



American Association of  
Motor Vehicle Administrators

# Future Trends and Updates on Commercial Driver Licensing

## CMV Safety & CDL Compliance Summit

### Denver, CO

### November 28 - 29, 2018



American Association of  
Motor Vehicle Administrators

# Agenda

CDL Test System Modernization

CSTIMS

AAMVA Guidelines for the Safe Testing of Highly Automated Vehicles

Joint mDL Working Group (Card Design Standard Committee & eID Working Group)

## **Test Maintenance Subcommittee**

Chair: Larry Boivin (ME)

Vice Chair: Vacant

Region 1: Jeffrey Oberdank (NH)

Region 2: Vacant (SC)

Region 3: Rhonda Czarnecki  
(MO)

Region 4: John Barness (ID)

## **International Driver Examiner Certification**

Chair: Linda Dunstall (ON)

Vice Chair: Nancy Prescott (VT)

Region 1: Holly Gallardo (NJ)

Region 2: Steve Ayers (VA)

Region 3: Cynthia Delp (IA)

Region 4: Todd Holbrook (UT)

The purpose of the proposal is to modernize the 2005 Commercial Driver License (CDL) Testing System.

The modernizations will include changes to the:

- Vehicle Inspection (VI) test,
- Basic Control Skills (BCS) test,
- Road test, CDL Knowledge tests; and
- Driver's/Examiner's Manuals.

Changes will be based on Commercial Motor Vehicle (CMV) crash causation factors and advances in CMV equipment technologies; and will be accomplished through partnerships with jurisdictions, Federal partners and industry stakeholders.

The current CDL testing system, (AAMVA) 2005 CDL Testing System was conceptualized in the late 1980's and the first concept was produced and implemented in the early 1990s.

It has been **well over a decade** since the release of our current testing system.

There have been significant changes in vehicle technologies and components Braking, steering and suspension systems coupled with other vehicle components have and continue to advance at a fast pace.

Hybrid electric CMVs, CMVs with 360 degree camera monitoring systems instead of traditional mirrors and other CMV technology systems are currently being manufactured.

# Why Modernize?

The AAMVA TMS and IDEC continue to interact with Law Enforcement, Jurisdiction and Industry partners to understand their concerns with the current testing system:

- *Length of time to conduct a skills test,*
- *Long waiting periods for scheduling tests,*
- *High failure rates on VI,*
- *Inconsistencies with testing,*
- *Driver shortage, etc.)*

The CDL Testing System needs to continually evolve to keep pace with current technology and are necessary to reflect changes in CMV technologies, industry practices, jurisdictional needs and driver competencies.

## **Vehicle Inspection (VI):**

Develop a VI test to better align test procedures with current industry practices and CMVs being developed.

Test will be based on the most common crash causation, CVSA inspection process and citation data.

