Supplier Perspectives on Policies Impacting Advanced Vehicle Safety Technology

Catherine Boland, Vice President, Legislative Affairs
Leigh Merino, Senior Director, Regulatory Affairs
Brian Daugherty, CTO

FMCSA MCSAC Meeting -- June 13, 2017

About MEMA

- **Our Mission**: Advance the motor vehicle and mobility supplier industry and the business interests of our members
- MEMA represents members through four division associations:
  - OESA, AASA, HDMA and MERA
  - Collectively, MEMA represents about 1,000 members that manufacture and supply original equipment and aftermarket motor vehicle components and systems for use in passenger and commercial vehicles
- Offices in Detroit, Raleigh & DC areas
  - MEMA's Washington, DC office advocates on behalf of suppliers on legislation, regulation and policy that impact our industry

OESA — Original Equipment Manufacturers Association
AASA — Automotive Aftermarket Suppliers Association
HDMA — Heavy Duty Manufacturers Association
MERA — Motor & Equipment Remanufacturers Association

Economic & Employment Impact U.S. Vehicle Supplier Industry

Role of Vehicle Suppliers

- Suppliers are the Innovators, Developers and Manufacturers of Advanced Vehicle Safety Technologies
- These technologies have proven successful in preventing and mitigating several types of crashes
- MEMA and our members are committed to the manufacture of technologies that will improve the safety of vehicles
- **Heavy-duty vehicle suppliers work closely with their OEM customers and the fleets on these technologies**

Incentivizing Implementation of Safety Tech

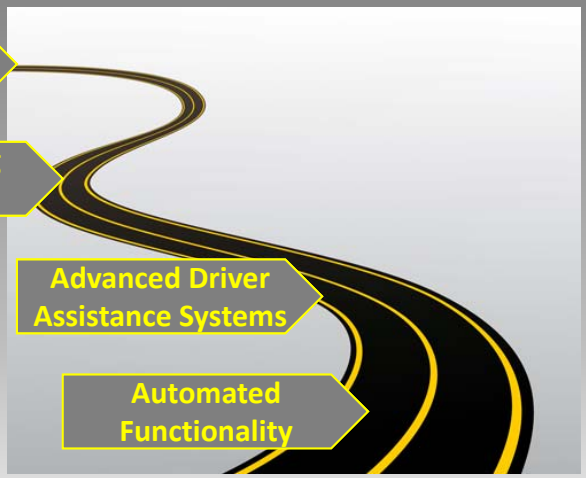
MEMA supports efforts to encourage voluntary deployment by fleets and owner-operators

- **Beyond Compliance**
  - MEMA urged FMCSA to act quickly to develop rules to provide credits to carriers and drivers that establish safety practices and programs that go beyond the standards established by the agency
- **Other Incentives**
  - MEMA supports federal policies, including tax incentives, to encourage commercial vehicle fleet owners and independent owner-operators to install and deploy advanced vehicle safety systems

Existing Regulations Must Stay in Place

- Suppliers support smart regulations already in place that will make commercial vehicles safer
- HD ESC Rule
  - Suppliers with Congress, NHTSA, vehicle manufacturers and the public to advance the use of critical safety devices in motor vehicles including the heavy-duty vehicle electronic stability control rule
  - ESC systems maintain the directional control of a vehicle automatically when drivers can't react quickly
  - According to the ESC Final Rule, NHTSA estimates the rule will prevent as many as 1,759 crashes, 649 injuries and 49 fatalities each year, and will prevent up to 56% of rollover crashes not caused by striking an obstacle or leaving the road

Path to Automation in Heavy Vehicles



MEMA Perspectives on Policies Impacting Connected Vehicles

Commercial vehicles must be included in policies that focus on automated vehicles (AV).

As industry stakeholders and government officials prepare for a future of improved mobility of connected vehicles that includes a suite of technologies that enable automated vehicles, the role of commercial vehicles must be included

Recap of 2016 – Vehicle Safety Policy

MEMA-BCG Study "A Roadmap to Safer Driving"

- Key Takeaways:
  - Taken together, Advanced Driver Assistance Systems Technologies features:
    - Could save **~10K lives** and **$251B** each year
    - Are the **building blocks** of partially and fully **automated driving**
  - Policymakers can take concrete steps to promote vehicle technologies that enhance safety by:
    - Implementing **Enhanced NCAP** 5-star Ratings that Include ADAS
    - Conducting **Consumer Education** Programs to Accelerate Consumer Acceptance and Adoption
    - Mandating **V2V Communications** / Preserving the 5.9 Ghz "Safety Spectrum" for Intelligent Transportation Systems
    - Funding Forward-looking **National Infrastructure** Legislation
- Download our 2015 study here:
  - https://www.mema.org/resource/roadmap-safer-driving-through-advanced-driver-assistance-systems

MEMA Response to V2V NPRM

Bottom Line: We're Ready!

