

Uniform Law Commission Annual Meeting Memorandum

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To: Commissioners of the Uniform Law Commission

Re: Highly Automated Vehicles Act

Date: June 19, 2018

Introduction

This memo briefly introduces automated driving and the Drafting Committee's work to date on this topic. For more, please read:

- Bryant Walker Smith, *How Governments Can Promote Automated Driving*, 47 N.M. L. Rev. 99 (2017), newlypossible.org.
- SAE International, *Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles (J3016)*, sae.org.
- Previous memos to the Drafting Committee (including a survey of state legislation).

Technical Background

Automated driving is a complex topic with complicated terminology. The terms generally used by automated driving developers as well as regulators at the federal and state levels are explained at length in *Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles (J3016)*. This document is published by the standards organization formerly known as the Society of Automotive Engineers and is available for free upon registration at SAE's website.

An "automated driving system" is essentially a computer driver. Like a human driver, an automated driving system perceives the driving environment, decides how to move through that environment, and manipulates the vehicle accordingly. To perceive the environment, a system may process data from a combination of sensors in conjunction with stored map data; contrary to popular belief, automated driving does not necessarily involve exchanging electronic messages with other road users.

Unlike most human drivers, an automated driving system may function only on certain roads, in certain cities, at certain speeds, or in certain kinds of weather. A system may be designed to undertake only those trips that are expected to fall entirely within its limits, or it may be designed to work in conjunction with a human who will drive for those portions of the trip that fall outside of these limits.

The response to conditions outside of these limits also distinguishes two key levels of automated driving. At level 4, a system can reliably respond to conditions outside its limits by stopping the vehicle in a reasonably safe location. This means that engaging a human driver may be necessary to complete a trip but is not needed to achieve reasonable safety. In contrast, at level 3, engaging a human driver may be necessary not only to complete a trip but also to otherwise achieve reasonable safety.

The capabilities of an automated driving system can also influence the design of a motor vehicle on which it is installed. A vehicle might be designed with a steering wheel, brake pedal, and accelerator so

that it can be driven by a conventional human driver or by an automated driving system. Conversely, a vehicle might be designed without these traditional input mechanisms because it is intended to be driven exclusively by an automated driving system.

Many motor vehicles manufactured today have advanced driver assistance systems such as adaptive cruise control and active lane-keeping assistance. However, because these systems still need supervision by a human driver, they are not automated driving systems.

Legal Background

State approaches to automated driving vary widely in form, scope, and substance. Many states have enacted statutes,¹ while others have declined to do so.² California has lengthy statutory language and even lengthier regulatory language.³ Florida has relatively brief statutory language.⁴ Arizona has only two executive orders.⁵ Pennsylvania has enacted legislation related only to funding.⁶ And yet all four of these states (among others) are hosting significant automated driving activities.

The state role in regulating automated driving is limited by federal law. In the United States, the federal government does not approve the overall design of motor vehicles. The US Department of Transportation (USDOT)'s National Highway Traffic Safety Administration (NHTSA) does promulgate federal motor vehicle safety standards (FMVSSs) to which manufacturers self-certify their vehicles, but these do not contemplate many of the automotive technologies on the market today. NHTSA could preempt inconsistent state law by adopting a rule specific to automated driving, but at this point it has not even proposed one. Nonetheless, a bill passed by the US House and a companion in the Senate would preempt states from regulating key aspects of automated driving—even before NHTSA has acted.

Scope and Structure of the Draft Uniform Law

The draft uniform law covers the deployment of automated driving systems. It does not cover the testing of these systems for the purposes of research and development. And it does not cover driver assistance systems, which—unlike automated driving systems—are designed with the expectation that a human driver will still monitor the roadway while they are engaged.

The draft addresses a narrow set of the many legal and policy issues raised by automated driving. It is intended to *explicitly* accommodate and *specifically* regulate automated driving. Although existing law is already consistent with at least with some forms of automated driving, the uniform law would make this

¹ See Mich. Code Laws Ann. § 257.665, et seq. (2016); Tenn. Code Ann. § 55-8-101, et seq. (2017); Tex. Stat. Ann. § 545.451 (2017),

² See Virginia, which has intentionally avoided passing legislation specifically regulating automated vehicle operation. Michael Laris, *This State Wants to Usurp California as the Capital of Driverless Cars*, WASHINGTON POST (Apr. 24, 2017) https://www.washingtonpost.com/local/trafficandcommuting/virginia-wants-to-steal-some-of-californias-driverless-thunder/2017/04/23/a4bc6b54-206c-11e7-a0a7-8b2a45e3dc84_story.html?utm_term=.0a3fff731d2a.

³ See Cal. Veh. Code § 38750, et seq. (2017).

⁴ See Fla. Stat. Ann. § 316.85, et seq. (2016).

⁵ See Ariz. Exec. Order No. 2015-09 (Aug. 25, 2015); Ariz. Exec. Order No. 2018-04 (Mar. 1, 2018).

⁶ See Pa. Stat. Ann. § 9511(e.1)(3) (2016).

legal status explicit. And although existing law already addresses aspects of automated driving through rules of general application, the uniform law would provide rules that are specific to automated driving.

The draft uniform law attempts to reconcile automated driving with a typical state motor vehicle code. For this reason, in some ways the structure of the draft mirrors such a code: It defines key terms (some of which are adapted from J3016) and addresses the typical vehicle code categories of driver licensing, vehicle registration, vehicle equipment, and rules of the road. It also briefly addresses insurance, provides a new section on automated driving providers, and incorporates standard ULC provisions and other supporting provisions. The draft necessarily addresses allocation of fault in the context of a vehicle code, but it does not change liability rules of more generally application.