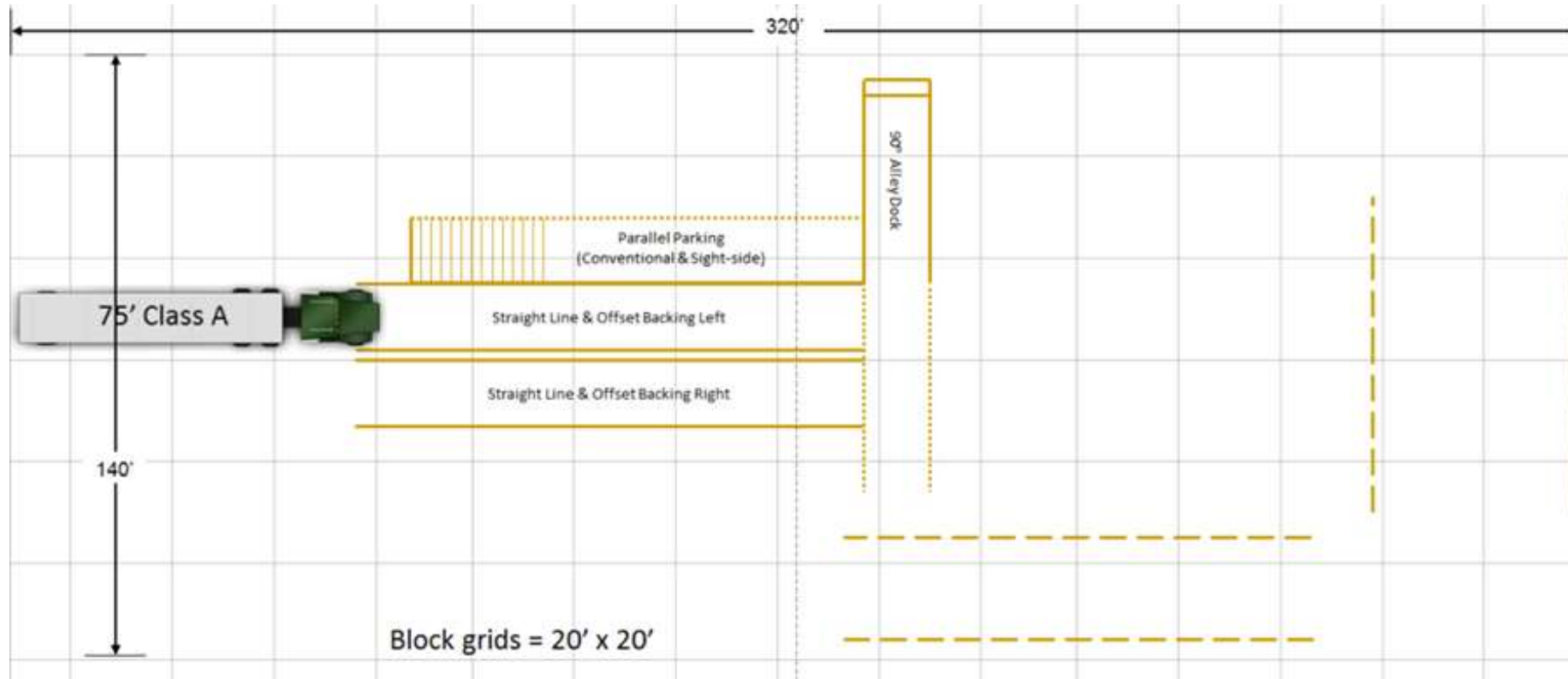
## **Basic Control Skills (BCS):**

The BCS modernization will utilize the same test concepts with a smaller layout while maintaining a robust testing standard.

Current BCS carousel 320' x 140', the proposed BCS carousel 260' x 45'.

