Docket FMCSA-2018-0037 Comment Summary			
#	**Commenter Organization**	**General Comments**	**Comments to the Specific Questions Posed in the FR Notice: Application of the FMCSRs to ADS-Equipped CMVs; Current Testing and Operation of CMVs With ADS**
0001	FMCSA	Federal Register Notice: "*Federal Motor Carrier Safety Regulations which may be Barrier to Safe Testing and Deployment of Automated Driving Systems-Equipped Commercial Motor Vehicles on Public Roads*"	
0002	Marcus Boykin **Individual**	• FNVSS No. 108 needs to be amended due to advanced lighting safety technology that has been deployed and recognized by CVSA - Light Safety Control Module is an automated plug and play safety technology that provides a supplemental low beam headlight when only 1 of the 2 required functional headlights perform.	
0003	FMCSA	Volpe Study: "*Review of the Federal Motor Carrier Safety Regulations for Automated Commercial Vehicles Preliminary Assessment of Interpretation and Enforcement Challenges, Questions and Gaps*"	
0004	Scott Leclerc **Individual**	• HOS needs to be updated. • Roadways need to be in top shape. • Concerns about construction. • If US adopted Canada's HOS, more beneficial to companies and drivers and wouldn't need AVs.	
0005	Gregory Albino **Individual**	• ADS can never make critical judgments and responses as a human driver – its sensors only see 75 feet away. • Automated system may be sensing the speed of the vehicle in front of it but will not see what's happening in front of that vehicle and further up the road, and the response will be too little too late. • Takes a human driver to know what the safest maneuver to prevent or at least minimize casualties. • Autonomous systems have imperfections and potential malfunctions.	
0006	Tanner Batey **Individual**	• Eliminate ELD mandate for small companies and owner operators; just another unnecessary added expense. • Truckers need to be able to legally carry a pistol in the truck. • Companies need to more carefully review drivers that they hire.	
0007	Anonymous	• See article about Starsky Robotics operating a driverless truck in FL when communications was lost and truck continued for 2 miles before stopping as example of CDL driver required not being followed.	

		• No CMV should ever be allowed to operate without a CDL driver unless it has been certified by FMCSA. • Uber driver in AZ was complacent and failed to do their job. • Concerns about environmental factors such as black ice, wind, dust.	
0008	Jack Hart **Individual**	• Collision avoidance software is available now; reasonably affordable, should be mandated on all vehicles regardless of class 5, 6, 7, 8 by 2020 model year. • Computers will react faster in most cases because drivers are often inattentive. • Pedestrians or wildlife just as likely to get hit by person driving or computer driving. • Self-driving vehicles cannot be error free until all vehicles are automated and infrastructure is in place to control all vehicles…this doesn't mean that we can't move forward.	
0009	Vince Wenger I**ndividual**	• Must be tested under every possible scenario that would occur to a human driver, and they must outperform every human in every situation before being allowed on the roads.	
0010	B. Hollinger **Individual**	• With the potential to make great strides in roadway safety, and limit losses to commercial transportation companies, it's important to solve issues sooner rather than later as the evolution of self-driving technology has been rapid and promising. • Reconsideration of 2017 policy regarding requiring driver in the seat is appropriate given the Volpe report findings. • Agree that definitions of driver, onboard technician, remote supervisor, and operator may address issues in regulations. • Clarifying the term "driver" will allow for unburdened testing and safe integration of automated driving technology without having to further burden the agency with temporary issues of licensing and exemptions while regulatory changes are commenced. • FMCSA limited to operation of CMVs in interstate commerce – NHTSA holds the power to regulate manufacturing. • Need to consider whether to require a non-driving human technician or supervisor onboard a completely automated CMV; believes that an onboard technician should always be present at least until the safety of the new technologies is firmly without doubt. • Human drivers will still be on the road; errors not addressed by AVs. • Concerns about poor or broken street lighting, potholes, and deteriorating roadways. • Concerns about liability.	

0011	JC Powell **Individual**	• All manufacturers and trucking companies should be expected to provide the government with all of their test results and incident reports so everyone can learn from the mistakes. • Sellers and users of ADS should disclose the make up of their systems to the public. • Distracted driving and fatigued driving are a serious issue, and we should strive to implement all reasonable driver cabin safety automation. • Should require the use of the available tools to monitor for distraction and fatigue to determine potential savings of AVs. • Roll out of AVs should be limited to certain hours with gradual softening of use of phones but with the implementation of distracted driving warning systems and fatigue prevention systems. • Requirements to be an "ADS" driver should be less than that of a CDL – the automation of the vehicles should require self diagnosis before operating, thereby allowing minimal training for an ADS operator. • Safety data has not been adequately publicized to the public regarding the necessary regulations of SAE Level 5 operation. • Trucking safety will increase with the adoption of ELDs, but that took years – don't rush to implement SAE Level 5 AVs. • Recommend a slow roll out under a short term waiver with SAE Level 3 or 4, at night on empty roads with non-CDL drivers monitored for distraction and fatigue.	
0012	Wayne Alberts **Individual**	• Don't want driverless trucks under any circumstances. • Concerns about liability. • How will pre- and post-trip inspections be conducted; how will defects be fixed? • Deployment of driverless vehicles isn't worth the risk to people and property – better driver controlled vehicles are needed more.	
0013	Thomas Zellmer **Individual**	• Stop wasting money on research; can't build a system that will exit the highway and drive in urban setting or in a construction zone. • Can't replace the operator – airplanes still have pilots; ships still have operators. • Some AVs work in controlled environments, but not in uncontrolled highway settings; this is beyond the scope of machines and human engineering. • Cannot match human skill and speed with mechanical engineering.	
0014	Ed Henderson	• AVs will become a reality – eliminating the driver shortage makes it worth the effort. • Each AV in service will replace 2-3 trucks due to HOS rules.	

	Trucking Company Safety Director	• Traffic flow/safety would improve, fuel consumption reduced because of efficiencies. • Impacts on warehouse and dock workers; loading and unloading schedules, weight compliance, trailer inspections. • AV CMVs will pay for themselves in a few years in payroll and fuel savings.	
0015	Todd Campbell **Individual**	• Opposed to AVs. • Severe number of fatalities will happen during the learning curve of these vehicles. • Concerns about under-trained people that are a risk to the motoring public. • Computers cannot calculate the unthinkable – they only know the numbers.	
0016	Neil Amstutz **Individual**	• While current vehicles are safer and more efficient than in the past, we will never reach a point where all accidents, injuries and deaths are eliminated no matter how much technology is added to the vehicle. • Need to take into account the additional cost of initial acquisition and ongoing maintenance. • Will not be practical – "using the Space Shuttle to deliver groceries." • Need to balance cost effective vs. cost prohibitive for introduction of technology. • There are always other factors such as weather, animals, poorly maintained roads, public infrastructure that collapses due to inadequate maintenance, and the driving public that share the roads with the CMV traffic. • Concerns about technology failing; trucks will be too complex to run efficiently.	
0017	Jarvis Burton **Individual**	• References AZ Uber crash – opposed to AVs. • Concerns about other drivers around CMVs. • Concerns about hacking.	
0018	Gregory Stucky **Individual**	• Anything without a steering wheel should be level 5, a steering wheel only meant for occasional use or optional use should be level 4, and most everything else should be level 3. • Liability should be held jointly by the operator and the organization that authorized the vehicle, proportional to that party's involvement in each specific incident. • The creator of the instructions should be liable, but most computer programmers don't understand driving to the extent required to be prepared for it. • Propose requiring a type of CDL for the individuals who work on the project and trace any event back to the line of code written that created the incident.	

0019	Zoranda Newman **Individual**	• Autonomous trucks are extremely dangerous and should not be allowed on public roads. • Not cost effective, produce more waste, and cannot pull the loads of today. • Concerns about hacking.	
0020	Vance Wagner **Individual**	• Automated systems to not take into account every factor – it is not an acceptable risk.	
0021	Mo Thompson **Individual**	• As human behavior is highly unpredictable even with laws and regulations prohibiting certain actions while driving, automated driving systems are likely to be safer than non-automated drivers. • Allowing further development of these technologies no the road will help spur on the advancement of better, more safe, systems.	
0022	Dwayne Oxford **Individual**	• AVs are worse than the inept drivers that get licensed today. • Corporations looking only to their bottom line. • Need separate roads and terminals accessed directly from those roads for AVs.	
0023	Rhoda Thompson **Individual**	• For AVs, the person should be a CDL holder and know what to do without any distraction in case they are needed. • Machines will have faults no matter who builds them.	
0024	Joseph Merkler **Individual**	• Opposed to AVs. • Remove the speed limits on trucks now for safer highways. • Only human beings can make the critical decisions needed to operate a CMV in a safe manner. • Remove HOS.	
0025	Johnny McDaniel **Individual**	• Drivers should be paid the same amount for driving wither manual or autonomous. • Tesla truck will show how much progress there has been.	
0026	Thomas Nulisch **Individual**	• Concerns about jobs. • Self-driving trucks can't detect when there is a problem ahead. • How do you regulate a self-driving truck – how can you hold it to our standards as a professional driver today?	
0027	Charlie Brown **Individual**	• Don't allow driverless vehicles – references the AZ Uber crash.	
0028	Ed Godfrey **Individual**	• Need to have a professional driver at all times – computer cannot predict the behavior of the surrounding traffic. • Radar, cameras, GPS, and environmental mapping cannot save lives as opposed to an experienced operator.	