Issues for the Commission

The Committee would be particularly appreciative of input from the Commission on the following:

A. Scope of the Act

In interpreting its mandate, the Committee has tentatively resolved several questions about the proper technical and legal scope of the draft uniform law. In particular:

- a) Vehicle deployment is in scope, while research-and-development testing is out of scope.
- b) Automated driving from SAE levels 3 through 5 is in scope, while driver assistance below level 3 is out of scope. (Accordingly, platooning below level 3 is out of scope.)
- c) Remote human input into automated driving is in scope, while remote human driving is out of scope.
- d) Allocation of fault in the context of the vehicle code is in scope, while liability rules of general application are out of scope.
- e) Clarification of automotive insurance requirements in the context of automated driving may be in scope, while regulation of insurance in general is out of scope.⁷
- f) Both the legal accommodation and the safety regulation of automated driving are in scope, while larger policy and planning issues (including privacy, taxation, land use, and employment, among many others) are out of scope.

It would be useful to understand whether the Commission believes these scope determinations to be (1) clear, (2) appropriate, and (3) comprehensive.

B. Application of Vehicle Law to a Legal Subject During Automated Operation

During automated operation of an automated vehicle, there may not be a human driver in a narrow technical sense. This raises the legal question of what natural or legal person (if any) should be considered the driver or operator under a state's vehicle code. This question is often expressed casually as "Who gets the speeding ticket?"—but the implications for safety, accountability, and trust are

⁷ For extended discussion of the insurance options considered, please refer to previous drafting memoranda.

potentially much larger.

As discussed in *Automated Vehicles Are Probably Legal in the United States*,⁸ states tend to broadly interpret traditional vehicle code terms such as “driver” and “operator.” Under these broad interpretations, a technician who starts an automated vehicle, a passenger who rides in one, or a company with some connection to one could conceivably be considered the driver. Although some (though not all) of the state automated driving laws enacted to date have attempted to provide more certainty, they have not necessarily achieved certainty or consistency. These laws have variously defined operator or driver (if at all) as the person engaging an automated mode,⁹ the person in the driver’s seat,¹⁰ and the automated driving system.¹¹ An automated driving system, however, is not a legal person on which legal responsibilities could be meaningfully placed. (One state seems to have given personhood to these systems, while another state has essentially treated them as agents of the manufacturer.)¹²

The draft uniform law continues to answer the question “who drives an automated vehicle?” with “the automated driving provider.” Similar to how drivers are licensed and subject to obligations under state vehicle codes, the automated driving provider would register and be subject to many of these same obligations. More fundamentally, the automated driving provider would be the legal entity that vouches for automated operation—and that thereby makes an explicit promise to the state and its public.

The diversity of automated driving requires flexibility within this concept. Automated driving systems may be installed on vehicles by the developer of the system, the manufacturer of the vehicle, or another entity altogether. These vehicles may be owned by sophisticated technology companies, by fleet operators with some familiarity with automation, or by individuals (or their lenders) with no technical knowledge whatsoever. But regardless of ownership, the continued safety of automated operation is likely to require the ongoing involvement of a technically competent entity that facilitates data transfers, software updates, and technical support.

Accordingly, the draft uniform law defines the automated driving provider not by a specific role in the stream of commerce but, rather, by a willingness and ability to meet specific technical and legal requirements. Many of these potential requirements have been added or modified per the discussion at

⁸ Bryant Walker Smith, *Automated Vehicles Are Probably Legal in the United States*, 1 Tex. A&M L. Rev. 411 (2014), available at newlypossible.org.

⁹ See, e.g., Cal. Veh. Code § 38750(a)(4) (2017) (“An “operator” of an autonomous vehicle is the person who is seated in the driver’s seat, or, if there is no person in the driver’s seat, causes the autonomous technology to engage.”).

¹⁰ See, e.g., S.B. 260, Reg. Sess. (Conn. 2017) (“‘Operator’ means the person seated in the driver’s seat of a fully autonomous vehicle”).

¹¹ See, e.g., Tenn. Code Ann. § 55-8-101(46)(B) (2017) (“For purposes of an ADS-operated vehicle when the context requires, the ADS when the ADS is engaged”); S.B. 995-998 (Mich. 2016) (creating the SAVE Act, which limits operation of automated vehicles to manufacturers).

¹² See Tenn. Code Ann. § 55-8-101(46) (2017) (“‘Person’ means a natural person, firm, co-partnership, association, corporation, or an engaged ADS.”); Mich. Comp. Laws Ann. § 500.3101-500.3179 (holding a motor vehicle manufacturer liable for the fault of automated vehicles it controls).

the February 2018 meeting, in part to mitigate administrative difficulties identified by participants from state regulatory agencies.

At the February 2018 meeting, a majority of the Committee voted to retain automated driving provider registration. A majority of industry stakeholders present preferred to abolish any registration and thereby eliminate the entire concept of the automated driving provider. A majority of stakeholders present from organizations other than industry preferred to retain registration or to expand it by imposing more substantive requirements.

The wide variety of perspectives makes consensus difficult, and yet this issue remains a critical one for both the integrity and the enactability of the uniform law. The Commission's views would be especially helpful in understanding how different legislatures might approach the resolution of this issue.

To this end, the Committee would particularly appreciate input on the following questions:

- a) When driving does not involve a traditional human driver, should there be some legal entity with similar obligations? If not, what is the alternative? And if so:
- b) Does the draft uniform law take an appropriate approach to identifying this entity? If not, what is the alternative?
- c) Does the draft uniform law place appropriate requirements on this entity?
- d) Does the draft uniform law place appropriate requirements on relevant state agencies?
- e) Is there a better name than "automated driving provider"?