concepts. (Report No. DOT HS 812 182). Washington, DC: National Highway Traffic Safety Administration.



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Naturalistic Study with Current Automated Systems

Federal Automated Vehicles (FAV) Policy

Released September 2016

– www.transportation.gov/av

- 60-day public comment period
  - Request for Comments (RFC) published on Sept 23, 2016
  - Docket No. NHTSA-2016-0090 (Document No. 2016-22993)
  - Comment period closes November 22, 2016

Policy Facilitates Safe Introduction and Deployment

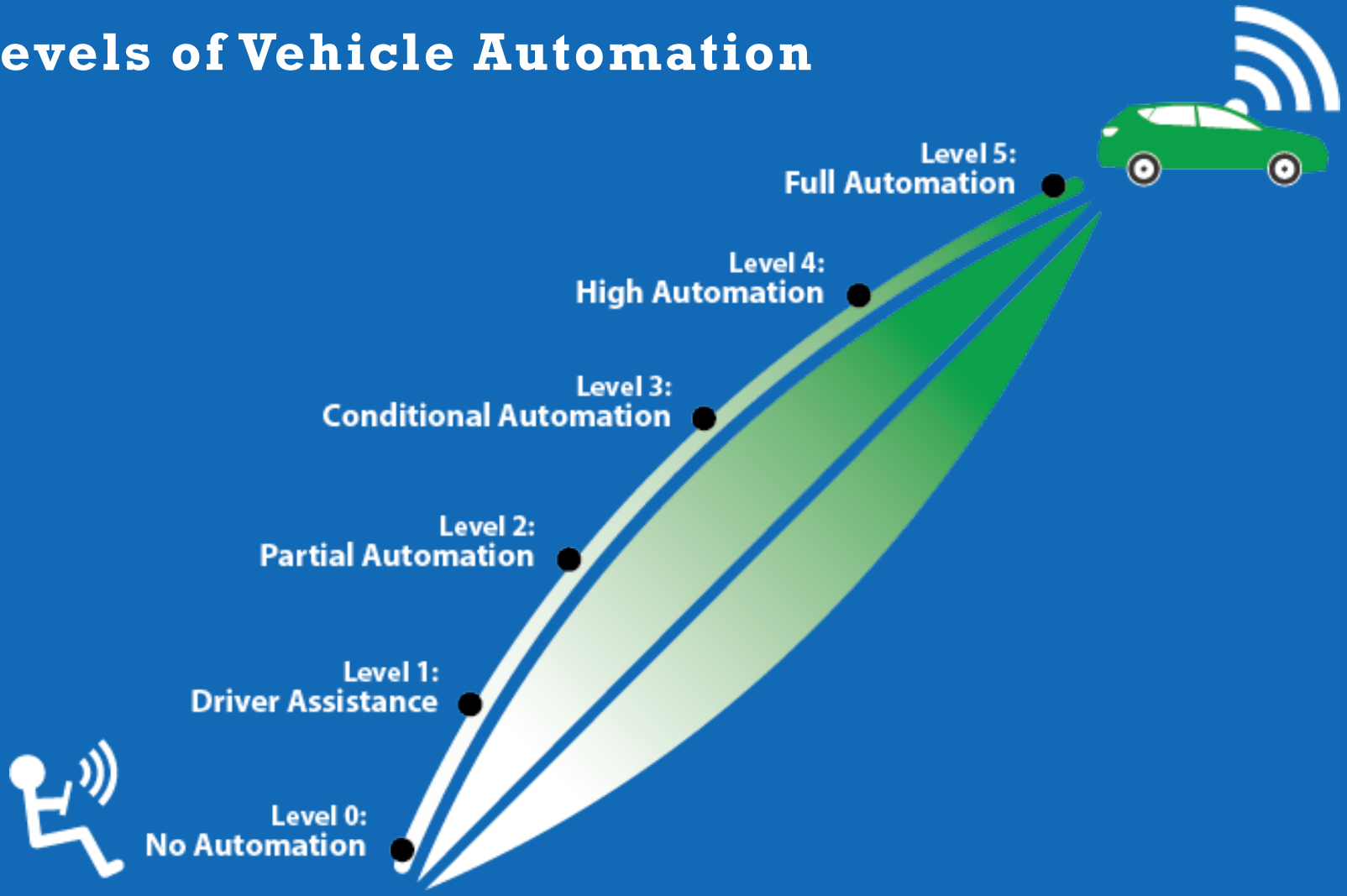
- Section I: Vehicle Performance Guidance for Automated Vehicles
- Section II: Model State Policy
- Section III: NHTSA's Current Regulatory Tools
- Section IV: Modern Regulatory Tools

Scope- Vehicle Performance Guidance

- …all individuals and companies manufacturing, designing, testing, and/or planning to sell automated vehicle systems in the United States

- …all classes of motor vehicles, including passenger cars, trucks and buses

Levels of Vehicle Automation



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Vehicle Performance 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

Crosscutting Areas

- Operational Design Domain (ODD)
- Object and Event Detection and Response (OEDR)
- Fall Back Minimum Risk Condition
- Validation Methods

System Specific Areas

Moving Forward

- Review and Consider Public Comments and Other Input
- Conduct Various Public Meetings and Workshops
- Meet with the States and Other Stakeholders
- Examine Other Potential New Tools
- Implement Policy Next Steps (23 and growing)

Visit www.nhtsa.gov/AV for current activities and updates

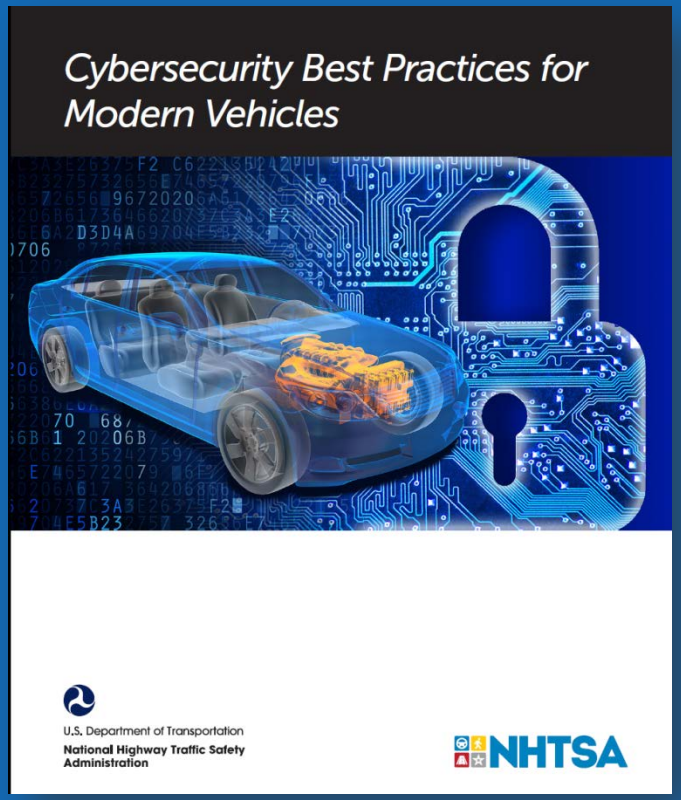
New: Cybersecurity Best Practices for Modern Vehicles

- Released on October 24, 2016

  http://www.nhtsa.gov/staticfiles/nvs/pdf/812333_cybersecurityForModernVehicles.pdf

- Soliciting public comments:

  Docket: NHTSA-2016-0104



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THANK YOU

chris.monk@dot.gov