WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

MEETING SUMMARY

Meeting: Licensing Subcommittee

Location: Teleconference - Skype

Date: October 29, 2020

First Name	Last Name	Organization
Ted	Bailey	Washington Department of Transportation (WSDOT)
Debi	Besser	Washington Traffic Safety Commission (WTSC)
Daniela	Bremmer	WSDOT
Leonard	Byrne	Society for Engineers
Steve	Crown	Wenatchee Police Department
Thad	Duvall	Douglas County Auditor
Matthew	Eng	City of Seattle
Bryan	Imai	Washington State Auto Dealers Association
Jill	Johnson	Washington Department of Licensing (WA DOL)
Kimberly	Mathis	Washington State Patrol
Kyle	Miller	WSDOT
Markell	Moffett	WSP USA
Corey	Paulsen	WA DOL
Beau	Perschbacher	WA DOL
Max	Platts	WSDOT
Lt. David	Putnam	Washington State Patrol
Sadeeq	Simmons	WA DOL
Ryan	Spiller	Alliance for Automotive Innovation
Drew	Wilder	Vicarious Liability Risk Mgmt, LLC
Sara	[*no last name*]	*Unknown*

WELCOME AND INTRODUCTIONS

Beau Perschbacher & Drew Wilder

- Introductions
- Review agenda
- Note there is one recommendation up for subcommittee vote today

Topic closed.

WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

MEETING SUMMARY

SAE Level of Self-Certification Process

Beau Perschbacher

- Recommendation documentation attached to meeting invitation
- Recommendation for the Legislature to grant the Washington State Department of Licensing (DOL) rulemaking authority over the AV self-certification program for the purpose of administering and maintaining the self-certification program
    - DOL to better clarify the SAE levels that are required to self-certify with DOL
        - This is a question that has come up in several previous meetings and discussions
        - Consensus is that SAE levels 4 and 5 are appropriate, but rather than noting that directly in legislation, suggest the DOL have rulemaking authority and can define the levels in rule, where it is an easier process to change
        - Rule would still go through the stakeholder review process, public hearings, filing CR102 and CR103, etc.
    - If other issues come up on the self-certification program, the DOL would have the clear statutory authority to do rulemaking
        - We want to be innovative, adapt the program to changes without having the change RCWs
- Discussion:
    - None.
- Vote:
    - Yes: 12
    - No: 0 (zero)
    - Abstain: 2
    - ***MOTION PASSES***

Topic closed.

UK AV Regulatory Model

Drew Wilder & Beau Perschbacher

- Authorized autonomous vehicle (AV) testing over a 300 kilometer (188 mile) testing route was conducted in 2020, including the installation of weather stations, smart cameras, and communications equipment
- A 3-year review of the regulatory framework for the deployment of AVs was kicked off in 2018 after discovery that AV testing was being done outside of the law
    - Review is being done by the United Kingdom (UK), Wales, and Scottish Law Commissions

- Review involves three rounds
  - Part 1 – Safety, license, liability
  - Part 2 – Regulation of remotely operated automated fleets and their relationship with public transportation
  - Part 3 – Comprehensive analysis and recommendations
  - *Noted that when the analysis and recommendations are published, co-chairs can bring to this subcommittee to review*
- Review includes SAE automation levels 0 to 5, and their distinctions
- AVs are subject to international regulations
- AVs defined as vehicles capable of driving themselves without human oversight
- Review project also looking at the boundary between self-driving and driver-assisted technology
- Regulating the safety of AVs – Three options being evaluated
  - Establish a new agency;
  - Use current Vehicle Certification Agency; or
  - Use current Driver Standards Agency
- Testing and Approval:
  - Manufacturers must meet United Nations Economic Commission for Europe (UNECE) standards
  - Manufacturers must obtain International Approval of Whole Vehicles (IWVTA) approval certificate
  - All European Union (EU) member states have established standard approval process
- Setting standards for driving automation:
  - New regulations are being developed to address advanced driver assistance functions such as lane keeping, lane change, and systems that operate at a high automation level (assumed Levels 4 and 5)
    - No timetable has been set for implementation (assume first quarter 2021)
- Paths to full automation:
  - Manufacturers to include additional automated systems to their vehicles
  - Manufacturers to produce vehicles that operate at Level 5 autonomy
  - Level 5 vehicles would operate in limited access areas
- Roadworthiness Tests:
  - Vehicles three years or older must complete annual vehicle roadworthiness review