# Basic Control Skills

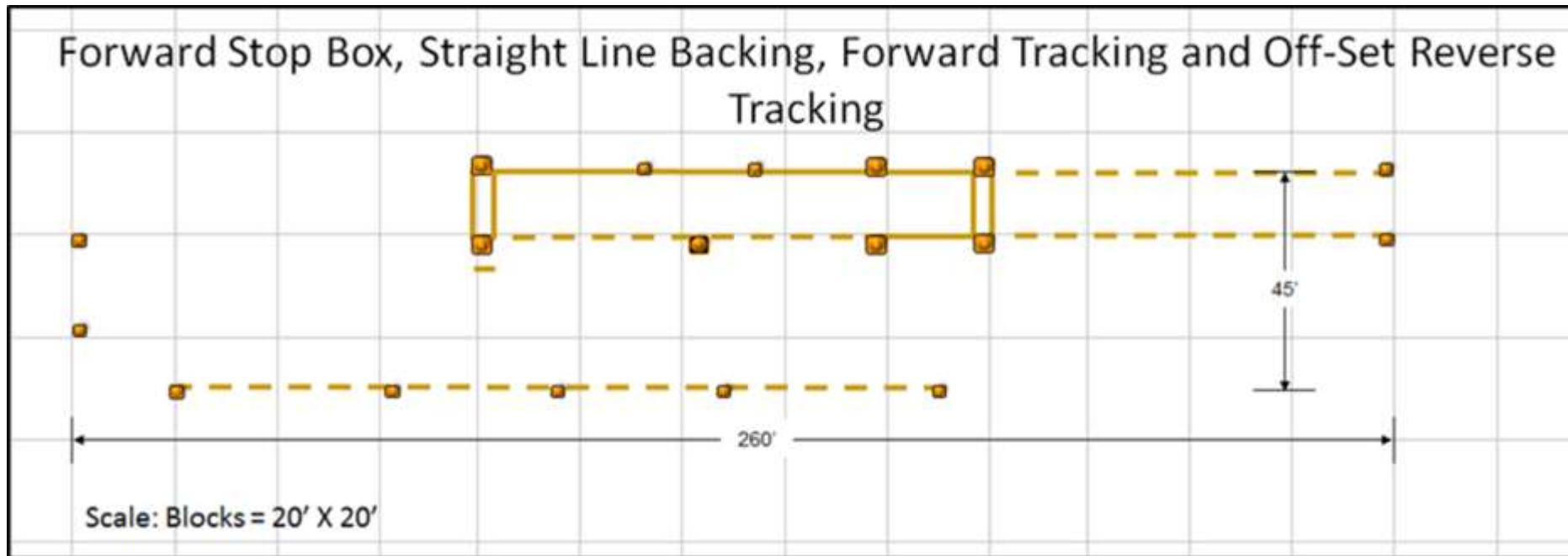
## Current BCS Carousel





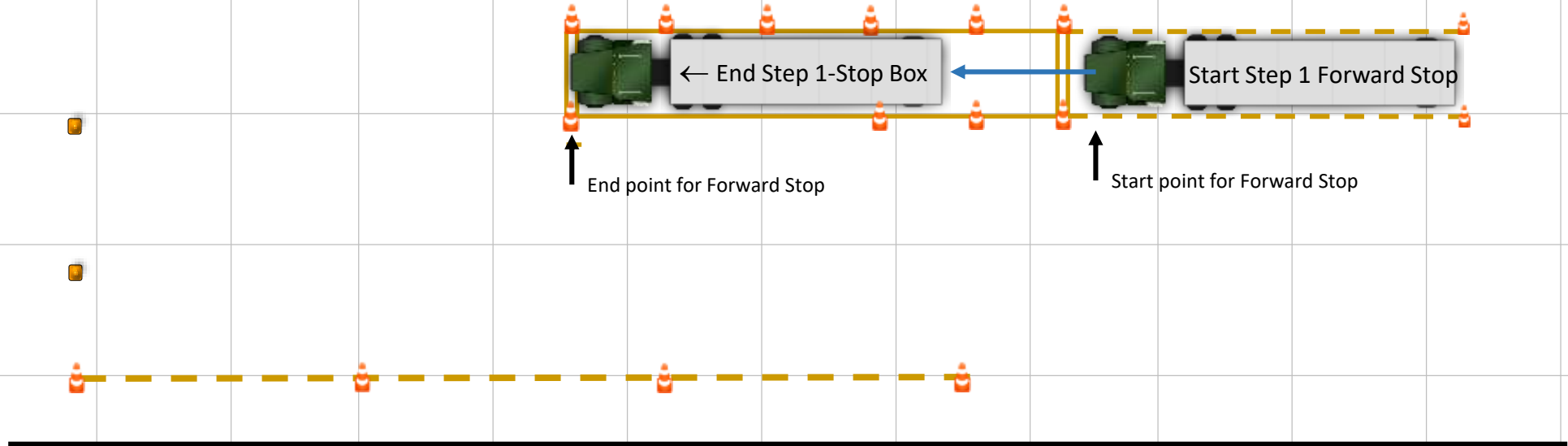
# Possible New Carousel

## Proposed BCS

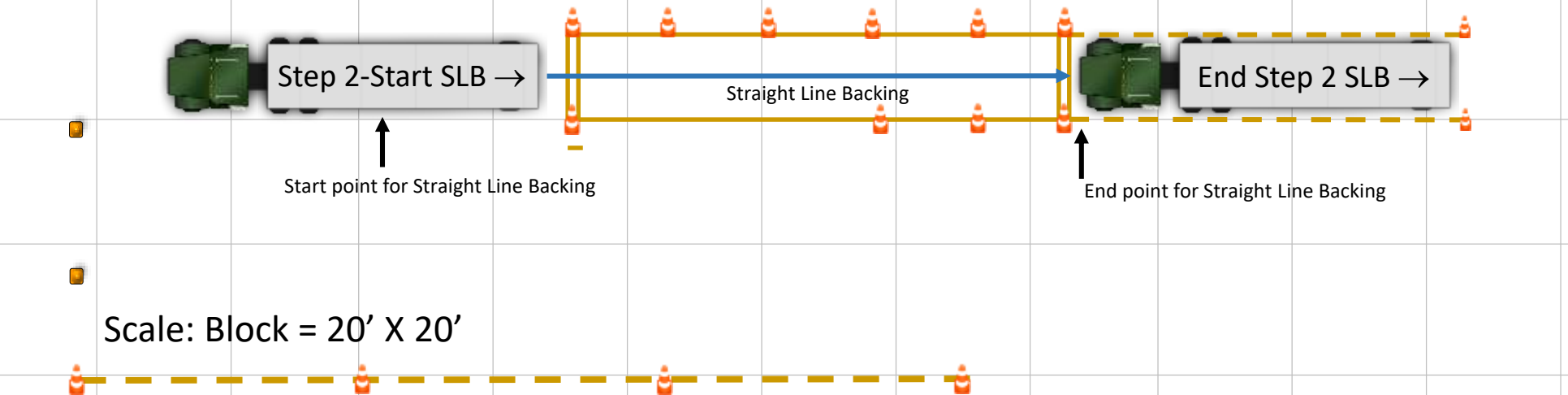


# New CDL BCS Exercises

## Forward Stop

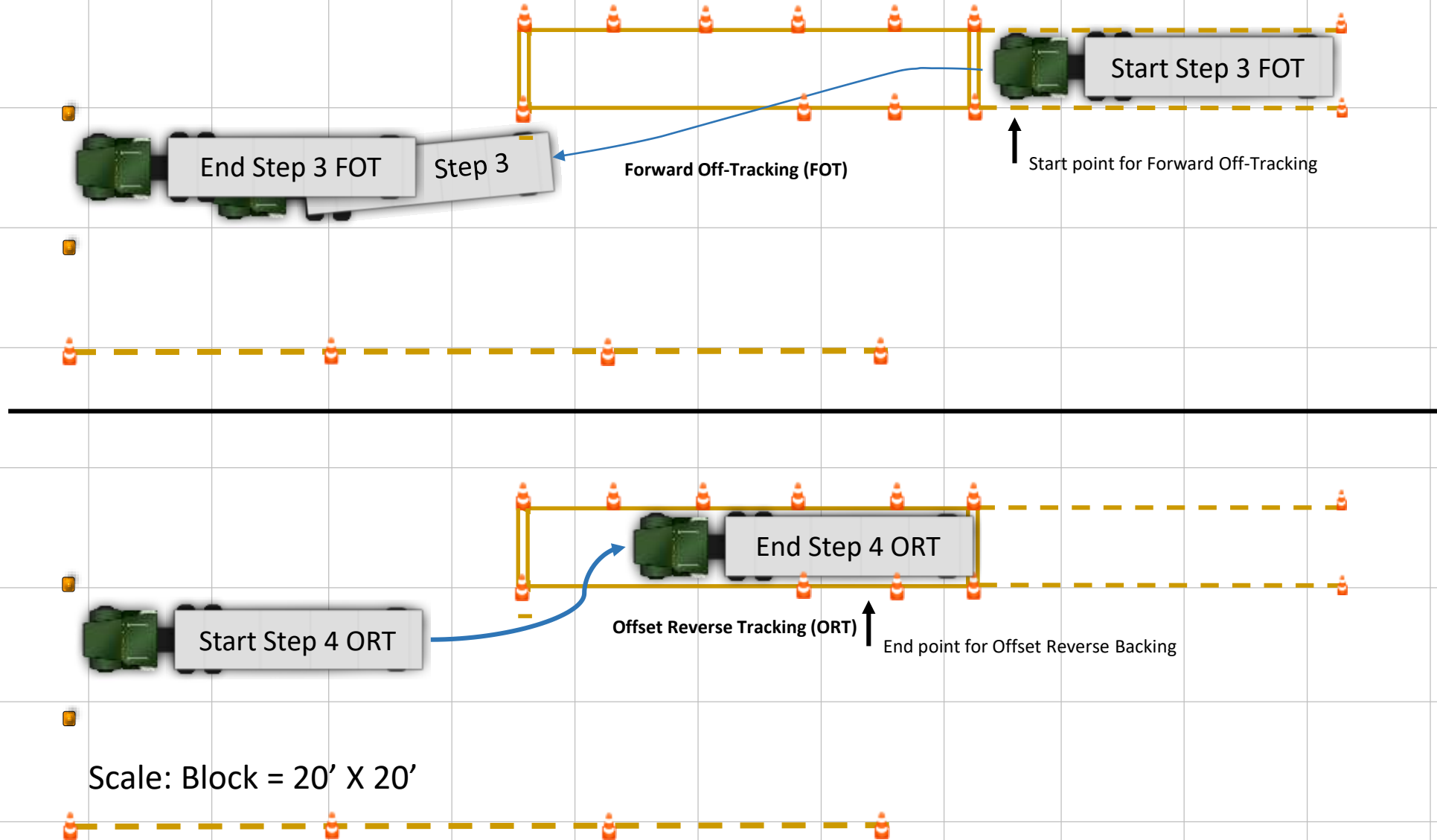


## Straight Line Backing (SLB)



Scale: Block = 20' X 20'

# New CDL BCS Exercises



## **Road Test:**

Can be reviewed and evaluated for possible modernization based on CMV crash causation factors and equipment technologies.

## **Knowledge Test:**

The Knowledge test and Driver/Examiner Manuals will be modernized based on equipment technologies and updates to the CDL Test System.

