

## Connected & Automated Vehicles US DOT Policy & Guidance Update



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# 5 levels of driving automation

		Steering and acceleration/ deceleration	Monitoring of driving environment	Fallback when automation fails	Automated system is in control
Human driver monitors the road	0 NO AUTOMATION				N/A
	1 DRIVER ASSISTANCE				SOME DRIVING MODES
	2 PARTIAL AUTOMATION				SOME DRIVING MODES
Automated driving system monitors the road	3 CONDITIONAL AUTOMATION				SOME DRIVING MODES
	4 HIGH AUTOMATION				SOME DRIVING MODES
	5 FULL AUTOMATION				

 Human driver

 Automated system

“Highly automated vehicles (HAVs)”

# Safety assessment guidance areas

*Manufacturers must self-certify and submit to NHTSA*

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



# Model State Policy

Federal / NHTSA Role Policy/Enforcement	State Role Enforcement
Set Federal Motor Vehicle Safety Standard	Licensing human drivers & registering motor vehicles
Enforce compliance	Enacting and enforcing traffic laws & regulations
Investigate and manage recall/remedy	Conducting safety inspections
Educate public	Regulating insurance and liability
Issue guidance for equipment manufacturers	

# Who leads?

“

The Vehicle Safety Act expressly **preempts States from issuing any standard that regulates performance if that standard is not identical to an existing FMVSS** regulating that same aspect of performance ... The Supreme Court has also found that State laws may be preempted if they stand as an obstacle to the accomplishment and execution of a NHTSA safety standard.

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# States encouraged to ...

- Evaluate current laws and regulations to address unnecessary impediments to safe testing, deployment, and operation
- Work with other states to standardize and maintain road infrastructure (*signs, signals, lights, pavement markings*)
- Identify lead agency responsible for testing and develop processes for issuing test vehicle permits
- Assess gaps in current regulations for transition from human-driven vehicles to fully automates (*ex. insurance, crash investigations, liability, maintenance, environmental impacts*)

# Enforcement



NHTSA has broad enforcement authority to address existing and new automotive technologies and equipment. **The Agency is commanded by Congress to protect the safety of the driving public against unreasonable risks of harm** that may occur because of the design, construction, or performance of a motor vehicle or motor vehicle equipment, and to mitigate risks of harm, including risks that may be emerging or contingent. **This authority and responsibility extends to cover defects and unreasonable risks to safety that may arise in connection with HAVs.**



Interpretations

Exemptions

Rulemakings

Defects &  
enforcement authority

New tools?

# Key Takeaways

## Manufacturers “must”:

- self-certify and submit to NHTSA
- specify what types of road, geography, conditions under which HAV will operate (Operational Design Domain)
- specify SAE automation level

# Key Takeaways

## **NHTSA has authority over:**

- policy setting for automated vehicles
- aftermarket vehicle safety equipment or retrofit safety devices (under the Federal Motor Vehicle Safety Standard)
- off-board software or data that is used as part of vehicle safety systems

## **NHTSA recommends states:**

- engage to support safety inspections
- work to standardize and maintain infrastructure

# ATKINS

Thanks for attending!