- Like WA, vehicles must go in every other year for emissions test

- No test in place for automated vehicles
- Recommendations were made for the establishment of a new agency that would develop testing procedures for automated vehicles

- Driver Training
  - Enhanced driver permits may be issued for drivers that operate vehicles equipped with driver assistance features
    - Be licensed to operate the vehicle
    - Not be under the influence of alcohol
    - Be medically fit to take control of the vehicle
    - Enhanced permits – Drivers specifically trained to operate automated vehicles
      - For Level 4/5 vehicles, may be a point in testing phase where human intervention required; Someone needs to take control of the vehicle
  - Insurers have been asked to consider giving discounts to drivers with enhanced permits
- Accident Investigations and Safety Standards:
  - Commission asked for input on how accidents involving AVs should be investigated
  - New agency (if established) to compare accident rate involving automated vehicles vs. the accident rate of human drivers
  - Recommended the Government set the safety standards for AVs
- Data Retention:
  - EU currently has the General Data Protection Regulation[1] (GDPR) – regulation that involves data protection and privacy
    - GDPR provides the roadmap for data protection related to AVs
  - Insurers will need access to data when investigating accidents
  - What data should be stored and for how long?
  - Data collection and retention standards
  - Problems that could arise when retaining data for long periods of time
- Automated agricultural vehicles fall under two broad classes – Large tractors (designed to transport seeds, fertilizer, etc.) and precision bots (performs the actions, e.g. planting seeds)
  - Registration – Apply to register, union wide agency that manages registration and traceability of these bots/equipment

[1] General Data Protection Regulation (GDPR) text: https://gdpr-info.eu/

- Insurance – Owner required to make sure proper insurance is in place
- Data Protection – GDPR applies
- Legal Personhood – At the end of the day, bots are going to have to be registered same as a corporation, vested or equipped with assets to pay for lawsuits. Owners of bots are liable for crimes or wrongdoings committed by the bots.
- Proportional Liability – Larger or smaller equipment, manufacturers and producers strictly liable if traced back to design
    - For bots, if it is a software issue, liability falls on programmer of the application
    - If damages occur during the learning curve, liability falls on the owner/user
    - For bots-for-hire, liability would fall on the hiring party

- Overall, the UK is concerned about the same things that we are
- Appears UK is making a push to get vehicles to Level 5 autonomy sooner rather than later
- Discussion:
    - Testing being conducted in the UK now. Concerns over testing being done by parties not authorized to do so
    - Unlike the U.S., nothing is prohibited unless there is an explicit law to prohibit it, the UK is the opposite in that something is prohibited unless explicitly allowed by law
    - What are the testing program requirements in the UK?
        - Equipment/automated software must meet certain standards
        - Must provide proof of proper insurance
        - Must have an action / testing plan
    - What are the ramifications of unauthorized testing? Are accidents occurring with those vehicles being tested outside purview?
        - Unsure at this time, subcommittee co-chairs may look into further and provide information at a future meeting
    - The “roadworthiness” section seemed like the UK version of the Federal Motor Vehicle Safety Standards (FMVSS). The UK looks at itself as its own country, in which case it would compare to the U.S. Federal Government’s role, where the State of Washington would defer safety standards to the FMVSS/federal level.
        - That is a challenge as we look at this from an international perspective
    - Looks like the UK desires an endorsement on driver licenses to indicate you are trained in AV operation