# Benefits of Modernization

- A more robust testing solution should offer standardization with flexibility with regard to changing roadways and technology.
- The system should facilitate enhanced examiner training and auditing methods to achieve safe drivers, safe vehicles and safe roadways to save lives.
- The system will result in efficiencies in test administration and backlogs.
- Enhance FMCSA's goal of attaining a zero loss of life.
- ***FMCSR rule change not anticipated.***



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# CSTIMS

**CSTIMS**  
Commercial Skills Test Information Management System  
[aamva.org/cstims](http://aamva.org/cstims)

Manage CDL Skills Testing for  
Jurisdiction and Third-Party Examiners

**HELPING JURISDICTIONS**  
comply with the final permit rule

- Schedule CDL skills tests.
- Record results of tests.
- Transfer out of state tests.
- Manage CDL audits.

WEB-BASED SYSTEM

**CDL** Commercial Driver's License

**REDUCE FRAUD**

**TABLET INTEGRATION**  
OPTIONS AVAILABLE

- CSTIMS is a web-based system for managing the skills test portion of the CDL licensing program.
- Funded by FMCSA; hosted and maintained by AAMVA
- Tracks/records information for CDL skills test organizations and examiners (state and 3<sup>rd</sup> party)
- Provides CDL skills tests **scheduling**, recording of **test results**, and **CDL audit** management
- Manages examiner **training** and **certification**

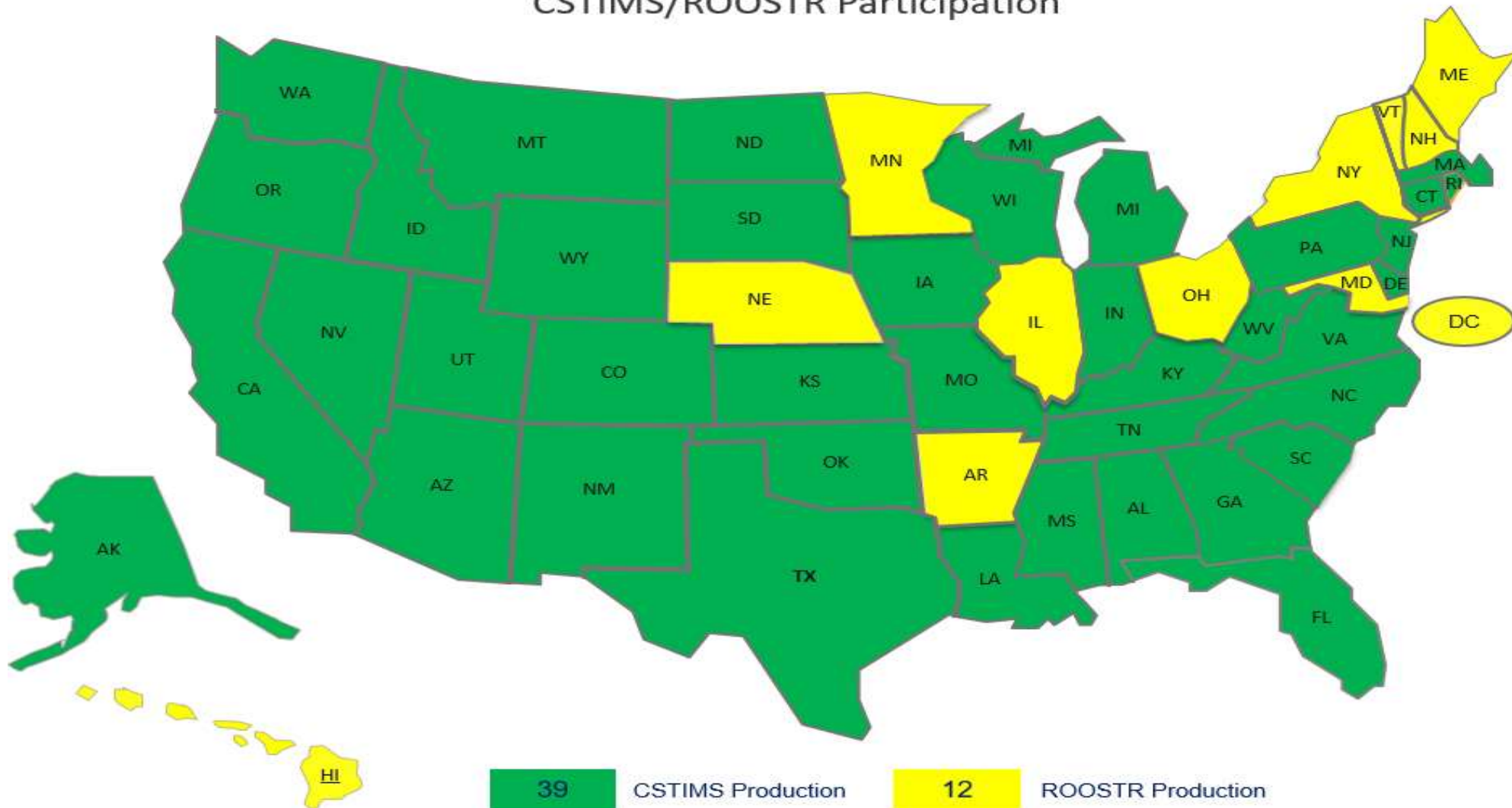
# CSTIMS Overview (continued)