		• Concerns about human in sleeper berth reacting in time in the event of an issue. • Testing of AVs should be conducted off public roads until real data is collected on all the various circumstances that can occur on public roads.	
0029	Kevin Johnson **Individual**	• Oppose driverless AVs, especially tractor/trailer combination. • Need to have a human operator at all levels because of distracted drivers and unforeseen road situations.	
0030	Kevin Mossman **Individual**	• Self-driving vehicles will not help jobs nor will it help America.	
0031	Ramonta Lee **Individual**	• Concerns about infrastructure, driver training, and general public driving around CMVs.	
0032	Peter Lantz **Individual**	• AVs should be first tested and implemented in school buses. • School buses generally run a regular route on a regular timetable with the same stops; they are kept off the roads during weather events; they generally stay close to their terminals and receive constant public attention.	
0033	Mike Suhr **Individual**	• Concerns about AVs being able to react to real world traffic scenarios.	
0034	Jonathon Organ **Individual**	• Opposed to any type of vehicle without a driver – these types of vehicles will not improve safety. • Do support any efforts or technology that will aid the driver to safely operate a vehicle. • Technology fails, and is not fail proof. • Computers and sensors can never replace an experienced driver when it comes to critical decision making or anticipating what traffic will do. • Increased CMV safety needs to start with training standards. • HOS needs to be addressed and changed. • General public needs to be educated on driving around CMVs. • Concerns about infrastructure.	
0035	Don Gore **Individual**	• Technology is not ready – probably never will be unless processing speeds and power (data transfer) are greatly increased. • Opposed to AVs.	
0036	Mike Valentine **Individual**	• AVs are unsafe and will kill people – dangerous for the general public.	

0037	Nelson Chambers **Individual**	• In favor of all technologies that help prove or improve safety for all drivers on the road. • But opposed to any technology that removes a driver from a job.	
0038	Thomas Peacock **Individual**	• AVs should have their own roadway separating them from other vehicles with restraining walls preventing them from colliding with passenger vehicles. • Any person tasked with monitoring an AV would have a hard time staying alert enough to respond timely in the event of a malfunction. • Concern about loss of jobs.	
0039	David Embry **Individual**	• AVs must be able to communicate with the road, therefore "smart roads" must be developed simultaneously with AVs. • Smart roads could alert AVs of construction, crashes, slowdowns or anything relevant to dynamic traffic conditions miles in advance of what a human operator could anticipate.	
0040	Frank Mitko **Individual**	• Bad idea – too many variables on the road for AVs. • Concerns with construction and lane shifts. • Concerns about driving in traffic and weather; pedestrians. • Technology needs much more exploration before it becomes the standard.	
0041	Helen Corbett **Individual**	• Concerns about hacking – will be used to cause great destruction. • Concern about loss of jobs.	
0042	Raymond Ward **Individual**	• Worried about losing job. • Even newer trucks have problems, and it takes a human to tell how well the vehicle is doing its job as safely as possible. • Replacing a human driver with a automated truck will not make things perfect and won't stop other drivers from interacting with these AVs and making other problems.	
0043	Tina Willis **Individual**	• Lawyer – opposed to AVs. • Any machine can break or malfunction. • Concern about AV provider lobbyists that are pushing for legislation that would eliminate safety certification requirements before these vehicles are approved to drive on the road.	
0044	Raymond Worden **Individual**	• Automated trucks should not be allowed on our highways while our families are traveling on them. • Any risk is not acceptable. • Biggest obstacles are (1) roads are a mess (potholes/construction), and (2) human beings.	
0045	Ralph Baker	• Opposed to AVs – concerns about safety and jobs.	

	Individual		
0046	Deborah Stobaugh **Individual/Owner Operator**	• Opposed to AVs • Opposed to ELDs	
0047	Bob Rutherford **Individual**	• Every truck should have automated tire systems before even considering driving systems (see attached link)	
0048	Randall North **Individual**	• Reducing the driver's hands on duties will increase the risk of fatigue and drowsy driving significantly for some, if not all drivers that participate.	
0049	James Ashby **Individual**	• Technology is not ready – hackers will be an issue.	
0050	Michael Lloyd **Individual**	• More vehicles and pedestrians are on the road than ever, and to put AVs no the road is unsafe and careless. • Only reason to consider the concept of AVs is for profit of corporations that are pushing this along. • Technology fails, and subject to hackers.	
0051	Chante Drew **Individual**	• Infrastructure on our public roads and highways needs to be fixed before AVs are allowed on the highways. • Will put truck drivers and industry out of work, and lives at risk. • People need to learn how to drive around trucks in general. • Unless there is a dedicated interstate system for AVs, this is a technology that is too far off to be a realistic goal.	
0052	Charles Gann **Individual**	• NO autonomous trucks – FMCSA does not care about safety, only about serving large corporations.	
0053	Brett Graves **Individual**	• All automated driving systems are inherently unsafe and should be prohibited by federal law, if not the US Constitution itself.	
0054	**International Brotherhood of Teamsters; Owner-Operator Independent Drivers Association;**	Request a 60-day extension for comments to docket.	

	Transportation Trades Department, AFL-CIO		
0055	Seth Brown **Individual**	• As a trucker, I realize that the industry is dying – the only way a company or company paid individual can make enough to earn a living is by working almost nonstop for weeks on end – it's not sustainable.	
0056	John McCaughey **Individual**	• Must always be a failsafe • If the technology fails, a qualified driver must be able to take over the driving tasks. • Support driver assist technologies, but not full automation for CMVs. • Cybersecurity is a big concern – what happens is these vehicles are hacked, especially when carrying hazardous materials.	
0057	c cc **Individual**	[*Comments appear to be related to a different docket – EPA issues*.]	
0058	Harry Crabtree **Individual**	• How will DVIR process be performed – how will safety of the truck and trailer be ensured if there is no driver to complete a vehicle inspection? • Carriers could have many pieces of equipment but no drivers – how will FMCSA address this for the purposes of CSA rankings and selection of carriers for audits?	
0059	Collin B. Mooney **Commercial Vehicle Safety Alliance (CVSA)**	• Urge NHTSA and FMCSA to proceed with caution and not to remove or relax necessary safety regulations to enable unproven automated driving systems on public roads. • Encourage FMCSA to work with NHTSA to establish requirements for CMVs to communicate information essential to enforcing traffic laws and conducting inspections, including electronic vehicle identification, time stamp, and automation operational status. • CVSA petition to require electronic vehicle identification will provide the platform for identifying and monitoring of ADS-equipped vehicles and their communication with law enforcement. • Logistical efficiency, driver convenience and employee retention, or resolving the shortage of qualified truck drivers are all possible market pressures for ADS that may conflict with some safety goals. • Discourage allowing testing of vehicles on public roads with no human onboard where other vehicles and human drivers are also operating unless and until the fully automated technologies have proven their performance, reliability, maintainability and durability, and shown to be safer than the best human drivers.	• Inspection, Repair, and Maintenance o ADS functionality will need to be vetted by carriers with technical or financial means to do so, and eventually by regulators for all other cases and going forward. o Will need to be regulations requiring self-diagnostics integration and reporting for critical subsystems as well as the ADS itself. o DOT will need to establish minimum performance or equipment criteria, and test procedures for either type-certification or self-certification. o A self-diagnostic test would need to be part of a pre-trip inspection before automated mode operation. o Some certification or minimum requirements or qualification would be justified in rulemaking for maintenance personnel responsible for maintaining ADS equipment. o Motor carriers will need to help ensure basic system security of ADS – FMCSA should consider rules to require the ADS industry, carriers, and customers to position, maintain, and monitor the system to ensure it cannot be operated remotely by an illicit outside source. o The NAS OOSC did not envision equipment that can operate the vehicle instead of the human driver; inspectors only check for required equipment and conditions, so if ADS systems are not required, the current inspection procedures and criteria do not apply.

		• Need to address how to account for vehicle and driver violations within FMCSA's CSA SMS, and how these ADS-related violations will impact a motor carrier's safety rating.	o If requirements are set, there should be minimum parameters established that could be retrieved as a data packet that inspectors could download from the vehicle or that could be communicated through telematics to an inspector. o Manufacturers and installers of ADS systems should be required to place a permanent label on the motor vehicle and ADS specific devices which identify key safety sensitive requirements. • Roadside and Annual Inspections o ADS-equipped vehicles should be marked and identified with some visible means of communication, and equipped with a universal electronic vehicle identification system capable of communicating to enforcement and other road users the ADS capability and status. o Inspector safety is an important consideration during roadside inspections of ADS vehicles. • Distracted Driving o Any possible changes would depend on the automated CMV operating concepts. o In any of the Automated CMV Operating Concept cases where a human driver is responsible for actively monitoring or intermittently monitoring the ADS operation of the vehicle, fatigue monitoring should be used. o Systems should utilize the best alertness assistance available, in accordance with established research and experience. • Medical Qualifications o All human driver medical qualifications would need to be reconsidered if a vehicle can be operated in C, D, E, F, and G operating concepts defined by Volpe. • HOS o In the near term, no significant changes needed to HOS regulations. o In the longer term, for periods of time during which the human driver effectively could tune out from the driving task, studies will be needed to better understand the impacts of these types of operations. • CDL Endorsements o Endorsement could be necessary if new skills are expected of the human driver of vehicles with certain advanced technologies. o New endorsement may be of interest if the human operator of an ADS-equipped vehicle now needs to monitor the driving task or to be prepared to make decisions on when and when not to rely on the ADS. o The capabilities of the ADS should exceed those of the human it is replacing. o In all situations, ADS-equipped CMVs must be able to react in a reasonable and safe way to emergency responders who are in emergent operations, including making a traffic stop on the ADS vehicle or for the ADS vehicle to move over for first responder who may be on the shoulder of the roadway.