- WA has been looking at the possibility of AV passengers not needing a drivers license at all when the AV is at a certain level, interesting to see the UK exploring special AV operation training
- Skill may be required to take over operation of a Level 5 vehicle in certain situations
- Likely that Level 5 would be the only automation level that could allow no ability to manually take over a vehicle, potentially manufactured without a steering wheel or pedals
    - Level 4 still cannot operate autonomously in all operational design domains, so it would require either a licensed/trained driver/operator in the vehicle or the ability to be controlled remotely
    - Insurance companies could incentivize special training with discounts
    - For WA, instead of creating a special endorsement, the training could be incorporated into driver training curriculum
        - Would work for new drivers, but problematic for anyone already licensed as they do not need to retake any driver training
        - There are already issues with drivers misunderstanding or misusing level 1 and 2 technologies in vehicles today

- This starts to get into a deployment question, rather than testing which is where WA is at
    - UK has a one-size-fits-all approach, WA has two clear paths – testing and deployment
        - Do not want to get into drivers licensing and related requirements if we are focusing on testing still
    - Tesla announced that their vehicles are being sold Level 4 and 5 equipped from a hardware standpoint, software and machine learning still have a learning curve
        - Tesla can deploy software updates over-the-air to deployed vehicles, which means Tesla could technically deploy Level 4 and 5 vehicles at any time, when they are ready, and the vehicles would already be on the road
- We should be focused on near-term test cases, such as low speed shuttles for hire, standalone automated trucks in an interstate application, agricultural applications
- The UK Government published a pathway to driverless cars report in 2015, there may be a more recent version of this out there: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/446316/pathway-driverless-cars.pdf
- Discussion on whether geographically constraining AVs is a good idea or not:
    - UK may be looking to constrain where highly automated AVs can operate because of several factors, such as the UK highway structure has a lot more roundabouts, weather conditions are not as conducive, many single lane roads with limited passing capacity

- WA may want to geographically constrain during testing so we can figure out how to do it right in a specific condition before full deployment
- Concerns on geographic constraints, as they may restrict safety learning opportunities
- Limiting testing would go against WA fundamental AV policy goals
    - WA does not have much testing going on, we are trying to encourage testing
    - One of our biggest barriers is getting industry to come to the table
- In DOL's talks with self-certified companies, one company mentioned WA is an ideal state for testing because of its climate and geography, don't want to restrict
- In the short term, limiting areas where AVs can test may be beneficial from a safety standpoint, however for long-term, we want to encourage testing everywhere to capture different scenarios
    - Is there an option to have a gradual approach? Vehicles test first in remote areas, then if those are successful, graduate to testing in metropolitan areas
        - Able to manage AV testing with lower risk
- AV companies have a tremendous financial incentive to getting it right, not creating a situation with negligence or additional liability
    - If the goal is to incentivize these companies to get testing done and if we want in WA, too many limitations may hinder that greatly
    - AV industry is spending billions testing at their plants first before ever testing on public roadways
- The State needs recourse if something catastrophic happens during testing
    - WA has precautions in place, such as the $5 million insurance requirement in HB2676
    - WA may need the ability to revoke the company's self-certification status and right to test either temporarily or permanently
        - Current DOL authority only allows DOL to grant approval to test, there is no language to remove that approval
        - California approach includes an application acceptance step, WA approach does not
            - As pieces such as the $5 million insurance requirement are added into the self-certification process, becomes less of a self-certification and more of an approval process
                - If company does not have proper insurance, DOL removes them from the self-certified list