- Allows jurisdictions to define specific business rules
- Allows transfer of **out-of-state** test results
- System notifications increase jurisdiction oversight and help prevent fraud
- Helps jurisdictions comply with provisions of the **final permit rule**
- Road Test **Tablet** integration options available
- **Driver Licensing System** integration available



# CSTIMS Participation

CSTIMS/ROOSTR Participation



## ROOSTR (report out-of-state test results):

- A limited edition version of CSTIMS that allows states that have not implemented CSTIMS to comply with §383.79 of the new CLP regulation.
- The rule requires states that have issued CLPs to accept CDL skills test results from any other State and transmit test results in a secure, electronic manner.

# ROOSTR (continued)

- Designed so that non-CSTIMS states can comply by the July 2015 deadline.
- Functionality **limited** to only these features:
  - Allows states to report out-of-state CDL test results to another licensing state
  - Allows states to look up out-of-state test results conducted in another state for their drivers

# New Generation Platform

Introducing: NG Platform, which offers a new technology foundation and architecture:

- Improves the efficiency of new development
- Reduces the bandwidth needed for support
- Encourages re-designs of complex workflows
- Maintains high quality, thanks to new automated regression testing

## NG





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**For More Information**

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# Jurisdictional Guidelines for the Safe Testing and Deployment of Highly Automated Vehicles

Developed by the AAMVA Autonomous Vehicles Working Group

The AVWG The Working Group established fall 2014

Consists of 18 jurisdictional members, 3 AAMVA staff

Three sub-groups focusing on issues impacting testing and deployed vehicles:

- Drivers: Education, Testing, Licensing
- Vehicles: Permits, Registration and Title
- Law Enforcement: Concerns & Challenges

Executive Summary

Chapter 1 Introduction

Chapter 2 Automated Vehicles Classifications, Terms and Technologies

Chapter 3 Administrative Considerations

Chapter 4 Vehicle Credentialing Considerations

Chapter 5 Driver Licensing Considerations

Chapter 6 Law Enforcement Considerations

Chapter 7 Next Steps

Appendix A Acronyms

Appendix B Summary of recommendations to Jurisdictions

Appendix C Summary of recommendations to Manufacturers

Appendix D – Working Group Roster



## Purpose:

Provides voluntary recommended guidelines regarding motor vehicle administration and law enforcement for the safe testing and deployment of HAVs.

Jurisdictions adopting the recommendation will facilitate consistency of regulations, without over regulating the industry while supporting innovation having the potential to reduce crashes, fatalities, injuries and property damage.

## Guiding Principles:

- Facilitating a consistent and balanced oversight approach by motor vehicle administrators to avoid inconsistent regulatory practices;
- Supporting the research and development of technology which has the potential to improve traffic safety while providing mobility options for underserved populations;
- Supporting the safe testing and the deployment of HAVs; and
- Confirming the roles and responsibilities of jurisdictions and the federal government.

## Out of Scope

Commercial motor vehicles, as defined by the Federal Motor Carrier Safety Regulations (FMCSRs) (390.5)	Cybersecurity
Training for MVA staff	Enabling infrastructure
Jurisdictional safety inspection programs and criteria	Economic considerations
Data privacy and security, including personal identifiable information (PII)	Environmental impacts

Some of these topics will be discussed in future versions of this report

- Describes the SAE, International 0-5 Vehicle Automation Classification System.
- Provides explanation of the SAE, International definitions.
- Defines other words and terms used throughout the report.