			- Safety protocols should be established and codified for automated vehicles to identify and address unusual conditions. - Testing and Interstate Operations of CMVs with ADS on Public Roadways - Operating ADS-equipped CMVs is not necessarily in violation of state or federal laws and regulations. - FMCSA should work with NHTSA to verify the ADS technology providers have records and safety practices that FMCSA would expect of a motor carrier in a pre-ADS world. - ADS should be first designed, developed and established to be safer than human drivers on CMVs with one human on board and limited hazardous materials, before expanding the technology to certain passenger carrying vehicle operations or hazardous materials shipments, especially in high speed operational environments. - Beyond Compliance Program - ADS should not be part of the Beyond Compliance Program until they have empirically established a benefit to safety. - Regulation of Manufacturing Versus Operation - Essential that FMCSA work with NHTSA and state partners and agencies in the new area of regulatory applicability. - Confidentiality of Shared Information - FMCSA may need to establish standards/regulations for non-proprietary safety information regarding certain components that directly relate to safety sensitive functions. - NHTSA, FMCSA, and other DOT agencies should work with the industry to obtain critical public safety related information that may be proprietary and seek confidential agreements which would provide critical safety sensitive functions.
0060	Brian Huseman **Amazon**	- Promote performance-based standards that focus on measurable outcomes rather than prescribed equipage or design requirements. - Performance-based standards should focus on addressing risk and consequence factors associated with different operations, taking into account the design, capabilities, and the operational applications of those vehicles and supporting systems. - Develop a consistent multimodal regulatory system for surface AV technologies. - Provide consistent design and operating requirements nationwide and globally – a patchwork of state regulations will create barriers to adoption of AVs and impede the widespread deployment of technologies that will have tremendous safety benefits. - DOT should partner with other countries to ensure these standards are harmonized internationally.	

		• Develop federated, interoperable communications standards – AV communications should be multimodal, standardized, and interoperable so different systems can interact seamlessly, sharing critical vehicle information to ensure safety of operations, irrespective of manufacturer, owner, or operator. • Promote V2V and V2I technical interoperability and performance-based solutions for safe vehicle operation. • Modernize existing regulations and reject arbitrary requirements for AVs.	
0061	Boyd Stephenson **National Tank Truck Carriers, Inc. (NTTC)**	• Must focus on ensuring that these new technologies integrate with existing systems with as little danger to existing vehicles as possible. • PHMSA and FMCSA need to work with NHTSA, state legislatures, insurance companies, OEMs, carriers, shippers, drivers, and other interested parties to ensure that liability is placed properly. • Move to a performance-based, operator-neutral perspective. • Any responsible set of rules for automated vehicles must mandate vehicle security.	
0062	James P. Lamb **Small Business in Transportation Coalition (SBTC)**	• Opposes ADS because a professionally trained, certified human driver is best suited to safely control CMVs on the interstate and prevent accidents that entail serious personal injury and fatalities. • Should not mandate use of ADS as has been done with ELDs.	• Inspection, Repair, and Maintenance o Do not believe that ADS should be mandated, but if an ADS is installed in a CMV then drivers should be thoroughly trained in the operation of the device so that they can thoroughly inspect and maintain an ADS. • Roadside and Annual Inspections o Concerned that drivers would face additional roadside inspections and unfavorable interaction with other road users if CMVs were visibly marked to show that an ADS was in use and the SAE level being used. • Distracted Driving and Driver Monitoring o Drivers should follow the handheld device usage law of the state in which they are travelling while they are operating a CMV in that state. o Drivers should maintain the same level of alertness regardless of whether an ADS is in use or not. • HOS o Drivers should record their HOS just as they would if an ADS was not in place and operating. • CDL Endorsements o CMV drivers should have the training, knowledge, and skills to safely operate an ADS. o Drivers should understand the capabilities and limitations of the advanced technologies and they should know and understand when it is appropriate to rely on an ADS rather than manual operations. o ADS-equipped DMV should never be deployed without a trained and certified driver onboard.

0063	Cian Cashin **American Association of Motor Vehicle Administrators (AAMVA)**	• Encourage FMCSA to use discretion in the consideration of any removal or modification of a FMCSR that may have secondary or tertiary impacts on the crashworthiness, operational safety, or performance standards of the vehicle when considered in its entirety. • Careful consideration must be given to how the removal or modification of FMCSRs will affect underlying state law and administrative policies. • Carefully consider how to differentiate applicability of regulations by level of automation as even within the "highly automated" context differing factors will require different reliance on ADS. • Recommend that ADS technology and level of autonomy be established based on an observed level of comparability beyond simply accepting the designation of ADS designers. • If there is a testing procedure for a functional component of a vehicle, the same acceptable standard that applies to a vehicle equipped with ADS technologies should be applied as it would to a vehicle dependent on a human driver (if not greater). • Recommend that data supporting the testing of vehicle functionality be reported with direct correlation to the skills they augment or replace. • Important to ensure that the same principles for preexisting demonstrations of CMV safety apply to ADS-equipped vehicles whether there is a human driver or not. • Request that FMCSA document and share observed testing results for ADS technologies with its state partners.	• CDL Endorsements o All drivers should be required to understand the capabilities and limitations of the advanced technologies equipped on their motor vehicles, under any conditions. o Existence of an endorsement may only serve as relevant in the post-citation, post-crash environment – may serve a purpose in terms of liability, enforcement, and predictive data on drivers. o Given that technologies have the potential to fail, it seems prudent to apply the same level of driver safety standards to any manned vehicle – including the ability to know when it is appropriate to rely on automatic versus manual operation. • Roadside and Annual Inspections o Recommend that ADS-equipped vehicles be marked in a visible manner so that roadside enforcement and first responders can readily identify them. o Recommend that ADS-equipped vehicles be able to differentiate, record, and communicate when the dynamic driving task is being performed by the human operator versus the ADS. • Distracted Driving o Possible changes to regulations will depend on the SAE-level designation of the vehicle, the operational capabilities of the vehicle, and the role of the driver. o Any human given the designation of "driver" should be responsible for safe oversight of the vehicle without engaging in any form of distracted driving.
0064	**Ad-Hoc HAV Data Access Coalition**	• The communication and interoperability of vehicle data, as well as the access to and control of that data, are a core consideration for federal regulators. • Strongly supports maintaining the current uniform regulatory construct that the owners of motor vehicles, as well as parties to whom the owners give informed and advance permission, control access to the data generated and stored by ADS-equipped CMVs. • First responders and law enforcement must be able to access real-time, accurate, and detailed information about a cargo electronically to ensure safety. • Basic cybersecurity tenants support that proprietary and closed data systems are the most vulnerable to catastrophic failure. • Suggest that FMCSA promote a regulatory framework that insures that vehicle data access is (1) open, secure, and neutral, (2) protected against hacking through recognized principles of data security by design, and (3)	

		accessible without charge to the vehicle owner and, should the vehicle owner provide informed advance consent, to authorized third parties.	
0065	Paul G. Levine, Matthew S. Erim, John R. Bagileo **National Motor Freight Traffic Association (NMFTA)**		• Inspection, Repair, and Maintenance o "Safe fail" plans should be clearly documented for all ADS-related equipment in the event of equipment failure, signal loss to control/analysis systems, interference with environmental sensors, and other related malfunctions. o CMV operator should be automatically alerted is equipment failure occurs, and the ADS technology must be able to safely transfer control to a human driver. o Maintenance procedures for all SAE Level 3-5 equipment should be clearly documented and available to the public. • Roadside and Annual Inspections o New vehicle systems, along with vehicle components and aftermarket devices with internet connectivity or local area network access should undergo annual cyber security evaluations before being placed on public roads. o CMV with Levels 3-5 ADS technology should automatically record which Level the vehicle was operating under over a certain period of time. o "Log" should be available for inspection by enforcement officials to determine if the operator was in compliance with the relevant FMCSRs for that SAE level. o Exterior markings not necessary if there is such a log. o Enforcement officials should have sufficient knowledge of ADS technology to determine whether automated features are malfunctioning and would require a vehicle to either be placed out of service or be required to operate at a lower level. • CDL Endorsements o Critical that a CMV operator understands the limitations of ADS technology in their vehicles and be able to safely and quickly take control of the CMV when necessary. o FMCSA should consider an endorsement to ensure that CMV operators sufficiently understand how to safely utilize ADS technologies and be aware when they must take manual control of the vehicle. o Endorsement would require a knowledge test and a skills test. o ADS-equipped CMV capable of operating in Levels 4-5 must demonstrate that the vehicle can pass a skills test as rigorous as the test a CDL candidate takes. • Beyond Compliance Program o Considering Levels 3-5 technology as part of the Beyond Compliance program is premature because (1) significant technological hurdles must be overcome, and substantial research and testing remain to be completed and analyzed before the safety benefits of such technologies move beyond being theoretical, and (2) the ADS equipment or technologies that will allow participation in the Program must be specifically identified and reviewed by the public, and (3) the final details of the

