April 24, 2017

Mr. Brian Soublet  
General Counsel  
California Department of Motor Vehicles  
2415 First Avenue  
Sacramento, CA  95818

Dear Mr. Soublet:

In response to the California Department of Motor Vehicle (DMV) proposed regulations for autonomous vehicles and the recent public workshops, Volvo Car Group (VCG) would like to submit these written comments for your consideration.

Safety is a founding principle of Volvo Cars and Volvo Cars works hard to stay at the forefront of the industry by taking an overall approach to safety, which has proven effective in real traffic situations. In 2007, Volvo Cars launched Vision 2020. This Vision states that no one should be killed or seriously injured in a new Volvo by 2020. Autonomous drive and the currently available technologies (crash avoidance and active safety) are essential to reach our goal.

As you know, numerous studies of real-world crash performance data in the US and abroad show the effectiveness of these active safety systems in reducing injuries and fatalities. These technologies will continue to be developed and they will become even more effective over time. Given that over 90 percent of crashes are due to human error, crash avoidance technologies and autonomous driving are high priorities for VCG. VCG’s goal is to move beyond concepts on autonomous driving and pioneer technologies that will reach consumers. VCG believes autonomous driving has the potential to improve fuel economy, traffic safety and the comfort of driving while at the same time reducing congestion. In addition, VCG supports the legal use and testing of cars with autonomous driving technology.

The State of California is in a unique position to advance the development and deployment of autonomous vehicles. Given the presence of tech companies and many traditional OEMs, California now has the advantage of a highly educated and skilled workforce. VCG believes it is therefore very important that the California AD regulations
(testing and deployment) encourage both tech companies and OEMs to develop this technology.

VCG is currently testing and developing autonomous technology. VCG has initiated a very advanced testing project in and around our engineering centre in Gothenburg, Sweden. This project includes advanced simulations and it utilizes test tracks and public roads. VCG’s plan is to utilize professional test drivers and also customers.

VCG applauds the California DMV for advancing AD technology by reducing some of the unnecessary hurdles and administrative burdens for testing and reporting. The prior draft regulations had a requirement for manufacturers to perform AV testing in the state of California as a prerequisite for AV deployment. The new proposal does not contain this unnecessary requirement which would have delayed AV technology in the state. VCG strongly supports this modification.

The current proposed CA DMV regulation allows for all levels of autonomy including level 4 and 5 autonomy (both for testing and deployment). VCG believes that the actual and real benefits of autonomous driving will happen when there are SAE level 4 and 5 vehicles. This level of automation is considered the safest because it does not depend on human reliability. The CA DMV has in its current proposed regulation removed a major impediment to AD advancement by allowing for all levels. VCG strongly supports this modification.

VCG believes the prior draft requirement to report incidents linked to excessive braking was onerous and unnecessary. VCG believes that the current proposed reporting requirements are more workable and basically can be managed during the testing phase.

VCG supports most of the changes in the recent issued Express terms and believes the current proposal is an improvement from the previously issued drafts dated December 2015 and September 2016. However, VCG would like to highlight some of the remaining issues and some concerns with regard to the current proposed regulation.

**Testing of Autonomous Vehicles**

VCG believes the current procedures for qualifying for the testing permit and the testing requirements are feasible. VCG believes that reporting requirements should specify that only serious incidents should be reported and this should only apply to a vehicle ready for sale and not apply to test prototypes. However, VCG also believes the
reporting of collisions and deactivations in the current proposed regulation is now more reasonable and thus, does not discourage the testing of highly autonomous vehicles in the state.

**Safety Assessment Letter**
States should not regulate vehicle performance standards because these standards are within the jurisdiction of the federal government and therefore, should not be regulated at the state level. The current proposed regulations require that manufacturers submit a copy of the Federal Automated Vehicles Policy Safety Assessment Letter (SAL) provided to the National Highway Traffic Safety Administration (NHTSA). The FAVP is a voluntary program and therefore, requiring the submission mandates NHTSA’s voluntary guidance. VCG recommends that the DMV clarify that submission of the SAL to the CA DMV is necessary after it has been submitted to NHTSA.

The California DMV should include thorough protections for Confidential Business Information or CBI. The SAL will include highly competitive technical material and that should not be in the public domain. Therefore VCG appreciates the revised proposed regulation that allows manufacturers to protect CBI from the SAL submission to the DMV. However, even if the CBI is redacted from the SAL, the information included in the SAL and other required documentation may contain CBI. The CA DMV should be very explicit and protect CBI by stating that information contained in these submissions should not be released under California’s Public Records Act.

**Cybersecurity**
VCG agrees that, for all connected vehicles, the issue of cyber-attacks and false intrusions into the vehicle’s operational systems is a serious matter that must be addressed in a continuous, vigilant and timely manner. VCG supports strong cybersecurity protections in all motor vehicles but VCG does not believe this is a matter that can be effectively regulated. So VCG has concerns with the current proposed requirement that requires certification that autonomous vehicles have self-diagnostic capabilities. This is a vehicle performance standard and thus jurisdiction of NHTSA (federal level).

Cybersecurity is a constantly evolving global field and it is impossible for regulation to keep up. Therefore VCG is part of the automotive information sharing and analysis center (Auto ISAC) which serves as the central organization for analysis and sharing of cyber threats. This global collaboration with other automakers and suppliers has drafted
the Automotive Cybersecurity Best Practices. These best practices cover seven key cyber functions that impact motor vehicle cybersecurity. The Functions are:

1. Governance
2. Risk assessment and management
3. Security by design
4. Threat detection and protection
5. Incident response
6. Awareness and training
7. Collaboration and engagement with appropriate third parties

These best practices will be updated continuously and therefore much more effective at quickly resolving these global issues that involve all connected cars. VCG therefore believe the CA DMV should harmonize with these efforts and instead require certification that the AD vehicles are in line with the Automotive Cybersecurity Best Practices.

Privacy
During the operation of a vehicle, a large amount of data is collected but not all of this data is collected continuously. Data on vehicle safety system performance is only collected when there is a serious incident but data related to driving of the vehicle (fuel consumption) etc is collected continuously. It is important to assure consumers and the public that their privacy will be protected so VCG has committed to implement measures to protect covered information against unauthorized use. VCG believes the issue of privacy is not a state issue and much work has already been done on Privacy Principle Best Practices.

In 2014, Auto Manufacturers issued Privacy Principles that protect identifiable information by utilizing Federal Trade Commission (FTC) guidance, the White House Consumer Bill of rights and the Fair Information Practices Principles. VCG recommends that the privacy provision in the California autonomous vehicle regulations be harmonized with the 'Privacy Principles', issued by the Alliance and Global Automakers. It is important to note that these principles are enforceable by the FTC.

EDRs
After a crash it becomes important to investigate the circumstances and also to establish the root cause of the incident and to learn if this is related to any malfunction or flaw in the vehicle’s systems. VCG has clearly stated that it assumes the liability of
an incident or crash where the control has been handed over to the vehicle in a correct manner and, thus, the cause of the crash is due to vehicle error. In line with this, having a data recorder to help investigators to establish the cause of the events becomes critical. VCG believes that data should be stored in accordance with the recommendations that will be issued by the SAE EDR Task force.

VCG appreciates the opportunity to provide comments on the California DMV’s proposed regulations. If you need additional information, please contact me at (202) 412-5935 or via email at kyehl@volvocars.com.

Sincerely,

Katherine H. Yehl

Katherine H. Yehl
Director of Government Affairs the Americas, Volvo Car Group