A comprehensive explanation of each topic addressed under Administration, Vehicle, Driver and Law Enforcement sections which includes:

- ✓ A discussion on the background of the issues
- ✓ Guideline for testing and/or deployed vehicles
- ✓ Benefits of implementing the guideline
- ✓ Challenges that jurisdictions may face

# Chapter 3.

## Administrative Considerations

### 3.1 Administration Examples of Recommendations for Jurisdictions

3.1.1 Identify a lead agency to manage the HAV committee and its work.

3.1.2 Establish an HAV committee to address HAV testing and deployment.

3.1.3 The HAV committee should develop strategies for addressing testing and deployment of HAVs in their jurisdiction.

3.1.4 Examine their laws and regulations to allow the safe testing, deployment and operation of HAVs.

3.1.5 Jurisdictions which regulate the testing of HAVs are encouraged to take necessary steps to establish statutory authority and to utilize NHTSA's *Automated Driving Systems: A Vision for Safety 2.0* published in September 2017 to frame the regulations.



Provide Recommendations in each of these areas:

4.1 Application for Permit to test HAVs

4.2 Vehicle Registration

4.3 Title and Branding New and Aftermarket HAVs

4.4 License Plates

4.5 Manufacturer Certificates of Origin

4.6 Financial Responsibility

4.7 Federal Motor Vehicle Safety Standards

# Examples of Recommendations in Chapter 4

- Establishing an application and permit process for HAV testing
- Place a notation on the registration credential or electronic record of vehicles
- Recognize the registration, title and plate issued by another titling jurisdiction for purposes of testing.



# Examples of Recommendations in Chapter 4

- Record and maintain the testing vehicle's information in its vehicle record brand should indicate "*highly automated vehicle*".
- Brand vehicles not equipped with automated technologies by the OEM, but have aftermarket components as aftermarket-altered automated technologies.
- Jurisdictions should not require a special license plate for HAVs.
- Require all HAVs, available to the public, to conform to all applicable FMVSS or CMVSS, unless specifically exempted by the federal agency.
- Jurisdictions should also require manufacturers to certify they have not made any federally-required safety devices inoperative.





Provide Recommendations in each of these areas:

5.1 Driver and Passenger Roles Defined

5.2 Driver License Requirements for Testing by Manufacturers and Other Entities

5.3 Driver Training for Consumers for Deployed Vehicles

5.4 HAV Driver Training for Motor Vehicle Agency Examiners, Driver Education Programs and Private Instructors

5.5 Driver License Skills Testing with Automated Vehicle Technologies

5.6 Endorsements and Restrictions for Deployed Vehicles

# Examples of Recommendations in Chapter 5

## Vehicle Testing:



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- Require test HAVs be operated solely by employees, contractors, or other persons designated by the manufacturer of the HAV.
- Require test drivers to receive training and instruction related to, but not limited to, the capabilities and limitations of the vehicle.
- Require training to be documented and submitted to the jurisdiction's HAV lead agency.
- Support the safe testing without a human driver inside of the vehicle, by requiring a user designated by the manufacturer of the ADS, to be capable of assuming control of the vehicle's operations.



## Driver testing and training involving deployed vehicles

- Provide training to driver license examiners on all vehicle technologies including levels 1 and 2 vehicles and the operation of HAVs.
- Require driver education curricula to contain information on HAVs and to provide hands-on training in the utilization of levels 1 and 2 vehicles and HAV technologies.

## New driver skills testing involving deployed vehicles (levels 1-3)

- Allow the applicant to utilize safety critical technologies for off-road skills tests or parking maneuvers during the road test. These technologies, such as backup or other cameras should not be disengaged for off-road testing.
- Jurisdictions should not allow the applicant to utilize convenience technologies, such as, the parking assist feature, for off-road skills tests or parking maneuvers during the road test. The applicant should be required to demonstrate the ability to park the vehicle.
- Do not establish endorsements and/or restrictions on the driver's license at this time.



For level 4 and 5 vehicles that can not be operated in manual mode Jurisdictions should:

- Take steps to ensure their motor vehicle laws allow for the operation of Level 4 and 5 vehicles without a driver.
- Not impose any other requirements; licensure, sobriety, clean driving history, etc., for non-drivers to utilize Level 4 and 5 vehicles.
- Review laws and regulations related to unsupervised children in motor vehicles and adopt appropriate laws and regulations to ensure safety.