			Program must be publicized before any potential aspects of such a still-theoretical program can be assessed.
0066	**Community Transportation Association of America (CTAA)**	• Concerns about SAE Levels 2-3 in particular is that human drivers may not be able to immediately assume operation of vehicles when their attention and operation are not needed most of the time. • Require more frequent monitoring of driver skills because drivers who seldom operate CMVs will become less experienced at driving when automation operates CMVs on highways for the vast amount of time spent traveling on such roadways. • Urge FMCSA to embrace a fully accessible transportation system for people with disabilities; need to be cognizant of civil rights implications. • Ensure that drivers receive employment retraining; FMCSA has an obligation to research the employment possibilities within the transportation industry for current drivers, and the percentages of those who would or could become eligible for other industry work.	• Need to ensure that regulations pertaining to lighting, windshields, emergency exits, rear vision mirrors, and horns remain in place for Level 4-5 operations. • Regulations regarding inspections should remain in place until continuous safety monitoring is proven. • Opportunity to eliminate unnecessary regulation for those public transportation providers that happen to operate across state lines.
0067	Marc Scribner **Competitive Enterprise Institute**	• Ensure that future proposed rules are performance-based, not prescriptive. • Ensure that future regulations related to ADS incorporate the latest voluntary consensus standards and continually monitor revisions to incorporated standards. • Ensure operator neutrality in future rulemakings.	
0068	Eric Teoh **Insurance Institute for Highway Safety – Highway Loss Data Institute**	• FMCSA should not reconsider requirement for a human driver at all times, for the foreseeable future, to maximize the safety of automated driving systems testing, regardless of whether human supervision is an assumption of the final design. • Focus on regulating the on-road testing of automated driving systems, and specifically the use of partial driving automation that may enter the market sooner. • Lower levels of driving automation (platooning, SAE Level 2) may increase driver fatigue or have other unique challenges, and should be evaluated. • Data from automated driving crashes need to be available to the public.	
0069	Maria Battista **National School Transportation Association (NSTA)**	• Opposed to the deployment of ADSs on school buses and other forms of student transportation. • Encourages caution regarding ADS-equipped CMVs on the highway unless such vehicles can assess and identify school transportation vehicles and its unique pattern of multiple stops to discharge or pick up children along a given route while also complying with light system and stop arm mechanisms on school buses. • Does not believe that any waiver or exemption should be granted to allow school buses to operate without human drivers.	

0070	**MITRE Corporation**	• Encourage FMCSA to adopt a data-driven, security-aware, verification-focused approach to adoption of ADS technology into the CMV space – driven by testable, performance-based standards instead of prescriptive regulation. o Use data-driven safety analytics to inform performance-based standards and requirements. o Data should be shared across CMV technologies and suppliers to enable industry-wide safety improvements. o Technologies must be implemented with careful evaluation of cyber security concerns. o As current CMVs are inspected annually and at roadside inspection points, testing must be considered for ADS components which supplant human operator decision-making.	
0071	Timothy Blubaugh **Truck & Engine Manufacturers Association (EMA)**	• An effective federal framework will speed the development and deployment of ADS technology on CMVs by avoiding the barriers created by a patchwork of incompatible state regulations, and it will ensure that CMVs can operate efficiently nationwide. • Support FMCSA's efforts to clarify how the existing regulations may apply when an ADS is performing the driving tasks. • CMV drivers serve many roles in addition to the actual driving tasks, including conducting critical pre-trip inspections, securing loads, manage and report on the logistics of delivering the load, and guard against theft of the vehicle and freight. • Anticipate ADS being deployed on existing, conventional, heavy-duty vehicle platforms. • Encourage FMCSA to look to NHTSA's FMVSS study by VTTI to determine how best to examine the FMCSRs regarding ADS.	• FMCSA should expand the exempted safety technologies permitted to be placed on the interior of the CMV windshield to include cameras, LIDAR, RADAR, and other devices used by ADS. • Recommend FMCSA reevaluate the dimensional requirements for mounting vehicle safety technologies on the interior of the CNV windshield.
0072	Leigh Merino Brian Daugherty **Motor & Equipment Manufacturers Association (MEMA)**	• Encourage FMCSA to continue to collaborate with NHTSA and other State and Federal agencies as ADS technology develops to ensure a harmonized regulatory framework to avoid any conflicting federal and state laws and regulations or other roadblocks to testing ADS on roadways or, ultimately, deploying ADS in fleets. • The integrity of the regulatory framework must always protect the primary intentions behind these standards, which are the safety and protection of the vehicle, its occupants, and other road users. • CMVs utilize a range of safety technologies to address service applications and vehicle characteristics o CMVs have unique needs	• Data sharing o All companies safeguard proprietary intellectual property and other confidential business information from dissemination. o Suppliers seek to safeguard commercially sensitive information, especially given their ongoing investments in research and development and validation testing of their product innovations of the various components, modules, and sensors that comprise ADSs. o Data developed during the testing phase are highly proprietary as it is primarily being collected by the company's testers for the purposes of refining and advancing the capabilities of the specific company's component, module, or system.

		○ Foundation brakes, ABS, and ESC ○ ADAS and V2V are building blocks to HACVs • Urge DOT to explore how existing forums – such as the UNECE World Forum for harmonization of Vehicle Regulations (WP.29) 1998 Agreement – can be useful bodies in which representatives can share with and learn from other governments as to how they are evaluating similar issues.	○ Such matters are best addressed through industry standard development bodies, like SAE. • Testing and Validation ○ The ability for suppliers to utilize public roadways to collect data, refine systems, and fully test and evaluate new technology before systems are finalized is a critical industry need. ○ MEMA has strongly advocated for the SELF DRIVE Act and the AV START Act – will establish a federal framework from which to build key policies and requirements to prepare for an automated future (CMVs not included in scope of those bills). • Beyond Compliance ○ Will encourage fleets to voluntarily purchase, install, and deploy advanced safety technologies and fleet management systems for CMVs. ○ Crash avoidance and mitigation technologies will significantly contribute to reducing heavy vehicle-related fatalities and injuries and, consequently, yielding financial and societal benefits. ○ Will allow fleets to address their specific needs in a cost-effective manner without creating new federal mandates or requirements. ○ Encourage FMCVSA to expedite implementation of he Beyond Compliance Program in the near term, and supports inclusion of ADSs as part of the program in the long term. • Regulation of Manufacturing Versus Operation ○ Stress the importance for FMCSA to work collaboratively with NHTSA. ○ Added challenges of fleet maintenance and skilled technicians to maintain, repair, and monitor these complex and integrated safety systems.
0073	Larry I. Willis **Transportation Trades Department, AFL-CIO (TTD)**	• Any efforts to introduce autonomous technology must not undermine safety on the nation's highways, and allowing the propagation of autonomous vehicles without serious regulatory oversight is an unacceptable risk. • FMCSA, DOT, and Congress must consider the workforce impacts of automation, which threatens millions of good-paying middle class jobs in the transportation industry. • FMCSA should consider its role in promoting and developing labor market programs that support workers who lose their livelihoods to automation, as well as training and retaining programs for displaced workers and workers at risk of displacement.	• HOS ○ As long as a human remains in the vehicle and is tasked with any operational functions, it is imperative that critical requirements that fight worker fatigue and are shown to promote safety are not undermined. ○ Studies suggest that operations in which a human oversees some level of autonomous function and takes over tasks as necessary actually increases fatigue as drivers struggle to maintain alertness needed to reengage quickly. ○ FMCSA must not dilute or reduce HOS requirements in response to automation. • Hazardous Materials ○ There are duties related to the transportation of hazmat that simply cannot be safely subsumed by a computer, and FMCSA should not alter these requirements. ○ The safe transportation of hazmat must always involve the human factor elements represented by a qualified and skilled human operator.
0074	David M. Golden	• Insurer's abilities to identify vehicles with automated driving technology, as well as differentiate among various system providers and system functions,	

	Property Casualty Insurers Association of America (PCI)	will be critical for development of new insurance products, underwriting, and pricing methods as automated vehicle technology evolves. • FMCSA should take this opportunity to address Automated Driving System information access, both during testing and after full implementation. • Appropriate information sharing is critical for insurers to fulfill their dual roles in improving safety and resolving highway accidents. • Protecting the vehicle user's privacy, ensuring vehicle systems are secure and that intellectual property rights are protected are also essential. • The traditional driver-based liability component may well diminish as automated vehicles become more common on the highways – it does not make sense to change financial responsibility requirements for motor carriers just as driving begins to shift toward automated systems that motor carriers and human drivers will not directly control.	
0075	Michael Cammisa **American Trucking Associations (ATA)**	• Critical that state and local laws do not create disparities that limit commerce and obstruct the successful adoption of these potentially safety- and productivity-boosting technologies. • Need to revise or remove outdated safety related laws, regulations, and guidance as data demonstrates a technology's ability to provide an equivalent or higher level of safety. • Industry standards developers, including TMC and SAE, need to address the challenges in understanding and communicating the specification and maintenance issues surrounding the rapidly evolving technologies involved in ADS, updating existing practices and developing new consensus driven practices. • New TMC Study Group on Automated Vehicles established to assist in the development and maintenance of durable, reliable, and maintainable systems for automated vehicles.	• Inspection, Repair, and Maintenance o Proper functioning of ADS should be assessed prior to operation through a combination of pre-trip inspections, system self-diagnostics, or any other relevant inspections or actions recommended by the manufacturer of the ADS. o Self-diagnostics should perform a check to ensure that hardware and software components are healthy. o If faults are detected that could compromise safety, ADS should not engage until the fault or malfunction is corrected following procedures recommended by the manufacturer. o Trucking industry organizations, such as TMC, working with technology providers, component suppliers, truck manufacturers, and motor carriers should develop recommended practices to ensure that motor carrier personnel and third-party technicians have the appropriate information and training to properly maintain ADS and associated vehicle systems and equipment. o Fleets and service providers should train employees on company policies and processes appropriate for their role for assuring cybersecurity in company systems and equipment, and what they should do in the event of a known or suspected cybersecurity breach in accordance with manufacturer recommendations and industry best practices. o ADS self-diagnostic systems should be sufficient to identify functional deficiencies and or the presence of malware or viruses that may be the result of a cybersecurity intrusion. o Needs to be distinction of criteria that will result in an OOS condition and those which may permit continued operation in either a limited automated or fully manual mode of operation. • Roadside and Annual Inspections