- From a licensing and regulatory perspective, are there concerns or thoughts as we start to see next evolution of AVs testing and deployments? As we move into companies looking to have Level 4 vehicles deployed, live rider services, trucking routes, etc. is the current HB2676 and self-certification framework sufficient?
    - Don't want WA to substantially deviate from what other states are doing from a competition-of-interest standpoint
    - Current framework and self-certification process encourage self-regulation, incentivizes companies to be forward thinking, but still enough regulatory pieces that we can have some big impacts on companies and operators if we need it
    - Where is the line in existing legislation for AVs not being tested, but being deployed? Tesla can do an over-the-air update and turn their cars into Level 4 AVs. Is that allowed?
        - DOL knows how many Teslas are registered in WA, but would not know to what extent those vehicles are receiving upgrades and advanced automation features
            - Teslas are mostly privately owned rather than fleet owned, would be difficult to get that information
        - Tesla updates just appear (no driver interaction required), any newer Tesla that is already deployed with the right cameras and sensors could be a Level 4 overnight
        - Tesla announced they are rolling out these features in a limited fashion with a few select customers chosen to participate in advanced feature testing
        - Tesla is not self-certified with WA DOL
        - There is modest reason for concern with Tesla
            - Have not had many accidents, but the accidents that have occurred, Tesla claims driver/operator was not following instructions
            - Tesla's safety record is not very good, but where does the liability lie?
            - Perhaps a near-term step would be awareness – How would we know if and when a Level 4 AV is deployed on roadways?
                - The vehicle identification number (VIN) is not sufficient to indicate to DOL if a vehicle is an AV and what level it is meant to operate at
                - How do we link licensing requirements to levels of automation, from an awareness perspective?
                - Example: Tesla Model S with software version A equals Level 2
                - DOL is leery about being the determining factor for this, DOL is not currently equipped with the right level of insight or expertise to determine SAE levels per software differences

- When reviewing crash reports for "Tesla", unable to extract what level of automation the vehicle is capable of operating in
    - This may be where NHTSA and FMVSS need to step in, however NHTSA only lists the level of automation at the time a vehicle is delivered. Tesla has demonstrated it can activate hardware differently based on software updates and change the level of automation remotely
- How would we be notified of changes in Tesla automation levels? Send a letter to all Tesla owners? Require Tesla to tell us? Voluntary notification seems to be the only way
- This is a national issue, potential for states to discuss together and advocate for a federal level decision, exploring what data is there and what options there are for notification – what level of automation a car has at any given time
    - Looking at data elements required at time of an accident, consider adding mandatory reporting of software versions and upgrades to know what was active at time of the accident

- Waymo's AV deployment in Arizona
    - When Waymo was deploying in Arizona, they held many conversations with the Governor's office and AZDOT on what was going to occur
    - Arizona regulations do not require formal notification or coordination for moving from AV testing to deployment, was an informal conversation
    - Waymo is required to have a law enforcement interaction protocol, which provides coordination points with government, but not specifically for deployments
- Does there need to be additional enabling legislation to enable commercialization of SAE Level 4 deployment/operation in WA state?
    - Expect there to be requirements for full implementation/commercialization
    - Regulators would be very concerned if Level 4/5 AVs were suddenly operating around WA
    - There are different questions and answers on who/what/when/how we are using and interacting with AVs based on whether they are testing, limited deployment, or full commercialization
    - WA currently lacks a clear path to implementation
        - If WA had a clear path, WA could define what the parameters were (e.g. low-speed, outside urban areas, limited deployment) which would provide clarity to companies to decide whether to spend capital dollars to gear up to come deploy in WA
        - What state has a deployment path?
            - None known at this time

- Arizona is likely the closest – They do not define a clear path to implementation, they leave it as an open conversation to incrementally grow together as things evolve
  - Does not work well for personal ownership, works well for fleet ownership models
- Pennsylvania Smart Belt Coalition is working on Level 4 trucking automation efforts – Part of the arrangement is to allow something beyond testing, but do not think they are there yet
- Should get direction from the Executive Committee on this
  - How do we meld testing with implementation?
  - What differences are there?
  - What does a transition look like?
- If DOL is granted rulemaking authority (via recommendation being brought to the Executive Committee), what are intermediate steps that can be taken to support this?
  - Testing itself not defined
  - Through rulemaking, DOL could clarify definition of testing to include broader set of use cases, such as commercial pilots, rides, etc.
    - This framework fits with the Self Drive Act, which plans to allow testing up to certain gates to better understand the landscape before allowing 5million+ AVs on the roadways
    - Could define some testing limits of what the State is comfortable allowing on public roadways until more data is collected, there is a better understanding – Provide in-roads to commercialization through small applications that can be proven successful
    - **ACTION ITEM**: Representative of Alliance for Automotive Innovation asked to take this idea back to represented companies
      - What would an implementation path in WA look like?
      - What pieces would make sense to include?
      - How important is it to provide a path to implementation to the industry to contemplate beyond testing?
    - **ACTION ITEM**: WSDOT CAT Program Manager to reach out to other state DOT contacts to see which states may have a path to implementation, something that provides guidance beyond testing

Topic closed.

WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

MEETING SUMMARY

AV Agricultural Issues

Beau Perschbacher

- Agricultural AVs fall under the purview of this subcommittee from a license and regulatory perspective for when farm vehicles need to cross roadways to get to the next farm
- To what extent can we fit agricultural AVs into existing exemptions?
    - Farm vehicles not a typical transaction for DOL
    - Farm vehicles have different classifications, most general and familiar are farm exempt vehicles
        - Only operate within a 25-mile radius from where they are housed/garaged
        - Farm decals do not transfer between vehicles or owners
        - Decals are valid for the life of the vehicle
        - Vehicles are exempt from licensing and gross weight requirements
        - Vehicles must maintain load limits
        - Vehicles have 4 axles with tires
    - Agricultural AVs would be used mostly in fields/farms, do not expect them to be going across roadways much
    - Unsure what agricultural AV regulation, requirements, or fees would be
        - Hopefully, if/when legislation is drafted, it is clear and allows DOL to have rulemaking authority
    - Do not see licensing/regulatory barriers, they would likely fit under the existing farm exempt category
- Discussion:
    - Has the WSDOT CAT Team heard much about agricultural AVs in their far-reaching circles?
        - Not really, could reach out to the Department of Agriculture who may know more
    - Automated technologies are highly developed in the agricultural space as they have clear, defined rules, jobs, routes, etc.
        - Agricultural vehicles today can connect to GPS apps that tell them when to stop and turn
        - Would not be difficult to associate existing GPS technologies with autonomous technologies to get them up and running
    - The current licensing and regulatory model seem setup to handle agricultural AVs
    - How well can agricultural vehicles navigate on roadways?
        - Heavy vehicles on the road need to pull aside, look far ahead to identify corners, etc.
        - There is more a driver needs to think about for a farm vehicle on a public road than the navigator of a regular vehicle
        - How capable are they of sharing the road? Even if just temporarily to cross to get to the next farm.
        - Agricultural vehicles are slow moving, not controlled the same as a normal vehicle

- Does this pose a concern for other drivers, or is it infrequent enough to not be a concern?

- It is possible that agricultural AVs will be more like robot vacuums – They have a pattern/route, going around fields to harvest
  - Do not expect their intention is to drive down the road in level 5 autonomous mode
  - Should be easily engaged and disengaged – Farmer can disengage autonomous mode, then manually drive across/down the road
  - Could see legislation related to remote driving to support agricultural AVs

Topic closed.

WRAP UP AND NEXT STEPS

Beau Perschbacher & Drew Wilder

- The DOL rulemaking authority recommendation will be presented to the WA AV Executive Committee at the November 12 meeting
- Topics this subcommittee is interested in covering at the next subcommittee meeting?
  - Any proposed legislation around the recommendation as we go into legislative session
    - Note that because the upcoming legislative session will be virtual, it is possible that smaller items/issues such as this may not make it to the table – Legislators have bigger fish to fry, trying to figure out budgets and the like
  - Other state examples
  - Recommendations matrix for the Subcommittees presented to the Executive Committee in September
  - Self-Driving Coalition for Safer Streets' and Alliance for Automotive Innovation's model AV bills
  - If DeFazio pushes the Self Drive Act after the election, a primer on what is in that Act may be beneficial
  - Update on where federal AV activity is
- **ACTION ITEM**: If any meeting attendees have other topic ideas for future subcommittee meetings, put in the meeting chat or contact one of the co-chairs

Topic Closed.

MEETING ADJOURNED.