Provide Recommendations in each of these areas:

- 6.1 Crash/Incident Reporting
- 6.2 Criminal Activity
- 6.3 Distracted Driving
- 6.4 Enforcement of Permit Conditions
- 6.5 Establishing Operational Responsibility and Law Enforcement Implications
- 6.6 First Responder Safety
- 6.7 Law Enforcement/First Responder Training
- 6.8 Vehicle Response to Emergency Vehicles, Manual Traffic Controls and Atypical Road Conditions
- 6.9 System Misuse and Abuse
- 6.10 Vehicle Identification
- 6.11 Adherence to Traffic Laws



# Examples of Recommendations in Chapter 6

- Require HAV manufacturers to submit to them, crash related information and a summary of the manufacturer's analysis of the incident in order to expand the amount of HAV data and research.
- U.S. jurisdictions should adopt the MMUCC (5<sup>th</sup> Edition, August 2017) recommendation as soon as practicable.
- Jurisdictions that have HAV permitting requirements should require the designated test users (employees, contractors and other persons) to pass a background check, including, but not limited to, a driver history review and a criminal history check, prior to being authorized to operate a test HAV.
- Hold test users responsible for violations of existing traffic laws subject to existing legal processes.

- Define what enforcement actions can be taken and who or what is responsible when there is no human onboard an automated test vehicle.
- For vehicles classified as Levels 4 or 5, which may be operated without a licensed driver and where the driverless vehicle performs the DDT independent of human input, the registered owner should be responsible for its safe operation.
- Work with manufacturer's consumer training programs to make the HAV training available to first responders at no cost to agencies.





These are just some examples of 16 recommendations for Jurisdictions.

There are also 23 recommendations for manufacturers which the working group will provide and discuss with the manufacturers.

Examples:

- Manufacturers should design HAVs to record vehicle behavior sensor data and the driver/vehicle interface. Law enforcement should be provided with access to this information as well as at least 30-seconds of pre-crash and post-crash data for completing a proper investigation.
- Manufacturers should make EDR information retrievable in a standard, non-proprietary format for ready access by those duly authorized.



- Manufacturers should ensure HAVs leave an electronic fingerprint that can allow tracing of input data to whoever initiated them.
- Manufacturers should ensure HAVs are permanently labeled, at a minimum, on the rear and sides of the vehicle for the safety of first responders.
- Manufacturers should ensure HAVs have safety systems or procedures which allow first responders to immobilize or otherwise disable the vehicle post-crash, to prevent movement or subsequent ignition of the vehicle for the safety of vehicle occupants and first responders.
- Manufacturers should make the information regarding HAVs and procedures available to the first responder community in the jurisdiction where the vehicle will be operated.

Over the next few years the Working Group is will:

- Attend conferences, seminars and other forums focused on the technology as well as public policy to advance and share their expertise.
- Provide technical assistance to jurisdictions – developing a plan
- Provide support to updating driver licensing testing standards and training driver license examiners.
- Work closely with industry and research stakeholders, state and federal government officials and national associations supporting transportation agencies
- Update this report periodically for the foreseeable future to address areas such as commercial vehicles, ride share ownership models, training MVA staff, as well as other topics





# Conclusion

- Careful consideration must be given to support the implementation of the technology yet maintain (and hopefully) improve safe transportation.
- Many laws, policies and procedures will need to be reconsidered, amended and implemented over time.
- There is a great collaborative effort among state officials and the entities that support them.

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- The joint working group (WG) which combines the Card Design Standard Committee and the e-ID working group remains focused on mobile DL. Recently they finished up mDL specific model legislation and procurement guidance for the benefit of the issuing jurisdictions.
- What is mDL?
  - A mobile driver's license (mDL) is a digital representation of the information contained in a physical DL, stored on or accessed with the help of a device (owned and controlled by the DL holder) such as a cell phone or tablet



- As you may be aware, AAMVA worked with the RDW, the DMV of the Netherlands, on an mDL operational proof of concept. As a result, many of our jurisdiction members were able to download an application and “test-drive” the operational concepts of what an mDL might look and feel like.
- A video showing the Phase I version of the collaboration was debuted at the AAMVA 2017 AIC in San Francisco and is one of the most viewed videos AAMVA has ever produced. It is on our YouTube site for anyone interested in seeing how the technology would work.



- A new development in the work happening in international standards setting collaboration is an mDL interoperability test exercise that will be hosted by Japan this October.
- The National Police Agency in Japan had taken the AAMVA/RDW work and built a proof of concept that shows the translation feature from Japanese to other languages and vice-versa. The interoperability exercise will provide an opportunity for the solution providers to see how closely aligned they are to the emerging standards.



- Also of note is the collaboration happening with other MVAs around the globe – leveraging mutual interest in mDL. AAMVA is actively engaged in with the European Community through EReg and an EU backed electronic identity effort.
- AAMVA is also working with Austroads – the Australian counterpart to AAMVA. AAMVA and Iowa DOT were recently invited to attend an inaugural Digital ID conference in Canberra and there is a desire to convene a mini-summit in December bringing AAMVA, EReg and Austroads together in Melbourne.

# Contact Information

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