			o Marking of automated vehicles needs additional study, and may be different for Levels 1-3 and 4-5; need to coordinate with NHTSA. o Industry, including carriers, technology providers, equipment suppliers, and truck manufacturers) and the enforcement community should work together to develop appropriate training for enforcement personnel to effectively inspect ADS-equipped CMVs. • Distracted Driving and Driver Monitoring o Needs to be a better understanding of the requirements of the driver/operator in real-world driving conditions for operating the vehicle with the ADS active before considering any changes. o Requirements may differ based on ADS design, level of automation, and presence or absence of a driver-state monitoring system; any changes need to be based on data. o More data needed before determining whether driver fatigue monitoring should be required. o Any alertness system requirements need to be flexible to allow alternative approaches to achieving the desired outcome, and not proscribe a specific method or technology. • Medical Qualifications o When discharging the responsibilities of a driver (Levels 1-3), all current medical requirements for drivers/operators of CMVs should be maintained. o For the non-driving tasks (Levels 4-5), further study is needed before considering potential changes to the associated medical requirements. • HOS for Drivers o Need study in this area. o Level of effort required by the driver/operator will vary with the automation level, the design of the ADS, and the amount of time the vehicle is able to operate at a particular level of automation given the route and conditions the driver/operator is experiencing on a given day. o Research needed to examine fatigue and attentiveness/inattentiveness experienced by drivers of ADS-equipped vehicles to determine what modifications to HOS rules for drivers of ADS-equipped vehicles are appropriate. o HOS rules should apply only to human drivers and not to an ADS. • CDL Endorsements o Does not seem appropriate at this time as the capabilities and limitations of an ADS may vary based on system design, even for ADSs operating at the same level of automation. o As the technology matures, there could be sufficient commonality of ADS to enable a standardized test for an endorsement in the future, but this should be studied to

			identify the need and/or benefit of such an endorsement, which may be different for different levels of automation. o Any new requirements for ADS need to be technology neutral and provide flexibility that will allow for different design concepts and future innovations. • Data Sharing o FMCSA, in coordination with NHTSA, NTSB, TMC, and SAE should investigate the feasibility of the creation of reliable data parameter standards for accident reconstruction purposes without compromising proprietary data that would be applicable regardless of system design or technology used. • Beyond Compliance Program o FMCSA should recognize motor carriers that adopt innovative safety technology and adjust its enforcement priorities appropriately. • Regulation of Manufacturing Versus Operation o A Federal solution is key for future deployment, and should include coordination of policies and regulations across all relevant agencies. o The regulation of performance and technical specifications of automated and connected truck technology should be solely the responsibility of the Federal government. o Critical that federal, state and local laws do not create disparities that limit commerce and obstruct the successful adoption of these potentially safety- and productivity-boosting technologies. • Confidentiality of Shared Information o Expect that FMCSA would follow, at a minimum, an equivalent process as employed by NHTSA regarding CBI. o FMCSA needs to work with individual carriers, manufacturers, and developers of ADS to learnmore about their systems, while protecting CBI.
0076	Glenn Westrick **The Travelers Companies, Inc.**		• Inspection, Repair, and Maintenance o Recommend the development of a pre-deployment and road inspection protocol for autonomous systems. o Inspectors should receive specific training regarding ADS systems and key components of the system to identify and check to ensure the proper functioning of the ADS system. • Distracted Driving and Driver Monitoring o Issue of engaging in secondary manual and visual tasks during Level 3 automation is complex and may introduce unintended risks; may be sensible to skip Level 3 in favor of moving right to Levels 4 and 5. • Medical Qualifications o No change to existing medical requirements at Level 3. • HOS

			○ Changes will be necessary for Levels 4 and 5; do not recommend changes for Level 3. • CDL Endorsements ○ Driver should have endorsements appropriate to ADS-type vehicles, particularly to the extent that specialized knowledge of the technology in use may be required. ○ Appears to be a loophole which allows companies to bypass the road test requirements; need to address this for semi-autonomous vehicles.
0077	Amitai Bin-Nun, Ph.D. Jeff Gerlach **Securing America's Future Energy (SAFE)**		• Urge FMCSA to consider all relevant information before coming to a final interpretation that a trained commercial driver must be behind the wheel at all times because this may place a ceiling on innovation and rapid technology in the private sector. • Adopting standardized definitions for technologies is an important first step, as an imperfect understanding of any individual technologies by drivers or operators presents safety risks to both users of the CMVS and members of the general public. • Urge against a specific CDL endorsement, but necessary to provide comprehensive use instructions, appropriate training materials, and adequate notice to drivers or operators regarding the limitations of all autonomous or semi-autonomous features and systems. • Markings should not be required unless FMSA can demonstrate compelling reasons due to its high potential to distract and cause unsafe road conditions for other drivers and road users. • Imperative that date reporting requirements balance the public good of data availability with the private-sector interest in minimizing the loss of confidential business information.
0078	Douglas Greenhaus **National Automobile Dealers Association (NADA)**	• Counterproductive to suggest that the FMCSRs contain "barriers" to ADS-equipped CMV testing and deployment that must be "removed"; FMCSA should carefully review the FMCSRs for potential modifications necessary to apply and "adapt" them to ADS-equipped CMVs in a manner that fully preserves the intended safety benefits of the FMCSRs. • Potential modifications to the FMCSRs should reflect how, when, and under what circumstances ADS-equipped CMVs may be operated in the real world. • A new FMCSR likely is necessary for CMV ADSs; need to ensure an equivalent level of safety.	• Inspection, Repair, and Maintenance ○ Need to modify part 396 to ensure that ADSs be both continuously and periodically inspected for proper software and hardware component operation and to verify that they utilize the most current software updates. ○ ADSs must be designed to continuously monitor their own performance for issues or concerns (faults). ○ Identified faults must be effectively communicated to CNV owners or lessees so that they can be remedied in a timely manner. ○ Faults indicating that an ADS is unable to perform a DDT should cause the ADS to become non-operational and/or to place the CMV into a minimal risk condition. ○ Annual inspections of CMV ADSs should be conducted only by human inspectors trained to be familiar with the ADS systems, with appropriate diagnostic tools. ○ Mandated inspections should apply to all ADS hardware, software, and sensor components for the useful life of the CMV. • Roadside and Annual Inspections ○ Hardware, software, and sensors of CMV ADSs must be capable of being inspected during roadside inspections to allow for the identification of potential conditions

			warranting that they be placed into a non-operational state pending proper service or repair. • Distracted Driving and Driver Monitoring o Modifications will be necessary to accommodate how human operators are likely to act when CMVs are being operated by ADSs, given the potential need for human operators to take over ADS operation. o FMCSR modifications will be necessary to address scenarios where ADSs are designed to take over human CMV operations when monitoring systems suggest human operators are no longer capable of operating CMVS due to fatigue, impairment, distraction, failure to use seat belts, speeding, and other violations. • Medical Qualifications o Consider modifications for human CMV operators who only monitor a CMV's ADS operation, on-board or remotely; need to ensure an equivalent level of safety. • HOS o Modifications may be warranted to accommodate situations where CMVs are operated both by humans and by ADSs. o New HOS requirements may be warranted for humans who do not routinely operate CMVs, but who monitor ADS operations, on-board or remotely, for situations warranting that they take over a CMV's operation or bring it into minimal risk condition. • CDL Endorsements o Modifications may be warranted to effectively apply them to ADSs operating CMVs and to accommodate humans who primarily perform an ADS monitoring function, onboard or remotely.
0079	Todd Spencer **Owner-Operator Independent Drivers Association, Inc. (OOIDA)**	• FMCSA, along with other federal agencies and lawmakers, must take careful and proper steps to ensure that ADS optimally serve both the general public and the trucking industry. • FMCSA/DOT need to analyze how ADS will impact the trucking workforce and consider what regulatory changes must be made concerning cybersecurity, infrastructure, and data sharing among other issues. • FMCSA should allow NHTSA to complete their study regarding H.R. 701, "The Security and Privacy in Your Car Study Act of 2017." • FMCSA must consider infrastructure modernization.	• Part 381, Waivers, Exemptions, and Pilot Programs o Any autonomous truck that is no longer subject to any part of the FMCSRs should be required to operate under 49 CFR 381.300 o All requests for exemption should be open for public comment before FMCSA acts. • Part 390, FMCSRs, General o Law enforcement must be able to identify platooning and autonomous vehicles so they must be marked to identify the two types of technology. o FMCSA needs to include relevant driver training requirements and CDL endorsements for drivers that use different technologies. • Part 392 o Until Level 5 automation is commonplace on the roads, the prohibitions on cell phones and texting should remain as drivers will need to be constantly vigilant. • HOS o Will the driver of a Level 3 or 4 ADS have the same HOS as a current driver?