Photo Source: US DOT, ITS-JPO

- Support Mandate to Require the Exchange of Standardized Basic Safety Messages
- Dedicated Short Range Communications (DSRC) devices for V2V communication have ideal qualities -- inherent low-latency and ability to "see" beyond radar, camera, LIDAR sensors
- Retaining the 5.9 GHz Spectrum and Utilizing Ch. 172 are critical and should not be shared
- "Alternatives" to DSRC must be interoperable
- Urged prompt agency action to finalize LVs rule and make decision on HVs

MEMA urged completion of NHTSA's Heavy Vehicle V2V research and to move forward

MEMA FAVP Comments Summary

MEMA Encouraged by Policy and Support the Iterative Process, Guidance Approach, But Important Clarifications are Needed

- Critical to Get Foundational Policy as Clear as Possible; Voluntary but Essentially *de facto* standards
- Policy Criteria for Test Systems/Vehicles vs. Production Systems/Vehicles; (e.g. SALs, Roles & Responsibilities, data recording/sharing, exemptions)
- State Model Policy asserts each test vehicle follows Performance Guidance "set forth by NHTSA" and "meets all applicable" FMVSS
- FAVP Infers Retroactive SAL Submissions for SAE L2 to confirm if it "does" or "does not meet" the Guidance; asked NHTSA to explicitly clarify expectations for in-production

Considerations for FAVP & Commercial Vehicles

- MEMA asked NHTSA to be mindful of "unique relationships present in the commercial vehicle industry and how the AV Policy will impact this segment."
- Protection of IP is particularly sensitive for heavy vehicle suppliers because safety systems and other new tech are key differentiators for their trucking fleets customers
- Commercial vehicle ecosystem is more complex than passenger market; must fully explore potential challenges and opportunities in the commercial space

Automated Vehicle Technology

- Advanced Driver Assistance Systems (ADAS) and low-level automated vehicle technologies are available today and will continue to improve the safety and efficiency of transportation
- Fully autonomous vehicles (SAE Level 5) will take much longer to develop than is commonly believed due to sensor limitations, the complexity of the driving environment, and the need for high-reliability, failsafe designs
- Having a driver that provides manual backup capability is a subtle but very important aspect of current vehicle systems.
- Failsafe designs will require high levels of redundancy for sensors, steering, braking, throttle control, and power systems.
- Some companies may take excessive risks with testing or limited "deployments" involving the public requiring NHTSA/FMCSA to step in

Automated Vehicle Technology Questions

- What level of **reliability** and the associated system **redundancy** is required?
- What about **service life**? What happens when automated vehicles get older or after a heavy lifetime of use? (This could be a short time, but 300K miles or it could be sensors that are 10+ years old and may be starting to degrade)
- Should they be required to detect sensor failures and **lock out** the vehicle?
- Should **inspections** be required? At what frequency? Mileage or time based?
- How will we know **when to retire** these vehicles? Should retirement (or factory refurbishment) be mandated at a certain age or mileage level?

Automated Vehicles Legislation

- Sens. Gary Peters (D-Mich.) and John Thune (R-S.D.) working together on legislation for AVs
- House E&C Committee also looking at potential pieces of legislation that would address different aspects of AVs
  - Lawmakers' objectives – How to improve regulatory flexibility without drastically changing current regulations for today's vehicles; How to help avoid a patchwork of state regulations
  - Possible introduction soon
- MEMA Key Objectives for any AV legislation are:
  - Improve suppliers' ability to test/evaluate prototype systems/vehicles
  - State preemption
  - Improve federal exemptions process

Cybersecurity

- **Automotive Information Sharing and Analysis Center**
  - Auto-ISAC Formed in August 2015 by automakers to establish a global information sharing community
  - Central hub for sharing, tracking and analyzing intelligence about cyber threats, vulnerabilities and incidents related to the connected vehicle
  - Over 30 global OEMs and Supplier Members; accounts >99% of N.A. light-duty vehicles
  - **Recently expanded membership to commercial vehicle OEMs/Suppliers and trucking industry Fleets/Carriers**
  - MEMA is an Auto-ISAC "Strategic Partner"
- NHTSA Issued Cybersecurity Best Practices last fall; MEMA weighed in
  - View docket here https://www.regulations.gov/document?D=NHTSA-2016-0104-0001

Challenges for Commercial HAVs

- Industry needs more certainty
  - Regulations, guidelines, policies
  - Standards Development
  - Collaboration
  - Alignment

- Cost
  - Technology penetration remains low because fleets and owner-operators face increasingly higher operating costs and tightening profit margins
- Data & Cybersecurity

Key Takeaways

- Don't let the hype surrounding fully autonomous vehicles distract us from the path to assisted and automated driving which will save lives
- We should not reduce investment in more near-term safety and connected safety technologies including:
  - ADAS
  - DSRC-based V2V Communications
- Cybersecurity risks and threats will lead to significant changes in vehicle architectures

Thank you!

Catherine Boland cboland@mema.org
Brian Daugherty bdaugherty@mema.org
Leigh Merino lmerino@mema.org

Follow us!
@MEMADC