			○ If a carrier decides to use ADSs as a way of transporting drivers from one location to another, how must that driver log their HOS? • Roadside and Annual Inspections ○ Various questions raised with respect to inspection procedures, training, OOS, repairs, etc. • Data transparency is essential to ensure the safety of the motoring public.
0080	Don Lefeve **Commercial Vehicle Training Association (CVTA)**	• While HACV technology will likely be deployed in the future, do not believe that it will replace human drivers in the foreseeable future. • Concerns about remote hacking or other malfunctions; cyber attacks. • Software systems are subject to "crashes" and other types of performance glitches or malfunctions – as such, need to require a human operator in the vehicle at all times. • Vocational careers are becoming increasingly lucrative choices for post-secondary age groups who either may not be able to afford college, or otherwise see a vocational or technical career as a better option - encourage FMCSA to reconsider the minimum driving age to operate a CMV in interstate commerce.	• FMCSA may want to consider requiring a HACV electronic diagnostic test that a CMV operator can use as part of a pre-trip inspection to effectively ensure that the automated systems controlling acceleration, deceleration, braking, steering and other critical features of the truck are functional. • If maintenance tasks have a potential impact on the HACV system, the technician needs to be trained on the HACV systems or accompanied by someone who has that training to ensure the HACV system is not compromised as a result of the maintenance being performed. • HACV systems should be frequently monitored and inspected to ensure they are free of viruses, malware, or other "bugs" that could have a potential negative safety impact; software should be regularly updated. • Any truck with a HACV system malfunction that has a negative impact on vehicle control should be immediately be put out of service unless there is a way to completely disengage the HACV system or override it so the driver can assume full control of the vehicle without any residual interference from the HACV system. • Enforcement officers will need to be trained to identify problems with HACV systems or have diagnostic tools available to ensure the safety of a HACV. • May consider requiring an operator to have documentation denoting the vehicle's level of automation to accompany the driver's CDL, RODS, bill of lading, and other documents. • No changes to distracted driving regulations – operators must maintain situational awareness at all times because there will be moments when automated systems fail to brake or maneuver to avoid an accident. • Medical qualifications for the operation of a CMV should not be amended or otherwise fluctuate based on a vehicle's level of automation. • No reason to amend HOS at this time – a system's level of automation does not reduce a driver's responsibility to maintain a level of situational awareness that can only be obtained with sufficient rest. • HACV CDL endorsement may be necessary considering the complexity of the systems. • FMCSA needs to work with technology companies, motor vehicle administrators and truck driver training providers to determine how to amend curriculum requirements in the entry level driver training rule.
0081	Alex Rodrigues Jonathan Morris	• ADS may be highly varied in terms of hardware, software, and intended use cases, which will make it hard to use traditional regulatory mandates and	• Believe that the term "driver" as it is used throughout the FMCSRs should not be extended to refer to an ADS.

	Embark	other tools to attempt to standardize what will continue to be a dynamic and rapidly evolving industry. • Encourage FMCSA to focus efforts on preparing for, and facilitating, the safe testing and development of the "most likely" ADS operating concepts based on input from ADS technology developers – "most likely" includes technically feasible, present a commercially viable value proposition, and the subject of active investment and development by the private sector. • Need to clarify that a Level 4 system, when operated exclusively within its ODD, may not include a human onboard the vehicle. • ADS development will be "revolutionary" as opposed to "evolutionary." • Challenges of Level 3 Automation: o Use of Level 3 systems presents a host of complex challenges regarding system handoff and effectiveness of human-provided fallback in safety critical situations. o Developing solutions to these challenges may not be viable when taking into consideration human behavior, attention spans, and reaction times to system requests for intervention, especially at highway speeds. o Level 3 system would significantly increase truck equipment cost due to the sophisticated computers and sensors required for such a system, without significant operational cost savings. o However, Level 4 ADS would provide highly significant economic benefits, both in terms of reduced operating costs and increase efficiency. • "Exit-to-exit Driverless" Level 4 ADS: o Most likely first implementation of an ADS for CMVs will be a Level 4 system designed to operate exclusively on multi-lane divided, limited-access highways and interstates without the presence of a human driver or supervisor on board. • Urge FMCSA to focus efforts on "Exit-to-exit Driverless" Level 4 ADS instead of Level 3 ADS.	• Broadening the definition of driver beyond what is stated in 390.5 to include ADS presents significant barriers to the development and deployment of truck automation by applying regulations intended for humans to equipment in a way that would not contribute to safety, while creating regulatory uncertainty and enforcement challenges. • Existing waiver, pilot, and exemption authorities are a sensible pathway to ensure technology can be deployed safely without initiating a rulemaking process – rulemaking is premature. • **Part 325, Compliance with Interstate Motor Carrier Noise Emission Standards**: o Part of a broader topic of CMV inspection; can be met in the short term with a combination of technology and human resource solutions in a way that satisfies both the letter and spirit of the regulations. o A driverless CMV must necessarily be able to understand and respond to a request by enforcement officers to stop at any point along its journey, whether at a static inspection and weigh stations, or at a suitable area on the side of the road. o Actual test and documentation could be accomplished by some combination of remote monitoring by human supervisors, remote operation, pre-determined behavior, or local human support. o In medium to long term, new regulations and inspection procedures intended specifically for automated and driverless truck operation could both streamline and strengthen the CMV inspection regime. • **Part 350, Commercial Motor Carrier Safety Assistance Program; Part 355, Compatibility of State Laws and Regulations Affecting Interstate Motor Carrier Operations** • Encourage FMCSA to clarify its views on CMV automation as soon as possible for the benefit of both state governments and industry. • Will discourage states from implementing significantly different regulations or restrictions on the use of automation b interstate motor carriers, creating a patchwork of state rules and thus raising unnecessary barriers to interstate commerce and ADS deployment. • **Part 365, Rules Governing Applications for Operating Authority** o Not concerned with the issue Volpe raised regarding the definition of "disabling damage" and how this may materially lower the threshold of what is included in a motor carrier's accident history. • **Part 368, Application for a Certificate of Registration to Operate in Municipalities in the US on the US-Mexico International Border or Within the Commercial Zones of Such Municipalities** o Encourage FMCSA to work with state government agencies and automated CMV developers currently developing law enforcement interaction plans to adopt solutions to these types of operational issues. Believe that multi-state organizations such as

			AASHTO, AAMVA, and CVSA will play important roles in developing solutions and elevating best practices to these types of operational issues for driverless CMVs. • **Part 374, Passenger Carrier Regulations** o Focused on developing exit-to-exit Level 4 ADS specifically tailored for freight trucking; Part 374 not applicable in this operational concept. • **Part 375, Transportation of Household Goods in Interstate Commerce; Consumer Protection Regulations** o Exit-to-exit automation is intended to be supported on either end of the journey by professional drivers operating manually driven trucks – these drivers can fulfill many of the freight trucking tasks well-suited for human drivers, including navigating complex off-interstate environments, cargo loading and unloading, and providing customer service and administrative duties at origin and termination points of cargo movement. • **Part 380, Special Training Requirements** o Any person, as defined in 390.5, involved in any safety critical aspect of automated CMV operation – including testing, remote monitoring, or inspection – should meet the currently existing requirements of any CMV driver, including holding an appropriate CDL and applicable special training certifications. • **Part 381, Waivers, Exemptions, and Pilot Programs** o Believe that exit-to-exit Level 4 operation can be compliant with existing FMCSRs. o If it is determined that some automated CMV use cases require part 381 approval, important for industry and FMCSA to work together to define the type and quantity of data that can demonstrate an equivalent level of safety. • **Part 383, Controlled Substances and Alcohol Use and Testing** o Should not be applied to an ADS, as it is intended to ensure safety by managing human-specific behavior. • **Part 383, CDL Standards; Requirements and Penalties; Part 384, State Compliance with CDL Program** o Appropriate to continue to apply these and other driver-focused regulations to any person involved in the operation of an automated CMV, including an onboard technician who may never directly “drive” a CMV. o Licensing rules as currently promulgated should not apply to an ADS, which falls outside the definition of “driver” and “person” per 390.5. • **Part 385, Safety Fitness Procedures** o Does not present a direct issue for exit-to-exit Level 4 driverless operation. • **Part 387, Minimum Levels of Financial Responsibility for Motor Carriers** o Does not present a direct issue for exit-to-exit Level 4 driverless operation. • **Part 390, FMCSRs, General**

			○ The definition of “driver” should encompass any human safety critical role in the operation of an automated CMV, including remote supervisors who do not directly complete the dynamic driving task from within the vehicle. • **Part 391, Qualifications of Drivers and LCV Driver Instructors** ○ See Part 390 discussion. • **Part 392, Driving of Commercial Motor Vehicles** ○ Exit-to-exit Level 4 driverless operation of automated CMVs can be compliant with the letter and spirit of part 392 by implementing appropriate technology and procedural solutions. ○ Safety requirements and limitations on human driver behavior should continue to apply to any human in a safety critical role in the operation of an automated CMV, including remote supervisors. • **Part 393, Parts and Accessories Necessary for Safe Operation** ○ ADS developer should provide FMCSA with data that supports an assertion that the system does not decrease safety of operation of the vehicle. ○ In lieu of testing, licensing, or imposing specific requirements on ADS at this early stage, test data on the operational capabilities of an ADS generated with appropriate human supervision across a large number of road miles can provide a much better set of evidence to demonstrate compliance with 393.3. • **Part 395, HOS** ○ Encourage FMCSA to clarify that HOS regulations, intended to manage human fatigue, do not apply to ADS. ○ HOS should continue to apply to any human fulfilling a safety critical role in the operation of an automated CMV. ○ Driving time by an exit-to-exit Level 4 driverless ADS can be assigned a unique account for the ADS for ELD purposes. • **Part 396, Inspection, Repair, and Maintenance** ○ As exit-to-exit Level 4 driverless CMVs will be supported by licensed human drivers at transition points, these drivers can fulfill inspection requirements. • **Part 397, Transportation of Hazardous Materials, Driving and Parking Rules** ○ Early versions of automated CMVs will likely exclude placarded hazardous materials, rendering this section not applicable. ○ Driverless operation may not be well suited for hauling material that is deemed to require constant on-site human supervision by a qualified representative, such as explosive material. • Automated CMV developers need to include details on ADS-specific training for personnel involved in maintaining and operating automated CMV equipment in any Voluntary Safety Self-Assessment.

			• ADS systems need to be designed with self-diagnostic capability that can be conveyed to maintenance personnel as well as enforcement personnel as needed. • No basis at this time to support requirements for exterior marking that denotes automation level on automated CMVs. • If FMCSA were to develop an ADS skills test requirement, encourage a flexible approach that requires an ADS to demonstrate only maneuvers relevant to the ODD as defined by the ADS developer. • Data sharing touch on business confidential information – need to create a dialogue with FMCSA to ensure confidentiality. • Testing on public roads involve a prototype Level 2 system with a properly licensed driver at the wheel, monitoring the road as well as system functionality. System designed to operate only on multi-lane, limited access, divided highways and is speed limited based on the prevailing speed limit for CMVs. • Encourage FMCSA to create direct relationships with ADS CMV developers to understand the similarities and differences in each approach. • Data from public road operations, as well as private test tracks and simulations can conclusively illustrate the capabilities of an ADS to perform maneuvers necessary for safe operation within its defined ODD. • Encourage FMCSA to work with industry to develop incentives that encourage the adoption of new safety technology, including ADS (Beyond Compliance).
0082	Justin Kintz **Uber Technologies, Inc.**	• Confirm that the FMCSRs do not require a human "driver" while underway. • Support state efforts to serve as testbeds by providing funding and regulatory flexibility. • Stand ready to consider requests for additional guidance and exemptions as needed. • Engage with industry to build data and insights to guide eventual rulemakings. • Evaluation should focus on driver required (SAE 1-3) vs no driver required (SAE 4-5). • Encourage FMCSA and NHTSA to work closely to ensure that approaches do not conflict, particularly regarding eventual development of standards for ADS-equipped vehicles. • Encourage FMCSA to consult closely with state enforcement partners in early adopter states working with developers to test ADS-equipped CMVs on their roads, and to take a pragmatic approach to addressing questions as they arise and leave near term flexibility for states and developers to explore different approaches to meeting regulatory needs and ensuring safety of operations.	• **Interpretation of "driver"**: o Part 383 – CDL requirements apply to any person who carries out the driving task; CDL requirements do not apply to machinery, including an ADS. o Part 391 – Qualifications apply to any person who carries out the driving task; qualifications do not apply to machinery, including an ADS. o Part 392 – Considered on a provision by provision basis; for example, load securement obligations must be complied with at all times, but alcohol and texting prohibitions apply to any person carrying out the driving task, but do not apply to machinery. o Part 395 – HOS rules apply to any person who carries out the driving task; HOS rules do not apply to machinery, including an ADS. • **Inspection, Repair, and Maintenance**: o ADS should be self-auditing, capable of detecting sensor and performance abnormalities. o ADS-equipped vehicles should be regularly inspected by persons trained to assess the proper functioning of the ADS equipment. o Not possible to specify a common set of inspection procedures for all ADS. o FMCSA should leave flexibility to carriers to ensure ADS features are inspected by persons with the correct skills and knowledge, regardless of who employs them.

			o Developers, manufacturers, integrators, and parts suppliers for ADS-equipped CMVs should ensure that their products meet or exceed appropriate and applicable current industry security standards. o If an ADS must be disengaged due to fault or failure, safe operation of the vehicle in manual will remain an option to return the vehicle to base for repair and validation of the ADS. • **Roadside and Annual Inspection**: o Developers, carriers, and enforcement community should work together to develop appropriate training for enforcement personnel to effectively inspect ADS-equipped CMVs. o Roadside inspections by enforcement personnel should continue to focus on existing clearly articulated standards, such as whether required equipment is installed and in good condition, and whether required pre-departure checks have been conducted by the carrier. o Enforcement personnel should not be expected to check performance of advanced systems. o Do not believe that there is a clearly demonstrated need to visibly mark ADS-equipped vehicles at this point, but if marking or other indicators are necessary, the focus should be on whether a vehicle requires a human driver. o FMCSA should support flexibility for carriers operating ADS-equipped CMVs to coordinate with enforcement officials in states in which they operate to establish an inspection plan for their vehicles that will ensure safety of operations without requiring unexpected departures from planned routes or ODD. o Annual inspections need to be conducted by persons with the proper skills and knowledge, who may not work for the carrier or manufacturer. • **Distracted Driving (Prohibition Against Texting and Using Handheld Wireless Phones) and Driver Monitoring**: o Limited to SAE Level l3 and below vehicles; when Level 4/5 is engaged, any human passengers are not driving and don't need to be subject to texting/phone use restrictions or driver fatigue monitoring. • **Medical Qualifications**: o All existing medical qualification requirements apply to the driver of an ADS-equipped vehicle; medical qualifications cannot apply to an ADS (i.e., to the vehicle itself). • **Hours of Service for Drivers**: o HOS for drivers do not apply to machinery, including and ADS, and also should not apply to persons traveling in a vehicle when a Level 4/5 ADS is engaged. • **CDL Endorsements**: o Drivers who operate a vehicle with ADS require detailed instruction on the capabilities and limitations of the particular ADS.

			o Given that each ADS may differ substantially, the training need is unlikely to prove amenable to a standard endorsement. o CDL licensing requirements apply only to persons, and should not be applied directly to ADS. o An ADS should not be misunderstood as behaviorally equivalent to a human driver; a test battery designed for human drivers will not necessarily demonstrate roadworthiness of ADS. o Different ADS will be designed for different use cases and ODDs, and many not need or include all capabilities that are reflected on a generic CDL skills test. • **Data Sharing**: o Prior to being able to share or discuss detailed data, FMCSA must stand up a robust confidentiality program that will protect submissions of CBI or trade secret information outside a formal rulemaking, and allow for submission of information in summary form. • **Testing and Interstate Operations of CMVs with ADS on Public Roadways**: o Working to develop a system where driverless CMVs shuttle freight along key highway corridors to transfer hubs while human-driven conventional trucks handle last mile, surface streets, and loading docks. o There are some weather-based and other environmental limitations. o FMCSA/NHTSA need to continue to ensure that manufacturers self-certify vehicles prior to first sale. • **Beyond Compliance Program**: o FMCSA should continue to recognize carriers that invest in innovative safety technology, including ADS, in order to perform at high levels of safety beyond the standard required for compliance, and adjust its enforcement priorities appropriately. • **Regulation of Manufacturing Versus Operation**: o FMCSA can support safe testing and initial integration of ADS through guidance and exemptions as needed, while preserving flexibility for developers, carriers, and state enforcement officials to explore a variety of technology, operational and business approaches. o FMCSA can continue to encourage efforts by states to support operation of ADS-equipped CMVs within their intrastate jurisdiction. o FMCSA and NHTSA should work with developers, manufacturers, carriers, state enforcement partners and other stakeholders to build expertise and data based on the learnings of early adopter states. • **Confidentiality of Shared Information**: o Encourage FMCSA to consider creating a process for protecting CBI voluntarily submitted outside a notice and comment rulemaking proceeding.

			o Encourage FMCSA to make available a procedure for advance legal review, confidentiality determination, and proper labelling of material considered for submission.
0083	Al Prescott **Tesla**	• FMCSA should interpret the motor carrier to be the "driver" of a self-driving truck, because the motor carrier will ultimately assume most or all responsibilities to operate. • In the alternative, the FMCSA may continue to interpret the "driver" as a human or self-driving system until the Agency has the opportunity for a rigorous rewrite in view of self-driving. • Recommend more formal long-term rulemaking to make clear that the requirements for HOS, medical, knowledge and skills testing only apply to a human driver who continues to manually operate the truck.	
0084	Missi Howard **Individual**	• Needs to be a law that is directed at shippers and receivers that they can not disturb a sleeping driver who has themselves logged into the sleeper for their required 10 hr break.	
0085	Lane Kidd **The Trucking Alliance**	• Supports the development of advanced vehicle technologies – can enable commercial drivers to utilize highly automated driving systems, enhancing their safety and security. • Supports the use of these technologies to achieve safety performance levels that rival commercial airlines and their record of safety, which if fully implemented, can eliminate large truck crashes. • Strongly believes that a properly trained commercial driver should be present in all trucks that incorporate advanced vehicle technologies – does not currently support the implementation or, in all but restricted instances, the testing of driverless tractor trailers on public highways. o Supports advanced driver assisted technologies in commercial vehicles, rather than commercial vehicles that rely solely on full automation. o Believes that commercial drivers are an indispensible asset to the sae operation of commercial vehicles. o Maintains the principle that commercial drivers are necessary to improve the safety and security of the general public. o Believes that commercial drivers are integral to supply chain accountability, as well as managing unforeseen weather events, emergencies, detours, vehicle conditions, computer software programs, cybersecurity disruptions, cargo security, and in providing efficient customer services.	
0086	FMCSA	Federal Register Notice: "Federal Motor Carrier Safety Regulations Which May Be a Barrier to the Safe Integration of Automated Driving Systems (ADS) in Commercial Motor Vehicle Operations; Public Meeting"	

0087	David Jefferson **Individual**	• What economic model justifies eliminating middle class jobs with a slight amount of technical proficiency to perform?	
0088	Virginia Harlow **Individual**	• Are computer-controlled trucks going to be hardened against RF radiation as in an EMP situation? • Concerned about the possibility of the automatic controls being hacked. • Who gets the ticket for an overweight load if there is no human at the controls?	
0089	Robert Lewis **Individual**	• Automation within the trucking industry is now following automation within aviation. • Operational areas are different, but basic airmanship has deteriorated with automation because of an overreliance on the features of automation. • The time frame for intervention can be very short at 60 mph. • The adaptation of automation is not a panacea, but can be, within limits, a useful aid.	
0090	James Morris **Individual**	• Anything man made is subject to failure. • This nonsense of driverless trucks will end when an 80000 lb truck plows into a bunch of people, because of a computer glitch or hacking.	
0091	Stephen Dowdy **Individual**	• It is just common sense – you need a driver to drive a truck. • There are too many variables that driverless trucks can't handle such as weather, road conditions, traffic. • There have already been deaths associated with driverless cars – take that X10 if a truck is involved. • Concerns about a terrorist hacking into the truck.	
0092	Anonymous **Individual**	• Driver is now disabled because of a malfunction of a computer system on a 2007 Volvo tandem daycab, and as such, is concerned about computer controlled trucks.	
0093	Frank Lamanna **Individual**	• Opposed to driverless vehciles. • Who is held accountable when something crashes and someone dies? • Computers feel no pain when they kill someone – people must remain behind the wheel to make quick decisions that computers can not make. • It is more about money than it is about lives.	
0094	Daniel English **Individual**	• If this continues, passes the tests, and companies start using them, it will cost thousands of jobs. • Ask that you don't take away our jobs that we enjoy and able to make a living to provide for our families.	
0095	David Quinalty	• Number of large truck fatalities increased by 9% in 2016. Number of injury crashes has increased by 98% between 2009 and 2016. Distracted driving	• Recommend that FMCSA issue interpretive guidance to clarify that the FMCSRs do not require that a driver be present in a CMV or that any other natural person be behind the

	WAYMO	and driver fatigue are major factors, and autonomous vehicles – including CMVs – offer significant potential to improve road safety and play a role in reversing the trends. • Autonomous trucks will create new jobs while reducing the need for others. • Fully autonomous trucks can make the transport of goods more efficient and more affordable, stimulating demand for more trucking. • Self-driving technology can help narrow the gap created by the driver shortage. • Encourage FMCSA to use interpretive guidance to remove any regulatory barriers to the safe testing and commercial deployment of these vehicles on public roads. • FMCSA should use waiver, exemption, and pilot program authority if it can't use interpretive guidance. • WAYMO started as Google Self-Driving Car Project in 2009. o Today, vehicles are put through an extensive safety and testing program, including learning to safely navigate the most common types of pre-crash scenarios. o WAYMO has self-driven over 7 million miles across more than 25 US cities, and simulated more than 5 billion miles of self-driving in our virtual world. o Began testing a Level 4 self-driving system in Class 8 trucks in AZ and CA last year – always a fully trained driver behind the wheel. o Extended that testing to Atlanta earlier this year for a pilot program with Google, moving goods for their data centers. o Level 4 self-driving system being developed for Waymo's Class 8 trucks is built from the same technology that is in the driverless light duty vehicles. o Geographic limitations are one essential part of the ODD for any Level 4 vehicle. o The geofenced territory of a particular system's ODD may span highways, surface streets, or both within a single city, throughout a state, or between many states. o In order for a CMV equipped with a Level 4 ADS to continue its trip beyond the geofenced ODD, a human driver would have to disengage the ADS and take over the driving, subject to all of FMCSA's existing requirements for drivers.	wheel of a CMV, particularly in the case of a CMV equipped with a Level 4 ADS that is operating within its ODD or a Level 5 system. o This is important to clarify the statement in the DOT September 2017 Guidance that the FMCSRs require a driver at all times; should be clarified in 3.0. • The definition of "driver" requires careful application in the context of fully autonomous CMVs. o An individual who is operating a CMV (performing the dynamic driving task) is generally considered a driver, even if the CMV is equipped with an ADS. o An individual who does not operate a CMV (does not perform the dynamic driving task) is not a driver, even if that person is onboard the CMV for some or all of a trip. • Onboard personnel that do not drive o FMCSA should issue interpretive guidance clarifying that a person is not a "driver" for the purposes of FMCSA's rules if that person does not operate a CMV during a given trip, even if such a person is onboard a CMV equipped with and operated by a Level 4 or 5 ADS. • Onboard personnel that may drive in limited circumstances o Encourage FMCSA to use its current regualtions and authorities to accommodate the novel, ADS-enabled approached to CMV operation to protect safety while also enabling the deployment of new, safety-enhancing technologies. • ADSs should not be considered "drivers" for the purposes of the FMCSRs and should be capable of compliance with rules of the road.\ • FMCSA should distinguish between remote fleet monitors and individuals who can remotely drive a CMV
0096	Shaun Kildare and Peter Kurdock	• While automated technology has the potential, in the long term, to make significant and lasting reductions in the mortality and morbidity toll, the emergence of experimental CMVs and their interactions with conventional	

	Advocates for Highway and Auto Safety	motor vehicles demands the same level of federal and state oversight of operating safety as is now applied to conventional CMVs. • Advocates has consistently promoted advanced technologies to save lives and prevent injuries. • FMCSA must focus on completing delayed safety rulemakings and strengthening driver protections, including the implementation of speed limiting devices, addressing drivers afflicted with obstructive sleep apnea, and establishing a program for the state inspection of passenger carrying vehicles. • Automated CMVs must be subject to robust federal regulations. o The FMCSRs preclude the placement of ADS systems into CMVs that have not been proven to be able to safely operate on public roads. o The Volpe Report notes that several sections of the FMCSRs "could be interpreted to preclude automated driving systems, particularly those that have not undergone sufficiently rigorous development, testing, and validation processes" from being installed on CMVs. • The development of automated CMVs does not merit weakening critical safety regulations. o Wide agreement that, for the foreseeable future, regardless of their level of automation, CMVs must have an operator with a valid CDL in the vehicle at all times. o There has been no evidence presented in the Volpe Report nor is Advocates aware of any other credible data, study, or demonstration to justify not having a human driver required in the CMV. o There should not be any amendment to the current prohibition on drivers using hand-held cellular phones or texting while operating a CMV. o FMCSA should develop additional regulations to ensure that drivers of automated CMVs are alert and able to take control of the vehicle when necessary. o There should be no weakening of regulations relating to drivers hours-of-service, licensing requirements, or entry level training and medical qualifications. • As automated technology develops, FMCSA should consider several common sense measures to help ensure that automated CMVs are deployed safely and responsibly. o Consider requiring carriers using automated CMVs to apply for additional operating authority and that drivers operating an automated CMV have an additional endorsement on their CDL to ensure that they	

		have been properly trained to monitor and, if need be, to operate an automated CMV. o Consider additional measures that will be needed to ensure that automated CMVs respond to state and local law enforcement authorities and requirements, and what measures must be taken to properly evaluate an automated CMV during roadside inspections.	
0097	James Hall **Individual**	• There is no driver shortage. • There is no amount of technology that can ever replace an experienced driver. • An automated driving system has little to do with safety and everything to do with mega carriers looking to cut costs. • FMCSA is not only complicit but a willing partner in this façade all in the name of safety. • Technology is not the be all end all answer – quality drivers properly trained and experienced is.	
0098	Ken Pyle **Individual**	• Drivers of some sort are going to be necessary for the foreseeable future. • Inspections are still going to be necessary, but the requirements will change as new technology is added. • Cybersecurity will be critical as automation is introduced. • Transparent and anonymized datasharing between parties is a must for both security hardening and maximizing vehicle and network safety. • The automation space is evolving, as will the definition of what automation means and, as such, the implementation of mandates should be carefully considered.	
0099	FMCSA	Federal Register Notice: “Federal Motor Carrier Safety Regulations Which May Be a Barrier to the Safe Integration of Automated Driving Systems (ADS) in Commercial Motor Vehicle Operations; Public Meeting”	
0100	Sid Nair **Individual**	• How does the FMCSA plan to address drivers hours of service rules, since level 3-4 will potentially help drivers drive for longer hours? • Will we see an increase in drive time + on-duty time?	
0101	Sid Nair **Individual**	• For a level 4-5 AV, heavy commercial vehicle who is responsible for safety? Who is liable in case of an accident?	